

Organizational Citizenship Behaviour of Distributed Teams: A Study on the Mediating Effects of Organizational Justice in Software Organizations

Harry Charles Devasagayam

Abstract— Globalization has changed the dynamics of team working in software development. Part of adapting and accepting globalization is to work with a heterogeneous group of people located in different parts of the world with different perceptions, different attitudes and varied characteristics. The challenge for software development organizations in this scenario is to source, coordinate and manage an adept pool of professionals and help them work for complementing tasks of distributed teams, keep them motivated so as to practice extra role behaviors which will in turn help the organization grow its business. However, in order that distributed employees feel motivated, valued and respected; the organizations through their employee friendly policies create an environment for people to perceive organizational support and role efficacy. A fairly supportive system and effective utilization of competencies is likely to create a sense of organization being fair to employees. This research examined the relationships between perceptions of organizational support, role efficacy and organizational citizenship behavior by examining the mediating effects of organizational justice. A questionnaire was given to 970 software professionals. The responses of 276 people selected through a convenience sample across globally located software organizations was used for the study. The data collected from the responses was analyzed using factor analysis to rule out factors not contributing to the study. Further the data was analyzed using correlation coefficient and hierarchical regression tests to find out the relationship and mediating effects between variables. There are seven hypotheses in this study. All of which has been accepted. As predicted a significant relationship was found between perceived organizational support and organizational citizenship behavior mediated by organizational justice and role efficacy and organizational citizenship behavior mediated by organizational justice. Among the justice dimensions procedural justice was significantly related to OCB. Distributive justice has been found to predict sportsmanship, Altruism and, Conscientiousness and is negatively related to general compliance and civic virtue. Interpersonal justice was found to predict Altruism, General compliance and Civic Virtue, and negatively related to Sportsmanship and informational justice has been found to predict all the dimensions of OCB. The results show that certain behaviors are driven by the sense of being valued and trusted while other behaviors are common and individual specific. This study suggests that when software organizations seek to provide distributed members with a sense of comfort in distributed locations and employees are allowed some control over processes that determine the organizational outcome, they are more likely to perceive that their organization is supportive, feel affectively committed and are more willing to engage in citizenship behaviors. Thus software organizations desiring to create an organizational climate among distributed team that fosters organizational support, role efficacy and citizenship behavior must make every effort to improve perceptions of organizational fairness in their organizations.

Index Terms— CP-Contextual Performance, DDC-Dedicated Design Center, GDT-Globally Distributed Team, GSD-Global Software Development, OCB-Organizational Citizenship Behaviour, ODC-Offshore Development Center, OJ-Organizational Justice, POB-Pro-social Organizational Behavior, POS-Perceived Organizational Support, RBSE-Role Breadth Self Efficacy, RE-Role Efficacy, STPI-Software Technology Parks of India, SWO-Satisfaction With Outcomes

1 INTRODUCTION

The exponential growth of the Information Technology (IT) industry through the 80's and 90's reengineered the way traditional industry has been working. Since individual based work structure could no longer meet the demands for smarter, faster and innovative solutions, the IT industry found a remedy in using teams distributed across the world to maximize benefits. Software organizations were divided from large organizational structures into small teams. In the last few decades, Indian software organizations adapted to distributed teams and morphed from being a domestic industry to a transnational industry. Carmel et al., 2007 further developed on this and said that distributed teams were becoming increa-

singly a common strategic response. A large percentage of almost 80 % of software projects are global. This has been further substantiated by researchers.

A distributed team brings together knowledge and ideas from individuals with diverse functional backgrounds and expertise to build a common solution (Sundstrom, DeMeuse & Futrell, 1990). The interaction between distributed team members adds new dimensions to the work in progress and increases a team's problem-solving abilities which in turn lead to better performance. The "Follow the Sun" system of development enables distributed teams to work nonstop for faster delivery and time to market. With work teams located in different parts of the globe, organizations are able to establish their presence with customers worldwide. Distributed teams allow companies to procure the best talent without geographical restric-

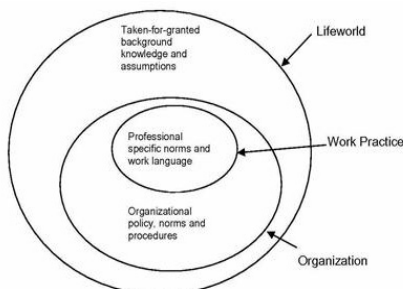
• Harry Charles Devasagayam is a Fellow of AHRD (IIMA) and a Senior HR professional with varied experience in different sectors.
E-mail: harrycd2011@gmail.com

tions. The use of distributed teams may increase commitment, motivation and efficiency to facilitate the implementation of decisions (Gladstein, 1984). Diversity in culture, knowledge, processes, technology and skills work as combined strength of the distributed team.

However, the use of distributed teams is not without its concerns and problems. Since distribution of teams has become an essential part of survival for organizations, companies have moved to expand the concept of teams in spite of the internal and external factors that might cause concerns. External factors such as cross culture, language, organizational ethics and work values, political environment, systems and processes, interdependence, information sharing, power distance, individual and family issues etc., have a significant impact on the performance of distributed team members. Internal factors such as selection and deputation to onsite assignment, organizational support, onsite rotation policy, role, learning and development opportunities, onsite career opportunities and support to family etc., creates concerns for the distributed team members. The job positioning (location, role, type of work, and rewards) comes with explicit and implicit constraints and concerns especially between onsite and offshore team members. This has given rise to favoritisms being perceived across the organization. Besides individuals interacting with their team create perceptions regarding their role and the support the organization provides to perform. If there are shared experiences of workplace fairness the employee's attitude towards the organization improves and consequently improves workplace cooperation.

Performance and justice perception has received considerable research attention. Greenberg (1987) defined Organizational justice as an individual's perception of fairness in an organization. Since this study attempts to understand the effects of justice perceptions of distributed teams, an understanding of justice climate is important. Justice climate is defined as "a distinct team level cognition regarding how fairly the team as a whole is treated [procedurally]" (Colquitt, Noe & Jackson, 2002). Team's cognition of fair treatment as defined by Kisooson (2007) (Figure 1) states that individual workplace concerns lead to interaction between team members creating a shared meaning. Shared meaning among team members creates a perception of organizational fairness (Endres, 2007) Colquitt & Greenberg (2005) have thus created a working model of how justice perceptions relate to OCB.

Figure 1: Fairness cognition



Three analytical levels of the software organizational context providing the basis for shared meaning in distributed teams.

This theory is further supported by creating processes leading to the similarity of

justice perceptions among distributed team members. Recent research on distributed team's justice perception has shown that team members converge on their justice perceptions but differ on citizenship behavior (Ganesh, 2008). Organizational justice has been found to be a predictor of work attitudes (Colquitt et al., 2002; Liao & Rupp, 2005), performance (Simons & Roberson, 2003), and citizenship behavior (Ehrhart, 2004). Shared justice perceptions among distributed teams enjoy autonomy in managing daily activities, including setting goals for the team, benchmarking their own performance, and managing decision-making processes (Manz & Sims, 1987). Being part of a distributed team member typically involves a great deal of interactions between members. This means that it can be expected that the behavior of one's teammates may influence one's justice perceptions and may have a large impact on team outcomes (Alper, Tjosvold, & Law, 2000). Research has found that procedural justice predicts organizational trust (Hubbell & Chory-Assad, 2005; Cohen-Charash & Spector, 2001) where as distributive justice impacts performance (Cohen-Charash & Spector, 2001) and job satisfaction positively associates with overall perceptions of organizational justice (Al-Zu'bi, 2010). Additionally, organizational commitment is related to perceptions of procedural justice such that greater the perceived injustice, the commitment diminishes and vice versa.

There has been a growing interest in the study of organizational citizenship behavior (OCB) as a workplace construct. (Moorman, 1991; Organ, 1988a; Organ & Konovsky, 1989; Podsakoff et al., 1990; Dalal, 2005; Ganesh, 2008; and Ali et al., 2011). Researchers have devoted attention to identifying the antecedents of organizational citizenship behavior. OCB has been connected with antecedents such as, organizational justice (Aquino, 1995, Colquitt et al., 2001, Moorman, 1991, Niehoff & Moorman, 1993) perceived organizational support (Eisenberger et al., 1990, Moorman et al., 1998) and role efficacy (Daniel et al., 2007).

Previous research has shown that procedural and distributive justice affects OCB (Farh et al., 1990; Moorman, 1991; Niehoff & Moorman, 1993). A meta-analysis of OCB (Dalal, 2005) has shown that OCB is better predicted by procedural justice rather than distributive justice (Konovsky & Folger, 1991; Moorman, 1991; Podsakoff et al., 1990). Since researchers have attributed the findings to various specific outcomes such as organizational systems and authorities (Folger & Konovsky, 1989; Lind & Tyler, 1988), this study focuses on organizational justice as a whole and its relationship with OCB.

A distributed work environment is one in which at least two specific experiences of organizational justice come to the forefront. The first experience is that of distributed employees who work in a complex environment and hence need organizational support. The second experience is that the employees' need to feel that their role adds value to their project and their organization. Considering the importance of these two variables to distributed software development, a further understanding of the relationship of these variables to organizational justice and OCB was explored.

Further to the existing research, Eisenberger et al., (1990) investigated the relationship between POS and OCB and found a significant positive relationship between the variables. In addition recent research indicates a relationship between POS, procedural justice and OCB (Lina Kogan 2004). Ganesh (2008) studied extra role performance in the light of organizational justice in software development teams and found a negative impact of overall virtualness on OCB. He further established a moderating effect of procedural justice perception on virtualness and OCB. Mehrdad (2009) studied the relationship between organizational justice and OCB and found that organizational dimensions qualified by correlation coefficient tests were positively related to OCB. Ali Nirozy (2011) investigated the relationship between organizational justice and OCB mediated by POS and found organizational justice significantly influences organizational support and OCB.

Daniel et al., (2007); Bandura, (1986); Gist & Mitchell, (1992) investigated role perceptions and OCB and established that 3 of the 4 facets of OCB relate to role perception. They have also shown that higher the role efficacy, workplace justice increases and in turn their engagement in OCB also increases.

This study is based on the above research. In addition, the study examines the mediating effect of organizational justice on the relationship between POS and OCB and RE and OCB as well.

In addition to the above, the pilot study of this research revealed that distributed members were not treated equally. (Table 1)

Table 1: Problems of distributed teams

Issues	Results
Shadowy, delayed, denied, and insufficient or lack of knowledge transfer between onsite and offshore worksites	Slows the development process and creates doubts about the actual goal and purpose of the project.
client and service provider with different processes and standards& misunderstood or mismatched processes between onsite and offshore teams	Leads to errors in work transfer, increased rework, and decreased productivity.
No communication, wrong communication or miscommunication	Leads to misunderstandings, omissions, errors, and rework.
work culture and professional values	Affects the working relationship between onsite and offshore teams
language barriers and differences in expectations of work outcomes and other extraneous factors	causes delays and affects working relationships
Asymmetric skills and team compatibility	Creates a distance or closeness between members

Distribution and coordination of work across multiple teams, sites and time zones	Riskier, time-consuming and costlier than a collocated project
Work-family distance and power distance	Challenging to manage amidst work delivery pressure.
Project metrics may be inconsistent in heterogeneous infrastructures, different processes, or company security boundaries	difficult to measure success
Political issues both within the company (organizations that fear losing work or resent the overheads of remote sites) and externally in the country or region of work	Could lead to hidden agendas and conflicting goals
Reporting through different management chains or different companies.	may not share the same objectives
Personal health and objectives that come in the way	To deliver common goals.
Where intellectual property laws are lax	restricts infrastructure and organizational decisions
Mergers, acquisitions, and outsourcing	Infrastructure and development tools may vary
Onsite teams' fear and ignorance of offshore development team	Distribution of responsibility for deliverables and the ability to judge the capability of each member of the project.

The above challenges could play disruptive roles in members experiencing organizational support and role perception which leads to forming their justice perception. Hence distributed team members have a greater potential for experiencing the lack of organizational justice in all dimensions (procedural, distributive, interpersonal and information). In the light of rapidly changing work environments in globally distributed software organizations, organizational justice and citizenship behavior remains a topic worth studying.

Thus, this dissertation attempts to get a deeper understanding of the factors that help enhance organizational justice perceptions of organizations that motivate members to practice OCB. The primary objective of the study is to investigate how POS and role efficacy influence organizational justice which in-turn motivates distributed members practice OCB. The study also seeks to find the possibility of significant differences in the way that members of distributed organizations perceive justice and practice OCB.

1.2 SIGNIFICANCE AND ASSUMPTIONS OF THE STUDY

The research covers global software development (GSD) companies including consulting and services, engineering and

products, semiconductor, telecom development, audio and video codec's and globally shared services. The companies are headquartered in India, with each carrying out substantial software development activities in their India sites, apart from other GSD teams in the US, Ireland, Malaysia, Japan, Singapore, Germany, China, India, and Poland etc.

THE RESEARCH IS BASED ON THE FOLLOWING SET OF ASSUMPTIONS.

A software project team consists of people with different skill sets and talent. It consists of a manager, architect, coordinator, technical and project leaders, designers and coders, testers and QA specialists. A project team member may be assigned to a single project or more than one project. Utilization of a team member can be 100 % in one project or could be partly contributing to one or more than one project. Project team members may report to more than one person at a time as the person is working in a client location, but her/his work is monitored from the company's offshore center. Distributed teams work in complex scenarios with changing project requirements and costs with external and internal hurdles. Different projects need different skills, depending on the requirement of the project. In addition project team members stay on in a project only until their skills are needed. Onsite returned employees do not get equal growth opportunities like their peers.

There are several established systems and processes of managing global practices for distributed teams through the HR department of organizations but implemented and managed by the project team, which at most times reveals gaps. Managers are at the receiving end as they are neither a part of creating the policies nor owners of it.

Distributed members will only be part of the team as long as their specialist skills are required. Team members come from same or different organisational backgrounds and cultures. Team members can be down the hall from each other, across the street, across the country or across the world. They can be part of the project team and geographically dispersed (characterised by cross culture, time-zone, work-life balance, and power distance, information exchange, mutually complementing tasks, collaboration and coordination)

It is also found that software industry determines value for the individuals based on competency, capability and availability together with long term business vision of the organization, business compulsions and competitive environment. Employee policies and processes are influenced by business, revenue and profits of software organizations. Allocation of resources depends on roles and location of the employee. Contributions, consistency and longevity create respect and dignity for a software engineer.

In the above scenario inconsistency is likely to be perceived in the process of selection and deployment, allocation of rewards and benefits, opportunity provided for higher learning and development, assign a role, provide support to members and their family apart from members experience of being differentiated from their peers professionally, organizationally and

socially in the way they are valued and respected. Hence, it was assumed that employees are differentiated; and the difference is visible to employees working at offshore and onsite, in India and outside India and in the product and services organizations and provides sufficient reason for perception of organizational justice.

1.3 STATEMENT OF THE PROBLEM

In the past two decades, the growing need for global software development, and the evolution and improvisation of the globally distributed work teams have been key enablers to the stellar growth of the Indian IT industry. However, software organizations face many challenges in global delivery with pressures like cost control, round the clock development, customer proximity, faster time to market and the ability to maintain world class quality. Software organizations have been exploring new geographies for expanding business and increasingly engaging in distributed models.

Revenue driven HR policies has been the reason for creating a difference among distributed members in the way they are treated in organizations. Lack of transparency, lack of global management system and insufficient resource management system are some of the reason why employees experience difference. The yet another "resource" approach of people in organizations restricts organizations mentality to see people as living organisms of a living entity. The growing rate of employee job hopping is a proof that employees do not trust the employers. Employees motivation gets stranded as they see a visible difference between peers of onsite and offshore, India and overseas, and between organizations engaged in product development and software services and consulting in salary and benefits, roles and designations, rewards and recognitions, processes and procedures, learning and development, information exchange and social recognition etc., Lack of global bench mark on HR practices, competitive edge in managing the differences between the core and non-core talents, increasing value for global exposure and US dollars support organizations maintaining the differences.

As distributed teams are becoming a reality for many software companies, this study tries to justify that organizations motivate distributed teams by building transparency, fairness in processes and procedures, equality in distribution of resources, matured and balanced interpersonal relations and appropriate information sharing to promote justice experiences and performance related behaviors.

There is no evidence that an attempt has been made to study the justice perceptions and citizenship behavior of distributed team members. Theoretically, this study will add to the body of knowledge on the specific subject of OCB. From a practitioner's point of view, there is a link between justice perception and OCB of team members on global assignments. Therefore, it is assumed that this study will be of interest to distributed members, distributed organizations, specifically distributed software organizations, human resource professionals, and organizations which outsource its activities to distributed organizations.

1.4 RESEARCH QUESTION

Based on the assumptions and the problems of the study, the following research questions are drawn.

- How does organizational justice relate to OCB and what mediates the relationship between POS, role efficacy and OCB?
- How does perceived organizational support and role efficacy relate to OCB?
- How does POS and role efficacy relate to organizational justice?

1.5 OBJECTIVES

- The primary objective of the study was to investigate how POS and role efficacy influence perception of organizational justice which in-turn motivates distributed members practice of OCB.
- The study also seeks to find the possibility of significant differences in the way that members of distributed organizations perceive justice and practice OCB.
- This study is aimed at helping researchers and practitioners benefit out of a deeper understanding of the factors that help enhance organizational justice perceptions of distributed organizations and motivate members to practice OCB.

1.6 LIKELY BENEFITS

- The benefits of this study can be two fold. Benefits to the industry can be by drawing indicators for OCB of members working in distributed teams, which would help organizations build a fair and equal system of managing resources. This study also aids build a HR system for global management.
- The study also aims to help professionals identify pain points of distributed team members and address the same to enable better performance and enhance repeat business opportunities.
- This study also aims to help scholars further investigate and understand the fine lines of difference between OCB practiced in consulting and service organizations as against product organizations with respect to distributed teams.

1.7 RESEARCH REPORT OUTLINE

The dissertation covers 6 chapters. Chapter I details the background of the research, statement of the problem, assumptions and significance, objectives and likely benefits of the study.

In Chapter II covers the Indian IT industry, its contribution to Indian economy, global delivery systems, distributed teams, characteristics of distributed teams and factors affecting justice perception

In Chapter III the literature review of the topic is covered. The Chapter covers theories on perception, attribution and self worth of software development, globally distributed and virtual teams. There is also a review on POS, role efficacy, organizational justice and organizational citizenship behavior. This chapter brings out knowledge and information for the reader to understand the rationale for organizational citizenship be-

havior among distributed teams.

In Chapter IV the Conceptualization and hypothesis of the study is covered.

In Chapter V Analysis and findings of the study with through tables, descriptions, interpretations, diagrams and graphs

In Chapter VI, results of the analysis are given in detail followed by the conclusion of the study.

CHAPTER 2

2.1 INDIAN IT INDUSTRY

The history of the software industry in India indicates that in the 1970s, local markets for the IT industry were absent and the Government's policy towards private enterprisers was hostile (Arora et al., 2000). IT industry in India did not see much of development during mid 70's due to restrictions on import of computer peripherals, high import tax, strict Foreign Exchange and the Regulation Act.. In 1974, for the first time in the history of the software industry in India, the Burroughs Corporation, a major American manufacturer of business equipment directed their sales agent Tata Consultancy Services (TCS) in India, to depute programmers for installing software systems for an American client (Ramadurai, 2002). Soon others followed which included foreign IT firms that formed compatible joint ventures notable among them being IBM.

In the late 1980s, India faced an acute balance of payment problem due to the limited availability of foreign exchange and mounting external debt. Being cash constrained the Government of India launched a 'liberalization policy' in 1984, giving privatization and globalization unprecedented momentum. Major policy reforms included recognition to software development as an industry to invest and make it eligible for incentives similar to domestic industries and reducing import tariffs which liberalized exposure to the latest technologies. This was done to compete globally and capture a share of global software exports. With drastic changes in higher education after 1983 liberalization made a major impact on privately funded colleges which later was the foundation for creating IT clusters. To compliment this growth Special Economic Zones (SEZ) were launched in several states.

In 1990, Department of Electronics (DoE) introduced the concept of Software Technology Park (STP's) in India. STP's were allowed establishment with basic infrastructure, dependable power supply, tax exemptions and also given 100% ownership for foreign firms. During this period India saw dramatic changes with heavy investments on higher education and booming privately funded engineering colleges to make India ready with technical manpower resources. High investments in higher education and the formation of prestigious engineering colleges and policy reforms to allow foreign investments in 1991 enabled significant growth in development. From just programming and documentation work India emerged to implementation, R&D, out sourcing and diversified itself to become a global hub for software and IT enabled services. Since the 1990s multinational software corporations focused on globalization by exploiting the opportunities available across the

world. IT outsourcing was one such to bring in a globally integrated economy. India for its strong value proportion became a target destination for multinationals for back end IT operations. Thus India witnessed an increase of off-shoring jobs offered by global outsourcers, like never before.

The advantage of the Indian software industry (Budhwar, Luthar, & Bhatnagar, 2006a; Budhwar, Varma, Singh, & Dhar, 2006b) was based on the availability of qualified and talented manpower at much lower costs than other developing economies. American firms were able to find cost effective ways to develop software products in India due to India's rapidly expanding professionally qualified people with good communication and language skills. With more and more qualified professionals being sourced by the US, gradually, a new global market opportunity emerged with a regular stream of skilled engineers being sent abroad on software programming assignments.

As the Indian IT industry advanced to the center stage Ministry of information technology, (2003) supported the efforts by setting up a science and technology bureaucracy to coordinate government-administrated projects relating to information technology. A number of different government agencies, formerly under the Ministry of Science and Technology concerned with IT, were brought together into an integrated Ministry of Information Technology (MIT). It has since undertaken a large number of projects to make India an IT Super Power.

2.2 IMPACT OF INDIAN IT INDUSTRY ON ECONOMY

The Indian IT industry contributed 6.1% of the GDP in 2010 and the industry employees contributed about USD 4.2 billion to the exchequer. Additionally, the industry's operating and capital expenditure was estimated at around USD 30 billion, while consumer spending from employees amounted to USD 21 billion in FY2009 (NASSCOM, 2010). The sector aggregated revenues of USD 73.1 billion in FY 2010, a growth of 5.4% over FY2009 and generated direct employment for 2.3 million people and indirect employment for an estimated 8.2 million people. 30 % of the total employee base is women and 60 % of companies offer employment to people with special needs. 58 % of the employees originate from Tier-II/III cities. The industry has also played a key role in regional development with IT-BPO intensive states accounting for over 14 % of the GDP with 58 % of engineering graduates. The industry has contributed to the development of the middle class and has improved their standard of living. In addition to this a strong sense of social responsibility has been imbibed with over USD 50 million spent in CSR activities in FY2009. India holds the majority share of the global market currently at 51% in technology and 62% in BPO, Contribution to national GDP is 6.1% in 2010 The Indian IT industry has businesses in over 70 different countries enabling learning and adapting to different cultures through employee movement.

2.3 INTEGRATED GROWTH ENGINEERED DISTRIBUTED MODEL

With the interdependence and integration between economies globalization of markets has grown. Part of the strategy was expanding the market by creating overseas units, outsourcing business, joint ventures and technical collaborations. NASSCOM, 2009 reported that 50% of fortune 500 companies use global software development and 60% operate remote centers. It further states that 50% of global software companies outsource some or all of their projects. Management consulting firm A. T. Kearney (2007) reported that at least 1000 global software development companies have outsourced their projects to India in the year 2009.

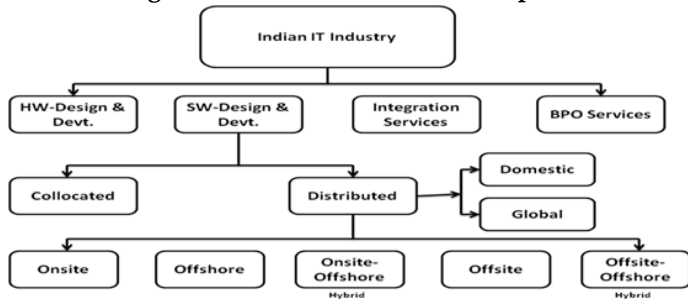
The growing competition, both from within the country and abroad, has provoked many Indian IT companies to look to foreign markets seriously to improve their competitive position and increase business. TCS pioneered the global delivery model for IT services with its first offshore client in 1974. This experience also helped TCS bag its first onsite project - the Institutional Group & Information Company (IGIC), a data centre for ten banks, which catered to two million customers in the US. Following the success of TCS, many other software companies started exploring overseas markets.

Between 1990 and 2010, the Indian IT sector had become the country's premier growth engine and crossed several significant milestones in terms of revenue, growth, employment generation and value creation. The industry saw an unprecedented growth of over 50% YOY from 1998 to 2001. Throughout the 2000s, India's outsourcing industry, both business process outsourcing and IT outsourcing grew steadily. The US accounted for 60 % of revenues from the export of products and services, and Europe accounted for about 22 %. Industry verticals such as Banking, Financial Services and the Insurance sector (BFSI) led the segment with 41% of revenues, and the balance was from other segments like hi-tech, telecom, manufacturing and retail. As per NASSCOM reports, for the financial year 2010, the IT sector aggregated revenue of USD 73.1 billion, out of which Software business accounted for USD 63.7 billion and generated direct employment for 2.3 million people. Export revenues grossed USD 50.1 billion in FY 2010 with 69% from IT-BPO revenues. In 2010 India had 51% of the total world market share of the software off-shoring market despite political and logistic constraints.

Domestic IT revenues grew at almost 8.5 % to reach INR 1,088 billion in FY2010. Domestic IT services grew by 12 % in FY2010. The industry has diversified beyond traditional IT with Indian and MNC service providers collaborating and competing to build the industry. With an aggregated total of 450 Indian software delivery centers in 60 countries globally the distributed team model became popular. A study by Goldman Sachs suggests that India is expected to be the world's third-largest economy by 2035, next only to the United States and China. A.T. Kearney (2007) quoted that India has become the third most attractive foreign investment destination globally.

The exponential growth of the IT business has promoted the pattern of delivery to manage global IT business (Figure 2). The following pattern is drawn to indicate how the industry has evolved into distributed development.

Figure 2 : Global Software Development



2.4 GLOBAL SOFTWARE DEVELOPMENT AND DELIVERY SYSTEM

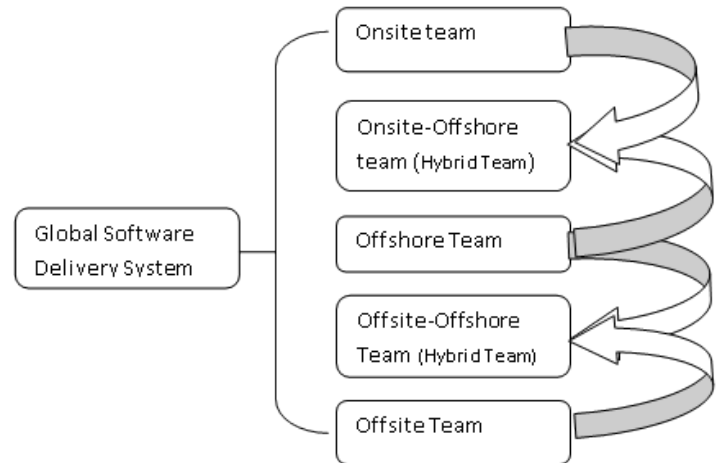
Global software development (Figure 3) is the coordination of software developmental activities across sites. It is also the management of distributed repositories of assets that contribute to those applications. "Distribution" is a broad term that can apply to one or more dimensions, including people, artifacts, platforms, and ownership or decision rights. As companies expand around the world, multiple sites become a "team of teams" contributing to a global delivery chain. Each team may own a module or component they deliver upstream for integration with components from other locations or companies, culminating in a final application or product. Teams may belong to the same organization, division, or company, or to different ones. Each member of the team is assigned to a role or type of work and divided according to their role and location.. The following are some of the roles.

- Developmental role-Technical contributions
- Fulfillment role-Project management, coordination, relationship management
- Leadership Role-Providing leadership to the organization
- Investment role- Equity investors
- Sales and Business Development role-Technical and business sales

Distributed development and outsourcing run parallel to each other. Outsourcing work is distributed between the service provider's onsite centre and the offshore development centre, thereby giving the client the advantage of both models. The distribution of work depends on the type of project. Usually 20-30 %of the work is done by the onsite centre and the rest is done offshore The Onsite - Offshore model is generally preferred in cases where the project is complicated and is expected to continue for a long period of time. Although the tasks accomplished on-site and offshore are different, they are developed in consonance with each other. Working together in this fashion leads to an exchange of information, interaction, listening, cooperation and coordination between members. Global organizational distributions, across multiple sites collaborate on a single component to be delivered in the chain.

Sites may be very large or, as a result of workforce mobility be as small as a single individual. This research has attempted to bring out a comprehensive understanding of different distributed teams, from the researcher's experiences of creating and managing distributed teams, and information obtained from the websites of different companies.

Figure 3 : Global Delivery System



2.1.3.1 On-site

The On-site team is a set of skilled professionals from across the organization deployed at the clients' location either for the entire duration of the project, or a part of it. The On-site team is used when the scope of the project is repetitive and open-ended. Technology transfer, knowledge transfer, revenue generation, building domain specific knowledge, etc., are some of the benefits of using an onsite team. A more accurate description of the onsite team would be to label them as a staff augmentation team working for overseas clients.

2.1.3.2 Offshore

The Offshore team is beneficial when customers need to quickly ramp up the team, reduce costs, engage in round-the-clock development, and/ or reduce risks attached to new product development. An offshore development team is used when there is a contract with a long-term agreement on prices and the size of the project is large. A large fraction of the project is executed offshore with the Indian firm responsible for delivery schedule adherences. Many established Indian software firms have more than one development centre.. It can be a dedicated design centre, domain based business unit or a technology driven organization etc.

2.1.3.3 Onsite - Offshore

The Onsite - Offshore team, or Hybrid team, is a combination of work executed both onsite and offshore. The Hybrid team executes work distributed between the service provider's onsite centre and the offshore development centre. The on-site technical team is placed in proximity to the client at critical phases of the project's life cycle to maximize efficiency and optimize costs. In this model, the Indian company sends a few software professionals to the client's site based on requirement for analysis or training in a particular system. These professionals then bring back the specifications to India and have a larger team develop the software offshore. If the project is

large, a couple of Indian professionals remain at the customer's site acting as liaisons between the project leaders offshore, and the clients. Sometimes these onsite professionals are needed for emergency operations and for reassuring the clients that the project is proceeding according to schedule. To execute such projects, a firm needs not only skilled professionals, but also a software development process and methodology and the ability to manage software development.

2.1.3.4 Offsite

In the Offsite team, the service provider works in the vicinity of the client, i.e. the service provider will be located within the same city/country as that of the client. The Offsite team enables the client and the service provider to interact face-to-face on a regular basis which is mutually advantageous. This is especially beneficial when the client's requirements are not well defined and are expected to change during the course of the project. The offsite model works well when clients are not in a position to expand their facilities all off a sudden to accommodate the service provider's team and requirements, but at the same time need to outsource.

2.1.3.5 Offsite-Offshore

The Offsite - Offshore team is one of the most successful and popular outsourcing models employed today. In this model, the service provider's software development centre is located near the client's premises, and the job is distributed between the offsite centre and an offshore development centre located in a different country. The offsite centre acts as the mediator. Usually, the off-site team handles 20-30 % of the total work and the offshore team manages the rest.

The Offsite - Offshore team is preferred when clients outsource to a service provider located near them, for control on the development process. When the Offsite - Offshore team is used, the offsite team works on requirement analysis and hands over the specifications to the offshore development centre, where the development and testing of the software is done. The off-site centre then implements at the software at the client's site. The management and administration costs involved in maintaining both the centers inhibit many service providers from choosing this model.. Also the cultural differences arising from the geographical differences between the offsite centre and offshore centre at times also cause problems.

2.1.3.6 Expatriates as distributed members

Well trained workforces are pooled from across the locations to manage complex tasks of software organizations. Multinational corporations send their representatives to their subsidiaries primarily to transfer responsibilities to their Indian counter parts. However, as organizations keep expanding, specialists in different domain and areas are given relatively longer period of assignment. In the same way when Indian software organizations open their overseas center, accomplished Indian professionals are deputed to shoulder build, operate and transfer responsibility to their local counterparts. Researchers have noted that the ability of managers to work cross-culturally is a crucial success factor in competing in the global marketplace (Dadfar & Gustavsson, 1992; Granstrand, Hakan-son, & Sjolander, 1993). Organizations suffer from a tendency

to be lenient to the expatriates when they are distributed to locations across the world. The leniency on higher pay, better treatment, higher role and extraordinary support develops a kind of a justice perception among members.

2.5 CHARACTERISTICS OF DISTRIBUTED TEAMS

Indian software organizations practice more than one system of distributing work. Projects get distributed where competencies are found, and people get distributed where projects are available. Developmental activities may be distributed along many dimensions and have distinct characteristics (Gumm DC, 2006). This gives rise to a few questions: Who or what is distributed and at what level? Are people or artifacts distributed? Are people dispersed individually or dispersed in groups?

Understanding of purpose, roles and structure-A distributed team has a clear mission and charter with long-term and short-term objectives depending on the type and size of the project. A common objective, shared vision and rewards are some of the important strategies around which a distributed team works. The team members have the expertise, and are empowered to create and innovate for the organization within the ambit of the distributed project goals. Teams draw strength and direction from a deep, shared understanding of a common purpose.

In an ideal situation, roles are clearly defined and work assignments are evenly distributed, though not necessarily fixed. Team members take responsibility for tasks willingly, and assume responsibility for tasks. Team members are willing to work outside their defined roles in order to help the team. Leadership is shared, and the issue of control is resolved to the team's satisfaction. Individual talents are utilized.

Project management and control- When distributed members are attached to the client's onsite location the project is managed by more than one person whereby the client manages the delivery while the technical quality is managed by the distributed member's parent organization. Team tracking and uniform delivery- Progress towards specified goals needs to be tracked. Each member has to compliment the role of other members.

Knowledge and information sharing- Developers need to communicate and collaborate closely or at times work independently on parts of a project. Needs of the project and distributed members determines communication. Software artifacts (code, designs, documentation, processes and step / phase wise development etc.) need to be shared and kept consistent. Information sharing between team members, sites / locations, client and customer, manager and team member on a regular basis helps distributed members.

Managing diverse environments- A distributed team may not have the balance in composition of gender, culture, age and experience. Organizational and cultural barriers may complicate globally distributed work (E. Carmel & R. Agarwal, 2001). The differences in cultural and communication behaviors and coping with the diversity of operating in different environ-

ments, needs to be managed (R. D. Battin, R. Crocker, J. Kreidler, & K. Subramanian, 2001).

Virtuality is managed by the bandwidth established between the distributed and the locations. These include email, internet, voice and data transfers, chats etc., Distance is managed by onsite deployment or offshore working or building a hybrid model of working between onsite and offshore.

Asynchronous management- The essence of Asynchronous Management™ is where a global distributed team is working on its own schedules / deadlines, but presents up-to-date information when called upon. This concept of Asynchronous Management started developing where managers are located in every time zone and region. Though each manager operates within the particular region's go-to-market strategy, he continues to be a part of the global team with global responsibilities and deliverables.

Shared Control- In a distributed work environment, it is critical to establish the responsibility of the work that can be developed and executed at a local level, and ones that need approval from the core development centre to help plan processes that can balance the local and regional needs against the overall budget, and revenue impacting decisions handled globally. Many a time, project control may be exercised either from the core development centre or from the client's or customer's office. In the absence of an awareness of roles, there is a possibility of mismanaging control, and misrepresenting the contribution of members.

2.6 FACTORS AFFECTING PERCEPTIONS

While appreciating the contribution of distributed teams to the growth of the IT industry, we need to understand that growth has not come without certain explicit and implied challenges. The challenges of managing the human dimension of such teams cannot be overstated. The rapid growth of the Indian software industry has created some unique human and leadership challenges.

Policies and processes- Software organizations lack focus in maintaining a uniform or balanced policy between onsite and offshore in selecting potential resources, assigning roles, providing transit accommodation for self and family, processing visa and social security measures, equitable compensation, regular interaction, regular update on management and resource management plans for post deployment.

Short duration- Many a times, onsite deployment is short lived, reducing the opportunity for forward integration either with the team or with the organization. Frequently changing projects, roles and locations due to the short duration of the project reduces consistency in performance and commitment to the organization.

Changing teams and roles- Members are shuffled from project to project and location to location to enable better resource utilization. However, such movement of resources reduces focus on their contribution and creates a sense of not being valued by the organization. It also reduces their chances

of developing their potential for future assignments.

Tools and technology- The dependency on development kits is very high as they move from one technology to another and from one project to another. In a distributed location, there could be a delay in providing the required technical assistance. Due to the non availability of tools, technologies and required project related support; members depend and tap open source tools. However, this might bring about many IP related issues to the organization.

Insufficient resources- In order to reduce cost and become more competitive, organizations engage minimum manpower in distributed locations, forcing a member into handling additional work. This attitude results in extended hours of work and working on holidays and weekends.

Learning and development opportunity- As members are assigned with set tasks and deadlines the time and opportunity for higher learning becomes difficult. Training individuals for the next assignment also becomes very difficult as members are bound by tight schedules of delivery. Members do feel left out when they don't get an opportunity for higher learning. A refusal of opportunity for higher learning will subsequently make them feel redundant. Fear of becoming redundant will force people to continue to look for challenging assignments and feel that their organization does not care about building their potential.

Post deployment career plan- The amount of haste and hurry shown in fulfilling the onsite requirements of the client is not shown to a member who is assigned to the onsite work. In the absence of a clear resource management plan (RMP), members are bound to feel that they will not get the kind of support needed for post assignment employment.

Opportunity for global exposure- Opportunity for global exposure is yet another self actualization move that members of software organizations look for as they keep climbing up the ladder. A domestic company which does not have an overseas client or a product development company which is building a product for specific requirement of a country may not have the need to give an overseas exposure or be able to afford a complete life cycle exposure. Lack of opportunity for global exposure will make people feel the need for a better assignment.

Life cycle exposure- Members may be assigned to routine work. Roles and responsibilities are divided between the team members to enable quicker and effective delivery. However, as members look for fast track growth, they would like to be exposed to the life cycle development (from requirement collection to post delivery support). Organizations must see the potential in every member and try to provide an opportunity for life cycle exposure.

Equal opportunity employer- Practically organizations may find it difficult to provide the aspired role to everyone. Often individuals' capability and potential are not considered while

assigning a role. Clients' need and time constraints to deliver determines the role of a member in organizations. Hence, role mismatch, denial or lack of opportunity to work in the desired role is some of the challenges which make members feel that their organizations are not supportive.

Accommodating personal and family needs- Distributed work comes with problems of finding a suitable accommodation to the member and his family, helping the member to get a family visa, providing competitive salary, health and insurance support to both the member and their family. Members might feel ignored if any of this is not taken care of.

Holidays and compensatory offs- Any disturbance at work is seen as contributing to workplace stress. Members who do not get holidays at regular intervals such as weekly off, annual holidays and national & festival holidays feel that they are not getting enough relaxation. As a result of this, they are likely to feel stressed, worn-out and exhausted.

Update about the business and organization- Personal touch with members has been a motivator, especially for those who are posted onsite. Lack of personal touch and information sharing make the members feel lonely.

Participation in management building- Not sharing focus areas and growth plans leave members in the dark. The members who are not taken into confidence and made inclusive are likely to experience a sense of aloofness and feel sidelined.

Keeping excited- Members are to be kept excited about the type of work they do, to make the best use of onsite assignments. In the absence of continued excitement, a member might lose interest in his job and start looking for assignments that might be of interest to him. Repeat, mundane and redundant type of work often causes heart burn and makes the employee develop an intention to quit. A sense of importance and fulfillment is important in keeping a member excited.

Rewards and appreciation- Insufficient rewards such as unequal salary, lack of onsite promotion, increment and rotation policy de-motivate the member. Power distance: Inability and lack of face to face interaction with the leaders and team members is yet another important reason why employees feel distanced from their organization.

Dignity and respect- How members are treated within their organization, among their team members, by the client in the distributed location is a vital parameter in keeping the team going.

Distance-Distance can reduce team cohesion in groups collaborating remotely. Distributed team members may not have the opportunity to meet face-to-face and discuss issues. Members eating together, sharing an office, or working late together to meet a deadline, all contributes to a feeling of being part of the team. These opportunities are diminished by distance.

Communication and Coordination- An important line con-

necting distributed team members is communication. Synchronous communication becomes less common due to time zones and language barriers. Even when communication is synchronous, the communication channels, such as conference calls or instant messaging, are less rich than face-to-face and co-located group meetings. Developers may take longer to solve problems because they lack the ability to step into a neighboring office to ask for help. When managers must manage across large distances, it becomes more difficult to stay aware of each person's task, and how they are interrelated. Different sites often use different tools and processes which can also make coordinating between sites difficult.

CHAPTER 3

LITERATURE REVIEW

This chapter includes major streams of literature necessary for establishing the foundation of the study. The first stream of literature relates to theories on the process of perception and social exchange resulting in satisfaction with outcome behaviours. The second stream reviews research in the areas of global software development and distributed teams. In this section we examine how software teams are formed and normed for a unique pattern of work. We also examine other names used to denote dispersed software development which include virtual and open source system of software development. The third stream of literature examines globally distributed teams. In this section, we examine how perceived organizational support and role efficacy experiences of distributed members help create and sustain perception across teams in software organizations and how perceptions influence discretionary and voluntary performance behaviours in distributed team. The fourth stream of literature examines the control factors of either strengthening or weakening the relationship between the criterion and the outcome variables. Upon these streams of literature the theoretical framework for the study is developed. The chapter concludes with a summary and the implications of the literature review.

The theories on perceptual process include important assumptions, interaction and exchange behaviours of members working in teams. It primarily discusses the perceptual pattern of how employees respond to a given processes and procedures, rewards and recognition and respect and dignity as it affects distributed members of a software development team.

3.1 THEORIES ON PERCEPTUAL PROCESS

3.1.1 THE SOCIAL INFORMATION PROCESSING MODEL

The social information processing model, developed in 1978 by Salancik and Pfeffer states that factors other than the core dimensions influences how employees respond to the design of their jobs. which is influenced by social information (information from other people) and by the employees' past behaviours.

In a typical social environment employees exposed to information regarding aspects of their job design and work outcome pay attention to some aspects and ignore others. The design of

the member's job such as kind of work, role within the project, knowledge required delivering given work, socio-political scenario of the location and rewards determine perceptions. As Distributed environment requires working together with other individuals the model suggests that the social environment provides information on how members should evaluate their jobs and work outcomes.

3.1.2 SOCIAL INFORMATION PROCESSING (SIP) THEORY

Joseph Walther developed this theory in 1992. SIP is an interpersonal communication theory that suggests how individuals process information to develop into interpersonal relationships. Relational communication between team members happens either face to face or as computer mediated communication (CMC), once personal relationships are established, they demonstrate the same relational dimensions and qualities despite being distributed.

When distributed members start working on a common project, they start forming an impression about each member distributed across locations based on skill, capability, communication, modesty and professional ethics. Their conversations and other paralinguistic cues such as posture, gesture, facial expression, vocal and nonverbal cues helps in inferring characteristics of other members.

3.1.3 ATTRIBUTION THEORY

Knowledge workers are found to be highly conscious of self development and self image. Attribution theory (Weiner, 1980, 1992) concerns ways in which people explain (or attribute) the behaviour of others. The motivation of a member at the location of assignment depends on perceptions of successes or failures of the assignment. This determines the amount of effort people are willing to put into the assignment in future. Socio-cultural factors contribute to perceptual factors for a member as it often offers challenges of being part of a distributed team in a strange location, with strange people, languages, culture, values and procedures and processes.. According to the attribution theory, explanations that people make on experiences of success or failure can be analyzed in terms of three sets of characteristics: The cause of the success or failure in a given situation may be internal(originating from within)or external(originating from the environment).It could be either stable or unstable. If stable, the outcome is likely to be the same during all occasions, and if unstable, different on other occasions. It could also be controllable or uncontrollable. A controllable factor is one in which we believe we ourselves can alter. And an uncontrollable factor is one that we do not believe we can easily alter.

3.1.4 SELF-WORTH THEORY

This theory is very important to the study as the theory discusses how individuals perceive role related efficacy and outcome behaviours. Self worth (Covington, 1984) combines' ideas related to members self-efficacy, attribution theory, and learned helplessness. It focuses on the notion that people are largely motivated to do what it takes to enhance their reputation in whatever location and assignment they are in. Distributed members engage in objectively counterproductive activ-

ities such as setting goals that are far too high or too low, reducing effort, and procrastinating, and non-cooperation with the team members. Knowledge workers have a high opinion of themselves (Ashish et al., 1999) with a can do attitude. The flip side however is that many feel that they are not treated well and paid equitable salaries and hence justifies their perceptions.

3.1.5 SOCIAL EXCHANGE THEORY

Social psychology and organizational research has supported the view that social interaction between professionals stimulates and reacts on various issues related to decisions (Blau, 1968). This social exchange goes beyond constraints of socio-cultural and political struggles of a distributed employee and includes organization culture to determine relationships between managers, supervisors and team members. This can be described in terms of LMX, WGX, and TMX. Distributed software development has given a renewed face to social exchange as acceptance of members working in the midst of constraints has become a process of accepting global culture. Defined by Harold H. Kelley and John W. Thibaut, (1959) claim that all human relationships have costs and rewards. SET states that people weigh the costs and rewards of a relationship to determine its worth. People strive to minimize costs and maximize rewards and then base the likeliness of developing a relationship with someone on the perceived possible outcomes. In a social interaction costs and rewards can be interpreted as cause and effect. Activities with a positive effect, are considered generating positive perception and vice versa. Social exchanges are obligations in a social context are not clearly specified in advance and may not involve calculations but based on perceptions. Perception of fairness also plays a major role in social exchange situations. Since work teams have high levels of task and goal interdependence, members are forced to cooperate. Social exchange mechanisms may instigate cooperation among members through reciprocity of task and interpersonal assistance.

Social exchange takes place between different organisms, a living entity within the organization. Organization structures encompass a process of delivering the common objective of the organization. People interact vertically and horizontally within the organization.

3.1.6 LEADER MEMBER EXCHANGE (LMX)

Leaders and members in distributed teams are spread across different locations, and influenced by location constraints. Leaders establish relationships with various groups of subordinates. One group, referred to as the in-group, is favoured by the leader. Leaders treat their equals and subordinates differently at varying degrees and levels contingent on whether they are part of the in-group (high-quality relationship) or out-group (low-quality relationship) (Graen and Scandura, 1987). This theory is further strengthened by the cultural differences found in distributed teams. Managers of distributed organizations follow a typical local model of treating employees. The theory asserts that leaders do not interact with subordinates uniformly (Graen and Cashman, 1975) because supervisors

have limited time and resources. The role determines whether someone is a leader or a member in a distributed software development. Distributed members (“In-group” or out-group) members perform their jobs in accordance with the principles of distributed employment procedures and can be counted on by their team members to perform structured tasks, maintain mutual communication to volunteer for extra work, and to share additional burdens or take on additional responsibilities. The relationship between leaders and followers follows three stages:

- Role taking: When a new member joins the organization, the leader assesses the talent and abilities of the member and offers them opportunities to demonstrate their capabilities.
- Role making: An informal and unstructured negotiation on work-related factors takes place between the leader and the member. A member who is similar to the leader is more likely to succeed. A betrayal by the member at this stage may result in him being relegated to the out-group

Leaders or coordinators have to exchange available resources with the team members to fulfil the structured tasks (Graen and Cashman, 1975). As a result, research shows that positive support, informal interdependencies, greater job latitude, common bonds, open communication, knowledge transfer, satisfaction, and shared loyalty exist (Dansereau, Graen, and Haga, 1975; Dienesch and Liden, 1986; Graen and Uhl-Bien, 1995).

The exchange between distributed members (superior-subordinate-dyad) is a two-way relationship and is the basic premise and unit of LMX analysis. This research investigates the quality of the relationship between LMX on team members’ perception of organizational justice and OCB. Previous studies have examined the construct of citizenship behaviour based on leaders’ reports. Wayne and Green (1993) investigate the effects of LMX on employee citizenship behaviour from the standpoint of the member rather than the leader. This research extends and builds on Wayne and Green’s study. Theories on team process include important assumptions, interactions and exchange behaviours of members working in teams. It primarily discusses the behavioural pattern of how employees interact and exchange their views and perceptions on given processes, procedures, rewards and recognition and respect and dignity. It also examines how individual perceptions in the context of a team become a shared perception resulting in outcome behaviour.

3.2 TEAMS IN SOFTWARE ORGANIZATIONS

Teams are an important part of every software organization as software development is a focused activity which involves more than one individual. The use of teams allows for expertise in multiple areas as members are brought together with diverse knowledge, skills and abilities (Rouse, Cannon-Bowers & Salas, 1992). When working in a team, members interact dynamically and exchange information which helps in better performance. Dispersed teams benefit organizations by providing greater accessibility of knowledgeable employees while

keeping expenses down (Cascio, 1999). In this way an organization operating from India, can access talents anywhere in the world at no extra cost.

Lisa Kimball in a speech described how teams have changed over a period of time. According to her the nature of teams have changed significantly because of changes in organizations and the nature of the work they do.. Relationships between people inside an organization and those previously considered outsiders (customers, suppliers, managers of collaborating organizations, other stakeholders) are becoming more important. Several Organizations have discovered the value of collaborative work with a focus on knowledge management.

These changes have influenced how teams are formed and operate as is mentioned below (Table 2)

Table 2-Changes perceived in contemporary teams

From	To
Fixed team membership	Mobile and shuttling team membership
All team members drawn from within the organization	Team members are drawn in one or more than one outside the organization (clients, collaborators, software vendors and professional service providers)
Team members are dedicated 100% to the team	Most members are part of multiple teams
Team members are co-located organizationally and geographically	Team members are distributed organizationally and geographically
Teams have a fixed starting and ending point Teams are managed by a single manager	Teams form and reform continuously Teams have multiple reporting relationships with different parts of the organization at different times
Organization follows uniform organizational processes and procedures across teams	Geographical location determines processes and procedures across teams

Numerous studies have been conducted on teams, software development teams, distributed teams and virtual teams. While distributed teams have become a necessity for the expansion of business and to meet the growing need, researchers have found that distributed teams have been shown to make better decisions (Chidambaram & Jones, 1993) when the task was not complex and members could freely interact with each other and had enough time to work.

3.2.1 RESEARCHES ON WORK TEAMS

A group of people who interact and exchange information and resources to achieve a shared objective of a common goal is called a work team. Sundstrom et al., (1990) say that a work team is an interdependent collection of individuals who share responsibility for specific outcomes for their organizations. Teams can have a positive impact on the organizations production and productivity (Antoni, 1991; Cappelli, Bassi, Katz, Knoke, Ostermann, & Useem, 1997; Guzzo & Dickson, 1996). This has been further demonstrated in Applebaum & Batt, (1994) study which states that teams are said to contribute to better outcomes for business organizations due to improved performance of employees. Work teams also stand committed to the organization's objective as has been found in studies by Mitchell, Holtom, Lee, Sablynski, & Erez, (2001); Osburn, Moran, Musselwhite, & Zenger, (1990); Wellins, Byham, & Wilson, (1991).

Researchers have tried to study the outcomes of work teams from different dimensions and have found out that work teams improves productivity (Glassop, 2002; Hamilton, Nickerson, & Owan, 2003), Work teams improves performance (Applebaum & Batt, 1994), work teams improve organizational responsiveness and flexibility (Friedman & Casner-Lotto, 2002), it adds up to morale and job satisfaction (Cordery, Mueller, & Smith, 1991; Dumaine, 1990; Goodman, Davadas, & Hughson, 1988; Hackman, 1987; Lewis, 1990; Stewart, Manz, & Sims, 2000) and work teams contribute to the commitment of the organization (Mitchell, Holtom, Lee, Sablynski, & Erez, 2001; Osburn, Moran, Musselwhite, & Zenger, 1990; Wellins, Byham, & Wilson, 1991).

There are different factors which affect work teams (Table 3) performance. Sundstrom et al. (2000) have classified the factors into five types.

Table 3- Factors affecting team performance

Work team context	Factors affecting performance
Organizational context	Type of job, role, rewards and recognition, location, supervisory behaviour, opportunity for a higher learning and development, organizational branding and image, global exposure and innovation
Group composition	Group members' average cognitive ability, group heterogeneity, team size, functional diversity, personality traits, and group tenure
Group work design	Interdependence between the team members
Intra group process	Group cohesiveness and collective efficacy, conflict, collaboration, norms and team member's affect

Intra group process	Communication outside the group and external interaction
---------------------	--

3.2.2 RESEARCH ON SOFTWARE DEVELOPMENT TEAMS

"There is no substitute for careful planning and team formation if overruns and later confusion, not to mention disaster, are to be avoided." John S. MacDonald, MacDonald Dettwiler (2011). Many scholars have attempted to study software development teams in the context of project management. Walker Royce (1998) said that "Team work is much more important than the sum of the individual". Ho Tsoi (1999) identified good management control system as a means to satisfy the project objectives. Researchers have found many variables affecting performance outcomes. The following variables have been studied in the context of software development teams Van Genuchten (1991) project execution, effectiveness was studied by Jiang & Klein (2000), goal achievement as a variable was explored by Sheremata, (2002), processes and performance was researched by Sawyer & Guinan, (1998).

Other variables (Table 4) studied in the context of software development teams are as follows:

Table 4- Software development teams-variables studied

Variables	Authors or scholars who have studied
Contextual variables	Team size- Carmel & Bird, 1997; Sawyer & Guinan, 1998 Work/professional experience- Lakhnupal, 1993; Faraj & Sproull, 2000
Interpersonal variables	Conflict and conflict resolution- Gobeli, Koenig & Bechinger, 1998, Sussman & Guinan, 1999 Cohesiveness- Lakhnupal, 1993
Team related variables	Task innovativeness, team work quality- Hoegl, Parboteeah & Gemuenden, 2003 Team development, job motivation- Janz, Colquitt & Noe 1997 Team processes- Guinan, Coopriider, & Faraj, 1998 Cognitive divergence and shared mental models- Levesque, Wilson & Wholey, 2001
Performance related variables	Team effectiveness- Hoegl et al., 2003; Janz et al., 1997; & Rajendran, 2005 Customer satisfaction- Gobeli et al., 1998; Sussman & Guinan, 1999 Performance- Guinan, et al., 1998; Faraj & Sproull, 2000

3.2.3 RESEARCH ON VIRTUAL TEAMS

Virtual teams are groups of dispersed employees who work with a shared objective and technology-supported communication. Lipnack and Stamps (1997) defines a virtual team as "a group of people who interact through interdependent tasks guided by a common purpose" and work "across space, time, and organizational boundaries with links strengthened by webs of communication technologies." Many interpretations have been used in defining virtual teams- some have said that virtual teams are divided by distance and never meet in person (Canney Davison and Ward 1999, Jarvenpaa et al. 1998, Kristof et al. 1995). However, the industry has moved forward and has adapted to global video conferencing and personal meetings but most refer to a virtual relationship as one that is conducted over technology (Geber 1995, Melymuka 1997b, Townsend et al. 1996, Young 1998).

Distributed members need to build their network with counterparts who are part of the team in contributing to common tasks. They interact and exchange to enable timely delivery of the given project. Managers from around the world build close networks and interact intensively to achieve a global strategy's potential, functions served well by global virtual teams (Adler 1997, Bartlett and Ghoshal 1989). Global companies prefer to integrate the resources available to them (Bartlett and Ghoshal 1989, Ghoshal 1987, Kobrin 1991, Kogut 1985). Virtual teams allow companies to procure the best talent without geographical restrictions (Ale Ebrahim, N., Ahmed, S. & Taha, Z., 2009). However despite all these studies empirical research is limited.

3.2.4 GLOBALLY DISTRIBUTED TEAMS

The world is becoming a global village as the need for organizations providing substantial availability to global customers becomes a necessity. Many scholars have found a marginal difference between globally distributed teams (GDT), virtual teams and open source teams. Software development teams are increasingly spread across multiple countries (Carmel 1999) to take advantage of resources at local sites. Although scholars have studied teams independently, distributed teams share a unique pattern of prevailing on software development process across the globe (Sarker & Sahay, 2004). In today's complex business environment, these teams enable greater organizational flexibility and the ability to respond quickly to change. Collaborative software development (Barkhi, Amiri & James, 2006), global software development (Herbsleb & Moitra, 2001) collaborative software development (Barkhi, Amiri & James, 2006) and distributed software development (Layman, Williams, Damian, & Bures, 2006) are terminologies used to denote the geographical dispersion in software development teams. This is particularly important in global software development because of the rapidly changing system requirements. In a global software development scenario, of interest would be to watch the sourcing of a project, the formation of teams, and distribution of teams between locations, following the software development process, and delivering business expectations and sustaining the business for the organization.

3.3 CENTRIFUGAL FORCE OF GDT

Herbsleb and Moitra (2001), list down factors which have fuelled the growth of global software development teams. Industries across the world respond positively to the distributed method of working. Andres (2002) assessed the usefulness of videoconferencing as a support mechanism for geographically dispersed software development teams. Distributed team is characterized by geographic dispersion, reliance on electronic media, and national diversity (Carmel 1999; Griffith et al. 2003), which form "a centrifugal force that propels team members apart from each other," causing breakdowns in communication, coordination, control, and cohesion (Carmel and Tjia 2005). Although an increasing number of organizations are relying on technology-enabled geographically distributed teams (McDonough et al. 2001), these teams are often difficult to manage and fall short of performance expectations. Process of creating and managing a globally distributed team is time consuming and needs more than one skill (Herbsleb & Grinter, 1999).

3.4 VARIABLES STUDIED IN THE PAST

A study on the Meta-analysis of globally distributed and virtual teams by Martin et al.,(2004) reviewed 109 articles. To increase the depth and breadth of the research 99 articles and white papers from 2004 to 2011 on globally distributed teams, software development teams, open source teams and virtual teams were reviewed. Although earlier studies were limited to university settings, current reviews found studies with industrial and IT settings.. Researchers have also listed problems that arise due to physical dispersion among project members and classified them under different dimensions of strategic, cultural, communication, project and process management, knowledge management and technical.

Researchers have found that the role of communication in distributed work settings affects, among others, collaboration (Majchrzak et al. 2005; Sarkar and Sahay 2003), trust (Jarvenpaa and Liedner 1999), Carmel and Agarwal (2001), found that intensive collaboration, cultural distance and temporal distance between team members help alleviate distance in global software development teams. When team interactions were studied, the authors found that conflict (Hinds and Bailey 2003; Hinds and Mortensen 2005), and team dynamics (Cramton and Hinds 2005; Metiu 2006) help in mitigating problems of software teams. Barkhi et al. (2006) studied communication and coordination in collaborative software development teams and found that when properly managed geographically dispersed teams can work effectively despite lean electronic communication. Members in distributed work settings encounter challenges related to information exchange and process transparency (Cramton and Orvis 2003); isolation, detachment, identity and status (Ahuja and Galvin 2003; Kirkman et al. 2002; Metiu 2006; Polzer et al. 2006); attribution and interpretation (Armstrong and Cole 2002; Sole and Edmondson 2002); and the development of mutual, common, or shared understandings (Cramton 2001; Postrel 2002).

Large geographic distances and differences in culture, back-

ground, and experience among team members complicate communication and understanding in remote collaborations (Carmel 1999; Cramton and Hinds 2005; Damian and Chisan 2006; Metiu 2006; Sinha et al. 2006). Layman, Williams, Damian, and Bures (2006) conducted a case study of a distributed software development team in the USA and the Czech Republic. They collected quantitative and qualitative data and by applying the grounded theory they identified four key factors for communication in globally-distributed teams working within a new problem domain. Sarker and Sahay (2003) identified various collaboration inhibitors, along with strategies used by team-members to address challenges posed by the mismatch in time zones and the lack of physical proximity. Ebert and De Neve (2001) compared collocated and dispersed software project teams and found that collocated teams needed less than half the time to detect defects compared to dispersed teams. Physical dispersion also impacted overall project efficiency. Cramton and Hinds (2005), who argue that differences in demographic attributes and individual backgrounds may result in people having different worldviews, values, beliefs, goal priorities and behavioural norms, and being accorded different amounts of power and status.

3.5 HUMAN CHALLENGES FOUND IN DISTRIBUTED DEVELOPMENT

Distributed teams face many challenges classified based on project, process and teams. Members distributed between on-site and offshore often compare salaries. Social comparisons of rewards also affect the perceptions of distributive justice (Adams, 1965; Kulik & Ambrose, 1992). A person onsite earns many times more than their Indian counterparts and hence Offshore team members feel a sense of injustice. According to the equity rule in distributive justice, reward distribution is viewed as fair to the extent that employees receive rewards commensurate with their performance inputs, such as effort, experience, and responsibility (Adams, 1965; Homans, 1961). Recent work has shown that the perceived justice of organizational decision-making processes affect employee reactions to pay raise decisions (Folger & Konovsky, 1989; Greenberg, 1987b, 1990).

Distributed teams frequently suffer coordination problems (Cramton 2001), crises of trust (Jarvenpaa and Leidner 1999), and unhealthy subgroup dynamics (Armstrong and Cole 2002, Cramton and Hinds 2005). In addition to the above, Rosalie ocker and Jerry, 2008 list a set of challenges faced by distributed teams which include difficulty in establishing trust (Coppola, Hiltz & Rotter, 2004; Jarvenpaa & Leidner, 1999; Jarvenpaa et al., 2004) and a shared team identity (Armstrong & Cole, 2002; Cramton, 2001); managing conflict (Hinds & Bailey, 2003; Hinds & Mortensen, 2005; Montoya-Weiss, Massey & Song, 2001), maintaining awareness of members' activities (Hinds & Mortensen, 2005); coordinating team member efforts (Maznevski & Chudoba, 2001; Malhotra et al., 2001; Sarkey & Shay, 2002), effective leadership (Bell & Kozlowski, 2002; Kayworth & Leidner, 2001), knowledge sharing (Cramton, 2001, Griffith et al., 2003), and determining appropriate task-technology fit (Qureshi & Vogel, 2001) (for reviews, see Hertel

et al., 2005; Martins et al., 2004; Pinsonneault & Caya, 2005; and Powell et al., 2004).

Despite an increasing amount of research examining the dynamics of distributed work (e.g., Gibson and Cohen 2003), there are more challenges as more and more countries are opening up their doors for global software development. Dynamics of distributed teams keep changing with the country, organization and the geography. The basic dynamics of distributed teams define situations differently and see issues differently. Some researchers find not much difference between collocated and distributed team as they fundamentally operate on the same principle. In this study, we look more from the organizational justice perspective as global organizations apply location, people, organization, country and geography specific policies for the team. Distributed work places being foreign, with salaries in foreign currency, exposure to varied domains of technology, are treated as a status symbol and is naturally a preferred choice among software professionals. Moreover, as distributed workers are situated in distinct locations, they will "experience different exogenous events, physical settings, constraints and practices, resulting in their having different information, assumptions, preferences and constraints" (Cramton and Hinds 2005). Issues of understanding and communication may further be aggravated by members' dependence on technology mediated communication, which reduces communication richness, closeness of teams, the immediacy of feedback, and the extent and rate of information transfer (Carlson and Zmud 1999; Carmel 1999; Gibson and Gibbs 2006; Metiu 2006). Distributed software professionals invariably look to be treated as a preferred member of the team, which creates conflicts between distant members as they struggle to come to terms with different perspectives, unshared information, and tensions. (Armstrong and Cole, 2002; Cramton 2001)

3.6 INDIVIDUAL EXPERIENCES LEAD TO SHARED JUSTICE PERCEPTIONS

The structure of Software organization does comprise of boundaries such as different project groups, domain groups, technology groups and departments. Organizations have both collocated teams working out of a centralized location and distributed teams spread across different buildings, locations and countries. Depending on the ability to stretch, organizations allow teams to tie up (McEvily & Zaheer, 1999; Burt, 2004). Chia et al., (2006) found that colleagues seek justice perceptions across boundaries. Members working on the same project domain or technology have a higher possibility of interchanging location and thus develop supportive behaviors and begin to compare justice perceptions. Peers demonstrate emphatic concern and support for unfair treatment in each other (Coleman, 1990; Krackhardt & Kilduff, 1990), fostering similar attitudes (Gibbons, 2004). For example, a distributed team member in location A expresses pay dissatisfaction to a colleague in location B. While both employees may have different initial perceptions, both may conclude that the organization did not treat employees as equals and thus are being unfair. Alternatively, the employee in location B may convince

the friend in location A. To make distributed teams more relevant, these workgroup based systems are expected to be more productive and more creative than individuals who work independently. In addition flat structure organizations (Guzzo, 1995) increase the use of workgroups or teams (Mohrman & Cohen, 1995) and team based systems. Going by the organizational climate literature, justice researchers created a construct called justice climate to describe shared perception of fairness (Naumann & Bennett, 2000). Workgroup or team members develop similar perspectives in terms of how fairly a team has been treated by an authority, other groups and peers (Roberson, 2006).

3.6.1 JUSTICE PERCEPTION AND BEHAVIOR INTENTIONS

Absenteeism(A), turnover(A), withdrawal (F), negativity(M), declining productivity (B) and organization retaliatory behavior (ORB) (I) are all categorized under intentions and have been extensively researched to provide strong empirical support in predicting a range of behavioral intentions including turnover intentions (e.g. Hom & Hulin, 1981). Furthermore, the model has been validated cross-culturally (e.g. Davidson, Jaccard, Triandis, Morales & Diaz Guerrero, 1976; Godwin et al., 1996; McInerney, 1991) and can be considered as a universal model for predicting intentions. These outcomes are primarily connected to various justice theories; (Jason Colquitt, 1997,) describes justice dimensions as having more than one predictor which is prevalent when there is an intention to quit or withdraw. Therefore we conclude that each of the justice theories plays a significant role.

Similarly poor interpersonal relations (C), reduced information processing (E), reduced ability to be discrete and concrete thinking (H) and increased alcohol and drug abuse are some behavioral categories related to interpersonal behaviors and social communication. Bies and Moag (1986) reflects the degree to which people are treated with politeness, dignity, and respect by authorities or third parties involved in executing procedures or determining outcomes. Jason Colquitt further explains that interpersonal relations could be a fall out of procedural and distributive justice and hence two dimensional factors are unavoidable.

Outcomes of employee depressions are predicted to have been caused out of a poor perception of the dimensions of organizational justice. Loss of interest and goal focus (G), reduced morale and job satisfaction (H), increased tendency to focus on negative events (M), anxiety and overreaction to stress (K) and the reduced ability to adapt to change and see alternatives (I) can be categorized as part of the outcome satisfaction which influence decision making processes on pay, promotion, performance evaluation, preferential treatment etc. Lack of role clarity, proper coordination information flow, differential wages and interpersonal treatment are sources of outcomes. In addition to workplace consequences, employees may also suffer personal consequences that affect their wellbeing and eventually impacts workplace performance.

3.6.2 PERFORMANCE OUTCOMES

Swift and Campbell, 1998 found that employee perceptions of the organizations culture and climate are critical in shaping

workplace behaviors and attitudes. Since employees are exposed to alien cultures unfamiliar languages which poor interactions between people it is essential for the organization to measure performance outcomes. Many have also studied distributed team related issues and concerns such as coordination (Piccoli et al., 2004) openness, trust and team-member exchange (Alge, Wiethoff, & Klein 2003), leadership (Kayworth & Leidner, 2002), communication channels (Pauleen & Yoong, 2001). After instituting a study a direct line was drawn between the processes and procedures of organizations that lead to perceptions, management practices (Hertel et al., 2004) and group behavioral performance. (González, Burke, Santuzzi, and Bradley 2003) Since computer mediated communication is prevalent in software development, an attempt to study the process of communication and how it affects distributed settings was also done by Leenders, van Engelen, & Kratzer, 2003. Interaction between distributed members was found to impact conflict management styles Paul et al., 2004, Samarah et al., 2003, Montoya-Weiss et al., 2001), polarity (van Engelen, Kiewiet & Terlouw, 2001, interaction styles (Potter & Balthazard, 2002), team processes and team-member relations (Lurey & Raisinghani, 2001). Cross cultural attributes were also found to impact performance in organizations as studied by Swigger, Alpaslan, Brazile, & Monticino, 2004).

3.6.3 AFFECTIVE OUTCOMES

Performance outcomes are often interpreted as either affective or reactive. Researchers have found that experience of a given role in a given organization is likely to motivate an employee to feel good about the organization. Affective outcomes have been linked to organization related satisfaction. Brief & Weiss, (2002) found that the creativity, goal persistence and a helping behavior as well as general measures of performance like absenteeism and turnover intentions are the result of experiencing fairness in organizations. An organization which relies on onsite postings for its expansion and growth will have to deal with a number of issues from offshore teams. This includes selection procedure, roles and rewards etc. Kayworth and Leidner (2002) found leadership style to be affecting team members' satisfaction towards communication. Hertel, Niedner, and Stefanie (2003) conducted a research on open source software development teams and found that the instrumentality and valence components were particularly predictive for measured motivational criteria such as time investment and willingness to engage in the future. Affective and attitudinal outcomes include psychological variables like satisfaction, commitment, trustworthiness, perception, and so on. Satisfaction is extensively studied for affective outcomes in a virtual team context. Other member perceptions like mission and role clarity are found to be affected by virtuality (Yajiong et al., 2004) and leadership effectiveness (Kayworth & Leidner, 2002).

Van Kedwyk, Fox, Spector and Kelloway (2000) found that a negative job affects outcomes. A study by Caballer et al. (2005) showed that satisfaction with the process was affected by communication media and time pressure affected satisfaction towards group results and commitment to those results nega-

tive. Weiss and Cropanzano (1996) found that the affect on mood memory, evaluative judgments, processing strategies and social behavior, all have implications on job performance. Yajiong, Sankar, and Mbarika (2004) found significant differences between face-to-face and virtual teams in terms of satisfaction. Panteli (2004) found that in a virtual organizing context, due to the lack of cues, silence could be misinterpreted as a sense of lack of commitment.

3.7 CONCEPTUALIZATION AND HYPOTHESES OF PRESENT RESEARCH

It is a natural phenomenon for a globally dispersed team to engage in constant exchange of resources, information, ideas, locations and gossip. In addition stake holders of a software development project keep changing and hence impact team performance constantly. Team Exchange theory is based on the premise that human behavior or social interaction is an exchange of activity, tangible and intangible (Homans, 1961). The exchange keeps the common objective as the desired target of the distributed team while each potentially contributes to complement each other's tasks. As the IT industry works between onsite and offshore destinations, it is imperative to establish and ensure proper social interaction and exchange between teams. The team exchanges everything that helps them to achieve as individuals as well as for combined targets. Kisson, 2007 explains, concerns felt and experienced in a team leads to interaction among team members and the interaction creates a shared meaning leading to perceptions.

According to Eisenberger and colleagues, 1986, IT professionals develop perceptions and beliefs depending on the extent to which the organization values their contribution and cares about their well being irrespective of the location they are assigned to. Since the cost reduction model of onsite postings does not allow organizations to stretch to fulfill expectations of distributed employees on parameters such as salary, family accommodation, holidays, limited working hours, frequent travels etc., adopting a social exchange framework, Eisenberger and colleagues argued that such beliefs underlie employees' inferences concerning their organizations' commitment to POS, which in turn contributes to the employees' commitment to the organization. High levels of POS create feelings of obligation, whereby employees not only feel that they ought to be committed to their employers, but also give something in return.

3.7.1 ORGANIZATIONAL CITIZENSHIP BEHAVIOR

Researchers have proved that positive behavior emulates affective outcomes in organizational settings. Literature provides empirical support that the perception of organizational fairness influences positive or negative workplace behaviors. Putting together these behaviors, (Organ, 1988) a comprehensive term has evolved to define proactive and reactive workplace behaviors. Thus, according to Organ, OCB is an individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system and that in the aggregate promotes the effective functioning of the organization. OCB typically refers to behaviors that positively impact

the organization or its members (Poncheri, 2006). OCB can be defined a proactive extra role behavior of a member bringing about direct support to the organization to fulfill its commitment or a behavior that exceeds routine expectations (Joireman et al. 2006). However organizations encourage such behavior as they represent the natural tendency of an employee towards the organization. An employee's outlook and tendency gets developed over a period time based on perceptions of organizational procedures and their impact on the employee. Organizational procedures are experienced through the processes adopted for distributing various resources in an equal and impartial manner and treating an employee for what they are. Employees go beyond certain set guidelines to enable them perform pro-social and extra roles. Many forms of citizenship behavior have been captured by Organ and colleagues (Bateman & Organ, 1983; Smith, Organ, & Near, 1983).

Altruism and conscientiousness were two of the first original forms of citizenship that Organ and colleagues (Bateman & Organ, 1983; Smith, Organ, & Near, 1983) examined at the start of the 1980s. Subsequently, a number of modifications ensued. First, Organ (1988) introduced various complementary forms of citizenship such as sportsmanship, courtesy, and civic virtue. Second, in Podsakoff and MacKensie (1994) research using a sample of salespeople, recommended abandoning conscientiousness – which could no longer be considered as a discretionary behavior as conscientiousness was meant to be a part of the behavior expected at work.

Sportsmanship-Organ (1990) defined sportsmanship as a "person's desire not to complain when experiencing the inevitable inconveniences and abuse generated in exercising a professional activity". According to Podsakoff et al. (2000), sportsmanship allows employees maintain a positive overall attitude with respect to their organization, especially in situations requiring self-denial and deferral of personal interests in favor of organizational needs.

Civic virtue refers to the degree of an employee's concern and interest in more general areas of the organization and is characterized by acts that, for example, promote the image of the firm, consolidate its reputation, and favor its public profile. Also, civic virtue corresponds to a salaried employee's attitude of wanting to participate in running the organization in varying degrees and different ways.

Helping behavior indicates an individual's desire to provide assistance to members of the organization encountering specific difficulties in their professional activities. Podsakoff and MacKensie (1994) argued that "helping behavior is a second-order latent construct consisting of Organ's (1988, 1990) altruism, courtesy, peacekeeping, and some aspects of his cheer-leading constructs" (p. 353). As such, helping behavior is the broadest and most complex form of OCB (Podsakoff, Ahearne, & MacKensie, 1997).

Sportsmanship, civic virtue, and helping behavior are the major forms of OCB, despite many other different dimensions of OCB (e.g., Bell & Mengüç, 2002; X.-P. Chen, Hui, & Segó, 1998; Diefendorff, Brown, Kamin, & Lord, 2002; Grima, 2007; Hui et al., 2004; Lievens & Anseel, 2004; MacKensie, Podsakoff, & Ahearne, 1998; MacKensie, Podsakoff, & Fetter, 1993; Tansky, 1993; Yoon & Suh, 2003).

3.7.2 EXTRA-ROLE BEHAVIORS

Many believe that extra role behaviour is demonstrated to impress the management and to support one's own personal aspirations. It is nothing but a different form of routing one's vested interests of moving up the career ladder. Van Dyne, Cummings and Mclean-Parks (1995) defined ERB as "behavior that attempts to benefit the organization and that goes beyond existing role expectations". Organ, Podsakoff, & MacKenzie, (2006) found that this is yet another construct similar to OCB. In addition dimensions of whistle blowing and principled organizational dissent have been discussed in ERB. Whistle blowing involves the ratting of one employee by another so that unethical and/or illegal practices are brought to the attention of authorities (Near & Miceli, 1987, as cited in Organ et al., 2006). Principled organizational dissent is when employees protest against the organization when experiencing injustice. (Graham, 1986, as cited in Organ et al., 2006).

3.7.3 CONTEXTUAL PERFORMANCE

Many researchers have tried to find parallels for Contextual Performance (CP) and OCB. Borman & Motowidlo, (1993) defined CP as non-task related work behaviors and activities that contribute to the social and psychological aspects of the organization. Some examples of CP include volunteering for additional work, following organizational rules and procedures, assisting and cooperating with coworkers, working on holidays, extended hours of work and various other discretionary behaviors even when personally inconvenienced. CP is further explained in terms of four dimensions of persistence of enthusiasm, assistance to others, following rules and procedures and openly defending the organizations objectives (Borman & Motowidlo, 1993). Borman & Motowidlo created taxonomy of contextual performance as given below.

- Persisting with enthusiasm and extra effort as necessary to complete own task activities successfully
- Volunteering to carry out task activities that are not formally part of own job
- Helping and cooperating with others
- Following organizational rules and procedures
- Endorsing, supporting, and defending organizational objectives
- Interpersonal facilitation
- Job dedication

CP does not require that the behavior be extra-role, only that it be non-task.

3.7.4 PRO-SOCIAL ORGANIZATIONAL BEHAVIOR

Many comparisons have emerged as more and more research has identified different attributes to pro-organizational activities. Brief & Motowidlo, (1986) compared pro-social behaviour (POB) to that of OCB. POB is defined as behavior within an organization aimed at improving the welfare of a person. The important distinction here is that this type of behavior, unlike

OCB, can be unrelated to the organization. Thus, someone exhibiting pro-social behavior could be helping a coworker with a personal matter as the individual tries to settle down with his/her job or role, location or team.

3.7.5 BEHAVIORS DIRECTED AT THE INDIVIDUAL AND THE ORGANIZATION

OCB was divided based on whom the behavior was directed at. Williams and Anderson (1991) brought out the dimensions in OCB and said that OCB is of two types. The behavior which was directed at an individual member in the organization is called (OCB-I). Altruism and courtesy fall under the umbrella of OCBI's. Conscientiousness, civic virtue, and sportsmanship behaviors intended for the benefit of the organization or Behavior directed at an organization is called (OCB-O).

3.8 ORGANIZATIONAL JUSTICE

Many theories have been applied to understand behavior in organizations (Greenberg, 1990); such as social information process theory (Salancik and Pfeffer, 1978) social exchange theory (Thibaut and Kelly 1959), equity theory (Adams, 1963), attribution theory (Weiner, 1980), self worth theory (Covington, 1984) and LMX theory (Dansereau, Graen, & Haga, 1975; Graen & Cashman, 1975) etc., Researchers have also explored different types of research questions proactive and reactive (Colquitt, Conlon, Wesson, Porter, and NG, 2001) while trying to study organizational outcomes of justice perceptions. Social exchange has many hurdles when employees are distributed. The exchanges between distributed team members role compatibility competency, information exchange, socio-cultural background, interdependencies and work-life balance are shown to influence role behaviors and OCB (Settoon, Bennett, and Liden 1996; Wayne, Shore, and Liden, 1997).

There are four dimensions of justice: distributive, procedural, interpersonal, and informational. (Colquitt, 2001)

Procedural justice refers to the perceived fairness with which an allocation decision regarding the distribution of outcomes is made in an organization (Konovsky, 2000). While the research on distributive justice focuses on the perceived fairness of rewards allocation, procedural justice focuses on the perceived fairness of the processes by which such reward allocations are made. The value of fair procedures needs to ensure that the distribution of outcomes is fair (Niehoff and Moorman 1993). In a distributed software organization, there is more than one reason why employees feel distanced from their parent organization. The organizational policies and processes for managing distributed software development are neither established, equitable, exchanged or balanced from a member's point of view. Members experience lack of policies or proper implementation of processes. When organizational processes and procedures do not support performance a member neither experiences a sense of justice nor shows belongingness to the organization. Organizational procedures for selection and deployment of members for onsite assignment, terms of assignment (short or long), travel and transit (family, insurance and accommodation), role (type of work), technical infrastructure and bandwidth, HR processes, rela-

tionship between (customer and parent organization, leader-member, onsite and offshore, technical and functional teams), fixing compensation and benefits, rewards and recognitions together form the various processes for managing distributed organizations.

Distributive justice refers to the perceived fairness of the distribution of outcomes (e.g., pay raises, promotions, and selection for further studies/training) in an organization (Moorman, 1991). Socialists confront this by saying that the rationale for distributive justice has been born out of the visible difference between haves and have-nots. According to Niehoff and Moorman (1993), distributive justice is the extent to which rewards are allocated in an equitable way. From the above it can be summarized that distributed justice this will have an impact on the motivation of a team member. In the context of distributed software development, situations may develop where a distributed member's application of an allocation rule may not be consistent with an employee's view of work or outcome allocation, leading to tensions within the project team impacting project outcomes. While every organization operates on certain said principles and processes, application and equitability of these processes between members working in different location creates heartburn forcing members to perceive the lack of distributive justice.

Interactional justice refers to the quality of interpersonal treatment an individual (employee) receives from an authority figure and the enactment of procedures (Moorman, 1991; Greenberg 1990). Justice perceptions are formed in interaction and exchange between same or different team members, subject to the influence of social interaction. Since members are distributed between onsite and offshore, India and outside India, collocated and distributed locations personality features, systems and processes, location constraints with differing, skills and roles imbalances are likely to be formed in the way members perceive organizational justice.

The role of justice perception in onsite -offshore work is the central focus of this study. Individual perceptions of justice typically lead to shared perceptions of justice within project teams. This shared perception can be hypothesized to influence work outcomes. According to the social information processing theory (Salancik & Pfeffer, 1978), interaction among team members of different roles facilitate the creation of justice climate. What creates a social climate is when personal and professional views are shared to create a collective perception. This proposition was directly tested with a recent study by Roberson (2006a). Organizational exchange has been discussed in terms of low level (limited to employment) and high level (beyond employment) relationships. Based on 124 undergraduate student project teams, Roberson found that, contrary to her prediction, a combination of unfavorable outcomes and fair procedures was most likely to trigger sense-making activities and led to the worst team outcomes (performance and commitment). Consistent with her prediction, more sense-making discussion led to a higher level of agreement on justice climate. Naumann and Bennett (2000) and Roberson (2006a) only focused on factors influencing the variance of justice climate. Researchers argue that justice climate has another dimension of justice climate level. While justice

climate variance is concerned with the agreement among team members on how fairly a team has been treated, justice climate level refers to the favorability of fairness evaluations within a team (i.e., how fairly they have been treated). In a software development environment, where people are posted in different locations, people begin to feel emotionally attached to the location and onsite people tend to share everything about their employment with their peers.

Employees' justice experience is related to many performance outcome variables such as POS (Rhoades & Eisenberger, 2002), and affective organizational commitment (Meyer and Allen (1997), OCB (Moorman, 1991) and job satisfaction and commitment (Yavuz, 2010). Organ (1988) in his discussion of the motivational basis of OCB, asserted that justice perceptions have an important role in promoting OCBs. Scholars have also established a relationship between affective organizational commitments and their predictors in three categories: (a) organizational characteristics, (b) personal characteristics, and (c) work experiences (Endres, 2007; David et al., 1998). Researchers who found a strong relationship with OCB have found similarity with both (OCB-I and OCB-O) categories of citizenship behaviours.

Justice dimensions have also been found to have a relationship with OCB. For example Konovsky 2000; Skarlicki & Folger, 1997; Roberson, 2006; Choi, 2008 found that there was a relationship between procedural justice and altruism. In this study, outcomes such as organization citizenship (Niehoff & Moorman, 1993; Lavelle et al., 2007), job satisfaction (Wesolowski & Mossholder, 1997), rule compliance, commitment and helping behavior (Colquitt et al., 2001) are particularly important. Williams et al. (2002) found that the likelihood of OCB increased when employee's perceptions of fair treatment became more positive and affective. In many related studies justice experience contributes significantly to OCB hence the justification to investigate this relationship in the context of distributed teams in the software industry. The software industry has been specifically selected as perceived organizational justice is more or less evidenced due to the circumstances in which a distributed member is made to work.

It is observed that software industry determines value for the individuals based on competency, capability and availability together with long term business vision of the organization, business compulsions and competitive environment. Employee policies and processes are influenced by business, revenues and profits of software organizations. Allocation of resources depends on roles and location of the employee. Contributions, consistency and longevity create respect and dignity for a software engineer.

In the above scenario inconsistency is likely to be perceived in the process of selection and deployment, allocation of rewards and benefits, opportunity provided for higher learning and development, assign a role, provide support to members and their family apart from members experience of being differentiated from their peers professionally, organizationally and socially in the way they are valued and respected.

Hence, it was assumed that employees are differentiated; and

the difference is visible to employees working at offshore and onsite, in India and outside India and in the product and services organizations and provides sufficient reason for perception of organizational justice.

Thus the first hypothesis of the study is:

Hypothesis 1: Organizational justice positively influences OCB.

3.9 PERCEIVED ORGANIZATIONAL SUPPORT (POS)

POS theory (Eisenberger, Huntington, Hutchinson, & Sowa, 1986; Rhoades & Eisenberger, 2002; Shore & Shore, 1995) holds that in order to meet socio-emotional needs and to assess the benefits of increased work effort, employees form a general perception concerning the extent to which the organization values their contributions and cares about their well-being. When members work out of their distributed location, many of the organizational processes are not explained. Liden et al. (2003) reported that contingent workers' perceptions of justice are positively related to POS for both an agency and a client organization, which in turn are related to altruistic OCB. There is evidence that employees who perceive a high degree of organizational support in terms of the extent to which an organization cares about their well-being (Eisenberger et al., 1986; Wayne et al., 2002), display increased affective commitment (Cropanzano et al., 1997; Eisenberger et al., 1986; Rhoades and Eisenberger, 2002; Van Knippenberg and Sleebos, 2006), POS increases employees' obligation to help the organization reach its objectives and increase, affective commitment to the organization, as they expect that improved performance would be rewarded. Behavioral outcomes of POS include increase in in-role and extra-role performance and decreases in stress and withdrawal behaviors such as absenteeism and turnover. Although there were relatively few studies of POS until the mid 1990's, research on the topic has burgeoned in the last few years. The history of decisions, associated with employee interpretations of organizational caring is most likely to influence employee behavior" (Shore & Shore, 1995: 160) Therefore, procedural justice relates to OCB because the employee's general perception on whether the organization values and supports him or her prompts the employee to reciprocate with increased citizenship behaviors.

According to Eisenberger et al. (1986), POS reflects the quality of the employee-organization relationship by measuring the extent to which employees believe that their organizations value their contributions and care about their welfare. Rhoades and Eisenberger (2002) suggest that employees develop POS through assessing their working conditions, organizational rewards, support received from supervisors, and procedural justice. In terms of expatriates, Aycan (1997) suggests that spousal assistance, compensation plans, cross-cultural training, social and logistic support and career path determine perceptions of organizational support. Non-expatriate employees may develop feelings of POS in the context of "standard" employment arrangements. However, in the case of expatriates, assigned to subsidiaries in the host

country, it is more complicated given the potential availability of two separate sources of organizational support.

3.9.1 ORGANIZATIONAL SUPPORT AND OCB

The study of Wayne et al., (2002) suggested that POS was related to both altruism and compliance dimensions of OCB and concluded that organizational justice was related to POS and POS was related to employees' commitment and OCB. Results of Liu (2009) supported that the affective commitment acted as a partial mediator of the relationship between parent company POS and organizational-directed OCB, and a full mediator of the relationship between subsidiary POS and organizational-directed OCB. Scholars have proved that there is a positive relationship between POS with affective commitment and performance. Consistent with the organizational support theory, Eisenberger et al. (2001) reported that obligation mediated the relationship of POS with affective commitment and extra-role performance.

As per (Shore & Shore, 1995), a distributed member will continue to pursue satisfying his /her socio-emotional need by seeking every type of a support needed to perform his role, enhance his technical development skills, improve compensation and benefits and improve his social status. When an organization seek to fulfill professional, socio-economic and emotional needs of an employee, it is likely that employee improves his sense of belonging and affective commitment to the organization thereby motivated to practice OCB. In the event an organization does not give attention to the socio-emotional needs of its members, member's motivation to perform OCB may take a back seat.

3.9.2 ORGANIZATIONAL JUSTICE AND ITS RELATIONSHIP WITH POS AND OCB

Ambrose and Schminke (2003) indicated that the relationship between procedural justice and POS was significant and the relationship between interactional justice and supervisory trust was positive and significant too. Therefore, procedural justice may be related to organizational citizenship behavior because perceptions of procedural justice affect an employee's general perception that an organization values him or her, and this perception of support may prompt the employee to reciprocate with increased citizenship behaviors. However, the study of Loi et al., (2006) showed that both procedural and distributive justice contributed to the development of POS, and POS mediated their effects on organizational commitment. Moorman et al, (1998) concluded that procedural justice is an antecedent to POS which in turn fully mediates its relationship to OCB.

Previously research has attempted to explain mediated relationship of POS between organizational justice and OCB and not the organizational justice mediating the relationship between POS and OCB. When team managers and team members' perceptions of organizational support were high and in agreement, outcomes were maximized. Bashshur et al., (2011). The negative effects of disagreement were most amplified

when managers perceived that the team manager received higher levels of support than did the team itself. Employees with a high exchange ideology showed stronger relationships of POS (Eisenberger et al., 2001), job attendance (Eisenberger et al., 1990), and extra-role performance (Ladd, 1997; Witt, 1991).

Owners of software projects have significant control over the resources of the project. Resources include people and their movement between locations, roles and control on the cost and benefits of the project. This type of control is what is called the "self interest model" which is also called the instrumental model (cf. Tyler, 1987), and suggests that people's desire to possess control over procedures increases the likelihood of favorable outcomes as opposed to persons who own the project.

Software developers always want to be part of a best team or as a group recognized across the organization. People perceive the product development group, the intellectual property development group, the embedded systems group, and the hardware design and development group to have better recognition than members working for software consulting and services groups. Similarly testing, quality assurance and documentation is rated lower as compared to their development partners. Functional team comments lesser value comparing to their peers who are part of development team. In the same way senior members are assumed to add higher value compared to junior peers. This type of group identification is called group value model (Lind & Tyler, 1988). Group value model is an attempt to explain justice perceptions in group identification processes. The model's assumption is that individuals value their membership in groups, for identity as well as a mechanism to validate and reinforce the appropriateness of their beliefs and behavior (Brockner, Tyler, & Cooper-Schneider, 1992). Perceived organizational justice affects OCB because justice judgments attached to the group affect the degree to which an employee believes an organization values the person. Shore and Shore (1995) wrote that POS is more likely to be procedural or distributive perceptions to impact employee's attitude and behaviours.

In order to test whether the relationship between POS and OCB is mediated by perceived organizational justice the following hypothesis was tested,

Hypotheses 2, 3 & 4

- Perceived organizational support positively and significantly influences organizational citizenship behavior
- Perceived organizational support positively and significantly relates to organizational justice
- Organizational justice mediates the relationship between perceived organizational support and organizational citizenship behavior

3.10 ROLE EFFICACY

Roles and tasks are important elements in the structure and performance of distributed teams. Pareek (1993) has defined

role efficacy as the potential efficiency of employees' performance, ambiguity and role overload. There are 3 dimensions to RE as discussed by Uday Pareek (1980). They are role making, centering and linking. Role breadth and self-efficacy (Parker, 1998), positively predicts proactive behavior at work (Crant, 2000; Parker et al., 2006). Effects of task-related variables and work related outcomes and their relationship with the OCB construct has been explored in a few studies (Farh, Podsakoff, & Organ, 1990; Podsakoff & MacKenzie, 1995; Podsakoff, Niehoff, MacKenzie, & Williams, 1993). Perhaps the most relevant treatment of direct relationships between task variables and OCB was by Farh, Podsakoff, and Organ (1990). Farh et al. who postulated that a direct relationship existed between task variables and OCB, given the concomitant effects they had on psychological states such as "meaningfulness of the work" and the "sense of responsibility." Thus, an employee with job tasks that intrinsically motivate and produce a firm sense of enhanced meaning would be expected to operate in the best interest of the company at large (OCB compliance) and be considerate of fellow workers who also share in the welfare of the organization (OCB altruism).

Perception of role efficacy

When a software professional takes up an assigned job, he is apprised of the requirements of the project, skills required, trainings to be attended, team size, reporting structure, processes, cost and time constraints. At the same he also develops his expectation of learning something new from the project. Therefore the performance of a team member depends grossly on the way a person gets deputed to the role. If a member lacks skill, knowledge, capabilities, and willingness to work in a given role, the member cannot be effective. In the same way, if given role does not allow a member to utilize his technical, managerial and organizational capabilities, the member's effectiveness is likely to be low. If the organization balances between the required role and the potential of the member, a member will feel that the organization is supportive and proactive towards him and will develop motivation to perform OCB.

It is important how a distributed member attaches meaning to the way a person is assigned to particular job, location, period, pay, benefits and learning opportunities and the support given to deliver the given tasks. This mental process of giving meaning is called role perception (Pestonjee & Aniruddh Pandey, 1996) if a member gives a positive meaning to the way he is used in the project, he will perceive it positively and if negative meaning than negative perception. If a member is assigned to a redundant, mundane and repetitive type of a role, never given global exposure and not exposed to client handling such a member is likely to develop justice perception.

3.10.1 ROLE EFFICACY AND OCB

As Parker 1998, predicts that role breadth and self efficacy positively predicts proactive behavior and (Crant, 2000; Parker et al, 2006) reiterates that employee beliefs about their capabilities to carry out a broader and more proactive role positively supports workplace behavior.

A distributed employee, thrives on his efficacy beliefs, directly exerts workplace behaviors as he intends to build a rationale for his continuance in the team.. In case where there is a felt gap between the acquired skills, efficiency and the role at which a member is employed for a long time, chances of low motivation leading to negative workplace attitude is high. Empirical findings have also shown that efficacy beliefs about issue selling predict issue-selling intentions (Ashford et al., 1998), and creative self-efficacy predicts creative behavior at work (Tierney & Farmer, 2002, 2004). The above assumptions also get support from the empirical findings of researchers as they state that employees with task-specific self-efficacy generally perform tasks better (Barling & Beattie, 1983) and persevere when problems arise (Lent, Brown, & Larkin, 1987).

In this study, we examine how efficacy beliefs influence various types of OCB, including onsite behaviors such as support and help provided to client and the organization, managing the pressures, not yielding to intention to quit and taking responsibility for tasks at both ends. If a member goes a step further and tries to bring higher level of contribution to the organization by over stretching (role-breadth self-efficacy, (Parker, 1998 & 2000) based on felt competence in performing a broader set of role-related behaviors that support work unit effectiveness, helping efficacy and taking charge efficacy capture feelings of competence in helping others and initiating change. Consistent with how specific efficacy beliefs predict associated behaviors (Ashford et al., 1998; Crant, 2000; Parker et al., 2006; Tierney & Farmer, 2002, 2004), we maintained that perceived efficacy with respect to helping and taking charge would relate to helping and taking charge behaviors, respectively. Such Role related behaviors are expected to influence employee's discretionary behavior at the workplace.

While many have examined the efficacy experiences with OCB, some seem to believe that role breadth of self efficacy (RBSE) differs from other constructs such as OCB. RBSE explicitly focuses on activities that require employees to be proactive, whereas OCB includes some dimensions that are proactive and some that are passive. RBSE is expected to change in response to the environment and organizational experiences (Parker, 1998). Masterson et al. (2000) found that the relationship between justice perceptions and employee reactions occurred through mediating variables. (Li Andrew et al., 2008) found that procedural justice moderated the role ambiguity-self-efficacy relationship; such that the relationship was stronger when procedural justice was high.

Research conducted recently by Beauchamp and Bray (2001) found a negative relationship between role ambiguity and role-related efficacy. A creator's mind is not constrained by conventional wisdom. Offshore is the creator, the creator normally wants freedom, he does not work under pressure, where as the other members who contribute for user application or vanilla type of work have pressure and not freedom. The creator has to be challenged; otherwise he does not respond. Especially in a product development organization where a member has the challenge of constantly looking for evolving dimensions to the product, work becomes interest-

ing. Role breadth self-efficacy (Parker, 1998), positively predicts proactive behavior at work (Crant, 2000; Parker et al., 2006). When a member is able to see that he is adding value to the product and is also perceived to be a value added to the organization, the same member develops enhanced commitment and attitude towards the organization.

Apart from the unique sales and brand value that an organization has for attracting and retaining talent, it is important to note that the role plays an effective part in attracting and retaining talent.. Within software organizations, roles (Katz & Kahn, 1978) play a disruptive role, roles within groups are considered to be a set of critical propositions that define the behaviors required of an individual member occupying a certain position. Formal roles are particularly relevant for performance within highly structured performing groups such as distributed teams. Building on existing research, we hypothesized that there exists a relationship between role efficacy and perceived organizational justice and the relationship between role efficacy perceptions and OCB is mediated by organizational justice. Past research has received enough attention on the types of role perceptions such as role breadth, perceived instrumentality, perceived role efficacy and perceived role discretion. Although all these dimensions contribute to behaviours associated with the organization (Bachrach & Jex, 2000; Morrison, 1994), behaviours relating to the perception of role efficacy are considered the most important as it contains many of the dimensions discussed in role perceptions.

3.10.2 Organizational justice and its relationship with role efficacy and OCB

(Agrawal & Sudeepa, 2004) have found that in organization work climate that's positive, participative, innovation and supportive are characterized by interpersonal trust is positively related with member's perception of their organization's human resource practices as procedurally fair. It was further hypothesized that such perceptions of fairness would be positively related to role efficacy among members. Although Tepper and colleagues did find interactions between procedural justice and OCB role definitions (Tepper et al., 2001; Tepper & Taylor, 2003; Zellars et al., 2002) and Kamdar and colleagues (2006) also recently examined the interactive relationship of role perceptions and procedural justice on OCB, they focused explicit attention on role breadth rather than efficacy.

Scholars have found that the relationship between justice perception and OCB is stronger when perceived role efficacy is high rather than low. OCB is found to be high when both employees perceived role efficacy and justice perceptions are high (Tepper et al., 2001; Tepper & Taylor, 2003; Zellars et al., 2002). (i.e., employees have discretion to perform high levels of OCB to reciprocate the high level of fairness) and least when perceived role efficacy is high and justice perception low (i.e., employees have discretion to withhold OCB in response to the perceived unfairness).

Onsite is a place where a person is controlled from different angles starting from product, technology, method of development, time to develop, and team to develop.. The impair-

ments associated with weaker efficacy expectations as predicted by efficacy theory—decreased effort, persistence, and ineffective performance—could also be expected (Bandura, 1997). This notion, although derived from a self-efficacy perspective, is consistent with findings from organizational psychology showing a negative relationship between role ambiguity and job-related performance (Jackson & Schuler, 1985; Tubre & Collins, 2000). A client has many objectives while proposing a product to be developed by a team. The client's constraints should not come in the way of the natural flow of innovation, which software engineers' cherish. There is a general perception that onsite assignments are usually repetitive, low end, and mundane. In the absence of a members' excitement of working on the latest technology or contributing to the innovation, there is a possibility that members start perceiving low efficacy level leading to ORB.

Effects of task-related variables and work related outcomes and their relationship with the OCB construct has been explored in a few studies (Farh, Podsakoff, & Organ, 1990; Podsakoff & MacKenzie, 1995; Podsakoff, Niehoff, MacKenzie, & Williams, 1993). More the felt efficacy, the higher the work related outcomes and their relationship with the OCB. When a member is incapacitated to experience the efficacy of his role, he is likely to compare his role with those members who are able to find their role more excited. The experience of inequity found in self efficacy of the members influence perception of fairness in workplace.

A general tendency found in the software industry is that members want to work on a technology, domain and the role that will boost their future career. While the current role will reassure members standing in the team, a concern for their positioning in the team will always make them feel uncomfortable for future job. For instance, role breadth self-efficacy, defined as employee beliefs about their capabilities to carry out a broader and more proactive role (Parker, 1998), positively predicts proactive behavior at work (Crant, 2000; Parker et al., 2006). Empirical findings have also shown that efficacy beliefs about issue selling predict issue-selling intentions (Ashford et al., 1998), and creative self-efficacy predicts creative behavior at work (Tierney & Farmer, 2002, 2004). Distributed members with task-specific self-efficacy generally perform those tasks better (Barling & Beattie, 1983) and persevere when problems arise (Lent, Brown, & Larkin, 1987). We propose that distributed members develop efficacy beliefs pertaining to various types of OCB, including interpersonal helping and taking charge.

Member's perception about their job description, role, level at which they are contributing, how much of their contribution goes for building organizational values and whether member's stake increases in line with the organizational stake all put together contribute to their perception of the role. Members appear to withhold OCB when they had low perception of role efficacy and justice perception.

Role also comes with certain internal and external advantages to the members as learning and development opportunities,

exposure to complete life cycle, opportunity to work in a global market, ability to work in latest technology and the domain skills in demand do create a perception for members about the justice perceptions of their organization and such perception do contribute to the OCB. Given these issues, we believe it is important to test whether, as the logic underlying the role discretion effect suggests, perceptions of discretion moderate the relationship between procedural justice and OCB.

The second important factor contributing to the organizational justice perception is role efficacy perception. A role cannot be seen as an independent activity. It has to be seen as a combined activity which generates experiences of social recognition, professional satisfaction and self actualization.

Since software development is an intellectual contribution, the second criterion considered as important is the kind of a work, role and level of contribution that a member is considered for. There are different types of business in software development. Some of them are application development, software integration, product development, technology development and product innovation. The roles can further be bifurcated into development, architect, testing and quality assurance, coordinators, project managers and documentation specialists. Some of these activities are considered as routine, redundant and repetitive while others are considered as adding value to the project, product and the organization. Some of these roles do not require technology advantage while others need continuous updating of the technology skills and domain expertise. In order to become market competitive and to ascertain one's own career progression, employees will keep comparing their competencies and capabilities with their peers and the skills in demand. When an employee feels that his skills and capabilities are fully used, employees form a general perception that he is being treated with respect and dignity. In order to test that perception of role efficacy influences organizational justice and thereby increase or decrease OCB the following hypotheses were tested.

Hypotheses 5, 6 & 7

- Role efficacy positively and significantly influences OCB
- Role efficacy positively and significantly influences organizational justice
- Organizational justice mediates the relationship between role efficacy and organizational citizenship behavior.

Member's experience of getting their salary in time, feeling that their salary is comparable to their peers, given career progression considering their contribution, provided enough team members and get sufficient technical support are areas of interaction between distributed members. The effects of the four dimensions of organizational justice is further explained by Colquitt and Greenberg wide their model given below. In their reasoning they have claimed that Distributive Justice is

the form of organizational justice that focuses on people's beliefs that they have received a fair amount of valued-work related outcomes. Distributive justice affects worker's feelings of satisfaction with their work outcomes, such as pay and job assignments. Procedural Justice refers to people's perception of the fairness of the outcomes they receive. Unfair procedures not only make people dissatisfied with their outcomes (as in the case of distributive justice) but also lead them to reject the entire system as unfair. Interpersonal Justice refers to people's perceptions of the fairness of the matter in which they are treated. Impersonal and disrespectful behavior shown by the boss causes the de-motivation in subordinate. Informational Justice is people's perception of the fairness of the information used as the basis for making decisions. Informational justice prompts feelings of being valued by others in an organization.

3.11 CONTROL VARIABLES

3.11.1 INDIVIDUAL AND ORGANIZATIONAL IDENTITY AND JUSTICE PERCEPTIONS

Given the individuals' position and terms of employment, they are also likely to be treated with respect and dignity. Thus, individuals who are part of permanent employment and multinational companies experience positive distributive, procedural, interpersonal and informational justice perceptions. With greater access to work-related resources and information (Casciaro, 1998) through peers, it is also likely for individuals with this type of organizational association (product or services) to experience justice perceptions. A member of services organization endure across geographical constraints (Gupta et al., 2007), these individuals are able to exchange procedural and interactional justice information (Chia et al., 2006) as against the members from product organization who has their own limitations to do the same.

3.11.2 MEMBERS DISTRIBUTED WITHIN AND OUTSIDE INDIA

Whether a person is distributed within or outside the country favorability motivates contribution behavior (Wasko & Faraj, 2005; Kankanhalli et al., 2005). With a fair view of the organization through work outcomes, individuals fulfill job obligations through contributing on the norms of social exchange (Constant et al., 1994). Similarly, distributive justice perception draws upon social exchange and equity theories to influence work outcomes such as organizational commitment (Aryee et al., 2002), rule compliance (Kim & Mauborgne, 1998).

3.11.3 NATURE OF BUSINESS -PRODUCT AND SERVICES

As discussed earlier, organizations engage in product development type of activities either own the activities or handle the business on behalf of an outsourced partner. In this type of business, most of the teams and related handling of the business are monitored by the clients. Teams are also distributed as part of the team is stationed with the client. There is a perceived stability, innovation and contribution in the employees engaged in product development activities. As employees are

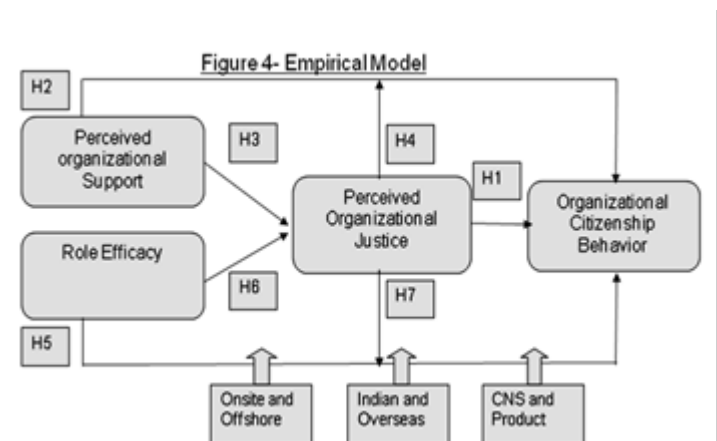
distributed to onsite locations, they get a better salary and global exposure too. This comes on the way of explaining the perception leading to organizational behavior.

Software development is also done on a services model to the global customer. Either packaged software or custom software, work is taken and delivered on cost basis. In this model also distribution of team is prevalent. However as complete work is outsourced, a client shares the primary requirement and expects the client to add value to the process of development to make it world class. The team is short lived as the project is limited to the scope and timeframe. An employee will become curious as he completes the given work as to which project, location, domain and client he will be deputed next. There seems to be so much of uncertainty for the employees working being part of the services industry.

3.12 RESEARCH FRAMEWORK

This section portrays the framework of the research design adopted in the present study.

Research framework proposes that level of POS and RE will positively influence distributed members OCB. This relationship would be moderated by the perceived organizational justice (POJ): However, nature of employment, type of organization and location (In India or outside India) and expatriate and inpatriates can control the perception as they are important parameters in the process of perception and subsequent outcome behaviors. Given below is the empirical model (Figure 4) of the proposed study



CHAPTER 4

RESEARCH METHODOLOGY

The purpose of this research was to examine the mediating effect of organizational justice on the relationship between POS and OCB and role efficacy. It also investigates the relationship between antecedents and mediating and outcome variables. The following section covers the participants and organizations included in this study, the study's design, pilot study, sample, data collection approach, questionnaire development and the measures used to test the relationships between the variables.

4.1. PILOT STUDY

A qualitative study to gain insights into the organizational fairness perceptions of distributed teams was conducted. As fairness perceptions are an outcome of the experiences of values, ethics, customs, cultures, policies and processes practiced within and outside the organization, the opinion of members who were part of distributed teams of software organizations were taken. The pre-study included convenience sample opinions of 25 members from Infosys, Wipro, RBIL, TCS covering consulting, services and product development areas. Interviews were conducted with Executives, Managers and Leaders from across Technical and Support Functional areas. The interviews covered both individual and groups on a one to one basis. The interviews were semi-structured and conversational in nature covering a range of topics related to selection criteria, employee friendly policies, roles, interaction and exchanges, learning opportunities, rewards and recognitions, respect and dignity. In order to get a deeper understanding of the worksites, the onsite and offshore sites within Bangalore were visited. During the visits, members on conference calls, interacting and exchanging information after office hours, on extended working hours and working on Sundays and holidays were observed. Some distributed team members mentioned pain points they have gone through during interviews. The employees interviewed had experience in onsite locations of India, Germany, Japan, US, UK, Malaysia, Canada, Israel, Singapore, Belgium, Italy, Dubai and France.

Based on the interview data, difficulties experienced by team members at both onsite and offshore locations have been classified into eight clusters. Some of the experiences highlighted in the interview are the lack of fairness in selection, compensation and benefits, assigned roles, deployed location, learning and development opportunities, respect and dignity, trust and information sharing and post onsite rehabilitation.

The results of the pilot study indicate that the perception of fairness decides the behavioral outcome. Given this the focus of the study was on organizational justice as a mediator between antecedents and outcome behaviors.

4.2 SAMPLE PROCEDURE

With the help of personal contacts approximately 30 software organizations spread across the world were contacted to par-

ticipate in the survey. The questionnaire was also sent directly to several software organizations. Approximately 970 questionnaires were distributed to 13 organizations via different communication channels. Software teams engaged in developing, managing and implementing projects at onsite and offshore sites, collocated and distributed teams in India and overseas irrespective of their area of work or gender or role were asked to participate in the survey. The respondents of the questionnaire have been kept anonymous.

4.2.1 SAMPLE

The final sample consisted of 276 participants. Data was collected included 157 from India and 119 from overseas. The participant's breakup was 194 males, 82 females, 189 graduates, 85 post graduates, 131 onsite employees and 137 offshore employees. Respondents for the sample included 194 Executives, 74 Managers and 8 Leaders. 203 employees were working for consulting and services, 67 on product development and 6 business process outsourcing employees. (Tables 5 & 6)

Table 5- Company wise sample

Company	Issued	Received	Rejected	Accepted	Location
Open source	100	20	0	20	Chennai
HTC Global	50	33	7	26	Chennai
TCS	50	56	0	56	Chennai
Symphony Services	50	0	0	0	Bangalore
Aricent Technologies	50	16	0	16	Bangalore
Ness Technologies	50	12	3	9	Bangalore
3D	30	0	0	0	Bangalore
IIM	225	27	4	23	Bangalore
Wipro	50	0	0	0	Bangalore
Open source	125	47	0	47	Worldwide
Isoft	50	23	3	20	Chennai
CCT, LI and NC	40	28	0	28	Bangalore
Infosys	50	34	3	31	Worldwide
IBM	50	0	0	0	Bangalore
Total	970	296	20	276	

Table 6- Demographic details

Gender	Male	Female	Others
	70.29%	29.71%	0%
Education	Graduation	Post Graduation	Doctoral
	68.48%	30.80%	0.72%
Location	Onsite	Offshore	Shuttling
	49.64%	47.46%	2.90%

Dist Location	India	Others	
	56.88%	43.12%	
Designation	Executives	Managers	Leaders
	194	74	8
Business	Consulting and Services	Product development	BPO
	203	67	6
Employment status	Permanent	Contract & Consultant	Others
	270	6	0

4.2.2 QUESTIONNAIRE DEVELOPMENT

The questionnaire was put through two stages of refinement. In the first stage, it was validated by a cross section of distributed software team members. Distributed members representing 8 software organizations from 11 countries participated in the survey. The first set of data was collected from 75 respondents. It was found that nine items had missing values. The missing values were replaced with the overall mean. The reliability coefficient (Cronbach Alpha) of the questionnaire was 0.72. In the second stage of refinement, the nine items which had missing values was checked for consistency. All the nine items were reworded to provide better clarity. The revised questionnaire was sent to 970 participants spread across different geographies. Among them approximately 28.45 % or 276 members responded. The reliability coefficient (Cronbach Alpha) of the revised instrument was 0.92.

4.2.3 RESEARCH DESIGN

The research is entirely empirical.

4.2.4 DATA ANALYSIS

Analyses was conducted on four primary scales and sub scales. The OCB scales included Altruism, Conscientiousness, sportsmanship, courtesy and civic virtue. The Organizational justice scale included Procedural, Distributive, Interpersonal and Informational justice.

Factor analysis was used to identify constructs, to statistically explain the patterns of variations among multiple values. The research based factor analysis was used to find out one or more unobserved independent variable that correlated with observed measures.

When there was more than two classifications to test the equality of means, the ANOVA test was used. If null hypothesis was rejected ($P < 0.05$) the Post-Hoc method of analysis using Tukey's test was used to compare. To test the relationship between variables, Pearson correlation coefficient was used. Hierarchical regression method was used for studying mediating effects between independent and outcome variables.

4.3 MEASUREMENTS

The study was undertaken to measure the constructs in the hypothesis of the existence of a relationship between POS, role efficacy, organizational justice and OCB. The measurements

are detailed below:

The questionnaire on organizational citizenship behavior developed by Podsakoff and MacKenzie, (1989) with its five dimensions was modified. The instrument on organizational justice developed by Colquitt et al., (2001) with its four dimensions was modified. The questionnaire on perceived organizational support developed by Eisenberger et al., (1986) was used to study, the instrument on role efficacy developed by Uday, (1980); and modified by Avinash & Gupta, (2009). For the purpose of the research all questionnaire were further modified to make it relevant for the study on distributed teams. In addition to the above, the following demographic variables were used as intervening variables to find the difference between perceptions of groups and other parameters such as work location (Onsite or offshore), geographical location (India or overseas), business unit(consulting and services, product and engineering development, business process outsourcing).

4.3.1 OCB SCALE

The dimensions of the OCB scale consisted of 20 items with a 5 point rating scale, of 1 being "Never" and 5 being "Always". The psychometric properties of this scale have been reported in Podsakoff, MacKenzie, Moorman, and Fetter (1990) and in Moorman (1991). Both studies supported a five-dimension model of citizenship behavior with reported reliabilities of over 0.70 for each dimension.

The psychometric properties of the scale used in this research reported reliabilities higher than 0.763 for each dimension. OCB was measured with 5 dimensions each having four items of measurement.

4.3.2 ORGANIZATIONAL JUSTICE (POJ) SCALE

Colquitt designed specific justice items using the construct definitions of Thibaut and Walker (1975), Leventhal (1976a; 1980), Bies and Moag (1986), Shapiro, Buttner and Barry (1994). Using a chi-square factor analysis, Colquitt et al., confirmed that the best fitting model was the four factor independent organizational model. The resulting instruments included seven items measuring procedural justice; four items each measuring distributive justice and interpersonal justice and five items measuring informational justice. The Colquitt instrument was customized to specific contexts by adopting the outcome on which the questions were based. The psychometric properties of the scale used in this research reported reliabilities of over 0.70.

4.3.3 PERCEIVED ORGANIZATIONAL SUPPORT SCALE

A measurement for POS (16 Items) was adapted from Eisenberger et al., 1986. The scale consisted of 16 items with a 5 point rating scale, of 1 being "Never" and 5 being "Always". The psychometric properties of this scale have reported reliabilities of over 0.93.

4.3.4 ROLE EFFICACY SCALE

To measure role efficacy, we adapted a modified version of the scale developed by Uday Pareek (1980). The questionnaire had ten dimensions, namely: Centrality, Integration, Pro-activity, Creativity, Inter-role linkage, Helping relationship, Super ordination, Influence, Growth, and Confrontation. Test and retest reliability was reported to be 0.68. In each set of three statements, one statement was chosen representing the specific dimension and members were asked to rate the statement from a scale. The scale consisted of 10 items and used a 5 point rating scale, with 1 being "Never" and 5 being "Always". The psychometric properties of this scale have reported reliabilities of over 0.70.

4.4 OPERATIONAL DEFINITION OF VARIABLES

This chapter identifies the operational definitions of the variables studied, the sampling technique and the details of tools used. The pilot study and the changes made for the final study are also described.

Distributed teams are groups of people who collaborate closely even though they are physically separated. They "work together but apart". The other name used for distributed teams are globally distributed team (GDT) or virtual teams.

Perceived organizational support (POS) is defined as the extent to which employees believe that the organization values their contribution and cares about their well-being.

Role efficacy is the perception of the effectiveness of the role of an employee in a distributed location. The individual perceives himself to be a role-making, role-centering or role-linking authority.

Organizational Justice (OJ) is the perception that decisions, procedures, processes and the allocation of resources are done in a fair and equitable manner in the organization distributed by geography, distance, time, technology, role, space, language and culture. Organizational justice is discussed in four dimensions:

Procedural Justice is a component of OJ, referring to the perceived fairness of the allocation of processes within an organization.

Interpersonal Justice is treatment of individuals with dignity and respect by authorities.

Distributive Justice refers to perceptions of fairness associated with the distribution of resources within an organization
Informational Justice is the information on why certain procedures are used and why outcomes are distributed in a given manner in distributed organizations.

Organization Citizenship Behavior (OCB) According to Organ (1988), is defined as the discretionary behavior of an individual. The omissions or commissions of these behaviors are not considered as deviance.

However, for the purpose of this study we define OCB as dis-

cretionary behavior, the omissions and commissions of which 'can' impact business and 'can' also be considered as a deviance in a distributed organization

Original forms of OCB - (Smith, Organ, and Near, 1983).

Altruism-Benevolence -behavior targeted specifically at helping individuals (e.g., person is always helpful).

Conscientiousness-Behavior reflecting compliance with general rules, norms, and expectations (e.g., person stays even overtime to complete a task).

Complementary forms of OCB- by Organ (1988)

Sportsmanship-Person's desire not to complain when experiencing inevitable inconveniences

Civic Virtue-Degree of employees concern and interest in organization

Helping behavior-The other term used is courtesy

Perception of floating employees: The term "floating" is used for employee's who keep shifting their work locations and project on a frequent basis. The study also covers the perspective of this category of unsettled and dynamic employees. The study also covers employees who return from a long term assignment and their rehabilitation.

CHAPTER 5 RESULTS

The data was analyzed using SPSS 18. The correlation analysis is carried out to identify the relationships between the variables studied. Linear regressions are used to explain the mediation effects of organizational justice in the relationship between perceived organizational support, role efficacy and organizational citizenship behavior.

5.1 DESCRIPTIVE STATISTICS

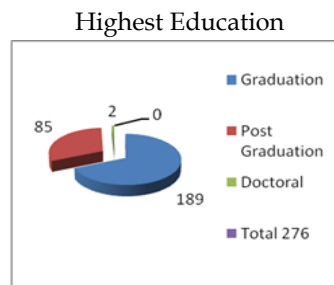
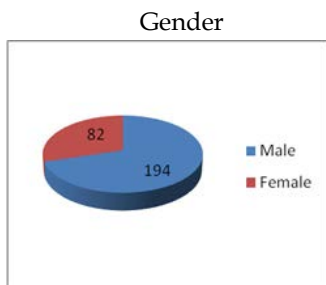
Table 7- Means, Standard Errors Means and standard Deviations

Variables	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Gender	276	1.30	.028	.458
Location	276	1.55	.033	.553
Geographical Location	276	1.43	.030	.496
Organizational Citizenship Behavior	276	3.71	.027	.442
Altruism	276	3.75	.039	.653
Conscientious	276	3.98	.043	.715
Sportsmanship	276	3.23	.048	.796
General Compliance	276	3.73	.039	.654
Civic Virtue	276	3.75	.039	.647
Organizational Justice	276	3.37	.025	.418
Procedural Justice	276	3.38	.041	.679
Distributive Justice	276	3.05	.050	.826
Interpersonal Justice	276	3.58	.039	.653
Informational Justice	276	3.43	.041	.675
Perceived Organizational Support	276	3.30	.046	.759
Role Efficacy	276	3.36	.030	.495
Satisfaction with outcomes	276	3.38	.028	.461
Valid N (listwise)	276			

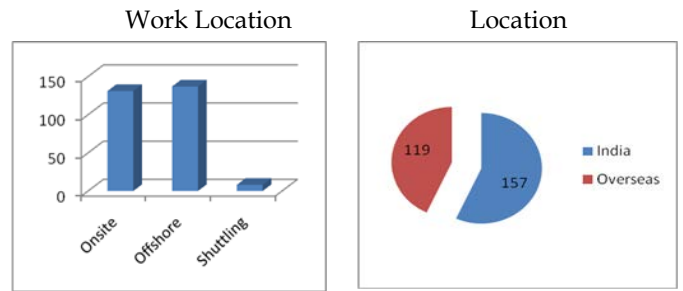
Note: Parameters indicated in bold represent measures used to test the hypothesis

5.2 SAMPLE PROFILE

The sample consists of employees representing both genders from offshore and onsite locations. The sample has a mix of 70.29% males and 29.71% females. This sample is in line with the industry ratio and has the appropriate combination.

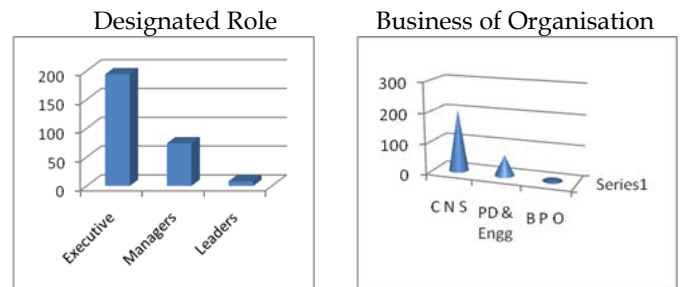


The sample of the educational background indicates that the majority of respondents are graduates i.e 68.48% and a good number of them are post graduates at 30.80%



Work Location of the respondents includes 49.64% of offshore employees, 47.46% from onsite locations of which 2.90% are floating employees.

Geographical location - The sample has a mix of distributed team members working from both India (56.88%) and overseas (43.12%)

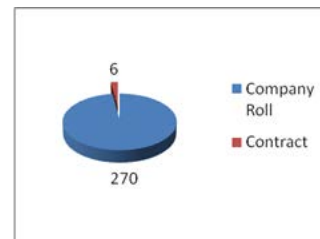


Role - The sample is divided into three different categories of executives, managers and leaders. The sample consists of 194 executives, 74 managers and 8 Leaders

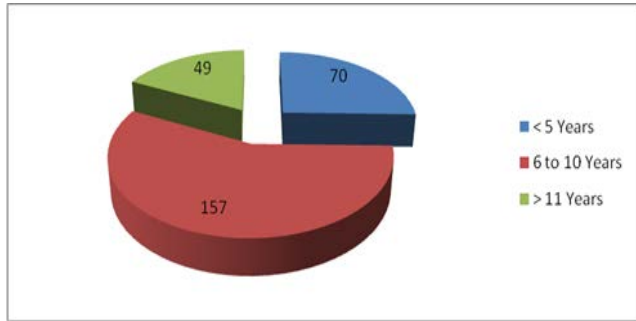
Business - The sample comprises of organizations engaged in consulting and services (203), product development (67) and business process outsourcing (6)

Employment status of the respondents is divided into permanent and contract employees. The sample shows that employees who have responded are those who have a confirmed job (270). The sample has 6 respondents who are on a contract assignment with the organization.

Employment status



Overall Experience



The experience profile of the sample indicates that employees between 6 to 10 years of experience are more in numbers at 157 followed by employees with less than 5 years of experience. The sample also has employees with above 11 years of experience.

5.3 FACTOR ANALYSIS

Responses were analyzed for underlying patterns using factor analysis with the help of SPSS 18. The factors identified correspond to the primary topics or latent variables.

The opinion of an expert was sought to evaluate the relevance and suitability of the questionnaire. Organizational justice questionnaire developed by Colquitt, (2001), OCB questionnaire developed by Podsakoff and Mackenzie(1989), Perceived organizational support questionnaire developed by Eisenberger et al., (1986) and Role efficacy questionnaire developed by Srivastav AK and Gupta KS, (2009) was modified to make it relevant for the study. The data collected through the questionnaire was factor analyzed to identify factors that were interpretable. On being clearly identified the interpretable factors, reliability scores of important loaded factors were recorded.

Table 8: Factor analysis of all the variables Rotated Component Matrix

Variables	Component		
	1	2	3
Perceived Organizational Support	0.783	0.171	0.202
Procedural Justice	0.748	0.241	-0.210
Satisfaction with outcomes	0.736	0.202	0.027
Informational Justice	0.730	0.057	0.176
Role Efficacy	0.688	0.280	0.101
Interpersonal Justice	0.638	0.054	-0.399
Conscientiousness	0.147	0.792	0.115
Altruism	0.067	0.762	0.165
Civic Virtue	0.225	0.732	-0.269
General Compliance	0.336	0.647	-0.124
Distributive Justice	-0.022	-0.014	0.861
Sportsmanship	0.138	0.024	0.720

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization-4 iterations.

Table 9: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.820
Bartlett's Approx. Chi-Square	1095.18
Test of Sphericity	df 66
Sig.	.000

The factor analysis of the study found three dimensions. In the first factor, it was found that organizational justice is highly correlated with antecedents. This implies that justice perception is closely linked to perceived organizational support, role efficacy perception and satisfaction among distributed software professionals. Hence this factor can be relabeled as "organizational best practices propel justice perception". In this factor items no. 2, 4 and 6 relate to justice perception of distributed members and items 1, 3 and 5 relate to organizational practices relating to POS, role efficacy and satisfaction with the outcome, as the basis for creating justice perceptions.

Since there are many dividing factors between distributed members and members that interact with peers who are not close to each other but rely on work values and employment practices, their role and existence in a distributed location is impacted positively or negatively and thereby they develop fairness perceptions accordingly. They also rely on the quality of interaction and exchange with peers and managers across other locations to form fairness perceptions.

Earlier research found that procedural justice is related positively to POS because fair policies and procedures (indiscrimination) strengthen employee beliefs that they will be rewarded for their efforts to help the organization. Studies on globally distributed teams suggest that procedural and interactional justice play differentially important roles in determining the quality of exchange as they experience mutual support [POS] and organizational trust. This dimension reiterates the fact that the relationship between procedural justice and POS is stronger in globally distributed organizations and that the relationship between interactional justice and managerial trust is stronger in globally dynamic organizations. The result of this analysis is consistent with the findings of the researchers on procedural justice as it is positively related to POS (Cropanzano, Prehar, & Chen, 2002; Blakely, & Niehoff, 1998) and the relationship is stronger for procedural justice as against distributive justice.

Software professionals consider that their role should become important indicator of their future career. According to the Attribution theory (Ployhart and Ryan, 1997), team members tend to experience organizational recognition when assigned onsite or in a role of choice. This recognition further develops in them a sense of appreciation and respect, leading to perceiving their organization as being fair. Organizations that utilize the competencies and capabilities of members to maximize benefits further enhance perceptions of organizational fairness.

Items 7, 8, 9 and 10 correlates to a single dimension and makes OCB a legitimate discretionary behavior for members of distributed teams. This means that differences in culture, language, processes, type of work and role does not impact the motivation to practice OCB as much as perceived organizational support and role efficacy perceptions do.

However, items 11 and 12 correlate to form a third dimension of the distributed teams' unique environment-such as onsite assignment being treated as a special privilege, getting global exposure, earning in foreign currencies, being closer to the client etc. This helps members play constructive roles in establishing healthy relationships with their parent organization. The parent organization in turn is also likely to accept the constructive role played by distributed members. This indicates that the higher the role of a distributed member in the outcome of the procedure applied (distributive justice) the better the perception.

5.3.1 ORGANIZATIONAL CITIZENSHIP BEHAVIOUR

Factor analysis was used to group items which explain similar characteristics for 20 items used to formulate the revised questionnaire. An examination of the Kaiser-Meyer Olkin measure of sampling adequacy suggested that the sample was adequate (KMO=0.782).

Using the extraction method of the principal component analysis with rotation method and Varimax with Kaiser Normalization, data for 20 items were tested. The rotated component matrix converged into six iterations.

Table 10 OCB- Rotated Component Matrix

Items	Component					
	1	2	3	4	5	6
Q1	.804	.044	-.075	.047	.090	.037
Q2	.818	.188	.046	.058	.123	.083
Q3	.649	.300	-.081	.003	-.026	.252
Q4	-.007	.122	.161	-.102	.778	.046
Q5	.287	.265	-.119	.036	-.158	.663
Q6	.288	.490	.218	.065	.133	.349
Q7	.649	.282	-.046	.044	-.213	.129
Q8	.272	.739	.077	-.029	-.199	.164
Q9	.018	-.154	.469	-.035	.340	.581
Q10	.192	.074	.758	.048	.105	.053
Q11	-.095	-.016	.673	.026	-.047	.029
Q12	-.206	.051	.660	-.054	.175	-.149

Q13	.177	.168	.177	.631	-.160	-.058
Q14	-.071	.012	-.162	.665	.263	.001
Q15	.177	.665	-.141	.160	.052	.080
Q16	.140	.741	.110	.137	.277	-.071
Q17	.052	.365	-.358	.179	.223	.459
Q18	.459	.156	.097	.464	.414	-.017
Q19	.543	.124	-.041	.490	-.132	-.108
Q20	.014	.059	.001	.663	-.268	.340

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization

Rotation converged in 6 iterations.

Items 6, 17 & 18 did not contribute to the study significantly. The other contributing items have been loaded into different factors. The statistical analysis generated 6 factors for analysis. However when the factors were put through the face validity and reliability test, the scores were less for some of the factors as some of the items were not indicative of any group characteristics. Finally four factors were extracted which explain specific OCB characteristics.

Factor 1 was labeled as "Providing support to team members in multiple situations" (Items 1, 2, 3 and 7) and is characterized as voluntary support to team members. While the first three items relate to the practice of altruism, item 7 explains how a member helps a new member remove a fear of the unknown. The reliability coefficient of this factor is 0.789 (Table 11). Factor 2 was labeled as "Giving voluntary feedback" (8 and 15) and is characterized by regular feedback to project team members. Items 15 & 16 relate to the voluntary feedback to members to improve the overall team outcome. The reliability coefficient of this factor is 0.57 (Table 11).

Factor 3 was labeled as "Organizational conscientiousness" (13 and 14) and relates to members being conscious of the needs of the organization. The reliability coefficient of this factor is 0.57 (Table 11).

Factor 4 was labeled as "Receptive to new comers" (4). This item relates to the necessity of being inclusive in a team. A supportive culture practiced within the team makes an individual and the team, experience team strength.

In addition to the above, it was found that some of the items contributed to the study independently but did not fit in as a group characteristic. Item No. 5, 9, 16, 19 and 20 contributed to feeling inclusive, sportsmanship, organizational compliance, attending meetings and interest shown in company developments.

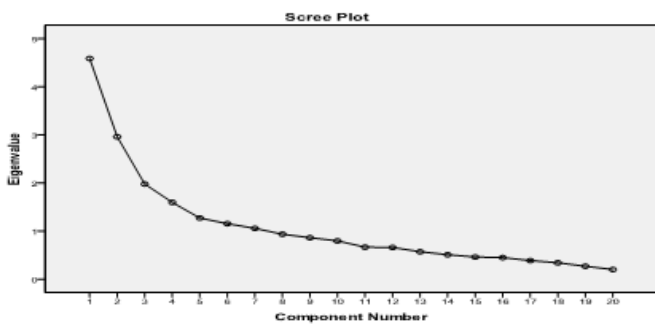
Based on the factors loaded the reliability coefficient was found to be as follows.

Table 11 Reliability of loaded OCB factors

Loaded OCB Factors	Cronbach Alpha
Organizational Citizenship Behaviour	0.76
Providing support to team members in multiple situations	0.79
Giving voluntary feedback	0.60
Organizational conscientiousness	0.57
Receptive to new comers	0.38

In order to find important factors contributing to the study on organizational citizenship behaviour, a Scree Plot of the factors were drawn.

Figure 6 Scree plot for OCB



The above Scree Plot indicates the number of components against the Eigenvalues and helps determine the optimal number of components. The steep slope indicates that a large percentage of total variance. The shallow slope indicates that the contribution to total variance is less. In the above plot, the first four factors have a steep slope, and become shallow later. Hence, the ideal number of factors is four.

5.3.2 ORGANIZATIONAL JUSTICE

Factor analysis was used to group items which explain similar characteristics for 20 items to formulate the Organizational justice questionnaire. An examination of the Kaiser-Meyer Olkin measure of sampling adequacy suggested that the sample was factorable (KMO=0.72).

Using the extraction method of the principal component analysis with Varimax rotation method with Kaiser Normalization, data for 20 items were tested. The rotated component matrix converged into six iterations.

Table 12- Organizational justice- Rotated Component Matrix

Items	Component					
	1	2	3	4	5	6
Q21	.489	.063	.024	.420	.203	-.038
Q22	.359	-.146	-.031	.668	-.309	.141
Q23	.700	.060	.223	.023	-.018	.174
Q24	.526	-.141	.138	.036	.460	.067
Q25	.629	-.026	-.001	.213	.160	.249
Q26	.668	-.287	.067	.039	-.009	-.135
Q27	.389	.048	.721	-.132	-.044	.041
Q28	-.215	.482	.209	.112	.100	-.444

Q29	-.141	.738	.096	.078	-.018	.060
Q30	.094	.767	-.078	-.107	-.041	.147
Q31	.096	.614	-.134	-.137	-.099	-.145
Q32	.076	.009	.679	.028	.348	.107
Q33	-.042	-.065	.629	.421	-.202	.304
Q34	.175	.020	.628	.007	.152	-.412
Q35	.262	-.594	-.289	.181	.034	.151
Q36	.178	-.084	.119	.078	.804	.132
Q37	.196	-.009	.149	.126	.278	.730
Q38	.087	-.079	.053	.768	.302	-.021
Q39	.499	.142	.318	.165	.308	.023
Q40	.019	.516	-.077	.276	.377	-.341

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization

a. Rotation converged in 10 iterations.

Item 21 & 28 did not contribute to the study significantly and item 35 contributed negatively to the study. The other contributing items have been grouped together and loaded under different factors. The statistical analysis generated 6 factors for analysis. When the factors were put through the face validity and reliability test, the scores were less for some of the factors as they were independent contributors. Finally four factors emerged which explain specific organizational justice characteristics.

Factor 1 is labeled as “perception on procedural fairness”. Four items (23, 24, 25 & 26) were loaded onto the perception of procedural fairness experienced by distributed teams. Members were able to raise opinions for any differences in view point or discontentment on policy.

Factor 2 is labeled as “perception on rewards”. Four items (29, 30, 31 & 40) have been loaded onto Factor 2 and relates to the perception of distributive fairness prevalent.

Factor 3 is labeled as “interpersonal fairness”. Four items (27, 32, 33, & 34) have been loaded onto Factor 3 and relates to members perception on the way they are treated at work.

Items (22 & 38) have been loaded onto Factor 4. These items relate to company considering the members views and take their opinions before taking decisions. This factor is labeled as “respect for individual opinions”.

In addition to the above, it was found that some items contributed to the study independently and did not identify into any group characteristics. Item No. 36 and 37 contributed to “role clarity”.

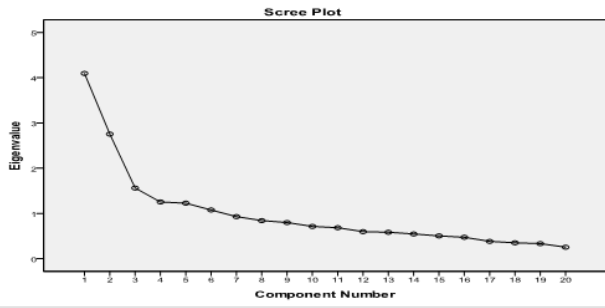
Based on the factors loaded, reliability coefficient of organizational justice and its factors were found to be as follows.

Table 13 - Reliability of loaded Organizational justice Factors

Loaded organizational Justice Factors	Cronbach Alpha
Organizational justice	0.71
Procedural fairness	0.69
Perception on reward	0.64
interpersonal fairness	0.66
Respect for individual opinions	0.51

In order to find the important factors contributing to the study on organizational justice, a Scree Plot was drawn.

Figure 7: Scree plot for Organizational justice



The above Scree Plot indicates the number of components against eigenvalues and helps determine the optimal number of components. The steep slope indicates that a large percentage of total variance. The shallow slope indicates that the contribution to total variance is less. In the above plot, the first four factors have a steep slope, and is shallow later. Hence, the ideal number of factors is four.

5.3.3 PERCEIVED ORGANIZATIONAL SUPPORT

Factor analysis was used for 16 items on perceived organizational support from the questionnaire to group items which explain similar characteristics. An examination of the Kaiser-Meyer Olkin measure of sampling adequacy suggested that the sample was factorable (KMO=0.92).

Using the extraction method of the principal component analysis with rotation method and Varimax with Kaiser Normalization, data for 16 items were tested. The rotated component matrix converged to five iterations.

Table 14 -POS - Rotated Component Matrix

Items	Component		
	1	2	3
Q41	.843	-.099	.025
Q42	.834	.217	.002
Q43	.667	.457	-.102
Q44	.674	.457	-.111
Q45	.216	.824	.117
Q46	.430	.636	-.045
Q47	.576	.420	.129
Q48	.666	.506	.096
Q49	.611	.499	.054
Q50	.653	.473	-.116
Q51	.135	.832	-.083
Q52	.671	.491	-.139
Q53	.663	.390	-.072
Q54	.376	.439	.220
Q55	.644	.436	-.024
Q56	-.065	.019	.957

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization

Rotation converged in 5 iterations.

Item 54 did not contribute to the study significantly and item 56 contributed independently but did not fit into any group. The other contributing items were loaded onto different factors. The statistical analysis generated 3 factors for analysis. Items (41, 42, 43, 44, 47, 48, 49, 50, 52, 53 & 55) of Factor 1 relate to perceived support at the work location. This factor was labeled as "Support experienced through organizational care". Items (45, 46 & 51) loaded onto Factor 2 relates to commitment on individual development and career growth, labeled as "commitment to individual development". Item 56 independently contributes to the study and relates to employees feeling valued in distributed locations and labeled as "Feeling valued".

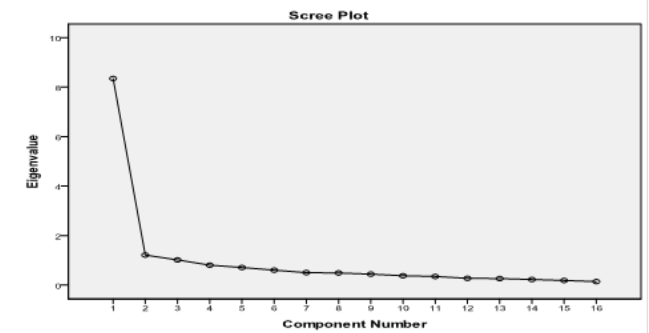
Based on the factors loaded the reliability coefficient of perceived organizational support and its factors were found to be as follows.

Table 15- Reliability of loaded POS factors

Loaded POS items	Cronbach Alpha
Perceived organizational support	0.93
Support experienced through organizational cares	0.94
Organizations commitment to individual development	0.80

In order to find the important factors contributing to the study on POS a Scree Plot of the factors were drawn

Figure 8: Scree plot for POS



The above Scree Plot gives the number of components against the Eigenvalues and helps determine the optimal number of components. The steep slope indicates a large percentage of total variance. The shallow slope indicates that the contribution to total variance is less.

5.3.4 ROLE EFFICACY

Factor analysis was used to group 10 items on the role efficacy questionnaire that explain similar characteristics. An examination of the Kaiser-Meyer Olkin measure of sampling adequacy suggested that the sample was factorable (KMO=0.741).

Using the extraction method of the principal component analysis with rotation method and Varimax with Kaiser Normalization, the data for 10 items were tested. The rotated component matrix converged into three iterations.

Table 16 – Role efficacy - Rotated Component Matrix

Items	Component	
	1	2
Q57	.705	.238
Q58	.134	.698
Q59	.059	-.764
Q60	.603	-.192
Q61	-.001	.734
Q62	.610	.051
Q63	.515	.003
Q64	.755	-.024
Q65	.706	-.036
Q66	.451	.125

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization

Rotation converged in 3 iterations.

Item 66 did not contribute to the study significantly. This may be due to the fact that distributed team members are mostly at the client site and are expected to work in line with the expectations of the client. It also can be interpreted that distributed members don't have the luxury to enjoy freedom of work as they are assigned for a small duration. Item 59 contributed negatively. Most of the time distributed members work independently and does not have a team and so the possibility of being supportive to other members may be less. This item asks if the respondents will help m. The other contributing items have been loaded onto different factors. The statistical analysis generated 2 factors for analysis.

Six items (57, 60, 62, 63, 64 & 65) was loaded onto Factor 1 relating to six dimensions of role efficacy. Items (58 & 61) have been loaded onto Factor 2 which relates to the perception that role expertise is not being ignored and labeled as "role avoidance".

Based on the factors loaded, the reliability coefficient of role efficacy and its factors the following was found.

Table 17 – Reliability of role efficacy factors

Loaded role efficacy factors	Cronbach Alpha
Role efficacy	0.62
Perception of role support	0.73
Perception of role avoidance	0.55

In order to find important factors contributing to the study on role efficacy a Scree Plot was drawn.

Figure 9: Scree plot for role efficacy



The above Scree Plot gives the number of components against the eigenvalues and helps to determine the optimal number of components. The steep slope indicates that a large percentage of total variance. The shallow slope indicates that the contribution to total variance is less. In the above plot, the first four factors have a steep slope, and is shallow later. Hence, the ideal number of factors is two.

5.4 GROUP STATISTICS

ANOVA test is used to test the mean effects that differ significantly for more than two groups.

Table 18- Testing for equality of means of OCB factors with work Location

OCB Dimensions		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Altruism	EV Assumed	0.76	0.39	-1.949	266	0.052
	EV Not assumed			-1.951	266	0.052
Conscientious	EV Assumed	0.41	0.52	0.506	266	0.613
	EV Not assumed			0.505	259	0.614
Sportsmanship	EV Assumed	0.03	0.86	-2.192	266	0.029
	EV Not assumed			-2.192	265	0.029
General Compliance	EV Assumed	0.12	0.73	0.126	266	0.9
	EV Not assumed			0.126	264	0.9
Civic Virtue	EV Assumed	6.35	0.01	0.535	266	0.593

	EV Not as-sumed			0.536	263	0.592
--	-----------------	--	--	-------	-----	-------

From the above table, it is found that both the onsite and offshore employees do not differ in their opinion on practicing OCB (altruism (0.39), conscientiousness (0.52), sportsmanship (0.86), general compliance (0.73) and civic virtue (0.01). However, group data reveals that there is a difference between their opinions on civic virtue and sportsmanship. Sportsmanship has a very high significance as compared to other OCB dimensions. Employees and the organization benefit mutually when employees work on onsite assignments and close to the client as role clarity is exemplified.

Table 19- Testing for equality of means of Organizational justice factors with work Location

Independent Samples Test

Organizational Justice		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Procedural Justice	EV Assumed	2.251	0.135	0.494	266	0.622
	EV Not Assumed			0.495	265	0.621
Distributive Justice	EV Assumed	0.488	0.485	-1.128	266	0.26
	EV Not Assumed			-1.126	263	0.261
Interpersonal Justice	EV Assumed	0.001	0.979	1.324	266	0.187
	EV Not Assumed			1.326	265	0.186
Informational Justice	EV Assumed	0.199	0.656	0.908	266	0.365
	EV Not Assumed			0.909	265	0.364

From the above table, it is found that both onsite and offshore employees seem to share similar opinions that perception of organizational justice (procedural justice (0.135), distributive justice (0.485), interpersonal justice (0.979) and informational justice (0.656) significantly influences OCB. The criteria for perceiving organizational justice does not change based on work location. However, procedural justice perceptions are low whereas interactional justice is high indicating that respect and value are high motivators.

5.4.1 SUMMARY OF INDIVIDUAL DIFFERENCES

Demographic characteristics were assessed to rule out alternative explanations for the relationships between the variables of OCB, organizational justice, organizational support and role efficacy. T-tests were used to find if there were any significant differences in the group's response. Results showed that among employees divided between onsite and offshore, onsite employees partly believe that they can practice sportsmanship (P=0.862) in their distributed location. Location status makes a difference for employees practicing other forms of OCB such as altruism (P=0.385) and civic virtue (P=0.012) as the P value is close to 0.05.

It was also found that there was no significant difference in the perception of interpersonal justice (P=0.979) and informational justice (P=0.686). Whereas there are significant differences in the perception of distributive justice (P=0.485), procedural justice (P=0.135). The results signify the difference in the perception of perceived organizational support (P=0.530) at onsite and offshore and there is no difference in the perception of role efficacy (P=0.136)

The above results show that offshore members practice altruism and sportsmanship where as onsite employees do not. The reason for the difference could be the short term nature of onsite assignments. Other OCB dimensions are not significantly different either at offshore or onsite locations.

There is a no significant difference in the perception of males and females on altruism (P=0.843), conscientiousness (P=0.871), procedural justice (P=0.828), interpersonal justice (P=0.690) and perceived organizational support (P=0.521). However a significant difference is seen in sportsmanship (P=0.439) civic virtue (P=0.352) distributive justice (P=0.453) and informational justice (P=0.374). Further there is no significant difference found in general compliance (P=0.171) of OCB and experience of role efficacy (P=0.150).

The result indicates that OCB behaviors of Altruism (P=0.834), sportsmanship (P=0.563) and interpersonal justice (P=0.843) are significantly different with employees working within or outside India. However conscientiousness (P=0.487), general compliance (P=0.308), distributive justice (P=0.403), informational justice (0.428) and perceived organizational support (P=0.340), procedural justice (P=0.051), civic virtue (P=0.072) and role efficacy (P=0.065) are statistically significant as the P value are close to >0.5.

5.5 ANOVA AND POST-HOC TESTS

Since the sample has more than two classifications ANOVA test was used to find out if there any significant difference between the classifications.

Table 20 ANOVA between designations / roles and OCB

		Sum of Squares	df	Mean Square	F	Sig.
Altruism	Between Groups	5.67	2	2.834	6.938	0.001
	Within Groups	111	273	0.408		
	Total	117	275			
Conscientiousness	Between Groups	4.07	2	2.036	4.069	0.018
	Within Groups	136	273	0.5		
	Total	140	275			

Table 21: Tukey's homogeneous subsets

Altruism

Tukey HSD			
Designation	N	Subset for alpha = 0.05	
		1	2
Executive	194	3.666	
Managers	74	3.936	3.936
Leaders	8		4.219
Sig.		0.362	0.327

Means for groups in homogeneous subsets are displayed.

Conscientious

Tukey HSD		
Designation	N	Subset for alpha = 0.05
		1
Executive	194	3.903
Leaders	8	3.969
Managers	74	4.179
Sig.		0.42

Means for groups in homogeneous subsets are displayed.

From the above table, the role of distributed members on OCB for altruism and conscientiousness show a significant relationship while the rest of the OCB dimensions are not significant.

Table 22- ANOVA between business groups and OCB

Sportsmanship	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.88	2	1.938	3.108	0.046
Within Groups	170	273	0.624		
Total	174	275			

Table 23: Tukey's homogeneous subsets

Sportsmanship		
Tukey HSD		
Business	N	Subset for alpha = 0.05
		1
CNS	203	3.156
BPO	6	3.292
PD & Engg	67	3.433
Sig.		0.582

Mean for groups in homogeneous subsets are displayed.

The above table shows that OCB among business groups differ significantly. Consulting and services, product development and business process outsourcing Distributed members share the same opinion on sportsmanship.

5.5.1 SUMMARY OF GROUP DIFFERENCES

A one-way analysis of variance (ANOVA-Post hoc) was used to examine differences between groups of respondents.. The group differences included roles (Executives, Managers and Leaders), business (Consulting & services, product development and BPO organizations) and their OCB. Post hoc tests revealed several significant inter correlations between variables.

The mean perception of Altruism differed significantly (P < 0.05). Executives (m= 3.66) and managers (m=3.93) practiced altruism more as compared to their leaders (m=4.21). Managers (m=3.93) and leaders (m=4.21) both think that practicing altruism is important as against executives (m=3.66). Altruism is a helping behavior that is motivated by a selfless concern for the welfare of another person within the organization. Managers support altruistic behavior of onsite executives in distributed locations, as members are individual contributors and support leaders on altruistic behaviors. Leaders form part of the collocated or offshore team. In offshore teams senior members are expected to display a higher level of supportive behavior.

The conscientiousness (Attention to detail and adherence to organizational rules) are significant as executives ($m=3.90$), managers ($m=3.96$) and leaders ($m=4.12$) express their feeling that rules do not impact ones feelings as adherence is implied.

However, the mean perceptions of role efficacy differ significantly (P is < 0.05). Executives ($m=3.08$) and managers ($m=3.31$) are alike when compared to their leaders ($m=3.49$). Managers ($m=3.31$) and leaders ($m=3.49$) perceptions are alike as against their executives ($m=3.08$).

In all other dimensions of OCB, justice dimensions and POS are not significantly different among executives, managers and leaders. The mean is also not significantly different as they agree that it is important to practice these values. Especially in a distributed location the relationship that a member is expected to maintain is in the interest of the member and to attract better business for the organization.

The results indicate that there is no significant relationship between members working as part of a consulting and services organization or product organizations on altruism ($P=0.928$), procedural justice ($P=0.922$), distributive justice ($P=0.970$), interpersonal justice ($P=0.751$) and role efficacy ($P=0.944$) However the relationship is significant on conscientiousness ($P=0.007$) Sportsmanship ($P=0.165$), general compliance ($P=0.066$), civic virtue ($P=0.090$), informational justice ($P=0.127$) and perceived organizational support ($P=0.094$).

The mean perception of employees from product development organizations on sportsmanship ($m=3.29$) and business process outsourcing organizations ($m=3.43$) are significantly different from consulting & services organizations ($m=3.15$). Procedural justice among product development organizations ($m=3.27$) and business process outsourcing organizations ($m=3.430$) also significantly differ from consulting & services organizations ($m=2.81$).

The above observation shows that distributed members of product development organizations and business process outsourcing organizations think alike when it comes to experiencing procedural justice as against consulting & services organizations.

5.6 RELATIONSHIP BETWEEN VARIABLES

The purpose of this study was to examine through an empirical model the mediating effects of organizational justice on the relationship between POS, role efficacy and OCB. The study provides a review of the key research findings. In accordance with the hypotheses outlined, Pearson's correlation method was used to test the relationship between variables and a stepwise linear regression analysis was used to test the mediation and main effect of organizational justice. The predictor variables used in the stepwise procedures are outlined below:

Seven hypotheses were tested. As predicted, the hypotheses were accepted. The independent variables (POS and role efficacy) relationship with OCB was found to be significantly positive.

The independent variables relationship with mediating variable (Organizational justice) was also found to be significantly positive. In the same way the mediating relationship between independent variables and the outcome variable (OCB was also found to be significantly positive)

5.7 Table 24- Correlation Coefficients

Pearson’s correlation coefficient was used to find the significance of the relationship between the variables studied.

		Correlations											
		1	2	3	4	5	6	7	8	9	10	11	12
1	Altruism	1.000											
2	Conscientious	0.519**	1.000										
3	Sportsmanship	0.114	0.023	1.000									
4	General Compliance	0.339**	0.405**	0.020	1.000								
5	Civic Virtue	0.394**	0.452**	-0.027	0.536*	1.000							
6	Procedural Justice	0.219**	0.230**	0.021	0.403*	0.418**	1.000						
7	Distributive Justice	0.096	0.060	0.416**	-0.112	0-0.179**	0-0.175**	1.000					
8	Interpersonal Justice	0.134*	0.095	-0.059	0.208*	0.313**	0.476**	0-0.284**	1.000				
9	Informational Justice	0.172**	0.188**	0.132*	0.299*	0.141*	0.456**	0.113	0.340**	1.000			
10	Perceived Organizational Support	0.182**	0.302**	0.192**	0.331*	0.255**	0.536**	0.117	0.349**	0.510**	1.000		
11	Role Efficacy	0.206**	0.358**	0.136*	0.381*	0.304**	0.469**	0.013	0.321**	0.437**	0.580**	1.000	
12	Satisfaction with outcomes	0.245**	0.312**	0.017	0.320*	0.239**	0.541**	0.057	0.422**	0.444**	0.541**	0.483**	1.000

** . Correlation is significant at the 0.01 level

Hypothesis 1 examined the relationship between organizational justice and organizational citizenship behavior: Results show that, organizational justice was positively and significantly ($p < 0.01$) correlated with OCB ($r = 0.412$). Organizational justice plays a vital role in perceiving fairness through various parameters as experienced by members in the organization. Previous studies found organizational justice was positively related to OCB (Bandura, 1986; Gist & Mitchell, 1992; Ali et al. 2011, Aryee and chay, 2001; Colquitt et al., 2001; Farh et al., 1990; Moorman, 1991; Niehoff & Moorman 1993; Skarlicki & Latham, 1997) and procedural justice (Moorman, 1991; Greenberg, 1993 & Organ, 1988a) was related to OCB (Podsakoff et al., 2000; Blakely et al., 2005; Karrikar & Williams 2009; Yilmaz & Tasdan, 2009; Young, 2010). For the first time, the relationship between organizational justice and OCB dimensions (Organ, 1988a) was examined in the context of distributed teams. Contribution of this study is unique as the relationship is found to be similar to collocated teams and does not differ

significantly. This finding provides support to the claims that organizational justice and OCB’s conceptualization and constructs are closely related.

Perceptions of distributive justice have not yet been found to predict OCB dimensions (Organ & Moorman, 1993) other than sportsmanship ($r = 0.416$). Distributive justice has no correlation with Altruism ($r = 0.096$), Conscientiousness ($r = 0.060$), is negatively correlated with general compliance ($r = -0.112$) and civic virtue ($r = -0.179$). Past research has supported a relationship between procedural justice and OCB, but not distributive justice.

Interpersonal justice was positively and significantly correlated to Altruism ($r = 0.134$), General compliance ($r = 0.208$) and Civic Virtue ($r = 0.313$), has no correlation with Conscientiousness ($r = 0.095$), and negatively correlated with Sportsmanship ($r = -0.059$).

Hypothesis 1 is reframed as follows:

H1a. Procedural justice was positively and significantly related to Altruism ($r=0.219$), Conscientiousness ($r=0.230$), Sportsmanship ($r=0.021$), General compliance ($r=0.403$) and Civic Virtue ($r=0.418$);

H1b. Distributive justice was positively and significantly correlates to Sportsmanship ($r=0.416$), Altruism ($r=0.096$) and, Conscientiousness ($r=0.060$), and is negatively correlated to general compliance ($r=-0.112$) and civic virtue ($r=-0.179$).

H1c. Interpersonal justice was positively and significantly correlated to Altruism ($r=0.134$), General compliance($r=0.208$) and Civic Virtue ($r=0.313$), with no correlation to Conscientiousness ($r=0.095$), and negatively correlated to Sportsmanship ($r=-0.059$).

H1d. Informational justice was positively and significantly correlated with Altruism ($r=0.172$), Conscientiousness ($r=0.188$), Sportsmanship ($r=0.132$), General compliance ($r=0.299$) and Civic Virtue ($r=0.141$).

Hypotheses 2 examined the relationship between perceived organizational support and organizational citizenship behavior.

As seen in the results organizational support was positively ($p<0.01$) correlated to OCB($r= 0.392$). POS is positive and related to general compliance ($r=0.331$), conscientiousness ($r=0.302$) and civic virtue ($r=0.255$) and has a lesser correlation with altruism ($r=0.182$) and sportsmanship ($r=0.192$) significant at 0.01. Scholars have examined the relationship between organizational support and employee work outcomes. Earlier studies support the relationship established in this research as they found that employees who perceive a high degree of organizational support in terms of the extent to which an organization cares about their well-being (Eisenberger et al., 1986; Wayne et al., 2002), display OCB (Moorman et al., 1998; Shore and Wayne, 1993) From these findings, the concept of organizational support is accepted as a key factor influencing employee organizational behavior.

Hypotheses 3 examined the relationship between perceived organizational support and organizational justice.

POS is moderately correlated with procedural justice ($r=0.536$), interpersonal justice ($r=0.349$) and informational justice ($r=0.510$) and has a low correlation with distributive justice ($r=0.117$) significant at 0.01. A positive relationship between organizational justice and POS was also found. This was supported by previous research that fairness of organizational procedures influence POS (Fasolo, 1995; Kaufman et al., 2001; Masterson et al., 2000; Moorman et al., 1998; O'Driscoll & Randall, 1999; Rhoades & Eisenberger, 2002; Scotten et al, 1996; Shore & Wayne, 1993; Wayne et al., 1997). Thus when the distributed teams perceive that their organization are pro-

cedurally fair, they are likely to feel that the organization values their contribution and cares about their well being. The present study contributes to the overall conceptualization and hypothesis that POS influences organizational justice and OCB.

The study of Loi et al., (2006) showed that both procedural and distributive justice contribute to the development of POS. This investigation explains that distributed employees experience organizational support through internal and external interactions. The interaction affects work balances and personal life of the employee and reflects on motivational factors to practice OCB.

Hypotheses 5 examined the relationship between role efficacy and organizational citizenship behavior.

Role efficacy is positively correlated to altruism ($r=0.206$), conscientiousness ($r=0.358$), general compliance ($r=0.381$) and civic virtue ($r=0.304$) significant at 0.01 and to sportsmanship ($r=0.136$) significant at 0.05. The relationship between role efficacy perception and OCB was studied by researchers and found that it was positively related (Farh, Podsakoff, & Organ, 1990; Podsakoff & MacKenzie, 1995; Podsakoff, Niehoff, MacKenzie, & Williams, 1993). Since a role can make or mar a career for a software employee, it is important to note that role perception can create justice perception and lead to proactive or reactive behavior (Crant, 2000; Parker et al., 2006). This study helps us understand how role perception can influence justice perception and subsequently impact citizenship behavior.

Hypotheses 6 examined the relationship between role efficacy and organizational justice.

Role efficacy is positively correlated with procedural justice ($r=0.469$), interpersonal justice ($r=0.321$) and informational justice ($r=0.437$) significant at 0.01 and has no correlation with distributive justice ($r=0.013$). A positive relationship between organizational justice and role efficacy was also found. This relationship was examined by researchers and proposed that perceptions of role efficacy interact with perceptions of justice to influence OCB (Kamdar et al., 2006; Tepper et al., 2001; Tepper & Taylor, 2003; Zellars et al. 2002). Perceptions of procedural fairness were also positively predictive of members' role efficacy in organizations (Agrawal & Sudeeba, 2004). Employees reciprocate fair treatment through citizenship contributions when they feel that they are treated fairly through the roles assigned to them. Hence a justice perception influences perceptions of role efficacy and alters the citizenship behavior.

5.8 HIERARCHICAL REGRESSION TESTS FOR MEDIATION EFFECTS

The Hierarchical regression method was used to find out the main and mediating effects of organizational justice and other independent variables on OCB based on the hypothesis set earlier. Data from individuals and team members were used for the analysis.

Figure 9 Histogram

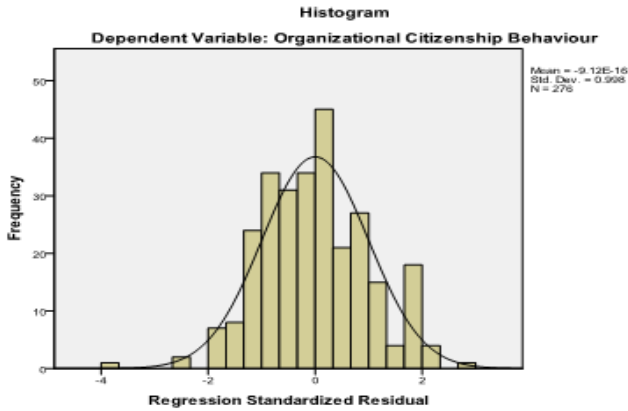
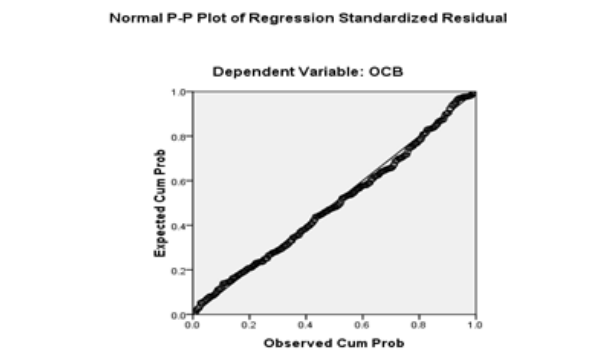


Figure 10 Regression standardized residual



The histogram given above indicates that OCB factors are normally distributed. From P-P plot, it is observed that the predicted values are close to the observed values.

5.8.1 STEPWISE HIERARCHICAL REGRESSION

Hierarchical regression was conducted to test the mediating effect of OJ on the relationship between POS and OCB (hypothesis 4), RE and OCB (hypothesis 7). The relationship was found to be significant with all dimensions of OCB. This procedure provides a unique method of accounting the variance in a dependent variable by a set of independent variables (Cohen & Cohen, 1983). Sobel (1982) developed the approximate significance test to examine the indirect effect of the predictor variable on the criterion variable through a mediator. He further examined the mediating effect of organizational justice on

the relationship between the dimensions of OCB and organizational justice.

Table 25

Summary of Hierarchical Regression Analysis for Variables (Perceived Organizational Support and Organizational Justice Predicting Altruism)

Variables	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Sig.	Beta	t
Step 1							
Perceived organizational support	0.033	0.03	0.643	0.033	0.002	0.156	3.064
Step 2							
Perceived organizational support					0.001	0.238	3.446
organizational justice	0.068	0.061	0.632	0.035	0.002	0.372	3.194

Dependent Variable: Altruism

Significant at the $p < 0.01$ level (Two tailed) and $p < 0.05$ (Two tailed)

Hierarchical regression was used to find the mediating effects of organizational justice on the relationship between POS and altruism. In the above table, the mediation criteria are established with the necessary significance found by regression equation of altruism on POS (0.156) and organizational justice (0.372). This indicates that organizational support has a significant effect on altruistic behavior.

Table 26

Summary of Hierarchical Regression Analysis for Variables (Role efficacy and Organizational Justice Predicting Altruism)

Variables	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Sig.	Beta	t
Step 1							
Role efficacy	0.042	0.039	0.64	0.042	0.001	0.271	3.478
Step 2							
Role efficacy					0.133	0.134	1.507
organizational justice	0.075	0.068	0.6301	0.033	0.002	0.326	3.104

Dependent variable: Altruism

Significant at the $p < 0.01$ level (Two tailed) and $p < 0.05$ (Two tailed)

Hierarchical regression was used to find out the mediation effects of organizational justice on the relationship between role efficacy and altruism. In the above table, the mediation criteria are established with the necessary significance found by regression equation of altruism on RE (0.271) and organizational justice (0.326). The above results indicate that perception of role efficacy has a significant effect on altruistic behavior of distributed members.

Table 27

Summary of Hierarchical Regression Analysis for Variables (POS and Organizational Justice Predicting Conscientiousness)

Variables	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Sig.	Beta	t
Step 1							
Perceived organizational support	0.091	0.088	0.6831	0.091	0.000	0.284	5.244
Step 2							
Perceived organizational support					0.001	0.238	3.446
organizational justice	0.095	0.088	0.6829	0.004	0.282	0.135	1.077

Dependent Variable: Conscientiousness

Significant at the $p < 0.01$ level (Two tailed) and $p < 0.05$ (Two tailed)

Hierarchical regression was used to find out the mediation effects of organizational justice on the relationship between POS and conscientiousness. In the above table, the mediation criteria are established with the necessary significance found by regression equation of conscientiousness on POS (0.284) and organizational justice (0.135). The above results indicate POS has a significant effect on conscientiousness behaviour of distributed members.

Table 28

Summary of Hierarchical Regression Analysis for Variables (Role efficacy, Organizational Justice Predicting Conscientiousness)

Variables	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Sig.	Beta	t
Step 1							
Role efficacy	0.128	0.125	0.669	0.128	0.000	0.518	6.345
Step 2							
Role efficacy					0.000	0.463	4.194
organizational justice	0.132	0.126	0.669	0.004	0.244	0.13	1.169

Dependent variable: Altruism

Significant at the $p < 0.01$ level (Two tailed) and $p < 0.05$ (Two tailed)

Hierarchical regression was used to find out the mediation effects of organizational justice on the relationship between role efficacy and conscientiousness. In the above table, the mediation criteria are established with the necessary significance found by regression equation of conscientiousness on RE (0.518) and organizational justice (0.130). The above results indicate RE has a significant effect on conscientiousness behavior of distributed members.

Table 29

Summary of Hierarchical Regression Analysis for Variables (POS and Organizational Justice Predicting Sportsmanship)

Variables	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Sig.	Beta	t
Step 1							
Perceived organizational support	0.037	0.033	0.782	0.037	0.001	0.201	3.235
Step 2							
Perceived organizational support					0.39	0.061	0.861
organizational justice	0.063	0.056	0.773	0.026	0.006	0.391	2.751

Dependent Variable: Sportsmanship

Significant at the $p < 0.01$ level (Two tailed) and $p < 0.05$ (Two tailed)

Hierarchical regression was used to find out the mediation effects of organizational justice on the relationship between POS and sportsmanship. In the above table, the mediation criteria are established with the necessary significance found by regression equation of sportsmanship on POS (0.201) and organizational justice (0.391). The above results indicate POS has a significant effect on sportsmanship behavior of distributed members.

Table 30

Summary of Hierarchical Regression Analysis for Variables (Role Efficacy and Organizational Justice Predicting Sportsmanship)

Variables	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Sig.	Beta	t
Step 1							
Role efficacy	0.018	0.015	0.789	0.018	0.024	0.218	2.267
Step 2							
Role efficacy					0.798	0.028	0.256
organizational justice	0.060	0.054	0.774	0.042	0.001	0.451	3.495

Dependent Variable: Sportsmanship

Significant at the $p < 0.01$ level (Two tailed) and $p < 0.05$ (Two tailed)

Hierarchical regression was used to find out the mediation effects of organizational justice on the relationship between role efficacy and sportsmanship. In the above table, the mediation criteria are established with the necessary significance found by regression equation of sportsmanship on RE (0.218) and organizational justice (0.451). The above results indicate RE has a significant effect on sportsmanship behavior of distributed members.

Table 31

Summary of Hierarchical Regression Analysis for Variables (POS, Organizational Justice Predicting General Compliance)

Variables	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Sig.	Beta	t
Step 1							
Perceived organizational support	0.11	0.106	0.618	0.11	0.000	0.285	5.811
Step 2							
Perceived organizational support					0.002	0.19	3.062
organizational justice	0.129	0.123	0.613	0.02	0.014	0.279	2.479

Dependent Variable: General Compliance

Significant at the $p < 0.01$ level (Two tailed) and $p < 0.05$

Hierarchical regression was used to find out the mediation effects of organizational justice on the relationship between perceived organizational support and general compliance. In the above table, the mediation criteria are established with the necessary significance found by regression equation of general compliance on POS (0.285) and organizational justice (0.279).

The above results indicate POS has a significant effect on general compliance behavior of distributed members.

Table 32

Summary of Hierarchical Regression Analysis for Variables (Role efficacy, Organizational Justice Predicting General Compliance)

Variables	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Sig.	Beta	t
Step 1							
Role efficacy	0.145	0.142	0.606	0.145	0.000	0.564	6.826
Step 2							
Role efficacy					0.000	0.394	4.671
organizational justice	0.166	0.160	0.599	0.021	0.010	0.260	2.605

Dependent Variable: General Compliance

Significant at the $p < 0.01$ level (Two tailed) and $p < 0.05$ (Two tailed)

Hierarchical regression was used to find out the mediation effects of organizational justice on the relationship between role efficacy and general compliance. In the above table, the mediation criteria are established with the necessary significance found by regression equation of general compliance on RE (0.564) and organizational justice (0.260). The above results indicate RE has a significant effect on general compliance behavior of distributed members.

Table 33

Summary of Hierarchical Regression Analysis for Variables (POS and Organizational Justice Predicting Civic Virtue)

Variables	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Sig.	Beta	t
Step 1							
Perceived organizational support	0.065	0.062	0.626	0.065	0.000	0.217	4.37
Step 2							
Perceived organizational support					0.044	0.127	2.026
organizational justice	0.083	0.076	0.6215	0.018	0.022	0.263	2.301

Dependent Variable: Civic Virtue

Significant at the $p < 0.01$ level (Two tailed) and $p < 0.05$ (Two

tioned)

Hierarchical regression was used to find out the mediation effects of organizational justice on the relationship between perceived organizational support and civic virtue. In the above table, the mediation criteria are established with the necessary significance found by regression equation of civic virtue on POS (0.217) and organizational justice (0.263). The above results indicate POS has a significant effect on civic virtue behavior of distributed members.

Table 34
Summary of Hierarchical Regression Analysis for Variables (Role efficacy, Organizational Justice Predicting Civic Virtue)

Variables	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Sig.	Beta	t
Step 1							
Role efficacy	0.093	0.089	0.617	0.093	0.000	0.398	5.29
Step 2							
Role efficacy					0.001	0.302	3.496
organizational justice	0.109	0.103	0.613	0.016	0.026	0.229	2.238

Dependent Variable: Civic virtue
Significant at the p <0.01 level (Two tailed) and p< 0.05 (Two tailed)

Hierarchical regression was used to find out the mediation effects of organizational justice on the relationship between role efficacy and civic virtue. In the above table, the mediation criteria are established with the necessary significance found by regression equation of civic virtue on RE (0.398) and organizational justice (0.229). The above results indicate RE has a significant effect on civic virtue behavior of distributed members.

5.8.2 SUMMARY OF REGRESSION

Summary of hierarchical regression analysis for independent variables, moderating variable and organizational citizenship behavior

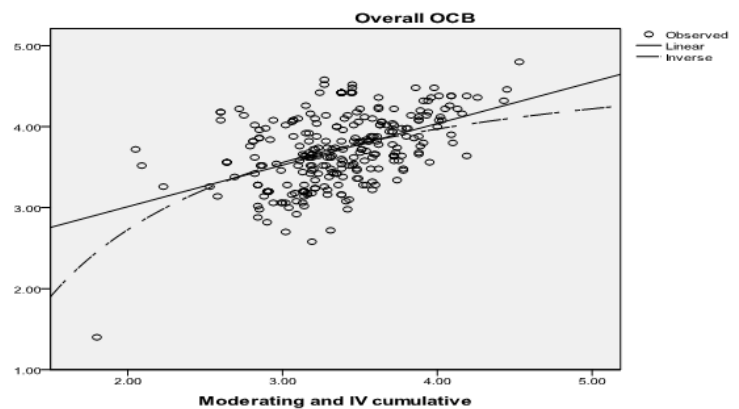
Table 35
Summary of Hierarchical Regression Analysis for Variables (POS, Role Efficacy and organizational justice Predicting Organizational citizenship Behavior)

Variables	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Sig.	Beta	t
Step 1							
Independent Variables	0.216	0.213	0.392	0.216	0.000	0.429	8.694
Step 2							
Independent Variables					0.000	0.318	4.707
organizational justice	0.232	0.227	0.389	0.016	0.018	0.185	2.385

Dependent Variable: Organizational citizenship behaviour
Significant at the p <0.01 level (Two tailed) and p< 0.05 (Two tailed)

Hierarchical regression was tested to find out the mediation effects of organizational justice on the relationship between perceived organizational support and role efficacy (antecedents) and OCB as a single variable. In the above table, the mediation criteria are established with the necessary significance found by regression equation of OCB on antecedents (0.429) and organizational justice (0.185). The above results indicate that antecedents of this study have a significant effect on OCB behavior of distributed members.

Figure 12 Scatter plot -Summary



The diagram given above indicates that there is a direct and reliable association between POS, Role efficacy, organizational justice and OCB. As a result of this the relationship outcome variable is scattered on both the direct and curvilinear line. The diagram also indicates that higher the perceived organizational justice, higher will be the OCB.

CHAPTER 6

DISCUSSION AND CONCLUSION

The purpose of this study was to examine the mediating effects of organizational justice on the relationship between perceived organizational support, role efficacy and organizational citizenship behavior. The following section provides a review of the key research findings relevant to the software industry, IT professionals and academicians. In accordance with the hypotheses outlined in the introduction, the Pearson correlation method was used to test the relationship between variables and the stepwise linear regression analysis was used to test the mediation and main effects of organizational justice.

6.1 SUMMARY OF RESULTS

Results on work location (Onsite and Offshore) indicate that sportsmanship is highly significant and civic virtue has a low significance compared to other OCB dimensions. In the same way procedural justice perceptions are low whereas interactional justice is high indicating that respect and value are high motivators. Analysis based on gender (Male and Female) found that no significant difference in general compliance and role efficacy as compared to other variables.

Results on geographical location (India and Overseas) indicate that altruism, sportsmanship and interpersonal justice are highly significant whereas procedural justice, civic virtue and role efficacy has a low significance. In the group analysis, it was found that the mean perception of role efficacy differs significantly. Executives and managers perceptions are alike when compared to their leaders and managers and leaders perceive in similar way as against their executives.

The mean perception of employees from product development organizations on sportsmanship and business process outsourcing organizations are significantly different from consulting & services organizations. Procedural justice among product development organizations and business process outsourcing organizations also significantly differ from consulting & services organizations.

Seven hypotheses were tested to enable a deeper understanding of organizational citizenship behavior among distributed teams in software organizations. As predicted all the hypotheses were accepted. The independent variables (perceived organizational support and role efficacy) relationship with organizational citizenship behavior was found to be significantly positive. The independent variables relationship with the mediating variable (Organizational justice) was also found to be significantly positive. Similarly the mediating relationship between independent variables and the outcome variable (organizational citizenship behavior) was also found to be significantly positive.

Hypothesis 1 examined the relationship between organiza-

tional justice and organizational citizenship behavior. The results show that organizational justice was positively and significantly correlated with OCB. However, distributive justice did not correlate significantly with sportsmanship. The distance from the parent organization and circumstances of distributed locations at times encourage members to go beyond distributive fairness to increase their own value within the organization.

The above results indicate that software development organizations should provide enough avenues for members to perceive organizational justice through a systematic application of good work values and employment practices, not giving in to preferences and differences. This approach will enhance their perception of the organization being fair to them and will become a motivator to perform OCB.

Previous studies have found that organizational justice was positively related to organizational citizenship behavior (Bandura, 1986; Gist & Mitchell, 1992; Ali et al.2011) and procedural justice (Moorman, 1991; Greenberg, 1993 & Organ, 1988a) was related to organizational citizenship behavior (Podsakoff et al., 2000; Blakely et al., 2005; Karriker & Williams 2009; Yılmaz & Tasdan, 2009; Young, 2010). However this study has found that the relationship between justice perceptions in distributed teams are related to organizational citizenship behavior in a positive and significant way.

Hypotheses 2, 3 & 4 examined the relationship between POS and OCB and the mediating effect of organizational justice on the relationship. As hypothesized, Organizational justice exerts a direct effect on POS. Organizational justice also indirectly affects OCB through POS. And hence the relationship between POS and organizational justice, POS and OCB and the relationship between POS and OCB mediated by organizational justice is positive and significant.

The relationship established above shows that distributed employees do consider organizational support as an important mechanism to help build their belongingness to their organization. Attitude and approach of the organization to the distributed member is seen as support provided to them. The support given through processes and benefits help member's perceive that they are valued and respected and this in-turn develops in them a commitment to the organization and thereby motivates them to practice OCB. In the same way interaction and exchange when not perceived to be providing a supportive climate has the potential to affect work and personal life and reduce the motivation to practice OCB. Researchers that have investigated the relationship between POS and OCB (Eisenberger et al., 1986; Wayne et al., 2002) and the study of Loi et al., (2006) have shown that both procedural and distributive justice contributes to the development of POS.

Hypotheses 5, 6 & 7 examined the relationship between role efficacy and organizational citizenship behavior. As hypothesized, Organizational justice exerts a direct effect on the RE. Organizational justice also indirectly affects OCB through Role efficacy. And hence the relationship between role efficacy and organizational justice, role efficacy and OCB and the relationship between role efficacy and OCB mediated by organizational justice is positive and significant.

The skills and role of members complement each other and makes the member feel that he is in demand in the market. An employee's market value will be higher if experience in high end domain and technology is strong. By utilizing a competent employee in the desired job, an organization enhances his capability and increases his quality of delivery. When an employee is able to sense that the organization, through its processes helps him experience his self efficacy, he feels respected and wants to be a part of the organization.

This study helps us understand how role perception can influence justice perception and subsequently impact citizenship behavior of distributed employees.

The relationship between role efficacy perception and OCB was studied by researchers and found that it was positively related (Farh, Podsakoff, & Organ, 1990; Podsakoff & MacKenzie, 1995; Podsakoff, Niehoff, MacKenzie, & Williams, 1993). Since a role can make or mar a career for a software employee, it is important to note that role perception can create justice perception and lead to proactive or reactive behavior (Crant, 2000; Parker et al., 2006).

6.2 CONTRIBUTION OF THE PRESENT RESEARCH

This section provides and discusses important contributions to the existing theory and practice of citizenship behavior of globally distributed teams. This study looks at two critical factors of perceived organizational support and justice as well as role efficacy perception of globally distributed teams from India. This focus enables understanding important factors that contribute to the perception of organizational justice in a distributed location and in turn motivational factors leading to the practice of OCB. This study covers a sample of Indian software engineers working for a foreign company while being a part of an Indian company and located either in India or abroad.. The results of the study indicate that organizational justice and OCB are experienced irrespective of location, the type of team one works for and the type of work one does. However there are differences that the study reveals like for instance the perception that sportsmanship behavior is different for people working within India as against those who work outside the country. Additionally fears have been expressed by female employees that many onsite locations are not comfortable due to a non conducive socio-cultural atmosphere

It is important to note that potentially the benefits and implications of the study surpasses its limitations. This study shows a clearly defined path on how distributed team members practice organizational citizenship behavior, a crucial factor for the organizations' success especially in distributed locations. This research also opens windows for software organizations to review support a basic and necessary ingredient for members to perform successfully while perceiving fairness.

Practitioners are constantly challenged in finding ways and means to create and manage GDT and concurrently promote organizational commitment and OCB. The research suggests that distributed employees are willing to practice OCB and

improve business provided the organization is willing to stretch their support and make them experience organizational support and role efficacy thereby perceive organizational justice. Hence distributed organizations that expand across geographies have to focus on fostering perceptions of fairness through effective organizational support through people centric procedures and practices. It was further found that employee perceptions of organizational support influenced their perceptions of organizational justice, which in turn, contributed to their attitudes and behaviors.

This study inspires researchers to further look into as to how other factors contribute to perception of organizational fairness in distributed software development. This study brings out the need for developing a global management practice which will bring uniformity in management practices among distributed software organizations and reduce attrition due to unfair management practices.

Literature on POS has not comprehensively examined the effect of HR practices on distributed employee perceptions. The findings of this study document a positive association between POS and OCB of distributed members and organizational justice mediates the relationship to prove beyond doubt that healthy HR practices need to be in place. The results of this study add to our knowledge about the antecedents of OCB. While POS research has largely been rooted in the literature of organizational behavior, this study goes beyond by combining POS and organizational justice.

Role efficacy literature has not examined distributed team members perceptions and its relation to OCB. The finding of this study documents a positive association between role efficacy perceptions and OCB as well as that organizational justice perception positively and significantly mediates the relationship between role efficacy and OCB. The literature on role efficacy has sufficiently linked justice perceptions (Parker et al, 1999) and the outcome behavior and hence this study combines role efficacy perceptions with OCB and organizational justice for distributed teams.

6.3 DISCUSSION AND CONCLUSION

The purpose of the present study was to test the relationship between POS and OCB with the moderating effects of perceived organizational justice.. Findings showed that overall organizational justice have a positive and significant correlation with OCB, in accordance with previous studies (Blakely et al., 2005; Ilies et al.,2007; Karriker & Williams, 2009; Yilmaz & Tasdan, 2009; Young, 2010). It can be said that distributed members display OCB when organizational support is felt and creates a sense of organizational justice. A distributed member values organizational support highly and experiencing it helps build a perception that the organization is fair. Thus when members feel that they are getting their due they in return show their commitment through citizenship behavior. In other words, organizational justice gives members a sense of belonging, in spite of being away from the collocated organization. It also tends to make them more responsive at the workplace

which finally leads to exhibiting higher levels of OCB. This is amply supported by India, being the preferred destination for outsourcing. It is further substantiated with India's growing share of global software development which is growing at the rate of 25% year on year (NASSCOM Strategic review, 2009).

The relationship between POS and POJ has been established in a number of researches. POJ has been a frequently researched predictor of POS. Support from an organization is perceived as care shown (Rhoades & Eisenberger, 2002) by the organization to a member. This support is felt when a distributed member gets his dues in time, policies and procedures help deliver the given role willingly, and treated well in spite of being far from the core team, and finally, every bit of information is exchanged to perform given tasks. When organizations treat employees fairly, they demonstrate that they care about their employees' wellbeing (Shore & Shore, 1995).

Distributed members have the uniqueness of being part of a team which is dissipated in many senses. Hence connecting what they deliver with what they get is easy. The more an organization outsources projects, the greater the trust that the organization is capable of delivering global projects. This trust is citizenship behaviour exhibited by members in distributed locations. This finding is consistent with previous findings (Wayne et al., 2002; Liu, 2009). These findings suggest that employees who perceive their organizations to be supportive are likely to engage in citizenship behaviors.

When members experience high levels of POS such as getting family accommodation, visa for family members, reviewing members regularly and being appreciated for contributions, providing them opportunities to engage in client relationships and providing opportunities for higher learning and recognizing them in appropriate forums creates obligations. This obligation helps the employee exhibit OCB such as altruism, courtesy, sportsmanship, conscientiousness and civic virtue (Liu, 2009). Also, results showed that POJ is a mediator of the relationship between POS and OCB. These results are consistent with (Moorman et al., 1998; Henry, 2007) and demonstrate that improvements in POS enhance POJ and correlate with increased OCB intentions.

The study is susceptible to ecological fallacies of drawing inferences about distributed members across different geographies based on aggregate level data (Robinson, 1950). Organizational and individual factors such as POS and RE have been measured in the study where as other factors like cultural dimensions have not been measured with the assumption that distributed members mirrored the cultural pattern identified in cross-cultural studies.

This study was conducted with participants from different organizations and the data collected was used collectively for analysis. However, since each organization follows a specific model of operation both from within and outside their collocated teams, across geographies and in consulting services and product development a refined study could be done on specific

teams for OCB practices. Organizational constraints such as not allowing employees to participate in such surveys, non availability of teams, time constraints, distance between onsite and offshore teams does not allow for test specific models in this study.

It is recommended that future studies measure actual values at the team level based on types of business and engagement with customers (outsourcing and insourcing). To test a model based on teams in product or consulting and services organizations of different businesses could make the perception of distributed members leading to extra-role behaviours meaningful and substantially contribution to research on OCB.

Future studies may include other moderator and mediating variables. Literature suggests that mediating variables such as interdependence, trust, and the exchange of information explains why perceptions of justice result in OCB. Other studies have suggested that the relationship of POS OCB and role efficacy can be moderated by variable such as LMX. Future studies may test the inclusion of these mediators and moderators in the model to verify and measure alterations on the five dimensions of organizational citizenship behavior.

This study contributes to a wider perspective on developing citizenship behavior in distributed organizations across the world. Many might wonder why some organizations keep expanding geographically and growing their business, while others are laid back. OCB applies to individuals, teams and organizations. Behaviors being voluntary, a positive and affective attitude towards the organization can be built. Another spin off would be that the self image of a member improves with a change in attitude.

It suggests that not only does interactional and procedural justice perceptions contribute to POS in more predictable numbers than distributive and informational justice in OCB, but distributive justice and informational justice also contributes to the perception of role efficacy in more predictable numbers than procedural and interpersonal justice. A further study with the specific objective of directing citizenship behavior could throw a better light as the industry is poised for big time growth.

6.4 CONCLUDING REMARKS

As more and more geographies are explored for creating competitive advantage for the software business, managers are challenged to maintain employee commitment and practice organizational citizenship behavior to enable sustained business. This research suggests that software professionals are willing to engage in OCB provided organizational climate is supportive to their distributed position and role and helps them perceive a value for themselves, their project and organization.

The distributed software organizations who desire to create climate of organizational justice that encourages OCB must make every effort to improve perceptions of fairness in the

organizational procedures, allocation of resources and help members feel respected and valued. The perception of procedural fairness among distributed members is likely to develop a supportive behavior where their team members feel that their organization appreciates their contribution and values them. Employee's perception of organizational fairness may be improved by providing global exposure, desired role, competitive salary, learning new technology, option of working from home, flexi working, opportunity for creativity and entrepreneurship. In return employees will feel obligated and look for opportunity to reciprocate with their extra role behavior.

In an expanding world like ours business keeps us on our toes. Software organizations are faced with the problem of continuously changing technology, upgrading talent pool, pressure to control cost, provide services at the door step, round the clock support and faster time to deliver with limited resources. Software organizations can increase the motivation of members through their effective and timely support to distributed teams and provide them choicest roles to help them experience organizational fairness and develop affective commitment to the organization which in turn motivate them perform OCB.

6.5 LIMITATIONS OF THIS RESEARCH

As employees working in software companies are highly mobile and keep changing their domain, technology, teams, organizations, locations and geography, the consistency of the data collected is questionable. The status of perceptions keep changing as employee keeps moving from team to team and from one organization to another. Selecting a sample population of a fully distributed team working in the same organization was found to be difficult as many did not respond. Covering a few such organizations cannot become a real sample as the organizations, their practice of work values and ethics at onsite and offshore vary from an Indian company to MNC a product to consulting and services company, a software to a BPO company and a collaborated to a captive company etc., This study attempts to group all the variables that influence the perception of employee support as organizational support and study their influence on citizenship behavior. There could be variables such as socio-cultural, work flow process and standards, political and language impact which can alter the citizenship behavior also. This study attempts to group all role related variables that influence self efficacy as role efficacy and study their influence on citizenship behavior. There could be organizations where role conflict can play a disruptive role that can alter the citizenship behavior, but this study does not cover that area.

Perception of organizational justice is temporary and limited to an individual's libido. Once their wish lists are fulfilled, they come out of it temporarily. And again when they join another organization and start comparing, difference do appear which make employees experience inequality and injustice. Hence, experience of justice in software companies or distributed teams is temporary and changing as against more stable organizations. Justice perception influencing OCB is

relative as best practices keep changing. Indian organizations' organizational practices are highly influenced by global organizations, software organizations keep upgrading their HR practices to attract and retain top talent without which sustenance and growth is difficult. Organizations keep their practices up to date to reap benefits of competitive advantage. Competition for top talent keeps organizations altering organizational policies to distributed teams.

This study does not cover organizations with all its verticals, domains, expertise and functions and does not cover geographies of people who speak languages other than English as their programming language. It also does not cover an individual contributor who does not have a team to work with.

6.6 AREAS FOR FUTURE STUDY

The Software industry has been divided into many strategic business units based on technology and domains. The dynamic nature of the industry does not limit itself to one domain or technology forever. Organizations keep moving from one vertical to another, one domain to another and from one location to the other. It is suggested that a research of this type should be an ongoing effort to understand the changing face of human challenges and its implications to global software development. A study of this type also stimulates sustained growth of the business across the globe. And hence a study on how OCB is practiced in a strategically positioned and stable organization versus organizations on a constant fight for survival could be more meaningful.

Since justice perception is limited by circumstances of the member, there is a possibility that given a chance a member will change his perception ones his needs are fulfilled and will continue to thrive on the same perception until the member is exposed to yet another situation. And hence a study on how tentative perception influences OCB and what happens to CB when the member frequently changes perceptions could also be meaningful. Assuming justice perceptions are tentative, limited to the circumstances and keep changing with the change in the working atmosphere, a study on how changing perceptions impact OCB in distributed teams could be studied.

A detailed study on citizenship behavior could be done based on culture. How does organizational culture contribute to citizenship behavior? A comparative research could be done on how POJ influences OCB in different verticals of software development organizations versus BPO type of organizations. How independent contributors versus teams in software organizations perceive organizational justice could also be covered in a study.

6.7 SUMMARY

The main objective of the current research was to examine organizational citizenship behavior of distributed team members as they experience the mediating effect of perceived organizational justice influencing organizational support and role efficacy. A questionnaire was developed to measure the citizenship behavior of distributed teams in respect of their perceived

organizational justice at the workplace. The questionnaire also measured perceived organizational support and role efficacy of the members which provided the scope for experiencing organizational justice. An analysis of the dimensions measured in the distributed teams of software organizations was conducted. This involved examining the relationships between different variables, their interaction and their effect. The discussion that followed summarizes the main findings in relation to the research aims of the study. The implications of these findings are discussed with respect to the existing literature and research associated with the current field of study.

REFERENCES

Ågerfalk P, Fitzgerald B, Holmström H, Lings B, Lundell B and Ó Conchúir E (2005). Framework for considering Opportunities and Threats in Distributed Software Development, In the Proceedings of the International Workshop on Distributed Software Engineering, Austrian Computer Society, p. 47-61.

Agrawal NM & Thite M (2003) Human resource issues, challenges and strategies in the Indians of software industry. International Journal of Human Resources Development and Management, p. 249-264.

Agarwal M & Sudeepa Bose (2004) Organizational climate for perceptions of procedural fairness in human resource practices and role efficacy. Indian Journal of Industrial Relations, Vol. 40, No. 2, Oct., 2004

Ale Ebrahim, N., Ahmed, S., & Taha, Z. (2009). Virtual Teams: Australian Journal of Basic and Applied Sciences, 3(3), 2653-2669.

Allen TD & Rush MC (1998) The effects of organizational citizenship behavior on performance judgments: A field study and a laboratory experiment. Journal of Applied Psychology, 83, 247-260.

Alge BJ, Wiethoff C & Klein HJ (2003) When does the medium matter? Knowledge-building experiences and opportunities in decision-making teams. Journal of Organizational Behavior and Human Decision Processes, 91: 26-37.

Alper, S., Tjosvold, D., & Law, K. S. (2000). Conflict management, efficacy, and performance in organizational teams. Personnel Psychology, 53, 625-642.

Ali Noruzy et al., (2011) Investigation the relationship between organizational justice, and organizational citizenship behavior: The mediating role of perceived organizational support, Indian Journal of Science and Technology, Vol. 4 No. 7, 842- 847.

Armstrong D and Cole P (2002) Managing distances and differences in geographically distributed work groups. In Distributed work: New ways of working across distance using technology (P. Hinds & S. Kiesler, Eds.), MIT Press.

Arora A & Athreye S (2002) 'The software industry and India's economic development', Information Economics and Policy, 14(2), 253-273.

Arora A, Arunachalam VS, Asundi JM, & Fernandes (2001) "The Indian Software Services Industry," Research Policy, (30) 8, pp.1267-1287

Aryee S & Chay YW (2009) Workplace justice, citizenship behavior, turnover intentions in a union context: Examining the mediating role of perceived union support and union instrumentality, Journal of Applied Psychology, 86(1), 154-160

Bachrach DG & Jex SM (2000). Organizational citizenship and mood: An experimental test of perceived job breadth. Journal of Applied Social Psychology, 30, 641-663.

Bandura A (1986) Social foundations of thought and action: A social cognitive theory. Prentice Hall: Englewood Cliffs, NJ: Barling J & Beattie R (1983) Self-efficacy beliefs and sales performance. Journal of Organizational Behavior Management, 5, 41-51.

Bashshur, Michael R, Hernández, Ana González-Romá, Vicente (2001) When managers and their teams disagree: A longitudinal look at the consequences of differences in perceptions of organizational support. Journal of Applied Psychology, 96(3), 558-573.

Bateman TS & Organ, DW. (1983) Job satisfaction and the good soldier: the relationship between affect and employee "citizenship". Academy of Management Journal, 26, 587-95.

Battin RD Crocker J Kreidler and K Subramanian (2001) Leveraging resources in global software development. IEEE Software, 18(2):70-77.

Bettencourt LA, Brown SW, MacKenzie SB (2005). Customer-oriented boundary-spanning behaviors: test of a social exchange model of antecedents. Journal of Retailing, 81:141-157.

Bell SJ & Menguc, B(2002), "The employee-organization relationship, organizational citizenship behaviours, and superior service quality", Journal of Retailing, Vol. 78 No. 2, pp. 131-46.

Blakely GL, Andrews MC and Moorman RH (2005) The moderating effects of equity sensitivity on the relationship between organizational justice and organizational citizenship behaviors. Journal of Business & Psychology, 20(2), 259-273.

Blau P (1964) Exchange and Power in Social Life. New York: John Wiley & Sons.

Bilir P (2005) Organizational climate of Ministry of Youth and Sports and perceptions of staff in terms of participation, Humanity & Social Sciences Journal, 3 (1): 37-48, 2008

Brockner J, Tyler TR & Cooper-Schneider R (1992) The influ-

ence of prior commitment to an institution on reactions to perceived unfairness: The higher they are, the harder they fall. *Administrative Science Quarterly*, 37, 241-261.

Budhwar et al., (2006) (Budhwar PS, Varma A, Singh V and Dhar R), HRM systems of Indian call centres: An exploratory study. *The International Journal of Human Resource Management*, 175 (2006), pp. 881-897.

Cairncross F (1997) *The death of distance: how the communications revolution will change our lives*, Harvard Business School Press.

Carmel E (1999) *Global software teams: Collaborating across borders and time zones*, Prentice Hall, Englewood Cliffs, NJ.

Carmel E & Abbott P (2007). Why 'Near shore' means that distance matters. *Association for computing machinery. Communications of the ACM*, 50(10), 40-46.

Carmel E & Agrawal R (2001) Tactical approaches for alleviating distance in global software development. *IEEE Software*, 2(18):22-29.

Celik V (2000a) *Okul Kulturu ve Yonetimi. 2. Baski. [School Culture and Its Management]* Ankara: Pegem A Yayınevi Tic. Ltd. Sti.

Chen X, Hui C & Sego DJ (1998) The role of organizational citizenship behavior in turnover: conceptualization and preliminary tests of key hypotheses. *Journal of Applied Psychology*, 83, 922-931.

Cohen-Charash, Y, Spector, PE.,(2001) The role of justice in organizations: a meta-analysis. *Organizational Behavior and Human Decision Processes*, 86(2), 278-321.

Cohen-Charash Y & Spector P (2001) "The role of justice in organizations: a meta-analysis", *Organizational Behavior and Human Decision Processes*, 86 pp.278-321.

Coleman J (1960) *In Mathematical Thinking in the Measurement of Behaviour*.

Colquitt JA (2005) Does the Justice of the One Interact With the Justice of the Many? Reactions to Procedural Justice in Teams. *Journal of Applied Psychology*, 89(4), 633-646.

Colquitt JA (2001) On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, 86, 386-400

Colquitt JA, Clegg, E, Loveman, P, Royle and M.K. Sidhu. 2005. "Surgery for Morbid Obesity." *The Cochrane Database of Systematic Reviews*, Issue 4, Art. No. CD003641

Colquitt JA, Conlon DE, Wesson MJ, Porter CO, L H., & Ng, KY (2001) Justice at the millennium: A meta-analytic review of

25 years of organizational justice research. *Journal of Applied Psychology*, 86, 425-445.

Colquitt, J. A., Noe, R. A., & Jackson, C. L. (2002). Justice in teams: Antecedents and consequences of procedural justice climate. *Personnel Psychology*, 55, 83-109.

Conchuir EO, Holmstrom H, Agerfalk PJ & Fitzgerald B (2006). Exploring the assumed benefits of global software development. *IEEE International conference on global software engineering*.

Cropanzano R and Ambrose ML (2001). Procedural and distributive justices are more similar than you think: A monistic perspective and a research agenda. In: Greenberg, J., and Cropanzano R. (eds.), *Advances in Organizational Justice*, Stanford University Press, Stanford CA, pp. 119-151.

Cropanzano, R., Prehar, C. A., & Chen, P. Y. (2002). Using social exchange theory to distinguish procedural from interactional justice. *Group and Organizational Management*, 27, 324-351.

Crant JM (2000) Proactive behavior in organizations. *Journal of Management*, 26, 435-462.

Cramton C. (2001) The mutual knowledge problem and its consequences for dispersed collaboration. *Organization Science*, 12, 346 - 371.

Dadfar H & Gustavsson P (1992) "Competition by Effective Management of Cultural Diversity". *International Studies of Management and Organization*, 22(4): 81-92.

Dalal (2005) A meta-analysis of the relationship between organizational citizenship behavior and counterproductive work behavior, *Journal of Applied Psychology*, Vol.90, No.6, 1241-1255

Daniel et al., (2007) Disentangling role perceptions: How perceived role breadth, discretion, instrumentality and efficacy relate to helping and taking charge, *Journal of Applied Psychology*, Vol.92, No.5, 1200-1211

Ehrhart, M. G. (2004). Leadership and Procedural Justice Climate as Antecedents of Unit-Level Organizational Citizenship Behavior. *Personnel Psychology*, 57, 61-94.

Endres ML, Endres SP, Chowdhury SK & Alam I (2007) Tacit Knowledge Sharing, Self-Efficacy Theory, and Application to the Open Source Community. *Journal of Knowledge Management*, 11, pp. 93-103.

Eisenberger R, Huntington R, Hutchison S, & Sowa D (1986) Perceived organizational support. *Journal of Applied Psychology*, 71, 500-507.

Eisenberger R, Armeli S, Rexwinkel B, Lynch PD, & Rhoades L (2001) Reciprocation of perceived organizational support. *Journal of Applied Psychology*, 86(1), 42-51.

- Eisenberger R, Cummings J, Armeli S, & Lynch P (1997) Perceived organizational support, discretionary treatment, and job satisfaction. *Journal of Applied Psychology*, 82: 812-820.
- Eoin Ó Conchúir, Pär J. Ågerfalk, Helena H. Olsson, and Brian Fitzgerald, Global (2009) *Software Development: Where are the Benefits?* *Communications of the acm* | vol. 52 | no. 8 |
- Espinosa JA, Slaughter SA, Kraut RE, Herbsleb JD (2007) Team knowledge and coordination in geographically distributed software development, *Journal of Management Information Systems*, 24, 135-169
- Farh JL, Podsakoff PM, & Organ DW (1990) Accounting for organizational citizenship behavior: Leader fairness and task scope versus satisfaction. *Journal of Management*, 16, 705-721.
- Fasolo PM (1995) Procedural justice and perceived organizational support: Hypothesized effects on job performance. In RS Cropanzano and KM Kacmar, (Eds), *organizational politics, justice and support: managing the social climate in the work place*, 185-195
- Ganesh (2008) A study of extra role performance and team climate in software development project teams: The role of virtualness.
- Gartner Group, "Gartner on Outsourcing," Dec. 14, 2005.
- Gerald R Salancik & Jeffrey Pfeffer (1978) A Social Information Processing Approach to Job Attitudes and Task Design; *Administrative Science Quarterly*, 23, pp. 224-253
- Gladstein, D. L. (1984). Groups in context: A model of task group effectiveness. *Administrative Science Quarterly*, 29, 499-517.
- Gist ME & Mitchell TR, (1992) Self-efficacy: a theoretical analysis of its determinants and malleability. *Academy of Management Rev*, 17 (1992), pp. 183-211
- Graen B & Cashman JF.(1975) A role making model of leadership in formal organizations: A developmental approach. In J .G. Hunt & L.L. Larson (Eds.),
- Greenberg J., (1990) Organizational justice: yesterday, today, and tomorrow. *Journal of management*, 16(2), 399-432.
- Goldman Sachs (2007) Indian's rising growth capital
- Gopal A Krishnan MS, Mukhopadhyay T, and Goldenson DR (2002), "Measurement Programs in Software Development: Determinants of Success," *IEEE Transactions on Software Engineering*, 863-875.
- Gonzalez MG, Burke MJ, Santuzzi AM, & Bradley JC (2003) The impact of group process variables on the effectiveness of distance collaboration groups. *Computers in Human Behavior*, 19: 629-648.
- Granstrand O, Hakanson L & Sjolander S (1993) "Internationalization of R&D - A Survey of Some Recent Research." *Research Policy*, 22: 413-430.
- Greenberg J & Colquitt JA (2005) *Handbook of Organizational Justice* page: 1913
- Greenberg J & George JM (1998) The experience and evolution of trust: implications for cooperation and teamwork, *Academy of Management Review*, 23, 531-546.
- Grenier R & Metes G (1995) Going virtual: Moving your organization into the 21st century.
- Grundy JC, Hosking JG & Mugridge WB (2004) "Supporting flexible consistency management via discrete change description propagation," *Software - Practice & Experience*, 26, 1053-1083
- Grundy J, Hosking JG and Hamer J (1991): A visual programming environment for object-oriented languages, in Korson, T., Vaishnavi, V., and Meyer, B. (eds) *Technology of Object-Oriented Languages and Systems TOOLS 5 Proc of the 5th International Conference Santa Barbara*, Prentice Hall, 129-138.
- Gumm DC (2006) Distribution dimensions in software development projects: a taxonomy. *IEEE Software*. 23(5), pp. 17-19.
- Hakonen M & Lipponen J (2008) Procedural Justice and Identification with Virtual Teams: The Moderating Role of Face-to-Face Meetings and Geographical Dispersion. *Social Justice Research*, 21(2), 164-178.
- Harvey M (1993) "Training In-patriate Managers to Succeed in the Domestic Organization." *Fourth Symposium on Cross-Cultural Consumer and Business Studies. Proceedings*: 210-216.
- Henry EP (2007) Reciprocating perceived organizational support through citizenship behaviors. *Journal of Managerial Issues*. 19(4), 554-576.
- Herbsleb JD, Mockus A, Finholt T & Grinter RE. (2001). An empirical study of global software development: distance and speed. *Proceedings of the 23rd international conference on software engineering*.
- Herbsleb JD & Grinter RE (1999) Splitting the organization and integrating the code: Conway's law revisited. *Proceedings of the 21st international conference on software engineering*, 85-95.
- Herbsleb J & Grinter R (1999) Architectures, coordination, and distance: Conway's law and beyond. *IEEE Software*, 16(5):63-70.

- Harvey M (1993) "Training Inpatriate Managers to Succeed in the Domestic Organization." Fourth Symposium on Cross-Cultural Consumer and Business Studies. Proceedings: 210-216.
- Herbsleb J and Grinter R (1999). Architectures, coordination, and distance: Conway's law and beyond. *IEEE Software*, 16(5):63-70.
- Heeks R & Mundy D (2001) Information systems and public sector reform in the Third World. In *The internationalization of public management*. eds. W. McCourt and M. Minogue, pp. 196-219. Cheltenham, UK: Edward Elgar.
- Herbsleb JD & Mockus A (2003) An Empirical Study of Speed and Communication in Globally Distributed Software Development. *IEEE*.
- Hirschheim R & Lacity MC (2002) Four Stories of Information Systems In-sourcing. *Information Systems Outsourcing - Enduring Themes, Emergent Patterns and Future Directions*, Eds.
- Homans G (1961) *Social Behavior*. New York: Harcourt, Brace & World.
- Humphrey WS (1989) *Managing the Software Process*
- Jarvenpaa SL & Leidner DE (1999) Communication and trust in global virtual teams. *Organization Science*, 10, 791-815.
- John D. Adams, Ph.D. (2001) *A Primer: Managing Dispersed Work Effectively*.
- Joireman J, Daniels, D, Falvy, J, & Kamdar, D (2006) Organizational citizenship behavior as function of empathy consideration of future consequences, and employee time horizon: an initial exploration using an in-basket simulation of OCBs. *Journal of Applied Social Psychology*, 36, 9, pp. 2266-2292.
- Kahn RL, Wolfe DM, Quinn R, Snoek JD, & Rosenthal RA (1964) *Organizational Stress*. New York: Wiley.
- Kamdar D, McAllister DJ & Turban DB (2006) All in a day's work: How follower individual differences and justice perceptions predict OCB role definitions and behavior. *Journal of Applied Psychology*, 91, 841-855.
- Karriker JH and Williams ML (2009) Organizational justice and organizational citizenship behavior: A mediated multifoci model. *Journal of Management*. 35 (1), 112-135.
- Kathryn and Mats, (2008) http://www.ibm.com/developerworks/rational/library/edge/08/jan08/fryer_gothe/index.htm
- Katz D (1964) the motivational basis of organizational behavior. *Behavioral Science*, 9, 131-146.
- Kaufman JD, Stamper CL & Tesluk PE (2001) Do supportive organizations make for good citizens, *Journal of managerial issues*, 13(4), 436-449
- Kayworth T & Leidner D (2000) The global virtual manager: A prescription for success. *European Management Journal*, 18: 183-194.
- Kearney AT Goldman Sachs reports, 2009, 2010 & 2011
- Kissoon (2007) Concern, tasks, interaction and outcome (CTIO) cycle -- Cycle as a means of studying team member interaction using face-to-face and virtual interaction media in retail banking, 9:173-174
- Kinnear P & Gray C (2000) *SPSS for Windows Made Simple*. Release 10. Sussex: Psychology Press, Taylor & Francis.
- Konovsky M. (2000). Understanding procedural justice and its impact on business organization. *Journal of Management*, Vol. 26 No. 3, 489-511.
- Konovsky MA and Pugh SD (1994), "Citizenship behavior and social exchange", *Academy of Management journal*, 37, 656-669
- Kossler ME & Prestridge S (1996) Geographically dispersed teams. *Center for Creative Leadership. Issues & Observations*, 16(2/3).
- Knoll K & Jarvenpaa SL (1998) Working together in global virtual teams. *The virtual workplace*, pp. 2-23
- Krackhardt D.& Stern, R. (1988) Informal networks and organizational crises: An experimental simulation. *Social Psychology Quarterly*, 51(2), 123-140.
- Krackhardt D & Kilduff M (1990) "Friendship patterns and culture: the control of organizational diversity." *American Anthropologist*, 92(1): 142-154
- Lacity MC & Willcocks LP (2001) *Global Information Technology Outsourcing: In Search of Business Advantage*, Wiley, New York, NY.
- Lally R, Kostner J (1997), "Learn to be a distance manager", *Getting Results-for the Hands-On Manager*, 42:6
- Lent RW, Brown SD & Larkin KC (1987) Comparison of three theoretically derived variables in predicting career and academic behavior: Self efficacy, interest congruence, and consequence thinking. *Journal of Counseling Psychology*, 34, 293-298.
- Li Andrew, Bagger & Jessica, (2008) Role Ambiguity and Self-Efficacy: The Moderating Effects of Goal Orientation and Procedural Justice, *Journal of Vocational Behavior*, p368-375

- Lina Kogan (2004) Mediating effects of affective commitment and perceived organizational support on the relationship between procedural justice and OCB, UMI, ProQuest Information and learning company.
- Lind EA & Tyler TR (1988) The social psychology of procedural justice. N.Y.: Plenum
- Lind EA & Earley PC (1991) Some thoughts on self and group interest: a parallel processor model, Academy of Management. Miami.
- Lind EA. (2001b). Thinking critically about justice judgments. Journal of Vocational Behavior, 58, 220-226.
- Liu Y (2009) Perceived organizational support and expatriate organizational citizenship behavior: The mediating role of affective commitment towards the parent company. Personnel Review. 38(3), 307-319.
- Malatesta RM & Tetrick, LE (1996) Understanding the dynamics of organizational and supervisory commitment. Paper presented at the Annual Meeting of the Society for Industrial and Organizational Society.
- Manz, C. C., & Sims, H. P. (1987). Leading workers to lead themselves: The external leadership of self-managing work teams. Administrative Science Quarterly, 32, 106-129.
- Martin, Joanne, Feldman, Martha S., Hatch, Mary Jo, & Sitkin, Sim B (1983) The uniqueness paradox in organizational stories. Administrative Science Quarterly, 28: 438-453.
- Masterson SS, Lewis K, Goldenman BM & Taylor MS (2000) Integrating justice and social exchange: The differing effects of fair procedures and treatment on work relationships. Academy of management Journal, 43(4), 738-748
- McDonald DM (1995) "Fixing blame in n-person attributions: a social identity model for attributional processes in newly-formed cross-functional groups." In M. Martinko, (Ed.) Attribution theory: an organizational perspective. Delray Beach, Florida: St Lucie Press.
- McEvily B & Zaheer A (1999) Strategic Management Journal, 20, 1133.
- McShane SL & Von Glinow MA (2008) Organizational Behavior, 4th Ed. (Boston: McGraw-Hill).
- Mehrdad (2009) The relationship between organizational justice and OCB, American Journal of Economics and Business administration, 1 (2): 171-174
- Meyer JP & Allen NJ (1997) Commitment in the workplace: Theory, research, and application. Thousand Oaks, CA.: Sage Publishing, Inc.
- Mockus A & Weiss DM (2001) Globalization by chunking: A quantitative approach. IEEE Software.
- Moorman RH, Niehoff BP & Organ DW (1993) Treating employees fairly and organizational citizenship behaviors: Sorting the effects of job satisfaction, organizational commitment, and procedural justice. Employee Responsibilities and Rights Journal, 6: 209-225.
- Moorman RH, Blakely GL and Niehoff BP (1998) Does perceived organizational support mediate the relationship between procedural justice and organizational citizenship behavior? Academy of Management Journal. 41(3), 351-357.
- Moorman RH (1991) Relationship between organizational justice and organizational citizenship behaviors: Do fairness perceptions influence employee citizenship? Journal of Applied Psychology, 76: 845-855.
- Morrison EW (1994). Role definitions and organizational citizenship behavior: The importance of the employee's perspective. Academy of Management Journal, 37, 1543-1567.
- Mottaz CJ (1988) Determinants of organizational commitment. Human Relations, 41, 467- 482.
- NeOIT research report of global software development, 2009
- NASSCOM Mckensy report, 2002
- <http://www.nasscom.in/Nasscom/templates/NormalPage.aspx?id=2598>
- NASSCOM Strategic Review, 2009 & 2010
- Netemeyer et al., (2005) Conflicts in the Work-family Interface: Links to Job Stress, Customer Service Employee Performance, and Customer Purchase Intent. Journal of Marketing, 69 (2005), pp. 130-143
- Nicholson B and Sahay, S. (2001). Some political and cultural issues in the globalisation of software development: case experience from Britain and India. Information and Organization, 11, pp. 25-43.
- Niehoff BP, Moorman, Robert H. (1993) "Justice as a Mediator of The Relationship Between Methods of Monitoring and Organizational Citizenship Behavior," Academy of Management Journal, 36(3):527.
- Niehoff BP & Moorman RH (1993) Justice as a mediator of the relationship between methods of monitoring and organizational citizenship behavior. Academy of Management Journal, 36: 527-556.

- Novicevic, Milorad M (1999) Human Resource Planning, The role of inpatriates in a globalization strategy and challenges associated with the Inpatriation Process, Human Resource Planning, Vol. 22, 1999.
- Oakley JG (1998) Leadership processes in virtual teams and organizations. The Journal of Leadership Studies, 5, 3-17.
- odesk global outsourcing statistics, 2008.
- O' Driscoll MP & Randall DM (1999) Perceived organizational support, satisfaction with rewards and employee job involvement and organizational commitment, Applied psychology- An international review, 48(2), 197-209.
- Olson GM & Olson JS (2000) Distance matters. Human- Computer Interaction, 15(2/3):139-178.
- Organ DW (1988) Organizational citizenship behavior: the good soldier syndrome. Lexington, MA: Lexington Books.
- Organ DW (1997) Organizational citizenship behavior: It's construct clean-up time. Human Performance, 10: 85-97.
- Organ DW (1990) "The motivational basis of organizational citizenship behavior", in B. M.Staw & L.L.Cummings, research in organization behavior, 12,p.p.43-72.
- Ozden Y (2000) Egitimde Donusum Egitimde Yeni Degerler. 3. Baski. [Transformation in the Education and the New Values in Education] Ankara: Pegem A Yayınevi Tic. Ltd. St.
- Parastoo Mohagheghi (2004) Reidar Conradi: An Empirical Study of Software Change: Origin, Acceptance Rate, and Functionality vs. Quality Attributes.7-16 IEEE Computer Society, ISBN 0-7695-2165-7
- Parker SK (1998) Enhancing role breadth self-efficacy: The roles of job enrichment and other organizational interventions. Journal of Applied Psychology, 83, 835-852.
- Parker SK, Williams HM & Turner N (2006) Modeling the antecedents of proactive behavior at work. Journal of Applied Psychology, 91, 636-652.
- Parker SK (1998) Enhancing role breadth self-efficacy: The roles of job enrichment and other organizational interventions. Journal of Applied Psychology, 83, 835-852.
- Pauleen DJ & Yoong P (2001) Facilitating virtual team relationships via Internet and conventional communication, channels Internet Research, 11: 190-202.
- Pechter K (1993) "The Foreigners Are Coming." International Business, September: 55-60.
- Pestonjee DM & Aniruddh Pandey, (1996) Enhancing role efficacy: An OD intervention, Vikalpa, Vol.21, No.2, 43-52
- Pfeffer J & Salancik, GR. (1978) The external control of organizations: a resource dependence perspective. New York: Harper & Row.
- Podsakoff PM, MacKenzie SB, Paine JB, & Bachrach DG (2000) Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. Journal of Management, 26, 513-563.
- Podsakoff PM, MacKenzie SB, Paine JB, & Bachrach DG (2000) Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. Journal of Management, 26, 513-563.
- Ployhart, R E., & Ryan, A. M' (1997)' Toward an explanation of applicant reactions: An examination of organization justice and attribution framework. Organizational Behavior and Human Decision processes, 22, 30g-335.
- Poncheri R (2006). The Impact of Work Context on the Prediction of Job Performance. North Carolina State University.
- Rao MT (2004). Key Issues for Global IT Sourcing: Country and Individual Factors. Information Systems Management, 21 (3), pp. 16-21. Vogel, M. (2005). Einmal Indien und zurück. CIO, 02/2005.
- Ramadorai S (2002), CEO of TCS: Personal communication with author, 11/29/02 Working Paper, The Open University.
- Rhoades L and Eisenberger R (2002) Perceived organizational support: a review of the literature. Journal of Applied Psychology, 87 (4). 698-714
- Sabuncuoglu Z & Tuz M (1998) Orgutsel psikoloji. 3. Baski. [Organizational Psychology] Bursa: Alfa Basım Yayım Dagitim Ltd. Sti.
- Salancik GR & Pfeffer, J. (1978) A social information processing approach to job attitudes and task design. Administrative Science Quarterly, 23, 224-253.
- Salanchik GR (1979) Commitment and the control of organizational behavior and belief. In Motivation and Work Behavior. R.M. Steers and L.W. Porter (Eds.) New York: McGraw-Hill.
- Schnake M (1991) Organizational citizenship: A review, proposed model, and research agenda. Human Relations, 44: 735-759.
- Settoon RP, Bennett, N, & Liden, RC (1996) Social Exchange in Organizations: Perceived Organizational Support, Leader-Member Exchange, and Employee Reciprocity. Journal of Applied Psychology, 81(3): 219-227.

- Sheppard BH, Lewick RJ & Minton, JW (1992) *Organizational justice: the search for fairness in the workplace*. New York: Lexington Books.
- Shore LM & Shore TH (1995) Perceived organizational support and organizational justice. In Cropanzano RS. & KM. Kacmar (Eds.). *Organizational politics, justice, and support: Managing the social climate of the workplace*, 149-164. Westport, CT: Quorum
- Shore LM and Shore TH (1995) Perceived organizational support and organizational justice. In: Cropanzano RS & Kacmar KM (Eds.). *Organizational politics, justice, and support: Managing the social climate of the workplace*: Westport, CT: Quorum. pp:149-164.
- Shore & Wayne (1993) Commitment and Employee behavior: Comparison of affective commitment and continuance commitment with perceived organizational support, *Journal of Applied Psychology*, 78(5), 774-780
- Simon HA (1962) *The architecture of complexity*. Reprinted in Simon 1996 as Chapter 7
- Simons, T., & Roberson, Q. (2003). Why managers should care about fairness: The effects of aggregate justice perceptions on organizational outcomes. *Journal of Applied Psychology*, 88, 432-443.
- Skarlicki DP & Latham GP (1997) Leadership training in organizational justice to increase citizenship behavior within a labour union: A replication. *Personnel Psychology* 50 (3), 617-633.
- Smith CA, Organ, DW., & Near, JP (1983) Organizational citizenship behavior: Its nature and antecedents. *Journal of Applied Psychology*, 68, 653- 663.
- Stephen P Robbins, Seema Sanghi, Timothy A Judge, (2010) *Essentials of Organizational behavior*, p. 2010, 456.
- Sundstrom, E., DeMeuse, K. P., & Futrell, D. (1990). Work teams: Applications and effectiveness. *American Psychologist*, 45, 120-133.
- Thomas Davenport (1992), *Information Ecology Thinking for a living-Working Knowledge*
- Thomas Davenport (1992) *Process Innovation: Reengineering Work through Information Technology*.
- Taymaz H (2003) *Okul Yonetimi. 7. Baski School Management*, Ankara: Pegem A Yayınevi Tic. Ltd. St.
- Tepper BJ & Taylor EC (2003) Relationships among supervisors' and subordinates' procedural justice perceptions and organizational citizenship behaviors. *Academy of Management Journal*, 46, 97-105.
- Tepper BJ, Lockhart D, & Hoobler J (2001) Justice, citizenship and role definition effects. *Journal of Applied Psychology*, 86, 789-796.
- Tierney P & Farmer SM (2002) Creative self-efficacy: Potential antecedents and relationship to creative performance. *Academy of Management Journal*, 45, 1137-1148.
- Tierney P & Farmer SM (2004) The Pygmalion process and employee creativity. *Journal of Management*, 30, 413-432.
- Tahaoglu F (2007) The influence of leadership roles of primary school managers on the organizational climate, *Journal of Management*.
- Thibaut, JW. and Kelley, HH. (1959) *The social Psychology of Groups*, New York: Wiley Third, Hamilton and Stewart (1993)
- Tyler DE (1987) A distribution-free M-Estimator of multivariate scatter, *Ann. Statist*, 15, 234-251.
- Van Den Bos K & Lind E (2001) The Psychology of Own Versus Others' Treatment: Self-Oriented and Other-Oriented Effects on Perceptions of Procedural Justice. *Personality and Social Psychology Bulletin*, 27(10), 1324-1333.
- Van Den Bos K & Lind EA (2002). Uncertainty management by means of fairness judgments. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 34, pp. 1-60). San Diego, CA: Academic Press.
- Van Dyne L, Cummings LL & McLean Parks J (1995) Extra role behaviors: In pursuit of construct and definitional clarity (a bridge over muddied waters). In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior*, 17 (pp. 215-285). Greenwich, CT: JAI Press.
- Van Maanen J & Schein EH (1979) "Toward of Theory of Organizational Socialization." *Research in Organizational Behavior*, 1: 209-264.
- Vaishnavi V, & Meyer B (1991) *Technology of Object-Oriented Languages and Systems TOOLS-5*, pages 129-138, Santa Barbara, Prentice Hall.
- Walther JB (1992). Interpersonal effects in computer-mediated interaction: A relational perspective. *Communication Research*, 19, 52-90.
- Wayne SJ, Shore LM, Bommer WH, & Tetrick LE (2002) The role of fair treatment and rewards in perceptions of organizational support and leader-member exchange. *Journal of Applied Psychology*, 87: 590-598.
- Wayne SJ., Shore, LM., & Liden, RC (1997) Perceived Organizational Support and Leader-Member Exchange: A Social Exchange Perspective. *Academy of Management Journal*, 40(1):

82-111.

Witt LA (1991) Exchange ideology as a moderator of job attitudes organizational citizenship behaviors relationships. *Journal of Applied Social Psychology*, 21, 1490-1501

Yilmaz K and Tasdan M (2009) Organizational citizenship and organizational justice in Turkish primary schools. *Journal of Education and Admin.* 47(1), 108-126.

Young LD (2010) Is organizational justice enough to promote citizenship behavior at Work? A retest in Korea, *European Journal of Scientific Research* 45(4), 637-648.

Zellars KL, Tepper BJ & Duffy MK (2002) Abusive supervision and subordinates' organizational citizenship behavior. *Journal of Applied Psychology*, 87, 1068-1076.