

The role of Organizational justice in the relationship between LMX,
Organizational Commitment and Intent to turnover

Amna Yousaf
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Supervisors: Dr. Nicole Torka
Prof. Dr. Jan Kees Looise

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1 Introduction

The aim of this research is to investigate the relationships between leader-member exchange, perceived justice concerning HR practices and organizational commitment (among PhD students at University of Twente, Enschede so as to suggest measures to increase their organizational commitment. Supervisors play a particularly prominent role in important HR activities that affect employee motivation, skills and subsequently organizational commitment and intent to leave. They are directly involved in selection and hiring process of the company, performance appraisal of employees, job design, job content of employees, decisions regarding employee authority, autonomy and empowerment, training and development opportunities and so on (Whitener, 1997). It is also reported that supervisors as leaders play an important role in shaping the attitude and behavior of their subordinates (Dansereau, Graen and Haga, 1975). Leader-member exchange (LMX) theory describes how leaders develop different exchange relationships over time with various subordinates (Graen and Scandura 1987; Maertz et al, 2007). It has been suggested in literature that the quality of relationships formed between leaders and subordinates determines employees' perception of organizational policies and practices such as distributive and procedural justice regarding HR policies used by the organization (Dansereau, Graen and Haga, 1975). These perceptions, in turn, influence their attitude and behavior (Graen and Scandura, 1987). In the words of Graen and Scandura (1987) the immediate supervisor of the employees mediates the relationship between fairness perceptions of employees regarding HR activities and their consequent level of organizational commitment.

Organizational justice is a very important predictor of a number of employee attitudes and behaviors. It is reported to directly influence organizational commitment, turnover and job satisfaction of employees (Colquitt et al, 2001). Cropanzano (2002) define this construct as fairness perceptions of employees regarding decisions taken by the organization.

Organizational commitment variable has been chosen as outcome variable for this research. Allen and Meyer (1990:14) define organizational commitment as "a psychological state that binds the individual to the organization (i.e., makes turnover less likely)". Steers (1977) also indicate in his findings that commitment is associated with increased desire of an employee to remain in the organization. Various authors highlight the importance of organizational commitment. For example, Al-Emadi and Marquardt (2007) explain that much recent writing on Human Resources Management has emphasized the desirability of a committed workforce and the central role of HRM practices in establishing and maintaining commitment. They report that there has been a continuing interest in the commitment of employees to their organization. This is because organizational commitment is recognized as one of the major determinants of organizational effectiveness (Steers, 1975). Ferris and Aranya (1983) add that 'organizational commitment is becoming an increasingly used construct to predict performance, absenteeism and turnover' (p. 96). They point out that management is recognizing the link between increased organizational commitment and higher levels of job performance, lower levels of absenteeism and lower levels of employee turnover. Mitchell et al. (2001) suggest that 'organizations of all sizes and types are recognizing that they are engaged in a struggle to retain talent, and are actively trying to do something about it' (p. 97).

The following research question will be addressed:

Does organizational justice concerning HR practices mediate the relationship between leader-member Exchange, organizational commitment and intent to turnover of PhD's?

To answer the main research question the following sub questions have been developed:

- a) What is organizational justice and why it is important?
- b) What are the consequences of organizational justice?
- c) How justice perceptions of employees are linked to different HR practices?
- d) What is Leader-Member Exchange and why is it important?
- e) What is the role of supervisor in the HR practices of the organization and how he/she can affect fairness perceptions?
- f) What are different dimensions of LMX?
- g) What is organizational commitment and what are the foci of commitment?
- h) What are the different dimensions of organizational commitment?
- i) What is intent to turnover?
- j) What is the interrelationship between different variables used in the study?
- k) Does Organizational justice mediate the relationship between LMX, commitment and turnover intent?

1.1 Societal relevance

PhD students are the foundation on which Dutch science is built (Tan and Meijer, 2001). It was stated in the Association of Dutch Universities' annual report of 1999 that 70 to 80 percent of scientific research in medical sciences is done by PhD students. It was also suggested that in physics, without the research of PhD students the output of scientific research would be five times less.

Scarcity of the number of scientific employees has been observed in the Netherlands since last couple of years. Fischer and Lohner (2001) found that there is declining trend in the students attracting towards PhD studies. In 1998 only 7% of the students with a master's degree continued into PhD study and numbers are declining still further. Those studying for PhDs in the Netherlands are not as in some other countries, considered to be students. They are university employees and receive a small salary, health insurance, maternity leave and pension insurance. At the moment the University of Amsterdam and Groningen University make the only exception to this system: Some of their PhD students are so called 'bursars' and receive only a grant (Fischer and Lohner, 2001).

The universities, the Netherlands Scientific Organization (NWO), the Royal Dutch Academy of Arts and Sciences (KNAW) as well as some other bodies (industry, charities) provide funding. The majority of PhD students is called AIO and is funded by the universities or KNAW. The only difference with the NWO-supported OIO is that OIOs don't teach undergraduates, but the OIO system is being discontinued (Fischer and Lohner, 2001). In general, students apply to the future supervisor directly, rather than applying to the university or funding bodies.

Tan and Meijer (2001) explain that the majority of PhD students (AIOs & OIOs,) pay a lot for education and supervision but still most were not satisfied with the quality and quantity of their supervision. The loss of motivated PhD students is not only a bad

experience for the students themselves; it is a loss of scientific work and future staff which are desperately needed (Tan and Meijer, 2001). A survey found that 32% of the students said that supervisors did not pay enough time to supervision and 29% did not expect to learn much from them. However, lack of proper supervision is one factor that contributes significantly to student drop out.

In theory PhD study takes 4 years, and funding is provided for this period, but only 12% finish their thesis within this term. Because of the increasing difficulty in finding PhD students, foreign PhD students are hired. At the moment around 20% to 37% of the PhD students come from abroad. A lot of openings and vacancies for PhD students can be found in newspapers and on internet with fewer respondents from the home country. Resultantly vacancies are also posted in the local media of neighbor countries like Germany to attract the PhD students and fill the vacant positions.

Number of students beginning PhDs per year – The Netherlands

Year	AIO (male)	AIO (female)	OIO (male)	OIO (female)	Total
1992	1023	483	354	152	2012
1993	925	511	367	153	1956
1994	822	470	352	161	1805
1995	728	451	305	133	1617
1996	838	506	348	126	1818
1997	861	562	313	57	1793
1998	918	691	244	141	1994

Another important cause of the dearth of scientific employees in The Netherlands can be linked to the retirement of senior PhD's but less availability of fresh ones in to the labor market. A report commissioned by the Dutch Minister of Education, Culture and Sciences showed that a third of the scientific staff will retire in the next 10 years. Universities should do their very best to keep young talent.

If we compare the situation of scientific employees with other neighboring/European countries, the situation looks dismal. Taking the example of Germany where there are very few regulations governing doctoral research. Many PhD candidates are not registered anywhere, which means that it is difficult to get an accurate picture of the true situation of doctoral students in Germany. There are also further complications of research problems in communication with supervisor. PhD's are understood only as students and barely find mechanisms to change the supervisor when cooperation does not function well. Besides, there is no possibility for supervisor to attend special courses, which would help him/her to improve cooperation with students.

Another crucial matter, which makes young educated people to leave, is poor perspective after finishing PhD study. In many European countries PhD's enjoy low societal status. Owing to time and difficulties involved in obtaining a PhD degree; it becomes easier for young scientists to leave the country. On the whole, poor working and studying conditions of young researchers in Europe clearly results in brain drain especially to the United States and Japan.

In the current situation it becomes very important to identify areas where adequate steps need to be taken to ensure retention of scientific staff and also for the hiring of new comers so as this scarcity can be over come.

PhD students attached to University of Twente, The Netherlands located in Enschede, will be chosen as the sample for the purpose of this research. In doing so, the research will take place in collaboration with the universities' PhD network. This university also faces similar kind of trends when it comes to the dilemma of the ever burgeoning scarcity of scientific employees. The following table makes the situation clearer.

Number of students beginning PhD's per year – University of Twente

Year	Male	Female	Local	Foreign	Total
2008	436	184	316	304	620
2007	-	-	-	-	607
2006	-	-	-	-	628
2005	-	-	-	-	634

This sample has been selected also because they are easier to enter and access to information will be easier. Data will be collected using online questionnaire.

This empirical study is the first of its kind to examine the relationship between above mentioned variables. Understanding such linkages may enable organizations to increase the commitment level of their scientific staff which is the need of the hour. This research can be of particular help to cope with the ever increasing problem of loss of PhD students by highlighting the role of promoter in supervising the research, which determines their perceptions of organizational justice in use of various HR policies, over which promoter has direct control. These perceptions in turn determine their organizational commitment level thus directly affecting their decision to drop out or quit or to leave the organization after completion of research.

1.2 Scientific relevance

Recent research efforts have noted the potential importance of differentiated levels of exchange with respect to subordinates' attitude formation, and have called for further study to determine if such differential treatment might affect perceptions of fairness and various organizational outcomes (Forret and Turban, 1994).

This study is significant for the following reasons:

1. Contribution to theory

Although several studies examined the relationship between LMX work/organizational outcome variables (e.g. Graen and Scandura, 1987) as well as between organizational justice and work/organizational outcome variables (Colquitt, 2001; Cropanzano, 2001), relatively little is known about the interrelationships between LMX, organizational justice, organizational commitment and turnover intent. Previous research hypothesized that LMX mediates the relationships between interactional justice and performance, supervisor-directed citizenship behaviours, and job satisfaction (Masterson et al, 2000). Current research will be aimed at studying the mediation effects and extent of mediation

of organizational justice in the relationship between LMX, commitment and turnover. It is expected to add up to the existing literature by providing a more developed model of organizational justice. Also, not much research has been done yet including the four dimensions of justice presented by Colquitt (explained below). The research will make use of Colquitt's four dimensional model of justice to test its hypothesis.

Also a scarcity was found on the research done investigating the role of supervisor regarding important HR practices of task content, career development opportunities and so on. The present research will also study this area where supervisor has large degree of autonomy.

2. Recommendations for future actions:

The study may assist in determining actions managers can take to maximize organizational commitment among employees, thus leading to retaining scientific capital. The study may also serve to highlight areas for further research.

2 Theoretical chapter and Research hypothesis

The following section deals with the literature study on the variables chosen for the purpose of this research and their intertwinement. Based on the literature review, we develop our own hypothesis and later research model to be tested using some appropriate statistical technique.

2.1 Organizational Justice

In literature a distinction has been made between four dimensions of justice: distributive justice, procedural justice, interpersonal justice and informational justice (Colquitt, 2001). In the following paragraphs, we will elaborate on these dimensions and link them to HR practices.

Cropanzano et al (2001) define organizational justice as the fairness perceptions of employees in organizational decision making. They link the justice perceptions of employees to commitment level of employees, job performance, withdrawal and organizational citizenship behaviors. Fairly treated employees, compared to the ones who are unfairly treated, demonstrate organizational citizenship behavior, show higher job performance, are more committed and have fewer turnover intentions (Rupp and Cropanzano 2002). Folger (1994) links justice to moral and ethical standards and explains in his studies that individuals prefer to be part of organizations that behave morally and ethically than those that do not. Therefore, justice has been classified as an important and basic requirement for the effective functioning of an organization, for the well being of its employees and for their personal satisfaction (Moore, 1978).

Below we look at various dimensions of organizational justice, their consequences and their specific implications for various HR practices

2.1.1 Distributive justice

There is ongoing conflict in literature about whether there are various dimensions of organizational justice and if they can be distinguished from each other. Before 1975 the study of justice was recognized to be consisting of only the distributive justice dimension. Other forms of justice were not conceptualized, meaning that justice was used as a broad term and no differentiation was made between dimensions of justice (Greenberg, 1990). Adams presented his Equity theory (1965) which focused only on the distributive aspect of justice as the theory focuses on reactions to pay inequity, an important distributive justice predictor. It states that individuals compare the ratio of their output (rewards) and inputs (contributions that they make towards the organization) to the similar ratio of their counterparts. If their ratio is higher (which means that they are getting more rewards) it may lead to their increased performance. However employees who feel themselves to be in inequitable position try to reduce inequity by distorting inputs (reducing their contributions) or outcomes in their own minds (Adams, 1965). Scandura (1999) explained that equal distribution of rewards would not totally avoid inequity perceptions, as those employees whose contributions are higher to organization also expect higher rewards compared to others. He further states that equal reward distribution may harm those who are the hardest workers in the group. So equity theory of Adams was criticized on the

ground that it did not address the issues of how plans were administered and raised questions of process oriented outcomes (Greenberg 1990, P 402).

Folger (1986a) presented Referent Cognitions Theory (RCT) in an attempt to address the pitfalls of equity theory. RCT states that an individual will find an outcome/judgment unfair when he believes that the use of some alternative procedure could have resulted in more favorable outcome. It means that presence of alternatives leads to a situation as disadvantaged if individuals are aware of it. Despite its contributions, RCT was also criticized on the ground that it explored only economic aspects and did not consider socioemotional aspects (Folger and Cropanzano, 2001). Folger revised the RCT keeping in mind its limitations and presented Fairness Theory (Folger and Cropanzano, 2001). Fairness theory addressed some of the limitations of RCT but it could not be empirically tested because of its recency.

Fairness heuristic theory was on the contrary empirically supported (Lind, 1995a). The theory explained how exactly justice judgments are formed. Individuals are often in situation in which they must surrender to an authority figure, leading to the chances of their being exploited and their identity being threatened (Lind, 1995). Furthermore, as a result individuals are often uncertain about their relations with authority. This uncertainty leads individuals to ask questions about the trustworthiness and unbiased treatment of authority. The theory states that the information required to answer these questions is often incomplete or unavailable. Thus individuals rely on heuristics or cognitive shortcuts to guide their subsequent behaviors. It concludes that fairness judgments of individuals are formed on the basis of readily available information.

Various authors have (Moore, 1978; Greenberg, 1990) mentioned the importance of distributive justice in the organizational justice research and its consequences. Skarlicki and Folger (1997:435) explain the consequences of organizational injustice as not merely job dissatisfaction. Rather violations of distributive justice might increase desire to punish and impose harmful consequences on a putative wrongdoer. Colquitt (2001) explains that decisions taking place in organizational lives have important consequences on both economic and socio emotional lives of the employees.

2.1.2 Procedural justice

Thibaut and Walker (1975) introduced another dimension of organizational justice namely procedural justice. They defined procedural justice to be concerned with individual's perceptions about the fairness of procedures governing decisions. Examples of procedural justice include the degree of voice a person has in the decision making process and whether or not consistent rules are followed in making decisions (this means that procedural justice is also linked to employee influence). Thibaut and Walker (1975), in other words, gave the concept of process control and decision control. Their work was mainly limited to legal procedures and disputant reactions. They suggested that if disputants had control over processes, they would still view procedures as fair even if they had minimal control over decisions. By process control they mean the control over the presentation of argumentation and sufficient time to present the case.

Leventhal et al (1980) introduced procedural justice in an organizational setting (in contrast to legal settings used by Thibaut and Walker in their studies) and introduced six measures of procedural justice. These include consistency across people and time, free

from bias, accuracy of information used in decision making, existence of some mechanism to correct flawed decisions, conforming to standards of ethics and morality and inclusion of opinion of various groups involved in the decision process.

Skarlicki and Folger (1997) explain the consequences of procedural justice. They argue that individuals accept responsibility for their problems if they perceive that fair procedures were used to arrive at decision outcomes. However if they perceive that procedures used by the organization are unfair, individuals may show anger and resentment and consequently enter into retaliating behaviors (Skarlicki and Folger, 1997). Employee perceptions of fairness in treatment and procedures enhances their quality of work, their performance, stimulates commitment and desirability of long term ongoing relationship with organization (Cropanzano et al, 2001). Also procedural justice is expected to increase perceptions of organizational support, which, in turn, increase both citizenship behaviors directed toward the organization and organizational commitment (Cropanzano et al, 2001). Thus it becomes important for employees that what is fair and what is not. Favorable outcomes are more likely to engender fairness, whereas unfavorable outcomes are more likely to engender perceived unfairness (e.g., Conlon, 1993).

A number of studies in a variety of situations have demonstrated that offering an explanation or justification for a decision will increase the perceived fairness of that decision, meaning that a perceived fair procedure also influences distributive justice positively (Greenberg, 1990).

2.1.3 Interactional justice

Another form of justice was introduced by Bies and Moag (1986) based on the importance of the quality of the interpersonal treatment people receive when procedures are implemented. This was referred to as "Interactional Justice". This dimension emphasizes the importance of truthfulness, respect, and justification as fairness criteria of interpersonal communication.

Highlighting the importance of interactional justice, Mikula, Petrik, and Tanzer (1990) reported that a considerable proportion of perceived injustices did not concern distributional or procedural issues in the narrow sense but instead referred to the manner in which people were treated interpersonally during interactions and encounters.

2.1.4 Interpersonal justice and Informational justice

Unlike previous literature on organizational justice, Colquitt (2001) made use of four dimensions of organizational justice. He does not use interactional justice as a subset of procedural justice; rather he suggests that interactional justice be further broken down into interpersonal justice and informational justice dimensions. Interpersonal justice reflects the degree to which people are treated with politeness, dignity and respects by authorities involved in executing procedures or determining outcomes. Informational justice focuses on the information provided to people about why certain selected procedures were used and why or why not certain outcomes were distributed in a certain fashion. He based his argument on the logic that if interactional justice is used as a subset of procedural justice, it can hide some important differences among the constructs.

Moreover Colquitt (2001) in his four factor model found that the four dimensions had different distinct impact on different outcomes.

In order to support this line of argumentation, Colquitt et al (2001) conducted a meta-analysis, which consisted of 183 empirical studies. One of the objectives of the study was to study the individual impact of different forms of justice on various organizational outcomes. Results showed that interpersonal and informational justice were relatively weakly correlated ($r = 0.16$ and $r = 0.26$) to organizational commitment. Distributive justice and procedural justice were highly correlated to organizational commitment ($r = 0.42$ and $r = 0.48$) respectively.

2.1.5 Organizational justice and HR practices

Gilliland and his colleague (1996) explain that human resource practices and hiring/staffing decisions influence procedural and distributive justice evaluations along a number of justice dimensions. These justice dimensions included formal characteristics of the selection procedures, explanation offered during the selection process, interpersonal treatment during the selection process, and distributive justice of the hiring decision (Gilliland and colleague, 1996). Fairness perceptions and attitudinal and behavioral outcomes result from these justice evaluations. Gilliland and his colleague state that job applicants are also concerned with justice. Fairness perceptions of applicants have been related to satisfaction with the selection process, organizational effectiveness and intention to recommend the organization to others. Gilliland and colleague (2003) found out that if applicants perceived fairness during selection process they would accept even negative decisions like their rejection in a better way.

Gilliland and his colleague (1996) also link types of justice to stages of selection in terms of importance. They explain that different types of justice are salient during different stages in selection process. During recruiting and initial communication stage, informational justice becomes of primary concern. During screening and selection, procedural justice becomes salient. Finally during decision making and communication, both informational and distributive justice becomes salient. Provision of information about the selection decision and timeliness of information also play crucial role. Gilliland and colleague moreover suggest that interpersonal justice is salient in all stages of selection. If prospective employees feel at any stage of selection process that they are being treated rudely they perceive it to be unfair and unjust treatment.

Bies and Shapiro (1988) found that perceptions of procedural fairness in a recruiting scenario were greater when justification was offered for a negative decision than when no justification was offered.

Greenberg (1990) found that perceived fairness in pay was strongly correlated with pay satisfaction meaning that the more strongly employees believe their pays are fair, the more satisfied they are with their pay outcomes.

Amongst other dimensions of justice, procedural justice has been specifically linked to performance evaluation decisions (Korsgaard, 1995). They explain voice to be an important procedural justice determinant. Voice is a form of subordinate participation, which has long been cited as a means to enhance satisfaction with the appraisal process (Korsgaard, 1995). The construct of participation in the performance appraisal has also

been linked to a number of outcomes, such as attitudes and perceptions of the appraisal, motivation to improve and satisfaction with work and supervisor. That is, voice affects people's attitudes toward a decision because they feel they have had a chance to indirectly influence the decision. Another explanation given by Korsgaard (1995) is one in which voice is intrinsically valued regardless of whether the input influences the decision. That is, voice produces positive attitudes because it is a desired end in itself. The key distinction between these mechanisms of voice is the perceived potential to influence, regardless of whether voice had any impact on the decision.

It is also important to note that procedural and informational justice dimensions have also been linked to layoff decisions taken by the organization in the literature (Gilliland and Schepers, 2003). Gilliland et al noted that if fairness in procedures is adopted while making these decisions and if they are communicated in a nice manner to the victims, it not only lessens the pain to the victims but can also cause less negative attitudinal outcomes for the survivors. They further state that if on the contrary, the procedures are perceived to be unfair and communicated poorly it may lead to reduced productivity, job satisfaction and organizational commitment of survivors.

Literature suggests that justice perceptions of individuals differ depending upon the quality of relationship between leader and his subordinate, referred to as Leader-Member exchange (Scandura (1999)). So it becomes important, for the purpose of this research, to study this specific leadership construct.

2.2 Leader- Member Exchange (LMX)

Amongst other leadership constructs, leader-member exchange has been chosen for the purpose of this study as it refers to the quality of the relationship between a supervisor and an employee (Graen & Scandura, 1987; Maertz et al, 2007). Whitener (1997) states that LMX focuses on the aspect of the leadership that is overlooked by other leadership constructs, which is formation of in group and out group members. An in - group is formed when the exchange relationship is high quality, meaning that it is characterized by a high degree of mutual trust, respect, and obligation. At the other extreme, is out – group which is characterized by low trust, respect, and obligation between leader and subordinate.

LMX theory suggests that leaders do not use the same style in dealing with all subordinates but rather develop a different type of relationship or exchange with each subordinate (Graen and Scandura, 1987). LMX may vary from low quality to high quality relationship. High quality LMX relationships involve exchanges that go beyond elements fundamental to employment contract.(Dansereau et al, 1975) These involve high degree of mutual respect, loyalty, trust, high degree of autonomy for the member and enhanced commitment and loyalty for the leader (Sherony et al 2002, p: 542). On the other hand individuals with low quality LMX relationship have weak social exchange relationship and low functional interdependence with both their subordinate and their employing organization. Low quality LMX relationships involve exchanges that are basic to employment contract like restricted to economic exchanges only. Employees as a result exhibit low trust, loyalty, respect and lack of commitment (Sherony and Green, 2002). However Wayne and colleagues (1997) in their article come to different conclusions. They suggest low quality LMX may not affect employee's intention to quit and their commitment towards their organization as they may perceive that their supervisor will

leave the organization sooner or later so even if some employees have unfair justice perception of their supervisor in their eyes it will not affect them in the long run.

2.2.1 Role of supervisor and different HR practices

Uhl-Bien et al (2000) highlight the importance of the quality of relationship between leader and member and its implications for HR. They state that organizations do not work in isolation; therefore to focus on HR functioning, focus should be realigned toward the right people, at the right place, at the right time and with the right kind of relationships (p: 144). They further explain that these high quality relationships can increase firm performance and satisfaction by 20%, compared to low LMX groupers. Low groupers result in being costly to organization, as a result, also exhibiting high turnover ratios; approximately almost every year all low LMX employees turn over. The employees react to the treatment they receive from the individual who carries out the procedures and distributive outcomes typically their supervisors (Whitener, 1997). Whitener (1997) states that the interpersonal treatment employees receive from their supervisor (such as adequately considering their view points, suppressing their personal biases, applying decision making criteria consistently, providing timely feed back after a decision and explaining a decision) strongly affects their perceptions of fairness.

Kingstrom and Mianstone (1985) found out that subordinates who have a favorable task and personal relationship with their supervisors receive significantly more favorable performance ratings and are more likely to receive promotions than other subordinates. Furthermore, the interpersonal relationship between a manager and a subordinate affects the content of performance appraisal feedback, including the subordinate's opportunity to participate in the review and discussion of important issues related to the subordinate's career (Kingstrom & Mainstone, 1985).

Literature review suggests that followers' job enrichment has been recognized among LMX scholars as an important component of the LMX leadership model, whereby followers engaged in higher-quality LMX relationships are likely to have been given more enriched work opportunities compared to followers in lower-quality LMX relationships (Laurent et al, 2006) Graen & Uhl-Bien (1995) referred to job enrichment in their LMX model of leadership. They explained that leaders can influence different characteristics of followers' jobs, including giving more autonomy at work, assigning more challenging tasks that require use of different skill sets, entrusting them with whole projects, and delegating responsibilities of greater importance, resulting in higher job enrichment.

Moreover, it was found that high LMX relationships influenced feelings of psychological and structural empowerment of employees at the workplace (Laschinger et al, 2007). Such employees felt empowered in terms of having meaning in their work and confidence in their ability to perform in the given role. They are more likely to feel that their work environments empower them to accomplish their work in meaningful ways. As a result, they are more likely to be satisfied and committed with their jobs. Because job satisfaction and commitment has been shown to be one of the strongest predictors of intent to leave one's job, these results illuminate factors that must be addressed to retain managers.

Kidd and Smewing (2001) defined the role of supervisor as gatekeeper to the organization and the person to be in direct contact with individual employees (subordinates). They suggest that role of supervisor is crucial for employees since employees depend on them for support, feedback and assessment of appraisal systems. Theory also suggests that supervisors have stronger impact on workers well being compared to workers relationships with co workers (e.g. Hopkins, 1997).

Whitener (1997) found that employees trust in their supervisor forms their perceptions of the success, accuracy and fairness of HR system used by the organization. Folger and Konovsky (1989) reinforced this view when they found that the process used by supervisors to make decisions would have a greater impact on fairness perceptions of employees than the pay raise outcomes themselves.

Erdogan (2002) studied justice perceptions in the use of performance appraisals as performance appraisal is an important HR practice having implications for important individual decisions (e.g. pay raises and promotions etc). Supervisors have been viewed as key persons in forming justice perceptions about performance appraisals as they are the main evaluators of individual's performance. Erdogan (2002) termed them as most influential raters. It has also been suggested by Ergodan that individuals assume that members having high quality LMX will have positive outcomes such as career progress and salary progress During the performance appraisal process, it is the supervisor who communicates with the member as a result of which individuals interactional justice perceptions are shaped. Similarly individual's distributive justice perceptions are formed by their supervisors as they decide the final performance rating of the individual. It might be noted that some of the researchers differentiated procedural and interactional justice by assuming that supervisor's behaviors can affect only interactional justice and not procedural justice

Erdogan (2002) contributed to the literature on justice perceptions regarding performance appraisals by dividing procedural justice in to two sub dimensions. *Rater procedural justice* refers to perceived fairness of procedures raters use during performance appraisals, whereas system procedural justice refers to perceived fairness of the performance appraisal procedures adopted by the organization. So Erdogan (2002) also highlighted the role of supervisor in forming procedural; justice perceptions of employees in the area of performance appraisals.

Renwick and MacNeil (2002) highlight the role of supervisor by bringing in to light the fact that supervisors have been devolved to perform important HR tasks including involvement in attracting and retaining of employees, decisions regarding pay raises, promotions, work assignments and roles, designing of career paths and decisions regarding developing opportunities including nominations in training programs. Role of leaders and supervisors also becomes very important because they bring sense of direction and motivation to their subordinates. (Bloisi et al, 2003). They further explain that it is these leaders who, on the behalf of their employing organization, communicate the goals of the organization to the subordinates, set purpose for the subordinates, assign them specific tasks, supervise their work and evaluate their performances later on to determine their respective rewards according to the already laid down procedures.

As regards the dimensions of LMX, Graen (1976) presented a unidimensional model of LMX. The model was based on work behaviors of leaders and subordinates. He used role

theory and social exchange theory to support their model. According to role theory (Graen, 1976) leaders assign different roles to their subordinates and subordinates comply with these roles/work assignments in varying degrees. The higher the compliance with the task demand, the greater the level of trust established by the leader in the subordinate and vice versa. Based on the compliance of task demand and subsequent establishment of different levels of trust on different subordinates, leaders reciprocate the subordinates with different work related resources such as information, challenging task assignments and autonomy (Graen and Scandura, 1987). This provision of resources by the leader in return to task behaviors exhibited by the subordinate represent exchange (Graen and Scandura, 1987).

A multidimensional conceptualization of LMX was first presented by Dienesch and Liden (1986). They explained three dimensions of LMX in their studies although they did not strictly limit their conclusions for only these dimensions of LMX and acknowledged possibility for some other dimensions of LMX also. First dimension they refer to in their work is *Contribution*. In their words contribution may be defined as "perception of the amount, direction, and quality of work-oriented activity each member puts forth toward the mutual goals (explicit or implicit) of the dyad" (1986: 624). It means that based on the performance of subordinates, leaders form high quality relationships with good performers and low quality relationships with low performers. Another dimension of LMX as provided by Dienesch and Liden (1986) is *loyalty*. They explain loyalty as the extent to which leader and member are loyal to each other and the extent to which they publicly support each other's actions. It is expected that leaders will assign more challenging tasks and tasks that require independent judgment and responsibility to more loyal members (Scandura et al, 1986). *Affect* is the third dimension used by Dienesch and Liden (1986) in their studies. They defined affect as "the mutual affection members of the dyad have for each other based primarily on interpersonal attraction rather than work or professional values" (1986: 625). The degree of liking has been found an important determinant of LMX and interpersonal interaction and is expected to be involved in developing LMXs to varying degrees with different subordinates (Dienesch and Liden 1986).

The same point of view has also been supported by Heneman et al (1989) when they state that leaders holding high expectations of subordinates may be more likely to attribute their good behavior to their internal qualities and poor behavior to the forces external to them or beyond their control; however situation would be reverse if leaders have low expectations of the subordinates. Feldman and Leana (1986) noted that leader expectations may also influence their behavior towards members. High leader expectations towards a subordinate may translate into the assignments of dedicated tasks, having more variety, lesser routine and more autonomy while low expectations of leader from subordinate may lead to routine like tasks, less feedback and few training opportunities (Feldman and Leana 1986).

It might be noted that Liden and Maslyn (1998) concluded that in LMXs that are work-based with contribution being the most important LMX dimension, affect may play little or no role in the exchange. On the other hand, some LMXs according to them may be dominated by affect. For example, the leader and member frequently interact simply because they enjoy each other's company. Unlike the previous authors, Liden and Maslyn (1998) gave a four factor model of LMX, which they developed after conducting a confirmatory factor analysis. Other than the three dimensions of LMX previously

explained they introduced another dimension to LMX namely professional respect. They define it as “perception of the degree to which each member of the dyad has built a reputation, within and/or outside the organization, of excelling at his or her line of work” (1998: 50). They explain that this perception of the individual can also be based on personal meeting with the subordinate or there can also be perception about the individual even before meeting him based on comments about him from inside or outside the organization.

There is likely to be more freedom for supervisors to develop relationships with the employees under him/her. Supervisors also form individual relationships with their employees and employees may be attached to a supervisor or have different attitudes to supervisors than to the organization as a whole. Because supervisors do have more daily contact with their employees, there is more opportunity for them to show support to employees, and when they provide important benefits on a regular basis, such as feedback or recommendations, they are likely to create positive feelings and trust among employees (Maertz et al, 2007). Supervisors who appear to be highly regarded by the organization would be assumed by workers to strongly embody the organization’s character

2.3 Organizational commitment

Another variable used for the purpose of this proposed study is organizational commitment which acts as an outcome variable of organizational justice (Steers, 1997). There is a vast variety of literature on the subject of commitment, its definition, antecedents and consequences, and also it has been defined in a number of ways. (Meyer and Herscovich, 2001; O’Reilly and Chatman, 1986). A lot of importance has been attached to this construct because of its important consequences for the organization. Mowday, Porter & Dubin (1974) link commitment to performance when they state that highly committed employees are expected to perform better than less committed ones.

Organizational commitment in a general sense may be defined as an employee’s engagement which restricts freedom of action (as defined in Oxford English dictionary). . Allen & Meyer (1990, p. 14) defined organizational commitment as “A psychological state that binds an individual to the organization (i.e., makes turnover less likely).” Meyer and Herscovich (2001) developed a general model of commitment. They defined commitment as a stabilizing or obliging force that gives direction to behavior (e.g. restricts freedom, binds the person to a course of action (2001: 301). They explained various conceptualizations of commitment and distinguished it from related constructs (e.g. motive and attitudes). They propose that commitment is more than merely a motive to engage in a particular course of action or a positive attitude towards an entity that predisposes an individual to behave in manner that is beneficial to the entity on the whole. They further state that commitment is also more than a state of mind that exists when an individual experiences a positive exchange relationship with some entity and it is also more than simply a positive attitude (2001, p. 301). A similar line of argumentation has been given by various other authors, thus, supporting the conceptualizations of commitment explained by Meyer and his colleague, for example, Brickman (1987) noted that commitment is different from motivation or general attitudes; it influences behavior independently of different motives and attitudes. Highly committed employees may lead individuals to behave in ways that are contrary even to their self- interests.

2.3.1 Conceptualizations of organizational commitment

There have been disagreements in literature regarding the dimensionality of commitment as to whether it is unidimensional or multidimensional construct. (Becker, 1960; Mowday, Steers and Porter; 1979, Allen and Meyer; 1990).

Allen and Meyer (1990) presented a three component model to explain organizational commitment and conducted two studies to verify their model. The construct was noted to be having three main dimensions: affective, continuance and normative. They characterize commitment in to these three dimensions on the basis of different mind sets. *Affective commitment* refers to identification with, involvement in, and emotional attachment to the organization. Thus employees having strong affective commitment remain in the organization because they want to do so (Allen and Meyer, 1990:1). *Continuance commitment* relates to the costs associated with leaving the current job which may include organizational and individual investments in career building of individual and may include economic losses such as pension accruals and social costs such as friendship ties with co-workers that would have to be given up. Individuals thus with strong continuance commitment remain with the organization because they *have to* do so. *Normative commitment* is a sense of obligation that an employee feels towards its company. Employee may feel obliged toward his organization for many reasons. For example, the company might have invested in his training and skill development that he wants to reciprocate by offering his services. Employees thus with strong normative commitment remain in the organization because they *ought to* do so.

Allen and Meyer (1990) developed scales to measure these components. In study one, relationships among the components of commitment and with hypothesized antecedents of each component were examined. It was found that although there was some overlap between affective and normative commitment, both were relatively independent of continuance commitment. Results of a correlation analysis done in study two suggested that, as predicted by the model, the affective and continuance components of organizational commitment are empirically distinguishable constructs with different correlates. The affective and normative components, although distinguishable, appear to be somewhat related.

Prior to that, Becker (1960) presented his side bets theory and explained the concept of continuance commitment to be a sub dimensional construct. Side bets theory states that an individual becomes bound to an organization because of anything of value (time, effort, money, e.g. pension, seniority, organization specific skills etc) that would be lost if he leaves the organization. In addition to this perceived cost of leaving, an individual also considers perceived lack of alternatives which bound him to the organization. This economic rationale of commitment was labeled as continuance commitment by Meyer and Allen (1984). However some of the researchers viewed commitment as attitudinal and conceptualized commitment as emotional attachment to organization (e.g. Steers, 1977; Mowday, Steers and Porter, 1979). This sense of emotional attachment has been labeled as affective commitment by Meyer and Allen (1984).

Meyer and Allen (1984) developed their own measures to test Becker's side bets theory (continuance commitment conceptualization) and the affective commitment conceptualization. They noted that these two dimensions of commitment are distinct, unrelated and independent of each other. It means that according to them one's degree of

affective attachment to the organization does not affect his degree of continuance commitment and vice versa.

McGee & Ford conducted a study in 1987 to reexamine the scales used by Meyer and Allen (1984) to measure the two dimensions of commitment. They found that while affective commitment was one-dimensional, continuance commitment consists out of two-sub dimensions. The first dimension was based on perceptions that few employment alternatives exist and the second on high personal sacrifice associated with leaving the organization. This noting of McGee and Ford strengthened the side bet theory originally presented by Becker. However unlike Meyer and Allen (1984) noting that continuance commitment and affective commitment were unrelated, McGee and Ford found that the two continuance commitment subscales were significantly, though differentially, related to affective commitment.

Dunham, Grube and Casteneda (1994) examined the psychometric characteristics (reliability and factor structure) of the Allen and Meyer (1990) scales. Furthermore, the relationships between the various organizational commitment dimensions and a number of antecedents selected on the basis of prior empirical research and conceptual arguments were also examined in the study. The results supported the findings of Allen and Meyer (1990) by drawing the conclusion that confirmatory factor analysis consistently demonstrate better fit between affective and normative commitment items define separate factors. However it was also found that correlations between affective and normative commitment are very high. Moreover, results also supported the two sub dimensions of continuance commitment construct i.e. personal sacrifice and lack of alternatives.

Allen and Meyer (1996) conducted a research to evaluate their previous findings about the multidimensionality of commitment construct and found evidence supporting their previous hypotheses. However it might also be noted that different studies about the normative and affective commitment construct still show conflicting results.

Meyer et al (2002) conducted a Meta analysis with the aim to estimate the correlations between variables identified in Meyer and Allen's three component model explained above. The focus of this analysis was on the validity and generalizability of the model on the whole, unlike Meyer and Allen (1996) who tested the validity of commitment scales used in the three component model. Meyer et al (2002) concluded that although there were some differences in the correlations of different commitment dimensions, but overall, the model was generalizable outside North – America. Their Meta analysis, moreover, supported the existence of Affective and Normative commitment as distinct construct; with higher correlations but not perfect correlation. The study also supported side bets theory (Becker, 1960) by validating the two subcomponents of Continuance commitment. However they suggested future research to refine Continuance commitment scale by including more items reflecting perceived sacrifice.

2.3.2 Foci of commitment

Foci of commitment are the different individuals and groups to whom an employee feels attached (Reichers, 1985). Different foci of commitment may include professions, unions, organizations, supervisors, higher management, goal and career. Similarly according to Becker (1992) workers can be: (1) locally committed to supervisors and coworkers, (2) globally committed to occupations, top management and organization as a whole, (3)

committed (attached to both local and global foci) and (4) the uncommitted (who are attached to neither local nor global foci).

Reichers (1985) found that the focus of commitment (i.e., to whom employees are committed) is an important dimension in assessing worker attachment. When commitment is directed at *specific* foci, differences in commitment will not be related to other attitudes and behaviors *in general*, but, rather, will be related to other attitudes and behaviors with respect to the specific foci (Becker and Billings, 1993: 183). They further explain that the locally committed will be more satisfied with supervisor and co-workers than will the globally committed and will engage in more pro social behavior directed at supervisor and co-workers than will the globally committed. Globally committed on the other hand will be more satisfied with the top management and the organization on the whole and will exhibit behaviors such as lower intention to quit. These results have important implications for our research.

Literature study shows (e.g. Reichers, 1985) that making distinctions between several foci of commitment is useful, but this research will focus on commitment of PhD students towards University of Twente on the whole as this focus of commitment is an important outcome of organizational justice and the study aims to highlight the role played by supervisor in forming fairness perceptions of employees regarding HR policies and their consequences for this construct. Moreover organizational commitment is found to be directly related to turnover intentions and one of the added benefit of this research can be to come up to the suggestions that can be helpful in retention of scientific employees and their increased commitment level towards the organization on the whole.

2.4 Turnover intentions

Intention to leave refers to individuals' perceived likelihood that they will be staying or leaving the employer organization (Igbara, M & colleague; 1999). Mobley (1977) pioneered a comprehensive explanation for the psychological process underlying intent to quit. According to his formulation of the withdrawal decision process dissatisfaction leads to thoughts about quitting. There are a number of possible mediating steps between dissatisfaction and actual quitting. First, one of the consequences of dissatisfaction is to inspire thoughts of leaving. These thoughts, in turn, stimulate consideration of the expected utility of a job search and the costs of quitting. The next step would be the behavioral intention to search for an alternative. The intention to search is followed by an actual search. If alternatives are available, an evaluation of these alternatives is initiated. The evaluation of alternatives is followed by a comparison of the present job to the alternatives. If the comparison favors the alternatives, it will inspire a behavioral intention to quit, followed by actual withdrawal. Cotton and Tuttle (1986) also found that overall job satisfaction, satisfaction with the work itself, pay satisfaction, and satisfaction with supervision were negatively associated with turnover

2.5 LMX and organizational justice

As explained before, according to LMX theory, leaders have limited resources such as discretion and time and they selectively distribute these resources among different group members. These exchange relationships between leaders and subordinates form employees' justice perceptions of organizational policies and practices just as distributive and procedural justice aspects. This perception in turn influences their attitudes and

behaviors. Scandura (1999) examined literature on LMX from organizational justice perspective and studied the relationship between the two constructs. He noted the attitudes and behaviors of employees falling into the categories of in group members (having high quality relationship) and out group members (having low quality relationship). He had different findings compared to other researchers who found that in-group members receive more work related benefits in comparison to out-group members. Scandura suggests that differentiation of members in to in group and out group does not necessarily translate into organizational justice. It rather depends on the perceptions of the members about the leader. If members perceive their leaders to use fair procedures for allocation of rewards etc, then they will perceive procedural justice and not injustice. Likewise, if members receive from their supervisor correct communication about reasons for distribution of rewards, then again interactional justice will be perceived by members despite members belonging to different groups. It is through proper way of communication (interactional justice) that even perceptions of employees of procedural and distributive injustice (in the cases where they make social comparisons) can also be changed (Scandura, 1999: 6).

Masterson, Lewis, Goldman, and Taylor (2000) investigated employee relationships with both their supervisor and the employing organization. These authors found that interactional justice improved the quality of leader-member exchange, which, in turn, increased job performance and raised job satisfaction. In other words, individuals not only generated separate justice perceptions based on the source of the treatment (the individual supervisor vs. the overall organization), but they also set up different patterns of reciprocity associated with each source. Wayne & colleagues (1997) also suggest that Supervisors are often instrumental in determining salary increases and bonuses as well as in providing career advice, task and training opportunities, emotional support and information. Superiors may also introduce subordinates to key individuals in other parts of their organization. This introduction leads to expansion of social network of employees, which may in turn lead to additional dividends such as greater visibility, information and other forms of support. Consequently employees may perceive higher level of interactional justice which leads to increased sense of commitment.

Dansereau et al (1995) suggest that successful leaders do not treat all their employees similarly; rather they individualize their relationships with employees according to the needs and motivations of each one of them. Hooper and Martin (2008) suggest that leaders should maintain appearance of equal treatment among coworkers where high solidarity in team is required (P: 27). Similarly leaders may need to allocate tangible resources differently among members according to their specific nature of tasks (equity rules) but they should distribute intangible resources in the form of regard, respect, trust and obligation equally to all team members (equality rules)

Lind and Tyler (1988) presented Relational Model of justice and linked justice perception directly to the role of supervisor and authority figures. They explained that if individuals have positive relationship with their supervisor they perceive fairness in procedures used by the organization. These perceptions of organizational justice are important because they eventually result in outcomes that affect both the employee and the employing organization directly, as mentioned above.

Ambrose and colleagues (2002) explain that if an employee perceives an injustice from the structural or organizational source they are expected to retaliate against the

organization on the whole, but when they perceive this injustice to be related to supervisors they may retaliate either to supervisor alone or to the organization on the whole.

2.5.1 LMX Promoter and LMX Tutor

A PhD student is supervised by daily tutor and promoter during the tenure of his research. In UT, not all the PhD candidates have both a daily supervisor (tutor) and a promoter, although most of them have. A distinction is being made between LMX tutor and LMX promoter to explore the independent influences of the two sub scales of LMX on justice perceptions of PhD's and their subsequent effect on commitment with UT and turnover intent. It is assumed that since both tutor and promoter have different degree of influence over various HR practices, the quality of LMX with them may also generate varying levels of justice, commitment and turnover intents. For example the tutor is expected to have direct and much greater influence over the work content, nominating the student for various courses, performance appraisal etc.

The above mentioned various aspects of theory lead us to the development of following hypothesis:

H1: The quality of LMX influences PhD candidates' justice perceptions regarding various HR practices positively.

2.6 Organizational Justice, Organizational Commitment and Turnover intent

As mentioned before, various authors found a relationship between organizational justice perceptions of employees and organizational commitment. However, how different dimensions of organizational justice interact with different forms of commitment is still a point of conflict between authors, as different study findings support different hypothesis drawn by authors. McFarlin and Sweeney (1992) conducted a survey on bank employees and found that distributive justice ended to be a stronger predictor of personal outcomes than procedural justice, whereas the reverse was true for organizational outcomes. The fairness of a firm's procedures may have a greater impact on organizational commitment than the fairness of distributive outcomes that workers receive, perhaps because procedures define the organization's capacity to treat employees fairly. Thus, if they see procedures as fair, employees may view the organization positively, even if they are currently dissatisfied with such personal outcomes as a low pay raise. It was also found out that fair procedures also lead to positive evaluations of the supervisors. Result of regression analysis done by Mcfarlin and Sweeney support this noting of theirs (1992). Briefly, according to referent cognitions theory, as explained before, individuals evaluate their work experiences by reflecting on "what might have been" under different circumstances and conditions (Folger, 1986a). The findings by Sweeney and Mcfarlin (1992) support the applications of Referent cognitions theory given by Cropanzano and Folger's (1989) stating that the outcomes of subordinate's evaluation of supervisor and organizational commitment would be most negative when both distributive and procedural justice are low. But positive evaluations would be expected when procedural justice is high, regardless of the level of distributive justice.

It might however be noted that the studies done by Lowe and Vodanovich (1995) on a sample of university employees showed different findings. They concluded that outcomes

(distributive justice) were a better predictor of organizational commitment than elements of procedural justice. These findings have been explained with the view that temporal factors may affect perceptions of organizational justice, that is, that the relative significance of Procedural Justice and Distributive Justice Judgments varies over time.

The following conclusion may be drawn from the variance in results of studies done by above mentioned authors. Sweeney and McFarlin conducted their research to study employee reactions to organizational procedures in general and in normal circumstances. However, Lowe and Vodanovich (1995) conducted their research soon after restructuring and job classifications took place in the university setting so employee reactions might be different and they attaching the organizational outcomes of satisfaction and trust in supervisor and organizational commitment more to distributive outcomes than to procedural outcomes. Another possible reason behind distributive justice as a better predictor of attitudinal outcomes of employees might be that employees are not exactly aware of the procedures used by the organization and therefore rely on outcomes.

Prior empirical research has provided considerable evidence that the level of organizational justice is directly related to the quality of social exchange relationships between individuals and their employing organizations and has proven to be a significant predictor of a number of important employee attitudes and behaviors including job satisfaction, organizational commitment, organizational citizenship behavior and intentions to leave (Masterson et al, 2000; Rupp and Cropanzano, 2002). Malatasta and Byrne (1997) tested the proposition that procedural and interactional justice differ because they are associated with different distinct outcomes of social exchange relationships. According to their model, perceptions of procedural justice are based on an organization's formal policies. They found that individuals reciprocate perceptions of fairness in procedures by exhibiting organizational commitment and organizational citizenship behavior. Furthermore, they suggested different outcomes of interactional justice thus making a distinction between procedural and interactional justice. They showed in their findings that interactional justice perceptions of individuals lead them to reciprocation in form of commitment and organizational citizenship behavior directed towards supervisor. Masterson et al (1997) arrived at similar conclusion. They suggested in their studies that procedural justice involves social exchange with the employing organization. Perceptions of procedural justice give employees feelings of POS which gives higher sense of organizational commitment and fewer intentions to quit. Malatasta et al (1997) moreover, concluded that interactional justice on the other hand, causes high quality leader-member exchange which in turn results in organizational citizenship behavior related to supervisor and higher job satisfaction. They tested their model with two studies both of which supported their hypothesis and theoretical explanations. As was found for LMX, distributive justice was a consistent predictor of commitment as well. This demonstrates that organizations that provide equitable and fair rewards for their employees can increase the level of commitment shown by their employees.

Similarly Rupp & Cropanzano (2002) suggested a negative relationship between justice perceptions of employees and their intent to leave in their findings.

We develop the following hypothesis based on literature:

H2: The justice perceptions of PhD candidates regarding various HR practices influence their organizational commitment positively.

H3: The justice perceptions of PhD candidates regarding various HR practices influence their intent to turnover negatively.

2.7 LMX, Commitment and Turnover intent

Research on LMX has shown significant associations with many important work outcomes. For example, LMX is negatively related to turnover and turnover intentions (Vecchio and Gobdel, 1984) and positively related to organizational commitment (Duchon, Green, & Taber, 1986). LMX quality has been found to be a consistent predictor of job-related attitudes such as organizational commitment and satisfaction with supervision, and behaviors such as performance and organizational citizenship behaviors (Kidd and Smewing, 2001). Stinglhamber et al (2003) state that employee's perception of the support of their supervisors (PSS), lead to their emotional attachment to the supervisor (affective commitment). This affective commitment will be developed through satisfying intrinsic job conditions as they increase feelings of care and respect from supervisors and can let employees feel that they are valued by their supervisor. Supervisors can influence these conditions through providing opportunities for challenge and personal development. This authority is mostly absent in the case of the tangible, extrinsically satisfying job conditions such as pay and benefits which are often established by the organization or HR specialists. Supervisors then may not only represent but also partly replace the organization in keeping their employees motivated and willing to stay (Stinglhamber et al., 2003)

Kacmar, Carlson and Brymer (1999) studied the antecedents and consequences of organizational commitment. Amongst other antecedents like age, gender and marital status, they also studied LMX and distributive justice constructs. Their statistical findings showed significant relationship between LMX, and commitment (p. 989). The exchange quality of the relationship between the supervisors and subordinates in the sample used (i.e. LMX) did directly affect the subordinates' feelings of commitment to the organization. Specifically, the better the relationship, the more committed the employees. LMX was noted to be equally related to all forms of commitment, indicating that supervisors can make a big difference in the commitment level of their employees.

Hooper and Martin (2008) conducted research on two different samples of employees to study the affects of perceived LMX variability on employee reactions and concluded that personal LMX quality was a strong predictor of employee reactions while perceived LMX variability was related to employee job satisfaction, organizational commitment and well being. It is suggested by their research that if a person perceives that he is being treated favorably by his leader compared to his coworker, he considers this differential treatment as fair, but if the coworker is being treated as favorably, then the worker considers it as unfair by the leader. This unequal treatment by the leader to the members of the same team/group may lead to elements of distrust and conflict among co workers.

Likewise, the LMX literature demonstrates that the quality of LMX is consistently related to organizational turnover intentions, meaning the higher the quality of LMX, the lower the employees' intentions to leave the organization (Vecchio & Gobdel, 1984). Furthermore, they have proposed and found a negative relationship between LMX quality and turnover intentions. Dansereau et al. (1975) support the same findings and explain that this inverse relation is because employees in high quality LMX enjoy high levels of

trust, emotional support, and related benefits compared to their lower-quality LMX counterparts and vice versa.

The following relationship is hypothesized:

H4: The quality of LMX influences PhD candidates' Organizational commitment positively.

H5: The quality of LMX influences PhD candidates' intent to turnover negatively.

2.8 The mediation conditions

Baron and Kenny (1986) studied distinction between moderator and mediator variable and explained various mediation conditions for the two variables. They explain that a variable can be termed as mediator when: (i) the independent variable (LMX) significantly affects the mediator (distributive justice/procedural justice/interpersonal justice and informational justice) shown by path a in figure below; (ii) the independent variable significantly affects the dependent variables (organizational commitment, and turnover intentions) shown by path c ; (iii) the mediators have significant unique effects on the dependent variable shown by path b; and (iv) the effect of the independent variable on the dependent variables shrinks upon the addition of the mediator to the model. According to Baron and Kenny (1986), after controlling for the mediator variables (distributive justice/procedural justice/interpersonal justice and informational justice, path a and b in the model below), the power of the independent variable (LMX) to predict the dependent variables (organizational commitment, and turnover intention) should become significantly smaller (for partial mediation effect) or non-significant (for full mediation effect). Partial mediation, according to them, indicates the existence of other mediator variables also in the relationship between dependant and independent variables, while full mediation indicates that there is no other mediator variable in the model. This means that after controlling for mediator variable path c becomes almost non significant or near to zero.

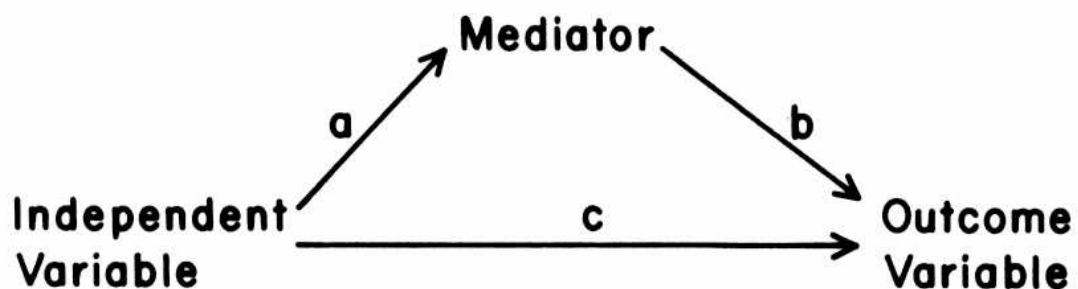


Fig.1 Model developed by Baron and Kenny to explain mediation (1986)

2.8.1 Mediation effects of various justice dimensions

This study predicts that distributive, procedural, interpersonal and informational justice will mediate the relationships among LMX, organizational commitment, and turnover

intentions. As established in the literature study LMX influences positively subordinates attitudinal variables such as organizational commitment and is negatively related to turnover intent. Also LMX is associated with subordinates' perceptions of organizational fairness. The previous discussion about the relationships among perceptions of organizational justice and specified outcomes variables shows that employees' justice perceptions may affect their attitudes and interactions at work. Thus, LMX is related to work-related outcome variables because LMX affects an employee's perceptions of fairness, in that a leader treats him or her fairly in terms of outcomes and procedures. This perception of fairness may prompt the employee to reciprocate with increased organizational commitment, and decreased turnover intentions. The above discussion suggests the proposition that perceptions of organizational justice will mediate the effects of LMX on work-related outcome variables. There has not been much research showing this mediating role of various dimensions of organizational justice in LMX and work/organizational outcomes. The following hypothesis is developed:

H6: Perception of organizational justice regarding various HR practices mediates the relationship between LMX and organizational commitment of PhD candidates.

H7: Perception of organizational justice mediates the relationship between LMX and turnover intent of PhD candidates.

2.9 Conclusion literature review

It can be concluded from literature study that PhD students regard their supervisor, be it tutor and/or promoter, as important sources of justice. They have direct authority over organizational decisions important to them, for example in designing their task content, performance evaluations, grant of autonomy, career development and training opportunities (nominating in seminars, conferences or other short courses) etc. So it can be stated that satisfaction with one's supervisor is an important determinant of satisfaction with one's employing organization (UT for our research context) which ultimately leads to higher organizational commitment. An implication from this research is that promoters and tutors should provide visible signs of support to PhD's so that they perceive that their respective supervisor cares about their wellbeing.

3 Research Model

Based on the literature review and on the hypothesis we come up with the following model

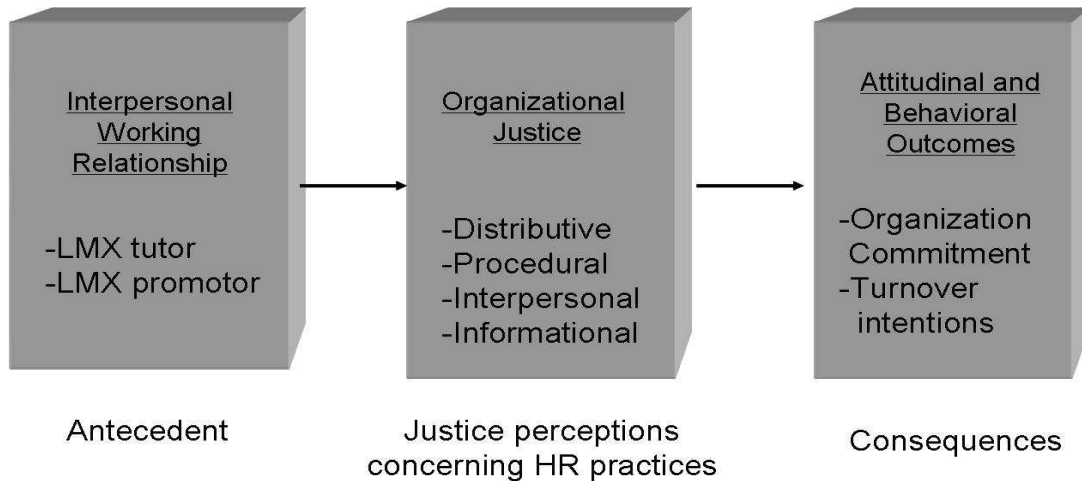


Fig.2 Theoretical framework of antecedents and consequences of Organizational Justice

3.1 Research Methodology

This chapter presents the research methodology utilized to investigate the relationships among organizational justice, LMX and organizational commitment and turnover intent at UT. In this chapter, the conceptual model and the research hypotheses of the study developed on the basis of literature review have been tested. In addition, the sample characteristics, data collection procedures, the administration of questionnaires, and the measures are presented. The statistical analysis that is used in the present study is also discussed.

3.2 Site

For the purpose of analysis and to solve the research questions, data was collected using population of local and foreign PhD students at the University of Twente, Enschede, The Netherlands. It was founded in 1961 and offers education and research in areas ranging from public policy studies and applied physics to biomedical technology. The UT is the Netherlands' only campus university. The University of Twente is the site of a broad range of research projects in technological, scientific and socio scientific disciplines. Research at the UT is mainly of a 'fundamental-strategic' nature: it focuses on issues which break fresh scientific ground and, at the same time, respond to needs in society. It is impossible to imagine research at the UT without this focus on practical usage. It underlies numerous new applications, appliances, systems and methods. In addition, the UT is a place for fundamental research, spurred on by the curiosity of its scientists.

The organization has a total scientific staff of approximately 620 employees. The rationale for selecting this university is the convenient and easy access to data and chances of a higher response rate and its appropriateness for the research questions,

leading to higher reliability, The organization's management is interested in increasing organizational commitment level of its scientific staff and also in attracting and retaining talented employees and agreed to participate in the study of examining the relationship between employees' beliefs regarding justice perceptions and employees' organizational commitment.

3.3 Population

The target population for this study included PhD students currently doing their research at the University of Twente and all of them having a supervisor. All PhD's with different kind of employment contracts were included. All other employees were excluded for the purpose of this research. Few studies have examined this kind of research especially in the University setting. Thus, the study could offer a new context to test external validity, the generalizability of existing evidence, and provide new insights into the area of organizational justice and LMX.

3.4 Study variables

In this study four scales were used to measure the constructs of interest. They included (1) employees' organizational commitment (affective commitment, continuance commitment and normative commitment) as the dependent variable under investigation (2) Intention to leave as another dependant variable, (3) LMX as an independent variable and (4) Organizational justice as a possible mediator variable. Measures designed to collect demographic information about the subjects, including sex, education; job status, job title, and length of employment were also used.

3.5 Scale

The items used for measuring scales are annexed in Appendix 1.

3.6 The survey instrument and data collection

The survey was developed online and distributed via email to all departments of the university in the target population. The platform of P-Nut (PhD's network association) was used for the purpose. The initial draft of the questionnaire was sent to the PhD experts of the university (P-Nut board members) for their feedback to ensure the face validity and readability of scale items. Based on their feedback the wording of some of the questions was slightly modified.

There are a total of 620 PhD candidates in the university out of which 550 are registered with the P-Nut. Questionnaires were therefore sent to 550 PhD's in cooperation with the P-Nut board members.

Questionnaires were sent online to 550 PhD students out of a total of 620 at the UT. 136 questionnaires were filled out of 550 and out of these 136, completely filled in questionnaires were 122 giving a response rate of 22%. The remaining 14 responses were excluded for the purpose of analysis due to excessive missing data. The demographic statistics for the employees are described in Table 1.

Table 1: Demographic characteristics of the respondents (N=122)

Personal Data	No of Respondents	Percentage
Gender		
Male	80	66
Female	42	44
No. of years at UT		
Less than 1 year	18	15
1 year – less than 2 years	37	30.3
2 years – less than 3 years	31	25.4
3 years – less than 4 years	19	15.57
4 years – 5 years	11	0.09
More than 5 years	06	0.05
No. of children < 12		
Yes	14	11.48
No	108	88.52
Department		
MB	32	26.2
GW	09	0.07
EWI	36	29.5
CTW	21	17.2
TNW	24	19.7
Nationality		
Dutch	70	57.3
German	02	0.016
Other EU country	12	0.098
Other non EU country	38	31.14
Employment status		
AIO	95	77.8
OIO	05	0.04
Lecturer	0	0
Researcher	4	0.0327
Assistant professor	0	0
Scholarship student	06	0.0491
Non employed, my contract expired	0	0
Non employed (so called external PhD candidate	08	0.0655

Tests of internal consistency (Cronbach's alpha) were conducted to assess the reliability of each of the scales used. All of the measures included in the questionnaire showed adequate levels of internal consistency reliability. The internal reliability for the measures ranged from .262 for the measure of affective commitment to .980 for the measure of interpersonal justice tutor. Table 2 reports the descriptive statistics for the measures used, including mean, standard deviation, and internal consistency reliability for each measure.

Table 2: Descriptive Statistics and Reliability Estimates of Scales Used (N=122)

Variables	No. of items	Mean	SD	Alpha
Distributive Justice	32	3.24	0.89	0.95
Procedural Justice	4	3.13	0.80	0.84
Interpersonal Justice Promoter	4	3.86	1.00	0.97
Interpersonal Justice Tutor	4	3.77	1.05	0.98
Informational Justice Promoter	5	3.29	1.00	0.93
Informational Justice Tutor	5	3.35	0.99	0.96
LMX Promoter	15	3.37	1.05	0.96
LMX (Tutor)	15	3.39	0.94	0.97
Affective Commitment	8	2.96	1.03	0.26
Continuance Commitment	8	2.83	1.01	0.55
Normative Commitment	7	2.82	0.92	0.30
Turnover Intent	4	3.20	1.33	0.90

The SD for Interpersonal justice Promoter, interpersonal justice tutor, Informational justice Promoter, LMX Promoter , continuance commitment and Turnover intent shows values higher than one, meaning that for these scales , responses of candidates varied greatly from their means.

3.7 Statistical analysis and results

In order to test the hypothesis' H1, LMX Promoter and LMX tutor were regressed separately on all the dimensions of organizational justice one by one to show their relative influence. Table 3 presents the results.

Table 3: Regression results for LMX and Justice dimensions of the model

Constructs	Distributive Justice Std. β	Procedural Justice Std. β	Interpersonal Justice (Promoter) Std. β	Interpersonal Justice (Tutor) Std. β	Informational Justice (Promoter) Std. β	Informational Justice (Tutor) Std. β
LMX (Promoter)	0.98	0.96	0.98	0.97	0.98	0.97
LMX (Tutor)	0.98	0.98	0.98	0.99	0.97	0.98

Note: The results are significant at 0.05 % level

The estimated model shows highly significant effect of LMX Promoter and LMX tutor on all dimensions of organizational justice thereby supporting the above stated hypothesis.

Table 4: Regression results for Justice dimensions and outcome variables of the model

Constructs	Affective Commitment Std. β	Continuance Commitment Std. β	Normative Commitment Std. β	Turnover Intent Std. β
Distributive Justice	0.98	0.98	0.98	-0.5
Procedural Justice	0.98	0.97	0.98	-0.41
Interpersonal Justice (Promoter)	0.96	0.95	0.96	-0.39
Interpersonal Justice (Tutor)	0.96	0.96	0.96	-0.39
Informational Justice (Promoter)	0.97	0.96	0.97	-0.52
Informational Justice (Tutor)	0.98	0.97	0.98	-0.40

Note: The results are significant at 0.05 % level

Table 4 shows regression results between various dimensions of justice commitment and turnover intent. Again the results support hypothesis H2 and H3 by demonstrating highly significant beta coefficient values for commitment scale and significantly negative beta values for turnover intent showing negative relation between justice and turnover as hypothesized.

Table 5: Regression results for LMX and outcome variables of the model

Constructs	Affective Commitment Std. β	Continuance Commitment Std. β	Normative Commitment Std. β	Turnover Intent Std. β
LMX (Promoter)	0.97	0.96	0.97	-0.57
LMX (Tutor)	0.98	0.96	0.97	-0.51

Note: The results are significant at 0.05 % level

Table 5 shows regression results between LMX Promoter, LMX tutor, affective commitment, continuance commitment, normative commitment and turnover intent. Again the results support hypothesis H4 and H5 by demonstrating highly significant positive beta coefficient values for commitment and negative beta values for turnover intent.

Table 6: Regression results for LMX, Affective commitment, Continuance Commitment, Normative Commitment and turnover when distributive justice acts as mediator variable

Constructs	Affective Commitment Std. β	Continuance Commitment Std. β	Normative Commitment Std. β	Turnover Intent Std. β
Distributive justice	0.74	0.96	0.85	-0.53
LMX Promoter	0.06	-0.02	0.13	-0.71
LMX tutor	0.19	-0.01	0.10	0.06

Note: The results are significant at 0.05 % level

To test the mediating effects of distributive, procedural, informational Promoter, informational tutor, interpersonal Promoter and interpersonal tutor justice in the relationship between LMX affective commitment, continuance commitment, normative commitment and turnover intent, all the justice dimensions and LMX were taken as independent variables and regressed on dependant variables of the model individually. As hypothesized and as per the condition of mediation the predictive power of LMX becomes insignificant in all cases when justice dimensions are entered into the equation as another independent variable. The findings fully support hypothesis. Table 6 shows significant reduction in predictive power of LMX Promoter and LMX tutor when distributive justice is entered in to the equation as another variable thus showing full mediation.

Table 7: Regression results for LMX, Affective commitment, Continuance Commitment, Normative Commitment and turnover when procedural justice acts as mediator variable

Constructs	Affective Commitment Std. β	Continuance Commitment Std. β	Normative Commitment Std. β	Turnover Intent Std. β
Procedural Justice	0.40	0.58	0.53	-0.86
LMX Promoter	0.22	0.19	0.28	-0.33
LMX tutor	0.37	0.21	0.18	0

Note: The results are significant at 0.05 % level

Table 7 shows significant reduction in predictive power of LMX Promoter and LMX tutor when procedural justice is entered in to the equation as another variable but here the mediation is partial as LMX Promoter and LMX tutor still have small effect on dependant variables of the model. Results support hypothesis H6 and H7 although mediation in this case is partial.

Table 8: Regression results for LMX, Affective commitment, Continuance Commitment, Normative Commitment and turnover when Interpersonal justice (Promoter) acts as mediator variable

Constructs	Affective Commitment Std. β	Continuance Commitment Std. β	Normative Commitment Std. β	Turnover Intent Std. β
Interpersonal Justice Promoter	0.08	0.01	0.09	-0.11
LMX Promoter	0.44	0.50	0.51	-.48
LMX tutor	0.54	0.46	0.38	-.25

Note: The results are significant at 0.05 % level

Table 8 shows significant reduction in predictive power of LMX Promoter and LMX tutor when Interpersonal justice (Promoter) justice is entered in to the equation as another variable but here the mediation is partial again as LMX still has some effect on dependant variables of the model. The beta value here declines from 0.9 to 0.5 on average when LMX is regressed on different dimensions of commitment showing mediation of Interpersonal Justice Promoter. Results support hypothesis H6 and H7 although mediation here is partial again.

Table 9: Regression results for LMX, Affective commitment, Continuance Commitment, Normative Commitment and turnover when Interpersonal Justice (tutor) acts as mediator variable

Constructs	Affective Commitment Std. β	Continuance Commitment Std. β	Normative Commitment Std. β	Turnover Intent Std. β
Interpersonal tutor	0.04	0.19	0.12	-0.01
LMX Promoter	0.43	0.48	0.55	-.44
LMX tutor	0.51	0.30	0.32	-.13

Note: The results are significant at 0.05 % level

Table 9 shows significant reduction in predictive power of LMX Promoter and LMX tutor when Interpersonal justice (tutor) is entered in to the equation as another variable but here the mediation is partial as well as LMX still has some effect on dependant variables of the model. Results support hypothesis H6 and H7 although mediation is partial again.

Table 10: Regression results for LMX, Affective commitment, Continuance Commitment, Normative Commitment and turnover when Informational justice (Promoter) acts as mediator variable

Constructs	Affective Commitment Std. β	Continuance Commitment Std. β	Normative Commitment Std. β	Turnover Intent Std. β
Informational Promoter	0.22	0.28	0.25	-0.21
LMX Promoter	0.26	0.29	0.37	-0.33
LMX tutor	0.5	0.41	0.37	-0.21

Note: The results are significant at 0.05 % level

Table 10 shows significant reduction in predictive power of LMX Promoter and LMX tutor when Informational justice (Promoter) is entered in to the equation as another variable .Here the mediation is partial as LMX still has some effect on dependant variables of the model.

Table 11: Regression results for LMX, Affective commitment, Continuance Commitment, Normative Commitment and turnover when informational justice (tutor) acts as mediator variable

Constructs	Affective Commitment Std. β	Continuance Commitment Std. β	Normative Commitment Std. β	Turnover Intent Std. β
Informational tutor	0.45	0.58	0.56	-0.09
LMX Promoter	0.32	0.35	0.42	-0.41
LMX tutor	0.22	0.05	0.01	-0.18

Note: The results are significant at 0.05 % level

Table 11 shows significant reduction in predictive power of LMX Promoter and LMX tutor when informational justice (tutor) is entered in to the equation as another variable but here the mediation is partial as LMX still has very small impact on dependant variables of the model

Table 12: Regression results for LMX, and different HR practices

Constructs	Task content Std. β	Monetary benefits Std. β	Career & development opportunities Std. β	Working conditions Std. β
LMX Promoter	0.981	0.973	0.978	0.975
LMX tutor	0.979	0.979	0.976	0.973

Note: The results are significant at 0.05 % level

The above table shows the influence of LMX promoter and LMX tutor on varying HR practices used by the university. These HR practices have been categorized into main sub categories by taking the individual HR practice from distributive justice scale and then making the sub groups of similar practices. For example Task content includes the HR activities related to work characteristics of the PhD candidate ranging from degree of autonomy in his work, challenge in work and variety in work. Results show very high beta coefficient values for all the sub categories against both LMX promoter and LMX tutor showing their high extent of influence.

4 Discussion and conclusions

The results of the regressions analysis carried out strongly supported all the hypothesis of the study and the findings by other researchers. We discuss hereunder the hypothesis of the model one by one:

In order to test the first hypothesis, LMX Promoter and LMX tutor were regressed separately on all dimensions of organizational justice separately and the results were very high and similar beta values appeared for both the sub dimensions of LMX. For LMX Promoter, distributive justice, procedural justice, interpersonal justice (Promoter), interpersonal justice (tutor) informational justice (Promoter) and informational justice (tutor), the values were 0.983, 0.959, 0.977, 0.972, 0.984 and 0.973 respectively. For LMX tutor, distributive justice, procedural justice, interpersonal justice (Promoter), interpersonal justice (tutor) informational justice (Promoter) and informational justice (tutor) the beta values were 0.983, 0.959, 0.977, 0.972, 0.984 and 0.973 respectively.

As explained before, the distinction was made between LMX Promoter and LMX tutor on the premise that since both have different degrees of influence over different HR practices, therefore both may have distinct affects on different dimensions of justice. But not much difference was found in this respect. A reason for this could be the simple fact that not all PhD students have both a Promoter and a tutor. Or maybe respondents did not make meaningful discriminations between the two sub dimensions in their responses. Therefore they just filled the questionnaire similar to both the Promoter and tutor (did not make any distinction). However important to note here is that the results supported our hypothesis that quality of relationship between Promoter/tutor and PhD student effectively influences their justice perceptions regarding HR practices.

The results of the study revealed that leader-member exchange is a positive predictor of procedural, distributive, interpersonal and informational justice, as hypothesized. In other words, if a PhD candidate perceives a higher level of quality in exchange in his relationship with his Promoter/Tutor, the PhD will also perceive a higher level of distributive, procedural, interpersonal and informational justice. The results of this study support previous research on the impact of the quality of the supervisor-subordinate relationship on the fairness perceptions of subordinates (Dansereau, Graen, & Haga, 1975). Thus PhD candidates having quality working relationship with their supervisor would probably receive more justification for procedural justice (i.e., distribution of resources) as well as distributive justice (i.e., larger actual amounts of those resources), due to the relative advantage of higher quality interactions and a closer relationship with the supervisor. They may also receive more opportunities to visit conferences' and attend other seminars and courses adding to their career development. Their perceptions of fairness are enhanced when they feel they are being valued by their supervisor.

Hypothesis 2 and 3 were formed to test the assumption that perceptions of organizational justice by PhD's will positively influence their organizational commitment and negatively influence their intent to turnover. Table 5 shows the results. Although other dimensions of justice also showed strong influence on affective, continuance and normative commitment and intent to turnover, the value of beta coefficient was particularly higher when distributive justice was regressed on dimensions of commitment and turnover. It means that if PhD's perceive fair treatment when it comes to distribution of rewards and fairness in the use of other HR practices measuring distributive justice scale, it affects

their commitment most. The results strongly supported the hypothesis once again. Distributive justice has a direct positive influence on affective, continuance and normative commitment and is negatively related to turnover intentions, as hypothesized. The results of this study support previous research conducted to explain the importance of the allocation phenomenon in organizations (Folger & Konovsky, 1989). For example, people tend to be more satisfied with outcomes they perceive to be fair than with those they perceive to be unfair. In addition, people may compare the adequacy of the rewards they receive to their expectations, or referent standards. Thus, if a PhD candidate feels discontent in what he receives compared to those of a referent other, he is more likely to show lower commitment with his organization.

Table 6 shows that procedural justice has a direct positive influence on commitment and negative influence on intent to quit as hypothesized. It could be concluded that if a PhD candidate perceives fairness in procedures used by his organization, he is likely to exhibit higher levels of commitment and consequently lower intent to quit. Same is supported by theory stating that people are more accepting of decisions that result from fair procedures than with decisions that result from unfair processes.

The table also showed direct positive influence of informational and interpersonal justice perceptions of PhD candidates on their commitment and negative influence of the same on their turnover intent. It means that if a PhD candidate perceives that his promoter/tutor is candid in communications with him and also explains procedures used to arrive at distributive outcomes thoroughly, timely and in detail, it will affect his commitment positively and his intent to turnover negatively. Similarly perceptions of being treated politely and with respect and dignity strongly and positively impact PhD's commitment level and negatively impact his turnover intent. Timely feedback from the supervisor and way of communication of the same is also important part of informational justice. If for example, a candidate is given a negative feedback but in a nice manner, it affects his motivation and commitment level differently than if the same message is conveyed in a harder tone. In other words conveying of same feedback but in harder tone may arouse feelings of informational injustice in the mind of PhD leading to his impaired commitment level and increased intent turnover.

Results also suggests a possibility that quality of relationship with the supervisor can be a very effective mean by which universities can build perceptions or organizational justice regarding use of various HR practices and in turn foster a reciprocal attachment by the PhD's and also sense of obligation will be developed in the mind PhD to remain in the university and to do research for it. He may also realign his goals or directions of his research in accordance with the goals of the university. Similarly PhD's perceptions of justice in presenting him opportunities of training and development and polish his skills, resulting from good relationship with supervisor, may also increase his continuance commitment with the specific university he is in, thus making it difficult for him to leave, for example benefits would be lost and acquired skills might be less useful elsewhere due to change in specific direction of research. So ultimately intent to quit of the PhD will also be low. Important to note here that continuance commitment of the PhD is also expected to be more with the organization because of the costs associated with leaving the organization in terms of time which might be wasted in switching. So LMX has the potential to affect all dimensions of commitment effectively.

It is important to note here that mediation hypotheses did not suggest partial or full mediation of different dimensions of justice. The results showed full mediation of distributive justice concerning HR practices, meaning that perceptions of fairness in outcomes by PhD's reduces the direct impact of LMX on commitment and turnover intent to almost 0. However the impact of LMX on the outcome variables reduces to a great extent but still remains significant when other variables like procedural justice, interpersonal justice and informational justice are introduced in the model. A possible explanation for these results could be that individuals care about different aspects of justice differently. Some dimensions of justice relate more to economic interests, some relate more to interpersonal interests and some influence moral principals more. For some individuals one aspect/dimension of justice could be more important than other. Moreover, it could also be the case that one dimension of justice could be more important to a candidate at one point of time and the other dimension might become more important at another point in time or the same may vary according to different situations.

Hypothesis 4 and 5 were formed to test the influence of LMX Promoter and LMX tutor on different dimensions of commitment and turnover intent individually. Table six again supports the hypothesis fully by suggesting strong positive beta values for LMX Promoter, LMX tutor, affective commitment, continuance commitment, normative commitment and strong negative beta vales for turnover intent. The results support the previous theory also by suggesting that if a PhD candidate has a good working relationship with his promoter or his tutor, its going to positively affect his commitment and negatively affect his turnover intent.

Hypothesis 6 and 7 were formed to test the mediation effects of justice dimensions in the relationship between LMX, commitment and turnover. The results strongly suggested that the affects of the quality of relationship with supervisor and their effect on behaviors of the candidates are mediated through the processes internal to the candidates i.e. through the organizational justice perceptions formed by PhD students. These perceptions appear to strongly intervene between the inputs and outputs of the conceptualized model. Test of this mediation role of justice helps build a mechanism which fully explains how and why LMX affects the organizational commitment level of PhD's and their intents to turnover. Therefore, leader-member exchange affects employees' organizational commitment, and turnover intentions through its effects on organizational justice. Results proved that after controlling for mediation by distributive justice dimension effect of LMX promotor and LMX tutor reduces significantly from beta coefficient of 0.96 to -0.02 only for continuance commitment and same goes for other dimensions of commitment as shown in table. Similarly beta values show that LMX effects much less strongly the turn over intent of PhD when their distributive justice perceptions are controlled. Table 7 gives evidence of full mediation of distributive justice in the case of LMX and work outcome variables. The mediation effects were however partial when other dimensions of justice were controlled and effect of LMX on organizational commitment and turnover intent studied, showing the existence of multiple dimensions of justice, each having its own peculiar mediating effects, thus supporting our model fully. Relatively stronger mediation effects of distributive justice dimension on the predictor and criterion variables of the model seem logical also because the items measuring distributive justice are of greater importance to the PhD candidate. It means that a PhD candidate is more concerned about justice perceptions regarding outcomes of working conditions, degree of autonomy and freedom that he has in conducting his research, facilities available to him crucial for his research, his salary/stipend amount, and career development opportunities given to him

and so on. All these HR activities are directly controlled/influenced by the daily tutor and promotor of the candidate.

In order to highlight the importance of LMX and its influence on HR practices carried out by the organization LMX was regressed against the main categories of HR practices. All these categories are of fundamental importance to the PhD candidate. The beta value for task content turned out to be 0.981 for LMX promoter and 0.979 for LMX tutor which shows that the supervisor has great impact on the work characteristics of the PhD. Supervisor is in direct control over the degree of autonomy given to the PhD, he plays pivotal role in deciding the direction for the research area of the PhD, his consent and support is what the student depends on at all levels. The amount and degree of variety in work and challenge in work are other important aspects for which the PhD directly depends on the supervisor. High quality of LMX may also lead for the PhD towards greater autonomy over his work; he may choose area of research more autonomously. He may also get more enriched work opportunities. All these factors also psychologically empower the candidate, he feels secure and supported by his supervisor and these factors result in higher commitment and satisfaction of the candidate with his work and his organization and much lower his intent to turnover.

Similarly the beta values for other important HR category of career and development opportunities was as high as 0.978 for LMX promoter and 0.976 for LMX tutor showing that both the tutor and supervisor are of fundamental importance in shaping the career and development opportunities of the PhD. A training and supervision plan is supposed to be filled out by the supervisor of the PhD candidate with in first three months from the date of commencement of PhD's tenor as per UT policy. In UT, the several courses available to a PhD candidate include:

- Course Technical Writing and Editing
- Presentation Skills
- Theatre Skills for Powerful Presentations
- Creative Thinking Techniques and Knowledge Management
- Systematically Searching for Information
- Tips for AIOs
- Supervising MSc-Projects
- Orientation on the Dutch Educational System and UT Educational Policy
- Task based learning: an efficient and flexible learning model Course
- Professional Effectiveness for Doctoral Students
- Personal Leadership
- Working on a project basis
- Effective Personal Communication
- How to present and create a distinct profile of yourself

Role of supervisor again can not be over estimated. He is the person going to nominate the student for the number of courses to be attended each year. Similarly the amount of national and international conferences to be attended by the PhD is also to be decided by the supervisor. Again, the quality of relationship with the supervisor is expected to bring more development opportunities and the analysis supports this conclusion also. The better the career and development opportunities available to the PhD candidate, the better will be his distributive justice perceptions regarding use of HR practices and that will ultimately translate into his high level of motivation, satisfaction and commitment to the

organization and will reduce his intent to turnover if any. Therefore evaluations of career development practices were found to be strong predictors of affective, normative and continuance commitment. This is not surprising because this kind of courses give a chance to the candidate to improve the skills crucial for him at different phases of his research. On the basis of these skills he might be able to improve the quality of his work and get them published in journals of international repute.

Daily tutor and final supervisor have high degree of influence over the monetary benefits of the candidate also, for example, salary issues and fringe benefits. The supervisor may not be directly influencing/deciding the amount of salary but definitely he influences the decision indirectly through the performance evaluation of the PhD. And here comes the important activity of performance evaluation. The tutor fills in the performance evaluation form. Good quality LMX gives an opportunity to the PhD to raise his voice during the performance evaluation procedure, which directly affects his satisfaction about the performance evaluation process thus enhancing his justice perceptions that ultimately result in higher commitment and lower turnover intent. This participation in the evaluation process actually makes the candidate feel that he has somehow indirect influence over the whole process.

Good working conditions are other important HR practice important for the PhD. Without conducive environment, he may not be able to perform well and his commitment might be lowered. Results of the research showed high beta value when this sub HR category was regressed against LMX promoter and LMX tutor. By working conditions we broadly mean the work-life balance, availability of own permanent work place, amount of space in office, facilities to perform research well and the amount of noise at work place. High quality of LMX can be translated to better working conditions and perceptions of justice by the PhD leading him to have positive organizational commitment and negative intent to quit. Similarly frequency, duration and quality of supervision are other factors important for the PhD candidate and are decided totally by the supervisor. Higher LMX could also win more support and supervision from the tutor and promoter resulting in positive attitudinal outcomes.

The research showed how relationship with supervisor drives attitudes and behavior. Therefore satisfaction with one's supervisor directly influences one's perceptions of fairness in HR practices used by organization, particularly distributive justice HR practices. Through this mediation, desired levels of organizationally relevant criteria, such an organizational commitment and turnover intentions could be achieved.

4.1 Implications of research

Despite the fact that organizational justice is an important factor as a basic requirement for the effective functioning of organizations (Greengberg, 1990), there have not been prior empirical research of organizational justice in the university setting. As expected, this study revealed the importance and impact of interpersonal working relationships in understanding employees' perceptions of fairness, and enhanced our understanding of the organizational justice factors fundamental to work-related outcomes in the scientific industry. Thus, this study provides a basis for researchers to further test the relationships among these constructs in university setting.

The result of the study has some practical implications for the UT management in particular and also could be generalized to the management of other universities. In order to reduce the burgeoning gap between the demand for young researchers and their available supply and also to retain the available talent, its important that highly important role of supervisor be high lightened. The results show that quality of LMX promotes justice perceptions of PhD's and that affects their commitment and turnover intent subsequently. A possibility could be that supervisors be trained in such a way to improve individual working relationships with the PhD's. Here are some of the recommendations that we make on the basis of the research:

4.1.1 Recommendations for the Dutch Government:

1. To support research more liberally, give more research funds, more research scholarships, give awards for best papers in each field, reduce paper/administrative work for foreign researchers, facilitate them for their easy adjustment in Dutch society etc. Additional benefits like cheap transportation, cheap meals, cheap residences etc may also be helpful in attracting and retaining foreign talent. This could work by enhancing the distributive justice perceptions of PhD students at the time of recruitment and afterwards leading to higher organizational commitment (particularly continuance commitment) and intention to stay.
2. Research income from the public sector be divided according to the share and quality of research by each university.

4.1.2 Recommendations for the University Management:

1. Additional attractive benefits should be given to the researchers who come up with best quality research (based on yearly performance). This recommendation is in line with the equity theory of Adams.
2. Only active researchers should be allowed to supervise PhD students. This could help enhance quality of LMX between supervisor and the PhD candidate based on important LMX dimensions of *contribution* and *professional respect*, which will in turn lead to desired goals of increasing commitment of the candidates through the mediation of positive justice perceptions.
3. Supervisors should be given the freedom to find and admit the research students themselves. This could also help build quality dyadic relationship.
4. University paper/administrative/manual work should be minimal thereby giving higher chance of interaction/communication with the candidate. This means that this step could influence interpersonal and informational justice perceptions of PhD candidates. It should also be made sure that the supervisor spends good quality of time in supervising his student(s).
5. Regulations governing PhD research should be made sure to be implemented, thus affecting rater procedural justice and system procedural justice perceptions.

4.1.3 Recommendations for supervisors:

1. Supervisors should not force students to work on a particular topic; the topic of research should be of mutual interest. It is important to give students feeling of autonomy and empowerment.

2. Sufficient incentive/reward should be provided to supervisors for supervising the PhD's. Supervision should not be assigned as additional or side task. Again, the step could positively influence the LMX and associated outcomes.
3. Importance of quality relationship with the PhD and consequences of the same should be made obvious to the supervisor.
4. Tangible resources should be divided among the subordinates equitably to get output from students in order to avoid coworker conflict, lack of solidarity and perceptions of injustice.
5. There should be a minimum number of publications necessary for a supervisor to achieve for being eligible to supervise; this can attract more PhD students and have important consequences for their quality of work and commitment towards organization.
6. Completion rate of PhD's should be included as success criteria for the supervisor and the university.
7. There should be a possibility for supervisors to attend special courses to improve cooperation with students.
8. Reducing the number of PhD's per supervisor; limit should be placed.
9. Supervisors be trained in such a manner that they can take maximum work (and keep the student committed as well) from the candidate without creation of feelings of injustice, if some resources are unavailable.
10. Expectations should be made from the PhD candidate according to the facilities provided to him, he should not be unnecessarily burdened.
11. Supervisor should be easily accessible and communication with supervisor should not be an issue
12. There should be an individualized training and supervision plan for each candidate.

Most of the research on organizational justice has so far focused on pay issues and performance appraisal. This research also included vast range of HR practices such as task content, training and supervision plan, opportunities to visit conferences etc. This research provides management an insight into the justice perceptions of PhD's. The results may also help management make better decisions concerning the important role of supervisor by giving them information about how LMX influences PhD's justice perceptions and work related outcomes.

This study used turnover intentions as an indicator of job withdrawal behavior. Especially, turnover is particularly important in the scientific industry. As explained before that many PhD candidates quit their studies in the middle and brain drain rate is higher for EU universities due to the unhealthy relations with supervisors, lack of training and development opportunities, lack of proper study plan, indefinite tenor of research and so on. In this regard, this study has implications for turnover research in the university setting by providing empirical evidence for relationships between LMX, justice perceptions and turnover intent. Meaning that intent to turnover of PhD candidates could be much reduced if the quality of relationship with the supervisor is improved. As is mentioned before that supervisor plays a key role during the whole employment period of the PhD, so good interpersonal working relationships with him can improve justice perceptions of the PhD which will result in his higher commitment and lower intent to quit.

Another important contribution of the research is that it incorporated the four dimensions of organizational justice presented by Colquitt (2001) and independent, unique effects of all of them were studied separately. All the dimensions were found to work out with distinct processes and affected by quality of LMX uniquely and themselves affected the attitudes and behaviors of PhD's separately. Similarly all the justice dimensions showed separate mediating effects in relationship between LMX, commitment and turnover. The study thereby highlighted the importance of treating the informational and interpersonal justice dimensions as independent rather than one sub dimension.

4.2 Recommendations for future research

Some limiting factors were observed during the research period. Therefore, recommendations for the future work are mentioned in this section accordingly.

The PhD candidates had to be approached through the PhD network in UT. P-Nut did not have complete list of all PhD students so the form could not be sent to all PhD candidates resulting in a relatively low response rate. This is an area which can be easily improved on and this could result in a much better response rate.

Another reason for low response rate could be the fact that the sample was not approached personally. The contact was made only through email and online questionnaire, making it less compelling for the candidates to participate in research. Depending upon the available time, this shortcoming can be overwhelmed in the future work.

Filling up of multiple questionnaires, some of which are monotonous, results in lower response rate. This could be improved by making very interesting questionnaires.

Data was collected only from the PhD candidates of UT and other universities in Netherlands were not involved in this study. The results of the study can be generalized further by replicating a similar kind of research on other universities.

One of the limiting factors hindering the research was the cultural and nationality differences amongst the PhD candidates in the university. Around 44% of the students come from countries other than Netherlands, thus belonging to varying mind sets, cultural and educational backgrounds. This means that owing to these differences one PhD candidate with similar kind of working conditions might perceive organizational justice while the other candidate with similar kind of working conditions might perceive organizational injustice or might have different perceptions of justice. Moreover perceptions of fairness of the candidates may vary over time.

Like most of the social sciences researches, another important limitation of this research was the use of snapshot approach or cross-sectional data collection. This type of paradigm makes the causality ambiguous which is unlikely if longitudinal approach is used. Longitudinal approach is more advantaged because data collection is done from the same sample but on regular intervals leading to more unambiguous and dependable causality. Future research could be directed towards longitudinal analysis to establish this causality or also to establish reverse causality if any. This means that future research could also

study if LMX mediates the relationship between these dimensions of organizational justice and attitudinal and behavioral outcomes.

Future research could also study the differences between the LMX and justice perceptions and their behavioral outcomes for foreign and local students. Current study did not make this distinction. This distinction can be very useful and of particular interest for management of universities because local candidates add to the scientific knowledge while foreigners go back to their home countries after completing their projects.

It could also be useful to study if there are any differences in LMX relationships and justice perceptions among candidates having different employment contracts.

Despite its limitations, the research contributed significantly to the literature of organizational justice and LMX by providing important insights to the management of scientific industry. The results showed that while measuring PhD's fairness perceptions concerning HR practices, the source should be kept in mind. The results of the study confirmed the central role played by the supervisor in forming these perceptions and affecting important organizational outcomes through them.

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Other sources

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Appendix 1

Scales

The variables are measured as follows:

Distributive justice concerning HRM (Colquitt, J.A., 2001)

1. The amount of autonomy and freedom in my work
2. The amount of variety in my work
3. Challenge in my work
4. Salary
5. Fringe-benefits (e.g., retirement pay, reimbursement of travelling costs)
6. Job security
7. Career opportunities
8. Opportunities for development
9. Opportunities for additional education and training
10. Opportunities to visit conferences
11. The social climate in my department
12. Work pressure
13. Stress
14. Work-life balance
15. Information on rewards and fringe-benefits
16. Information on education and courses
17. Influencing (co-deciding) on the content of my PhD
18. Influencing department decisions
19. Availability of own PC at the work place
20. Own permanent work place
21. Space in my office
22. Facilities to perform my research well
23. Noise at the work place
24. The amount of appreciation
25. The quality of appreciation
26. The amount of supervision
27. The quality of supervision
28. The amount of support

29. The quality of support
30. The opportunity to work together with colleagues
31. The adequacy of the professional competence of my promoter.
32. The supervision and training plan

Procedural justice perceptions (Colquitt, J.A., 2001)

1. The appraisal procedure (judgement on your progression or performance)
2. The procedure concerning the employment status (decision-making on AIO, OIO or different contract)
3. The procedure concerning labour contract extension
4. The procedure concerning an appointment at the UT after finishing the PhD

Interpersonal justice Promoter (Colquitt, J.A., 2001)

The following items refer to your promoter. To what extent:

1. Has he/she treated you in a polite manner?
2. Has he/she treated you with dignity?
3. Has he/she treated you with respect?
4. Shows he/she really concern for me?

Interpersonal justice tutor (Colquitt, J.A., 2001)

The following items refer to your tutor. To what extent:

- 1 Has he/she treated you in a polite manner?
- 2 Has he/she treated you with dignity?
- 3 Has he/she treated you with respect?
- 4 Shows he/she really concern for me?

Informational justice Promoter (Item 1 and 2 Bies and Moag, 1986, Item 3-5 Shapiro et al., 1994)

The following items refer to your Promoter. To what extent:

1. Has he/she been candid in communications with you?
2. Has he/she explained procedures (e.g. concerning salary, promotion) thoroughly?
3. Were his/her explanations regarding the procedures reasonable?
4. Has he/she communicated details on time?

5. Has he/she seemed to tailor his/her communications to your specific needs

Informational justice tutor (Item 1 and 2 Bies and Moag, 1986, Item 3-5 Shapiro et al., 1994)

The following items refer to your tutor. To what extent:

- 1 Has he/she been candid in communications with you?
- 2 Has he/she explained procedures (e.g. concerning salary, promotion) thoroughly?
- 3 Were his/her explanations regarding the procedures reasonable?
- 4 Has he/she communicated details on time?
- 5 Has he/she seemed to tailor his/her communications to your specific needs

LMX Promoter (Liden, R. C. & Maslyn, J. M., 1998)

1. I like my promoter very much as a person
2. My promoter is the kind of person one would like to have as a friend
3. My promoter is a lot of fun to work with
4. My promoter defends my work actions to a superior, even without complete knowledge of the issue in question
5. My promoter would come to my defence if I were 'attacked' by others
6. My promoter would defend me to others in the organization if I made an honest mistake
7. I do work for my promoter that goes beyond what is specified in my job description
8. I am willing to apply extra efforts on behalf of my promoter
9. I don't mind working as hard as possible on behalf of my promoter
10. I am impressed with my promoter's knowledge on his/her job
11. I respect my promoter's knowledge of and competence on the job
12. I admire my promoter's professional skills
13. Working with my promoter is very stimulating

14. My promoter believes in my capabilities

15. I always get positive feedback from my promoter when I achieve a certain goal

LMX Tutor (Liden, R. C. & Maslyn, J. M., 1998)

1 I like my tutor very much as a person

2 My tutor is the kind of person one would like to have as a friend

3 My tutor is a lot of fun to work with

4 My tutor defends my work actions to a superior, even without complete knowledge of the issue in question

5 My tutor would come to my defence if I were 'attacked' by others

6 My tutor would defend me to others in the organization if I made an honest mistake

7 I do work for my tutor that goes beyond what is specified in my job description

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9 I don't mind working as hard as possible on behalf of my tutor

10 I am impressed with my tutor's knowledge on his/her job

11 I respect my tutor's knowledge of and competence on the job

12 I admire my tutor's professional skills

13 Working with my tutor is very stimulating

14 My tutor believes in my capabilities

15 I always get positive feedback from my tutor when I achieve a certain goal

Organizational Commitment Scale (Allen, N. J. and Meyer, J. P., 1990).

Affective Commitment Scale items

1. I would be very happy to spend the rest of my career within the University of Twente (UT)

2. I enjoy discussing the UT with people outside it

3. I really feel as the UT's problems are my own
4. I think that I could easily become as attached to another organization as I am to the UT
5. I do not feel like 'part of the family' at the UT
6. I do not feel 'emotionally attached' to the UT
7. The UT has a great deal of personal meaning for me
8. I do not feel a *strong* sense of belonging to the UT

Continuance Commitment Scale items

1. I am not afraid of what might happen if I quit my job without having another one lined up
2. It would be very hard for me to leave the UT right now, even if I wanted to
3. Too much in my life would be disrupted if I decided I wanted to leave the UT now
4. It wouldn't be too costly for me to leave the UT now
5. Right now, staying with the UT is a matter of necessity as much as desire
6. I feel that I have too few options to consider leaving the UT
7. One of the few serious consequences of leaving the UT would be the scarcity of available alternatives
8. One of the major reasons I continue to work for the UT is that leaving would require considerable personal sacrifice — another organization may not match the overall benefits I have here

Normative Commitment Scale items

1. I think that people these days move from company to company too often.
2. I do not believe that a person must always be loyal to his or her organization
3. Jumping from organization to organization does not seem at all unethical to me
4. One of the major reasons I continue to work for the UT is that I believe that loyalty is important and therefore feel a sense of moral obligation to remain

5. If I got another offer for a better job elsewhere I would not feel it was right to leave the UT

6. I was taught to believe in the value of remaining loyal to one employer

7. Things were better in the days when people stayed with one organization for most of their careers

Intention to leave Scale (Cammann, Fichman, Jenkins, and Klesh, 1979)

1. I often think about leaving the UT after receiving my PhD

2. It is very likely that I will actively look for a job outside the UT after receiving my PhD

3. I will leave the UT as soon as I got my PhD

4. Even if the UT would offer me a job after receiving my PhD, I will leave

All instruments in this study provide information/responses on 5 point scale (1 = strongly disagree; 5 = strongly agree).