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The Human Aspects of Globally Distributed Work Teams in the Indian Information Technology Industry: Effect of Justice Perception on Team Performance

Harry Charles Devasagayam ^a & Menaka Rao ^a

Abstract- The evolution and improvisation of globally distributed work teams (GDWT) over the past 20 years has been the key enabler for the stellar growth of the Indian IT industry. Global software outsourcing has created a workforce that operates across geographical boundaries of place and time. The Indian software industry has a competitive advantage which includes availability of qualified and talented manpower at low costs as compared to other developing economies (Budhwar, Luthar, & Bhatnagar, 2006a; Budhwar, Varma, Singh, & Dhar, 2006b). In addition, globally distributed teams play a significant role in improving strategic responses by reducing delivery time and working 24X7 on projects. This paper is a study of the various kinds of distributed teams in the Indian IT industry and the unique human challenges experienced by them. In this study, we look into the characteristics of distributed teams that pose challenges to team performances. The onsite-offshore model invented by the Indian software industry requires that 20-30 % of the team work onsite at the client organization. Since customers of the Indian software industry are mostly located in North America and Europe, onsite postings create opportunities to visit a foreign country as well as the opportunity to save substantially. In addition, onsite postings create opportunities to develop domain expertise and customer management skills. Hence, onsite postings are perceived as a reward and software professionals look forward to them. When software professionals in a team perceive that the selection for onsite postings are not fair and equitable, they experience inequity (Agrawal, Khatri and Srinivasan, 2010, forthcoming). The socio-cultural contexts of multiple locations influence the work-life balance for members. The proximity to customers is a source of power for onsite members but is also a source of conflict between onsite-offshore team members. Among distributed teams the efficacy of a role gets partly defined by location and hence is looked at as an injustice perceived by team members. In addition, team members from different organizations work together in a distributed team and the treatment received by them may differ. Relationships between onsite and offshore team members are characterized by asymmetries in knowledge and experience, which often become the cause of potential misunderstanding (Vlaar et al. 2008). It has been found that those who perceive fair treatment exhibit high levels of citizenship behaviour (Moorman, Blakely & Niehoff, 1998; Masterson et al., 2000; Moorman & Bryne, 2005). It is in this context that the paper examines organizational variables which influence perceptions of justice among distributed teams in the software industry. A

participatory action research (PAR) methodology was used for conducting in-depth interviews. Closed- and open-ended questions were used to determine human aspects and related perceptions of organizational justice, and investigate how such perceptions impact performance. The results indicate the existence of a relationship between organizational variables, organizational justice and team performance and that justice perception is contagious and contributes to an employee's perception about fairness. The study was done to benefit knowledge workers, management, and organizations to develop global policies for creating and managing distributed teams.

Keywords: GDWT-globally distributed work teams, participatory action research.

I. INTRODUCTION

How does unfair treatment experienced by offshore or onsite employees affect employee behavior? If experiences of injustice are recounted will it alter colleagues' attitudes and behaviors? And if employees "compare notes" in the way people are treated in the workplace, will a shared consensus emerge regarding justice issues, and will that consensus affect the attitudes and behaviors of the overall unit? Each of these questions acknowledges that human aspects cause justice perceptions in collective contexts – i.e what happens to one employee may depend on (and influence) others. Questions raised by Jason A. Colquitt, Cindy P. Zapata-Phelan and Quinetta M. Roberson (2005) are critical to our understanding of the justice phenomena among distributed software development teams. Although people contribute to a project as individuals, the prevailing justice climate, processing of justice experienced across onsite or offshore teams (Salancik & Pfeffer, 1978) and the impact of such experiences create either commitment or resentment at the workplace, which in turn impacts the growth and sustenance of the organization.

An employee from one of the largest Indian IT companies experienced depression as he received a lower than expected performance rating from his onsite manager. While his direct / off shore manager was very happy and appreciated his exemplary performance, with an "Exceeded Expectation" in his annual performance accompanied by an appreciation note whereas his onsite manager's rating was "met expectation," due to which the employee was eligible for just a marginal

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salary increase. The only recourse the employee had was to question the accuracy of the evaluation stating that the onsite manager was not present for long enough periods to accurately monitor and gauge performance. Another visibly disturbed employee expressed anguish over the lack of information exchanged between off shore and onsite managers on the assignment and roles assigned to him. The employee took the matter to his delivery manager. The delivery manager refused further explanation as he thought that it would create precedence. He also justified his inaction stating that the onsite manager's rating was in congruence with people contributing from onshore.

In circumstances like this, what is left behind is a host of unanswered questions. What will be the reaction of the employee? This study tries to explore various reactions of employees given the exposure of a one-sided approach by management based on organizational justice literature (Colquitt, Greenberg & Zapata-Phelan, 2005). The established norms of the industry are that performance rating is a consultative process with all stake holders involved. As the onsite manager, has no regard for rating offshore managers (disrespectful and insolent), employees begin to develop doubts about distributive justice and the fairness of decision-making. Distributive justice is fostered when outcome allocations adhere to relevant norms, such as equity (Adams, 1965; Homans, 1961; Leventhal, 1976). Concerns have also been raised about procedural justice, and are linked to the perceived fairness of decision making procedures. Procedural justice is fostered when procedures are consistent across persons and time, based on accurate information, unbiased and correct (Leventhal, 1980), and afford individuals voice and control during the process (Thibaut & Walker, 1975). In addition, when employees believe that grievances are not handled properly, in terms of dignity and respect shown (interpersonal justice) justifications and explanations offered (informational justice) (Bies & Moag, 1986; Greenberg, 1993) are inconsequential.

A similar experience of both distributed employees (onsite and offshore) create a sense of insecurity and makes them think on the following:

- Onsite managers are unaware of the tasks performed by offshore members
- Onsite-offshore interfaces do not work in the organization
- Information sharing and trust between onsite and offshore is not visible
- No regard for the hard work of offshore employees
- Rewards and recognition go first to onsite members
- Offshore members are given secondary treatment
- Offshore members viewpoints are not considered and

- Offshore members are not valued, respected and treated well.

A detailed study on the characteristics of distributed work by Salas et al, 2001 describe 5 important human aspects to distributed work (Table 1.1).

Human Aspects	Effect on Team	Performance Requirement
Loss of visual cues	Degraded communications	Task communication that builds situation awareness. Use of implicit coordination during task execution.
Restricted information flow	Fewer communications	Task communication that builds situation awareness. Use of implicit coordination during task execution. Use of standard communication.
Lack of immersion	Reduced situation awareness	Build in task cues to prompt other team members. Team work processes such as backup behavior and monitoring.
Electronic communication	Less verbal cues and harder interpret actions	Team work processes such as backup behavior and monitoring. Trust.
Multi-cultural	Degraded communications More difficult to manage meanings, beliefs and communications	Use of closed loop communications. Task communication that builds situation awareness.

More research on the subject goes to explain that the differences between distributed and conventional teams go further than merely the lack of face-to-face interaction within a distributed team, Bell & Kozlowski (2002). These experiences evoke a series of workplace responses leading to behavioral outcomes. The perception of justice leads to workplace attitudes; including job satisfaction, organizational commitment, and trust in the leader (Colquitt, Conlon, Wesson, Porter & Ng, 2001). Employees in such a scenario think of alternate options like onsite postings, quitting the job, opting for job rotations etc. In addition such employees develop a negative attitude towards the organization reflected in behaviors of lowered task performance, low citizenship behavior, and counterproductive or withdrawal behaviors (Colquitt et al., 2001). It also increases stress and depression for the employee. Jason A. Colquitt et al, 2001, further explains that such employees intentionally violate rules or standards, and waste time on the job.

In this study, we explore various circumstances under which a person operates within the prevailing climate of the organization and how such circumstances lead to justice perceptions. There are several reasons why members at the workplace feel procedural, distributive, interactional and informational justice perceptions. By seeking to extend the logic of the perception of organizational justice between onsite versus offshore members this paper exposes the human aspects of distributed teams. There are a number of

factors motivating or de-motivating a distributed member in the whole course of getting a software project or product delivered. In a case study of a software engineering organization spread across several sites, Herbsleb and Grinter, 1999, investigated how the organization used a number of mechanisms, including plans, processes, and interface specifications, to coordinate cross-site work. In order to help this study the following research questions were raised.

- To identify various human aspects found in distributed work
- To find how human aspects influence perceptions of organizational justice
- To find how perception of justice leads to team performance

Overall the IT industry will benefit from this study as it is aimed at building an integrated HR system to help global organizations in

- Understanding enablers and inhibitors of dispersed organizations
- Motivating and synchronizing local organizations building globally accepted cultures and global organizations valuing local cultures

II. THEORETICAL FOUNDATION

Teams are inevitably an important part of global IT organizations. Complex software development demands employees to be collaborative and interdependent. Since dispersed teams face high uncertainties due to members not being familiar with the task on hand or other members, the chances of human factors contributing to misgivings in distributed work is more. This makes this study uniquely well-suited contextually to investigate the impact of the perception of organizational justice on team performance. Team performance is discussed in three different angles. The first is what are the human characteristics that influence shared perception? What makes teams perceive organizational justice and what makes an effectively performing team. The human factors create interdependencies which are complex in nature. These difficulties are compounded when the characteristics of the task and the team context make it difficult for team members to effectively manage these interdependencies (Malone & Crowston 1994). To be effective, team members need to carry out competently their "task work" activities – necessary to execute the task – and "teamwork" activities – necessary to work with each other (Klimoski & Mohammed 1994). In this context, the nature and process of team work needs to be understood to help us deal with the performance of the team. The following three pillars of distributed work are explained to help offer a perspective on the subject.

a) Human Aspects

A distributed team differs from conventional face-to-face teams in more than one way as a

collocated team operates out of the same geographical location and hence organizational climate is the same. However, distributed team members operate out of different locations and heavily rely on trust and communication. Human aspects consist of various interactions and exchanges that enhance or reduce justice perceptions of people. In a multi-locational organization, highly accomplished employees are given international assignments. An employee is expected to travel frequently (Black, 1988) and establish business, extend cooperation, develop systems and processes and benchmark the new organization with that of the parent organization. These employees experience greater job overload, greater external pressures, and greater visibility. They experience a high degree of role clarity, as compared to ambiguity faced by their domestic counterparts. These experiences lead to negative affectivity to the organization (Naumann, 1992; Bedeian and Armenakis, 1981; Lyons, 1971). Doing business through distributed teams involve managing a bundle of individuals, organizational and social issues. These issues form part of the critical factors for managing an effective organization. Imbalances experienced or felt in the way these issues are managed cause perceptions of organizational justice and impact work outcomes. Given below is a review of the theoretical foundation on human factors that are critical to distributed work teams.

b) Asymmetry of skills

Team members perform different roles. The roles include customer connector, business analyst, architect, technical lead, designer, coder, tester and product maintenance person. As performing tasks of each role is different, difference between members crop up at every stage of development. While project team members are identified and assigned tasks based on their skill, competencies required to perform the given task may vary from person to person. Not knowing or being familiar about the team members hampers the progress of the project. Velez et al, 2004 found that in remote collaborations, role asymmetry combined with platform heterogeneity impacts collaboration. Asymmetry of skills, assigned tasks and time to deliver has to go hand in hand. However, in most cases, since skill and competency levels are not known in distributed work teams, deliverables are delayed resulting in customer fury.

c) Team dispersion

The size of the team is an important phenomenon which determines perceptions and behaviors. In many cases, uneven distribution of team members causes psychological gaps. Development team are collocated either onsite or offshore and the sales, implementation, and maintenance personnel are distributed across boundaries. The main development

team is either consulted or taken into confidence when commitments are made to customers. Requirement changes to a large extent are not accepted as the development team's responsibility nor are customer's fully aware of the project details. However, frequent changes in the requirement or asking the development team to change the technology when the project is half way are not viewed positively by the development team. These types of situations cause a deep rooted angst in the relationship between members. As driven by the concept by HC Devasagayam 2013, distributed software development works when some decide what others deliver.

d) Geographic dispersion

Another important dimension in distributed working is geographic dispersion of employees. Since project demands are generated in one geographical location and the same is delivered at another location, every team member has to work to complete the given tasks despite differing time zones, language barriers, culture differences, expectations and quality standards. Though distributed members may not be familiar with the task or team they are working with, they are expected to work on the same page with the same quality standards.

These three factors put together influences most of the organizational, individual and socio-cultural aspects of the globally distributed work teams.

e) Moderating Aspects

A distributed team members' employment status has a great deal of influence on member's attitude to organization. This includes member being on direct company roll versus contract or consulting roll, deputation period being short term versus long term etc., the distinction between contract and permanent employees is studied in the context of job design of IT software development personnel by Ang and Slaughter (2001) supports the argument that employment status is an important motivator consistent performance. They believe that supervisors tend to restrict the scope of contract employees' jobs leading to a low perception of the job environment. The advantages of permanent employees are as follows:

- Proximity to the project manager is very high for a permanent employee
- A permanent employee has the closer attention of the organization as they share employee benefits, processes and help them participate in management
- Lesser chances of frequently changing locations
- Long period of service
- High level of job security is experienced
- A permanent employee can make choices out of

- various roles and can move in the career ladder of the same company.

Further from a social exchange theory perspective IT contract employees have lower positive attitudes and behaviors as it is based on the specifics of social exchange relationships and norms of reciprocity. The results from the study indicate that organizations should carefully design and balance the job of contractors and permanent employees.

An outsourced employee is an external resource as against permanent employee who is an internal source.

- An outsourced employee does not have access to various resources of the company as against a permanent employee
- Outsourced employees are bound by the contracting company as against permanent employees.
- Salary and rewards given by contracting company are the same and given by the employee's company.
- Employment is restricted by time as against no such limitation
- Group bonding is less as against strong group bonding
- No opportunity for long term training as against regular chances of getting such opportunities

The above differences cause relationship barriers between employees and the organization and hence different perceptions of organizational justice are evident. Product engineering teams predominantly handle technology and innovation activities as against regular client specific development handled by application development teams. Preferential treatment like salary variations, higher incentives, high value training and onsite assignments make the application development team look up to the technology team and yearn to join the team. There is a high level of self-esteem experienced by PE employees. Research further argues that "Procedural justice influences management evaluations, job satisfaction, and perceived conflict more than distributive justice"-Alexander and Ruderman (1987). Differences on being more inclusive, high job satisfaction, pride of innovating a product creates imbalances in the working atmosphere and hence the feeling of the lack of fairness.

f) Perception of organizational justice

Managing software development in a distributed environment is a mammoth task as it involves complexities. A project has many tasks such as coordination, relationship management, requirement capturing, coding, designing, architecting, managing, testing, integrating and implementing etc.; some tasks can be handled by individuals while others have dependencies. Some activities need periodic interaction with other members while other activities need

interaction with the same people. For example, a developer has to design according to the architect's dictates and hence regularly interacts with his technical lead and architect in shaping the project. A project manager has to give regular updates to the client explaining the progress. Even team member, at times interact with the customer. Each of these activities have different patterns of interaction resulting in different types of outcome. Members use email, chat rooms, fax, and phone, audio and video conferences for exchanging information relevant to their projects despite meeting clients face to face during visits to onsite locations.

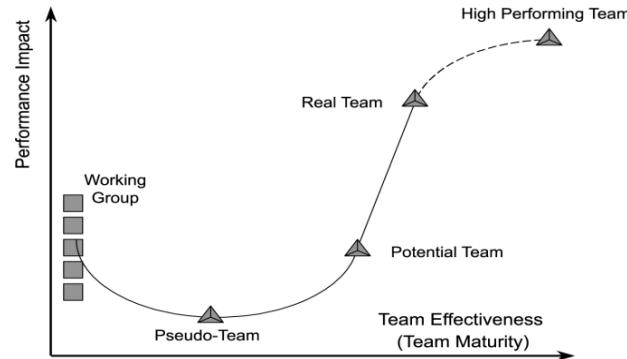
A distributed work environment is conceptualized as being composed of social, technical, resources, and organizational environment. Every project is associated with either an offshore or an onsite team. A member might have several constraints operating from their respective locations which develop due to individuals, organizations or the managers. From an organization point of view the constraints faced while operating globally distributed teams needs customized solutions to each member. A large company operating in many locations has difficulties in managing multiple issues. While dealing with these issues the organization needs to keep in mind that the software development industry works primarily on human capital.

g) Team Performance

Human beings have organized themselves into teams since squads of cavemen surrounded and killed mammoths. The best teams are passionate about their work – and you can't forge or force that kind of spirit. It bubbles up from within the hearts, souls and minds of team members. However, as a manager, you can create the emotional conditions from which passion will emerge. These include trust, sharing, camaraderie, commitment, common purpose and confidence. When you promote the secondions, you set the stage so that team members can worktogether with enthusiasm to accomplish their goals. Organizations throughout the world have increasingly adopted team-based work structures. H C Devasagayam, 2013 states that half of the Fortune 500 use formal work teams in some part of their operations, 85% of Fortune 1000 firms employ some element of group-based compensation, studies of managers show that they spend 30 to 80 percent of their time in team meetings and a Fortune 500 financial services company found that their average executive spent two out of every five working days collaborating with small groups claims Todd Harris (2008).

Katzenbach and Smith (2003) define five different types of teams and their relation to each other in overall performance. The dispersed members interact primarily to share information, best practices, or perspectives and to make decisions to help each individual perform within his or her area of responsibility.

Many a times information sharing goes beyond the work to employment practices which includes many human factors such as working hours, compensation and benefits, technology, type of work and holiday related issues etc., Katzenbach and Smith, 2003, try to connect various types of teams and the their performance impact as indicated in the graph given below (Figure 1.2).



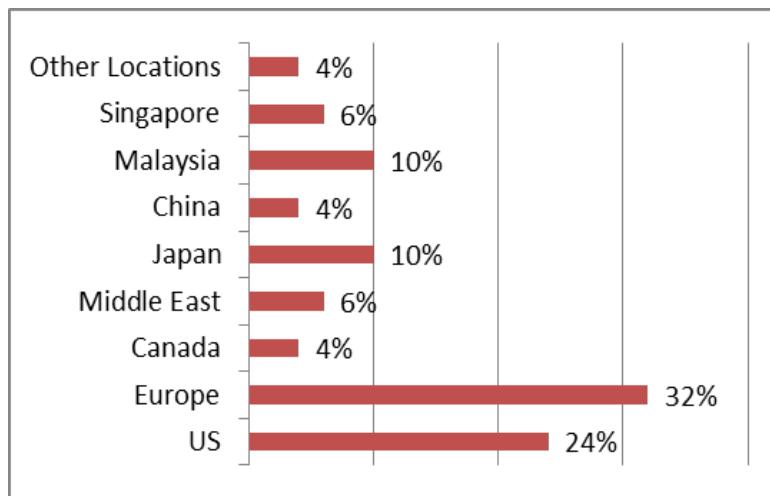
Work teams need clear assignment of tasks, schedules and time frames in order to be effective. Perceived injustice on tasks such as requirement collection, architecting, design, coding and testing assignments may become an area of contention and an obstacle to team performance. Justice literature has provided sufficient support that perception of justice affects a variety of work outcomes, such as performance outcomes, commitment, turnover intentions, and organizational citizenship behaviors (Cropanzona & Greenberg, 1997; Folger & Cropanzona, 1999; Gilliland, Steiner & Skarlicki, 2001). The expatriate's experience of workplace justice has been researched extensively. Werner 2002 states that experiences like commitment (Gregersen and Black, 1996); job satisfaction (Guzzo et al., 1993); psychological withdrawal (Shaffer and Harrison, 1998); acceptance of assignments (Aryee et al., 1996); concerns and expectations of dual careers (Harvey, 1997) and adjustments (Caligiuri et al.; Shaffer et al., 1999) focus more on expatriates perception of justice and related outcomes.

III. RESEARCH METHODS

This exploratory investigation asked managers of distributed teams from across the world to provide their first hand experiences of how justice is perceived in their teams and what kind of an impact is felt as a result of such perceptions. The primary goal was to understand the manager's perception of fair treatment in their environment. A convenience sampling was used. At the time of the study, participants were part of offshore, onsite and hybrid (Offshore-onsite), offsite, offshore and hybrid (Offsite-offshore) centres working from India and overseas locations. The respondents include members of distributed team who were technical contributors, project management and client relationship professionals.

h) Respondent Profile

The survey respondents were based in 70 countries (Figure 1.2)

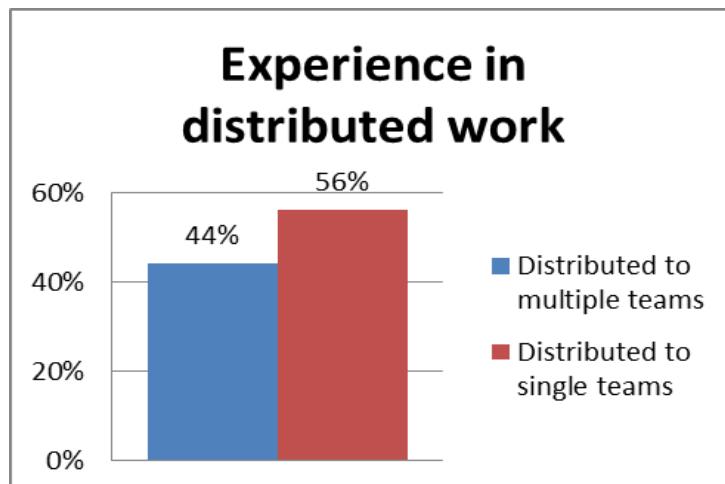
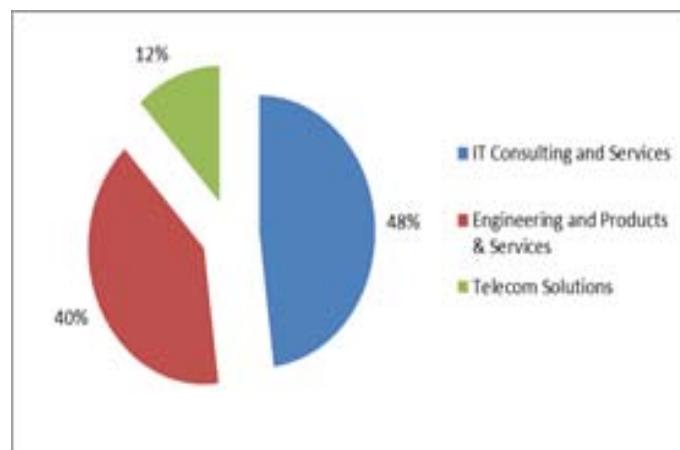


14

i) Size of Responding Organizations and Survey participation by Industry

The largest group of respondents (48%) represented organizations with businesses in consulting and services with more than 1,00,000 employees. The next largest group (40%) was from organizations in

engineering and products with less than 10,000 employees. Together, they constituted 88% of the survey participants. Representatives of mid-sized companies (1,000 employees) constituted the remaining 12% of respondents from telecom solutions (Figure 1.3).



To confirm respondents distributed experience, we asked participants on how many times they were part of distributed teams and if they were part of a team with people based in different locations (onsite, offshore and hybrid). Forty four percent (44%) of respondents indicated that they were part of distributed teams more than once and fifty six percent (56%) of the participants indicated that they were part of distributed team once in their careers.

Location of the distributed team was ascertained by asking the participants as to whether they were part of onsite, offshore or hybrid teams.

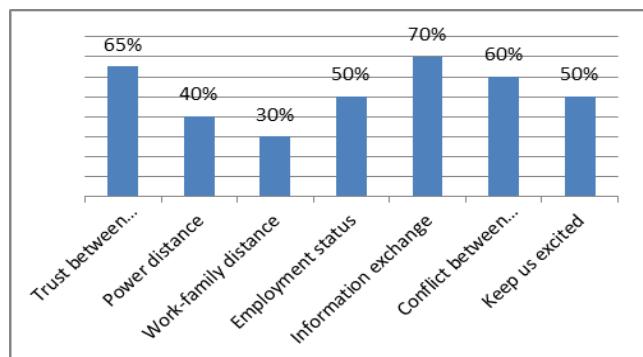
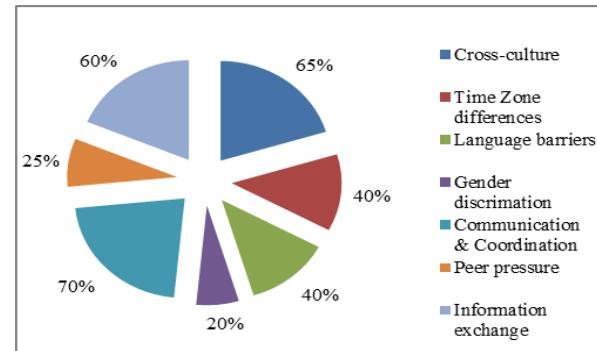
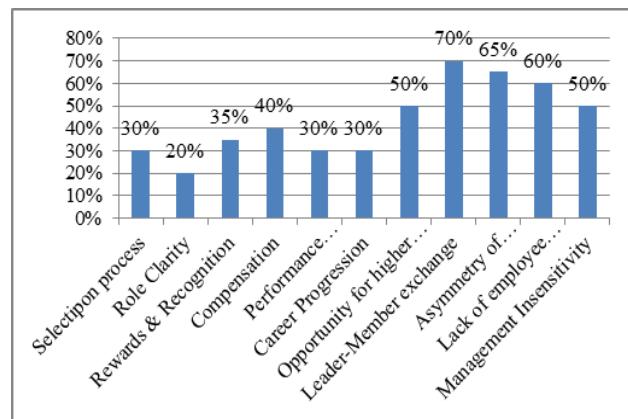
The present study includes interviews, visits and observations. Thus, the project was carried out in a Participatory Action Research (Whyte 1990) framework in that it was hoped that the findings of the project would be beneficial to knowledge workers, management, and organizations in terms of developing better relationships among distributed team members resulting in higher attention given to the human aspects of their workplace. At the time the participants were interviewed, each worked in different cities and countries. This representation helped ensure the research patterns reported represented diverse experiences in distributed environments. Interviews were conducted with personnel at all project levels. The interviews were in both individual and group formats and most were in person. The interviews were semi-structured and conversational in nature, and covered a range of topics related to the human aspects of distributed teams, perception of organizational justice and performance outcomes.

III. RESULTS AND INTERPRETATION

Future business is expected to be more and more virtual and distributed, with "distributed teams" as its key element. As trade breaks geographical barriers and businesses span across countries, location loses its relevance as an important criterion while business priorities assume greater importance. Global organizations have learned to operate through distributed teams for cost, competency and time advantages. Human aspects form part of managerial challenges that include but are not limited to fulfilling client needs, keep the distributed team (onsite and offshore) on the same page, their innovation spirit alive (local and remote peers), quickly respond to requested changes (in spite of time zone differences), create and monitor collaborative processes (bridging cultural gaps), keep the teams equally motivated (constantly remove trust deficiencies), be a connecting point for communication, respond to changing styles, provide timely responses to the changing needs of skills and capability and be an inspiration to the team. The present study covers these challenges found in globally distributed organizations and corroborates it with previous research on the subject.

Given below is the respondents rating of the various human aspects found to be key to the team performance.

Figure 1.6 : Human aspects important to team performance



a) Key Findings

The human factors found in globally distributed work teams have a direct correlation with the perception of organizational justice and team performance outcomes. Hence, when members find that organizations have pro-employee policies and are sensitive to the needs of employees, in spite of the person being part of collocated or distributed teams, they experience a sense of support and develop affective commitments to the organization resulting in greater team performance. At the same time when they find that the organization is ignoring them and not bothered about the needs of team members, the

perceived support is less, leading to the feeling that they are not needed and they begin to resent the situation. This sentiment is found in the results of the study. Given below are some of the premises made from the primary data corroborated by the existing study on the subject.

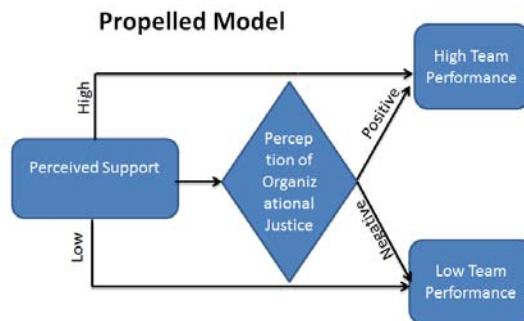
- Leader-Member Exchange enhances member influence on team decisions and improve performance.
- Asymmetry of skill demotivates members and leads to reduced team performance.
- Conflict on allocated tasks, relationship or processes followed have a negative influence on members leading to resentment and the lack of interest in the project.
- Managers not open to discussing difficulties faced by team members make teams dissatisfied.
- Trust deficit can bring down the customer confidence as employees don't work in a coherent and logical manner resulting in delayed and distorted deliverables.
- Absence of customized communication between team members increases anxiety and distrust.
- Work-Family propinquity positively contributes to team performance. Peer pressure negatively motivates and leads to higher employee attrition
- The lesser the practice of gender discrimination, the greater is the sense of perceived organizational injustice
- Cultural differences will have a negative impact on team performance. The greater the job rotation, the lesser will be the dissatisfaction of not getting selected for onsite assignments
- The greater the insensitivity of the manager, the higher the possibility of employee attrition
- Organizations practicing un-friendly policies and processes are most likely to face greater attrition

Organizations have established dedicated department to deal with issues arising out of onsite – offshore coordination and transactions. The global HR team or shared services team is yet another attempt to address specific issues arising out of inadequacy of information between onsite and offshore. However, so far organizations have been handling HR issues of distributed team on a case to case basis as members are distributed to different countries and each country is influenced by its own legal and cost issues. The project manager too handles HR issues at times if no exclusive HR person is available to the team. Shared Services is diametrically different from the outsourcing model where an external third party is paid to provide a service that was previously internal to the buying organization, typically leading to redundancies and reorganization. There is an on-going debate about the advantages of Shared Services over outsourcing. A large scale cultural and process transformation can be a key component of a move to Shared Services and may

include redundancies and changes of workpractices. One purpose of Shared Services is the convergence and streamlining of an organization's functions to ensure that they deliver to the organization the services required of them as effectively and efficiently as possible. This often involves the centralizing of back office functions such as HR and Finance but can also be applied to the middle or front offices. A key advantage of this convergence is that it enables the appreciation of economies of scale within the function and can enable multi-function working (e.g. linking HR and Finance together), where there is the potential to create synergies. Shared Services are more than just centralization or consolidation of similar activities in one location. Shared Services can mean running these service activities like a business and delivering services to internal customers at a cost, quality and timeliness that is competitive with alternatives. Organizations that have centralized their IT functions have now begun to take a close look at the technology services that their IT departments provide to internal customers, evaluating where it makes sense to provide specific technology components as a shared service. E-mail and scanning operations were obvious early candidates; many organizations with document-intensive operations are deploying scanning centres as a shared service. Job rotation is yet another method suggested by many participants. Job rotation for onsite assignment will reduce discontentment among other engineers who wait for an onsite opportunity. Even for this we need to lay down certain processes which goes well with any type of business.

b) *Propelled Research Model*

The information collected through primary sources and derived support from the previous research on the subject proposes the following model.



c) *Contribution of this research*

This study looks into two critical factors of human factors and team performance of globally distributed work teams. The focus of this study is to understand the level of human factors in distributed organizations and its impacts on team performance perceived either positively or negatively. This focus enables understanding important factors that contribute to performance in distributed teams. This study covers a

sample of companies distributed across multiple locations and countries both in India and abroad. The results of the study indicate that human factors practiced in organizations by distributed teams are perceived differently by people who are dispersed. However, the study reveals that team performance has a direct correlation to the perception of organizational justice and human factors experienced in distributed teams. This result is corroborated by the results of various research which includes Jason Colquitt's assertion that team effectiveness has a high correlation to organizational factors contributing to justice perception (Jason Colquitt & Brian D Janz, 1997)

IV. DISCUSSION AND CONCLUSION

Distributed teams are an essential component of a knowledge based economy. Katzenbach and Douglas (1999), defines team as "a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable." IT industry's success story synchronizes with the spread of teams making products and services relevant to a larger market. Whether an organization is small or large, what is important is that the fundamentals of human interactions and perceptions are kept alive to keep the team excited. Multinational organizations develop captive centers, offshore centers, onsite support teams, and partnerships with a set of specialist consultants to build success stories. Globally distributed teams pursue the same project goals, but they work from different locations (Oshri et al., 2008). This paper aims to explore the human factors (inter and intra organization) in globally dispersed work teams and the impact of these factors on team performance.

a) Workflow process in distributed work

In a distributed environment, organizations with a base in India (offshore) sets up a project office at or near the customer site (onsite). Once a project is sourced, the need of the project determines the kind of people to be located at the customer site and at the development center. Project scoping is done by either onsite coordinators or a technical lead or project lead. The scope is further analyzed to develop an environment suitable for technology and functionalities. Subsequently the onsite team works on detailed project requirements and critical parts of the system, as well as a preliminary development plan and budget. Later, the offshore team work on detailed designs, coding, unit testing, integration, and system testing—generally in a series of subprojects representing major parts of the system or components being built. Eventually, the offshore development team brings the completed system back to the customer located onsite for final acceptance testing and iterates as required to get the final details right. It is expected that the entire distributed members are on the same page during and after

completion of the project. People involved in development are distributed based on availability, skills, cost, interaction with customers and delivery time. The program or project manager coordinates effective delivery of the project from different locations and plays an active role in integrating components into one whole project.

b) Human Aspects and perception of organizational justice

In managing a software project, unlike collocated teams, a distributed team begins the process by identifying suitable members for the team. While there are many competent members available in the organization, a manager uses a list of criteria for selecting the most suitable candidate for filling onsite vacancies. Technical skill and capability, domain knowledge and prior experience are a few of them. Competitions for overseas assignments are high as these assignments are beneficial. Thus many ask: why not me? From the organization's point of view sending the most suitable candidate may not happen as the ideal candidate may not opt for an onsite assignment for reasons of the type of work among other reasons. People avoid onsite assignments even due to family commitment and personal reasons. Many members with a strong technical background don't want to go on onsite assignments as they consider it less challenging technically than the long term research oriented offshore work. Members defer onsite assignments as they fear losing their offshore jobs on their return. As offshore is where the actual technology development happens for an organization and the identity evolves for an individual, many refuse to go on onsite assignments. A member states "I have never been fascinated to go on an onsite assignment as most of the niche, technically challenging work happens at Bangalore where I work". A latest research finding by HC Devesagayam, 2013 on the subject, discusses the phenomena at length and brings out the following inconsistencies in distributed working.

1. Shadowy, delayed or denied knowledge transfer between onsite and offshore teams slows the development process. Knowledge sharing (Cramton, 2001, Griffith et al., 2003), and determining appropriate task-technology fit (Qureshi & Vogel, 2001) explained by respective scholars reiterates the same thought process. Insufficient or the lack of knowledge can create doubts in members about the actual goal and purpose of the project.
2. In the event of client and service provider following different sets of processes and standards, misunderstood processes or mismatched processes between onsite and offshore teams can lead to conflict and difficulty in establishing trust (Coppola, Hiltz & Rotter, 2004; Jarvenpaa & Leidner, 1999; Jarvenpaa et al., 2004), increased rework, and decreased productivity.

3. Coordinating team member efforts (Maznevski & Chudoba, 2001; Malhotra et al., 2001; Sarkey & Shay, 2002) could be a challenging task in distributed working. No communication, wrong communication or miscommunication can lead to misunderstandings, omissions, errors, and rework.
4. Work culture and professional values displayed in the workplace can affect working relationships between onsite and offshore teams and lead to the lack of providing effective leadership (Bell & Kozlowski, 2002; Kayworth & Leidner, 2001)
5. Extraneous factors, such as language barriers and differences in expectations of work outcomes can cause delays and affect working relationships.
6. Asymmetry of skills and compatibility can create skill gaps between working teams of different sites and a shared team identity (Armstrong & Cole, 2002; Cramton, 2001) may be lost in the process.
7. Distribution and coordination of work across multiple teams, sites and time zones are more risk taking, time-consuming and costly than for a collocated project as it creates difficulties in maintaining the awareness of members' activities (Hinds & Mortensen, 2005)
8. Work-family distance, power distance can be very challenging to manage amidst work delivery pressures.
9. Project metrics may be inconsistent or difficult to obtain from heterogeneous infrastructures, different processes, or company security boundaries, making it difficult to measure success and create conflicts among members and makes it difficult to manage conflicts (Hinds & Bailey, 2003; Hinds & Mortensen, 2005)
10. Political issues both within the company (organizations that fear losing work or resent the overhead of remote sites) and externally in the country or region, can lead to hidden agendas and conflicting goals.
11. Organizations may not share the same objectives, especially when reporting through different management chains or different companies.
12. Sickness and personal objective could come in the way of teams delivering common goals.
13. Concerns with regard to confidential, secure and intellectual property protection, especially in outsourcing countries where the intellectual property laws are more lax, can restrict infrastructural growth and organizational decisions.
14. Infrastructures and development tools may vary widely due to mergers, acquisitions, and outsourcing. Even internally, many smaller teams are adopting lightweight tools, frequently from the open source domain and often to support new processes, such as agile development.
15. Onsite teams' fear the ignorance of the offshore development team which causes concern on

whodelivers what and the capability of each member involved in the project.

These gaps can be damaging and affect the perception of onsite-offshore relationships whether it impacts the individual, the organization, or society at large.

c) *Justice perception*

Global software development has become the norm of the day as it complements global requirements better than any other available system. However, emerging global teams have so many challenges in delivering a value suitable to global requirements. These challenges are caused by certain factors perceived within the organizational frame work. The challenges of managing a distributed team such as geographical, political, environmental and legal are integrated into organizational challenges form part of the perceptual frame work for a distributed member. More the globally distributed environment is accepted by organizations, people and systems; the better the resolution of the problem of distributed working. In this study, we investigate various human factors which include organizational (ethics and work values), individual (interactions and exchanges) and contextual (socio-cultural) factors. The study does not undermine the contextual factors such as geographical, legal, racial and, linguistics but include them as socio-cultural factors in different forms and features. Review of literature on justice leads to many emotional outcomes leading to affective or negative organizational behavior. In this research, we correlated the human factors prevalent in team performance.

d) *Improving team performance*

If organizations with distributed teams could give equal importance to these critical factors, there could be an improvement in the way teams perform.

e) *Compensation not matching peers*

While onsite members make good money their offshore salary increases are very little with a lot of variations and generally in single digits. A person on return from an onsite assignment has a salary 30% less than his colleagues offshore. Managers need to balance this problem. The result of this difference is that he either quits his job or starts fighting with the organizations management. Even if the maximum amount of work on a project is done offshore and offshore members are more talented the career growth for offshore members is much less.

f) *On the bench*

The experience of am member is related as: Due to the lack of projects I have been kept on the bench for the past 3 months and in my appraisal I have been given two points. Currently our company is giving pink slips to people rated as two. I have been asked to

resign from my company as the company cannot afford to retain me on the bench for more than 3 months.

g) Stranded Offshore career

Onsite returned members are not given leadership positions, or promotions. Members remain as technical contributors until the manager is convinced about the person's capability- Whereas peers who have remained offshore have been given continuous projects and not asked to leave the company.

h) Preferential treatment

Hostility and incongruity develop between people working onsite and their offshore counterparts resulting in the onsite members being ignored on their return. This causes them to become depressed. To avoid this organization must have a clear onsite career path that maps to the offshore career path. Thus any resource switching over from offshore to onsite or vice-versa can transition effectively and smoothly.

i) Limitations of this research

This qualitative study is limited to distributed team performances from the information technology industry. However, since distributed teams are common across the globe in various business lines, the same principle of working in a multi-cultural environment is relevant to similar circumstances. The various control variables have not been treated as part of the study. Control variables might have an important role to play in members perceiving organizational fairness (H C Devasagayam, 2013). The sample takes into account selected countries but does not take into account distributed employees spread across many other countries where employee perceptions could be different.

V. CONCLUSION

The globe is expanding as custom made products and services are available at their respective location, in their country and at their price. But the fact that people who develop these products or provide services are human beings with unique needs is conveniently ignored. As a result, the perception of being treated equally is imbalanced. If organizations take into account and give sufficient attention to human factors and evolve methods to strengthen and improve perceptions of fairness, better team performances can be expected and at times guaranteed.

REFERENCES RÉFÉRENCES REFERENCIAS

1. Adams, J.S. (1965). Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 267-299). New York: Academic .
2. Alexander, S. & Ruderman, M. (1987). The role of procedural and distributive justice in organization behavior. *Social Justice Research*, 1(2): 177-198 .
3. Ang and Slaughter, 2001; Work Outcomes and Job Design for Contract versus Permanent Information Systems Professionals on Software Development Teams, *MIS Quarterly*, Vol. 25, No. 3. (Sep., 2001), pp. 321-350 .
4. Aryee, S., Chay, Y. W., & Chew, J. (1996). The motivation to mentor among managerial employees in the maintenance career stage: An interactionist's perspective. *Group & Organization Management*, 21, 261-277.
5. Bedeian, A.G & Armenakis, A.A, 1981; A path-analytic study of the consequence of role conflict and ambiguity. *Academy of Management Journal*; 24, 417-424 .
6. Beehr, T.A. (1995). *Psychological Stress in the Workplace*. London: Routledge Bell, B. S., & Kozlowski, S. W. J. 2002. A typology of virtual teams: Implications for effective leadership. *Group & Organization Management*, 27: 14-49.
7. Bies, R. J., & Moag, J. F. (1986). Interactional justice:
8. Communication criteria of fairness. *Research Negotiations in Organizations*, 1, 43-55
9. Black et al., 1992, development and evaluation of broad coverage of probabilistic grammar of English language computer manuals. In proceedings of the 30th annual meeting of Association of computer linguistics. Pages-185-192, Network Delaware.
10. Brockner, J., & Adsit, L. (1986). The moderating impact of sex on the equity-satisfaction relationship: A field study. *Journal of Applied Psychology*, 71, 585-590 .
11. Caligiuri, P.M., Hyland, M.M., Joshi, A., and Bross, A.S. (1998): "Testing a theoretical model for examining the relationship between family adjustment and expatriate's work adjustment", *Journal of Applied Psychology*, 83: 598-614.
12. Shaffer, M.A. Harrison, D. and Gilley, M. (1999): "Dimensions, determinants, and differences in the expatriate adjustment process", *Journal of International Business Studies*, 30, 3: 557-581
13. Carmel E (1999) Global software teams: Collaborating across borders and time zones," Prentice Hall, Englewood Cliffs, NJ.
14. Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, 86, 386-400.
15. 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.
16. Colquitt, J. A., Greenberg, J., & Zapata-Phelan, C. P. (2005). What is organizational justice? A historical

overview of the field. In J. Greenberg & J. A. Colquitt (Eds.), the handbook of organizational justice (pp. 3-56). Mahwah, NJ: Erlbaum

17. Cramton, C. D., P. Hinds. 2005. Subgroup dynamics in internationally distributed teams: Ethnocentrism or cross-national learning? *Research in Organizational Behavior* 26:231-263.
18. Cropanzano, R., and Folger , R. (1991). Procedural justice and worker motivation. In R. M. S. teers and L. W. Porter (Eds.), *Motivation and Work Behavior*. New York: McGraw-Hill Culture Wizard, Report on virtual teams, 2010.
19. Fitzgerald, Louise F.; Drasgow, Fritz; Hulin, Charles L.; Gelfand, Michele J.; Magley, Vicki J., Antecedents and consequences of sexual harassment in organizations: A test of an integrated model *Journal of Applied Psychology*, Vol 82(4), Aug 1997, 578-589 .
20. Folger, R., & Bies, R. J. (1989). Managerial responsibilities and procedural justice. *Employee Responsibilities and Rights Journal*, 2, 79-90.
21. Giebels, E. & Janssen, O. (2005). Conflict stress and reduced wellbeing at work: The buffering effect of third-party help. *European Journal of Work and Organizational Psychology*, 14, 137-155 .
22. Greenberg, J. and Alge, B. J. (1998) In R. W. Griffin, A. O'Leary Kelly, and J. Collins (Eds.), *Dysfunctional behavior in organizations, Part A: Violent behaviors in organizations*. Greenwich, CT: JAI.
23. Greenberg, J. 1986. Determinants of perceived fairness of performance evaluation. *Journal of Applied Psychology*, 71: 340 -342.
24. Gregersen, H. B. & Black, J. S. (1996), "Expatriate Performance Appraisal in U.S.. Multinational Firms." *Journal of International Business Studies*, 27:711-738.
25. Guzzo, R. A., Yost, P. R., Campbell, R. J., & Shea, G. P. (1993). Potency in groups: Articulating a construct. *British Journal of Social Psychology*, 32, 87-106.
26. Devasagayam HC. (2012). Organizational Citizenship Behavior of Distributed Teams: A Study on the Mediating Effect of Organizational Justice in Software Organizations. *International Journal of Scientific & Engineering Research*, 4(1): 1-54.
27. Griffiths, et al. (2004). "How scientists conceptualise genes: An empirical study." *Studies in History & Philosophy of Biological and Biomedical Sciences*, 35(4):647-673
28. Herbsleb, J. D. & Grinter, R. E. 1999b. Architectures, coordination, and distance: Conway's law and beyond. *IEEE Software*, 16(5): 63-70.
29. Herbsleb, J. D. & Mockus, A. 2003. An empirical study of speed and communication in globally distributed software development. *IEEE Transactions on Software Engineering*, 29(6): 481-494.
30. Homans, G.C. 1961. *Social behavior: Its elementary forms*. New York, NY: Harcourt, Brace, & World.
31. Janz, B. D., Colquitt, J. A., & Noe, R. A. 1997. Knowledge worker team effectiveness: The role of autonomy, interdependence, team development, and contextual support variables. *Personnel Psychology*, 50: 877-904.
32. Jarvenpaa, S. L., D. E. Leidner. 1999. Communication and trust in global virtual teams. *Organ. Sci.* 10(6) 791-815
33. Jarvenpaa, S. L., K. Knoll, D. Leidner. 1998. Is anybody out there?: The antecedents of trust in global virtual teams. *J. Management Inform. Systems* 14(4) 29-64.
34. Jason A. Colquitt, Cindy P. Zapata-Phelan, Quinetta M. Roberson, (2005) "Justice in Teams: A Review of Fairness Effects in Collective Contexts", Vol. Iss: 24, pp.53 – 94.
35. Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations*, 2nd Ed. New York, NY: John Wiley and Sons.
36. Klimoski, R., & Mohammed, S. (1994). Team Mental Model: Construct or metaphor? *Journal of Management*, 20 (2), 403-437.
37. Leventhal, G.S. 1976. Fairness in social relationship. In J.W. Thibaut, J.T. Spence & R.C. Carson (Eds.), *Contemporary topics in social psychology*, 211-239, Morristown, NJ: General Learning Press. Leventhal, G. S. (1980). What should be done with equity theory? New approaches to the study of fairness in social relationship. In K. Gergen, M. Greenberg, & R. Willis (Eds.), *Social exchange: Advances in theory and research* (pp. 27-55). New York: Plenum Press.
38. Lewicki, Roy J. and Barbara Benedict Bunker (1996), "Developing and Maintaining Trust in Work Relationships," in *Trust in Organizations*, Eds. Roderick M. Kramer and Tom R. Tyler, Thousand Oaks, Calif.:Sage Publications. 41. Velez, M. Tremaine, A. Sarcevic, B. Dorohonceanu, A. Krebs, and I. Marsic. "Who's in Charge Here?" Communicating Across Unequal Computer Platforms. *ACM Trans. CHI*, 11(4):407-444, 2004.
39. Maznevski, M. and Chudoba, K. (2001). "Bridging Space Over Time: Global Virtual Team Dynamics and Effectiveness," *Organization Science*, Vol. 11, No.5, pp. 473-492.
40. McFarlin, D. & Sweeney, P. (1992). Distributive and procedural justice as predictors of satisfaction with personal and organizational outcomes. *Academy of Management Journal*. 35 (3): 626 - 637 NASSCOM - Strategic Review 2013.
41. Naumann, E. (1992) "A conceptual model of expatriate turnover", *Journal of International Business Studies*, vol. 23, no. 3, pp. 499-531.

42. Olkkonen, M.-E., & Lipponen, J. (2006). Relationships between organizational justice, identification with organization and work unit, and group-related outcomes. *Organizational Behavior and Human Decision Processes*, 100, 202–215 .
43. Organ, D. W., & Paine, J. B. (1999). A new kind of performance for industrial and organizational psychology: Recent contribution to the study of organizational citizenship behavior. *International Review of Industrial and Organizational Psychology*, 14,337-368.
44. Organ, D. W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology*, 48,775–802.
45. Roberson, Q., & Colquitt, J. A. (2005). Shared and configural justice: A social network model of justice in teams. *Academy of Management Review*, 30, 595-607
46. Roberson, Q. M., & Colquitt, J. A. 2005. Shared and configural justice: A social network model of justice in teams. *Academy of Management Review*, 30, 595-607.
47. Salancik, G. R. & Pfeffer, J. 1978. A socialinformation processing approach to job attitudes and task design. *Administrative Science Quarterly*, 23: 224-253.
48. Scandura, T. A., & Lankau, M. J. (1997). Relationships of gender, family responsibility and flexible work hours to organizational commitment and job satisfaction. *Journal of Organizational Behavior*, 18, 377-391.
49. Schneider,S, D Roessli, and L Excoffier. 2000. "Arlequin: A software for population genetics data analysis. <http://lgb.unige.ch/arlequin/>". Ver 2.000. Genetics and Biometry Lab, Dept. of Anthropology, University of Geneva.
50. Shaffer, M. A., & Harrison, D. A. 1998. Expatriates' psychological withdrawal from international assignments: Work, non-work, and family influences. *Personnel Psychology*, 51: 87-118.
51. Sweeney, P. D. & Mc Farlin, D. B. (1997).Process and outcome: Gender differences in the assessment of justice. *Journal of Organizational Behavior*, 18, 83-98 .
52. Thibaut, J. & Walker, L. 1975. *Procedural justice: A psychological analysis*. Hillsdale, NJ: Lawrence Erlbaum Assoc.
53. Vlaar, P. W. L., Van Den Bosch, F. A. J. & Volberda ,H. W. (2006) Coping with Problems of Understanding in Interorganizational Relationships: Using Formalization as a Means to Make Sense. *Organization Studies*,27,1617-1638.
54. Yang, J., Mosholder, K. W., & Peng, T. K. (2007). Procedural justice climate and group power distance: An examination of cross-level interaction effects. *Journal of Applied Psychology*, 92, 681-692.