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LEADER'S ROLE IN BALANCING EFFORT AND REWARD

The Connection between Leader-Member Exchange and Effort-Reward Imbalance

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ABSTRACT

The Leader-Member Exchange (LMX) theory is one of the most notable leadership theories in academic literature and the outcomes of LMX relationships have been under examination for decades. At the same time, the Effort-Reward Imbalance (ERI) model has been used to explain the health and well-being outcomes of work-life, but the antecedents of ERI have been widely neglected in the academic literature. This study aims to connect these two theories by examining the connection between the quality of LMX relationship and the components of the ERI model, i.e. effort, reward, effort-reward imbalance and overcommitment among employees.

The study was conducted with quantitative methods using the data collected from a Finnish insurance company in the LÄIKE research project by the University of Vaasa during 2011-2013. The results show that the quality of LMX relationship is negatively connected to effort-reward imbalance and positively connected to reward, but there are contradicting findings about the connection between the LMX quality and effort. The findings show that the quality of LMX can balance out ERI by increasing experienced rewards. In addition, it was found that an average quality of LMX is enough to reduce ERI. However, no connection was found between the quality of LMX and overcommitment.

This study contributes the existing literature by combining the theories of LMX and ERI and by providing insight about the neglected antecedents of ERI. The implication of this study is that it connects the research fields of leadership and work-related health and well-being. The study provides a promising ground for further research to examine the mediating role of ERI and its components in the research of LMX and health and well-being outcomes. As a being a master's thesis, this study is limited to cross-sectional examination, when longitudinal research about the subject should be made to confirm the causality between LMX and ERI.

KEYWORDS: Leader-Member Exchange, LMX, Effort-Reward Imbalance, ERI, Overcommitment

1. INTRODUCTION

Studies show that leadership has an impact on employees' well-being and health (Kuoppala, Lamminpää, Liira & Vainio 2008; Skakon, Nielsen, Borg & Guzman 2010). Moreover, several studies show that leadership has a significant impact on employees' stress (Harms, Credé, Tynan, Leon & Jeung 2017; Offermann & Hellmann 1996; Skakon et al. 2010). Particularly, the relationship between the leader and the follower is known to be a significant source of well-being (Brunetto, Farr-Wharton & Shacklock 2011; Rousseau, Aubé, Chiocchio, Boudrias & Morin 2008; Schyns & Wolfram 2008), job satisfaction (Bhal & Ansari 2007; Cogliser, Schriesheim, Scandura & Gardner 2009; Gerstner & Day 1997; Jordan & Troth 2011) and reduced stress in work life, but still more research about the subject is needed (Harms et al. 2017).

Many practical and theoretical models and theories have been developed to examine and estimate the quality of leadership. Among the most studied and tested leadership theories is the Leader-Member Exchange (LMX) theory, which highlights the importance of the relationship between the leader and the follower in leadership. The dramatic and continuous increase of LMX research from 1970's to 2010's indicates the popularity of the model in academic leadership literature. (Gooty, Serban, Thomas, Gavin & Yammarino 2012; Hiller, DeChurch, Murase & Doty 2011.)

The core of the LMX theory is that leaders form different kind of relationships with their followers (Dansereau et al. 1975; Graen & Schiemann 1978; House & Aditya 1997). The quality of the LMX relationship is measured with qualities such as flexibility, tendency to help, co-operation and trust (Graen & Schiemann 1978). A high-quality LMX relationship can have many positive outcomes for employee's health and well-being, such as improved job satisfaction (Bhal & Ansari 2007; Cogliser et al. 2009; Gerstner & Day 1997; Jordan & Troth 2011) and reduced job stress (Becker, Halbesleben & Dan O'Hair 2005; Gregersen, Vincent-Höper & Nienhaus 2016; Huang, Chan, Lam & Nan 2010; Kumar, Singh, Rai & Bhattacharya 2012; Son, Kim & Kim 2014; Thomas & Lankau 2009).

One of the most used models to examine health and well-being at work is the Effort-Reward Imbalance model (the ERI model). The ERI model considers employee's well-being from the point of view of giving and receiving. The core idea of the model is that when an employee invests a lot of effort in their work but does not receive corresponding

rewards, the employee experiences prolonged stress which has negative effects on employee's health (Siegrist 1996). The efforts are often divided into extrinsic effort, i.e. the effort that is caused by the work itself, and intrinsic effort, which refers to employee's inability to withdraw from work. In the current research, intrinsic effort is defined with the term overcommitment. (Siegrist 2002.)

In academic research, the ERI model has been successfully used to explain not only work place stress (Eddy, Heckenberg, Wertheim, Kent & Wright 2016; Landolt, O'Donnell, Hazi, Dragano & Wright 2017; Tsutsumi & Kawakami 2004; Wege, Li, Muth, Angerer & Siegrist 2017), but also immune system (Eddy et al. 2016; Nakata, Takahashi & Irie 2011), general adverse health (Shimazu & de Jonge 2009) goal orientation of managers (Hyvönen, Feldt, Tolvanen & Kinnunen 2010), risk of burnout (Dai, Collins, Yu & Fu 2008; Willis, O'Connor & Smith 2008), frequent sickness absences (Schreuder, Roelen, Koopmans, Moen & Groothoff 2010), job satisfaction and leaving intentions (Kinman & Jones 2008). However, the antecedents of effort-reward imbalance have been highly neglected in the ERI research. The developer of the model, Johannes Siegrist (2012: 18) suggests that leaders have an important role in rewarding their subordinates and more attention should be paid to leadership's role in improving subordinate's well-being and health.

1.1. Research interest and gap

This study aims fill in the gap in the ERI research by examining how leadership affects effort-reward imbalance. More precisely, the study focuses on the relationship between leader-member exchange and effort-reward imbalance. The goal is to examine if a high-quality supervisor-subordinate relationship can have positive consequences on subordinate's well-being in the form of balanced efforts and rewards. From all leadership theories, LMX was chosen for this study because it is known to enhance well-being (Brunetto et al. 2011; Rousseau et al. 2008; Schyns & Wolfram 2008) and diminish stress (Harms et al. 2017). Moreover, it has been noted that high-quality LMX prevents employee stress more effectively than transformational leadership style (Harms et al. 2017). Additionally, the ERI model has been found to be more consistent in demonstrating psychosocial stress at work than other job stress models, such as the Demand-Control model (Backé, Seidler, Latza, Rossnagel & Schumann 2012). Therefore, the LMX theory and the ERI model are more than suitable to further examine how leadership affects employee health and well-being.

The connection between the LMX relationship and subordinates' perceptions of their efforts and rewards deserves more attention in academic literature. It is not yet known how the relationship between the manager and subordinate affects the experienced effort-reward imbalance. It is possible, for example, that subordinates who have a high-quality relationship with their manager feel that they are receiving corresponding rewards in the form of support, trust and appreciation, when subordinates who have a low-quality LMX relationship feel that they are not rewarded fairly compared to their efforts.

The connection between LMX and ERI is not yet been examined in academic literature. However, the relationship between ERI and transformational leadership has been studied and a connection has been found by Weiß & Süß (2016) and Keisu, Öhman & Enberg (2018). Although the transformational leadership theory does consider the input of the follower to the leadership process, the main focus of the theory is on the actions of the leader (Bass 1999). Instead, the LMX model is based on the idea of social exchange, as well as the ERI model. In LMX, the leader and subordinate exchange, for example, trust, information and support (Wayne, Shore & Liden 1997) whereas the ERI model is based on the social assumption of getting something in return for an effort (Siegrist 1996). By examining the connection between the LMX model and the ERI model, this study takes a new point of view to the relationship between leadership and work place health and well-being.

1.3. Scope of the study

Siegrist (2002) proposes that the ERI model should be tested with three hypotheses. Firstly, it should be examined how the imbalance of high efforts and low rewards affects the health outcomes (extrinsic ERI hypothesis). Secondly, the health effects of overcommitment should be measured (intrinsic OC hypothesis) and finally, the cooperative action of effort-reward imbalance and overcommitment should be examined (interaction hypothesis). The method is based on the assumption that both effort-reward imbalance and overcommitment separately influence negatively on employee's health, but the combination of them both has even greater negative effects. As there is evidence for this claim (e.g. Bakker, Killmer, Siegrist & Schaufeli 2000; de Jonge, Bosma, Peter & Siegrist 2000; Weyers, Peter, Boggild, Jeppesen & Siegrist 2006), it creates a reasonable base for ERI studies.

In this study, the connection of LMX with each component of the ERI model, i.e. effort, reward, ERI and overcommitment is examined. The connection of LMX with effort and reward components are examined separately to achieve more knowledge about *how* the LMX influences the effort-reward imbalance; does the quality of LMX effect ERI by arising rewards or diminishing efforts, or does it do both. In addition, the connection of LMX with overcommitment is investigated because according to the intrinsic OC hypothesis of the ERI model, overcommitment itself also creates stress, so it is important to examine if the quality of LMX relationship could diminish the intrinsic efforts of a subordinate. Also, it creates a favorable ground for future research to examine all the components of the ERI model.

1.2. Research questions

The purpose of this study is to examine the relationship between leadership and subordinate's effort-reward imbalance by using the LMX theory and the ERI model. More precisely, it is examined how the quality of LMX relationship affects the components of the ERI model, i.e. effort, reward, effort-reward imbalance and overcommitment. The research questions are:

(1) Is there a connection between the quality of LMX relationship and subordinate's experienced effort?
(2) Is there a connection between the quality of LMX relationship and subordinate's experienced reward?
(3) Is there a connection between the quality of LMX relationship and subordinate's experienced effort-reward imbalance?
(4) Is there a connection between the quality of LMX relationship and subordinate's experienced overcommitment?

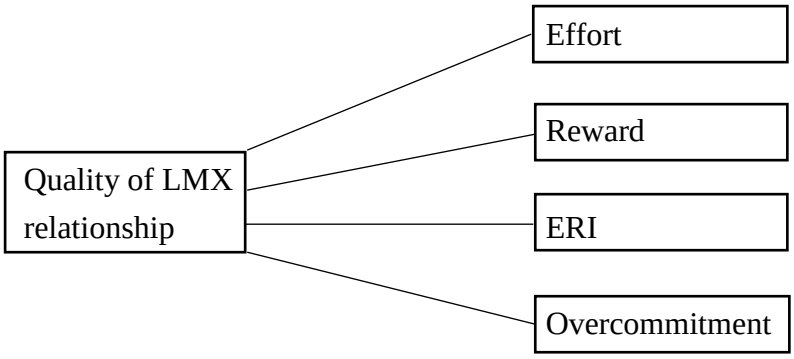

Figure 1. Portrayal of the analysis.

1.4. Structure of the thesis

After the introduction to the thesis, the theoretical background and previous research of both Leader-Member Exchange theory and Effort-Reward Imbalance model are introduced and discussed. First, the wide research of LMX is examined, focusing on the antecedents and outcomes of LMX. Second, the research of the ERI model which has mostly focused on the outcomes of ERI, is discussed. After the theoretical framework, the methodology of the thesis is presented, following by the results of the analyses. In conclusions, the results are interpreted and compared with former research. Lastly, the contribution and limitations of this study are discussed.

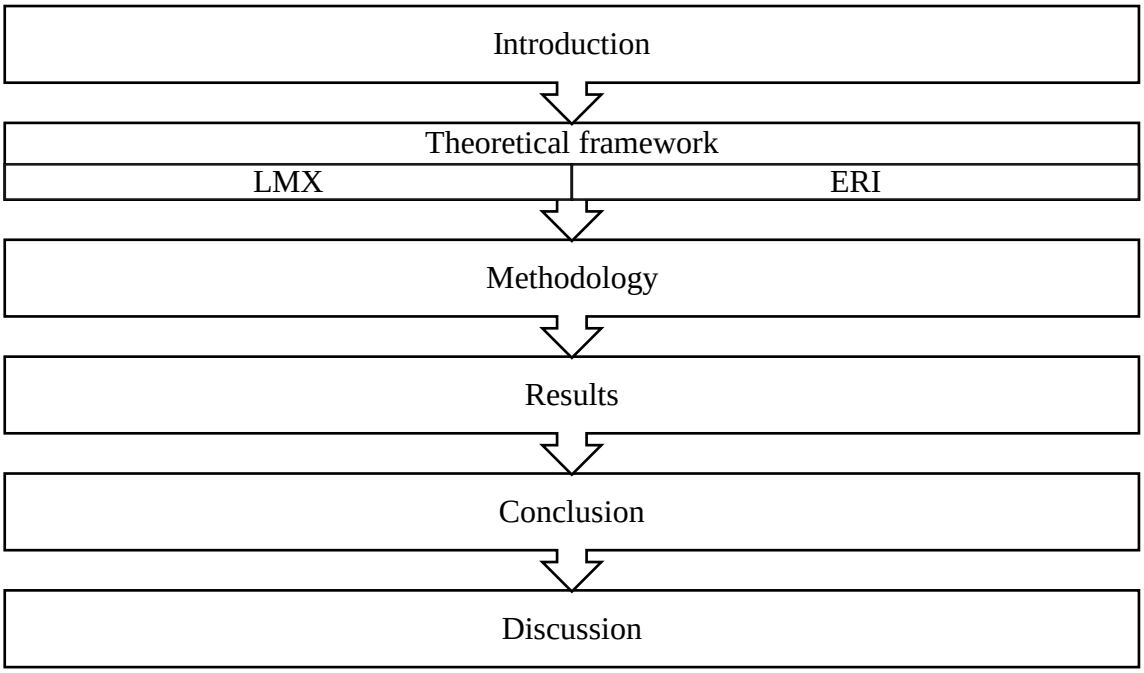

Figure 2. Structure of the thesis.

2. LEADER-MEMBER EXCHANGE

Traditionally, leadership theories have focused on leaders themselves. For example, behavioral theories examine leaders' behavior and how it affects the effectiveness of leadership. (House & Aditya 1997.) Also, trait approaches of leadership research have focused on personal qualities, such as intelligence, charisma and narcissism, of leaders (House & Aditya 1997; Judge, Piccolo & Kosalka 2009). Contingency theories, in turn, evaluate leadership as a combination of a leader's personality and behavior (House & Aditya 1997). However, leadership can also be seen as a concept of three domains which together construct the phenomenon. Leaderships forms not only from a leader and a follower, but also from the relationship between them. The division of leadership into these three domains makes it possible for academic research of leadership theories to focus the examination on each of these domains. (Graen & Uhl-Bien 1995.)

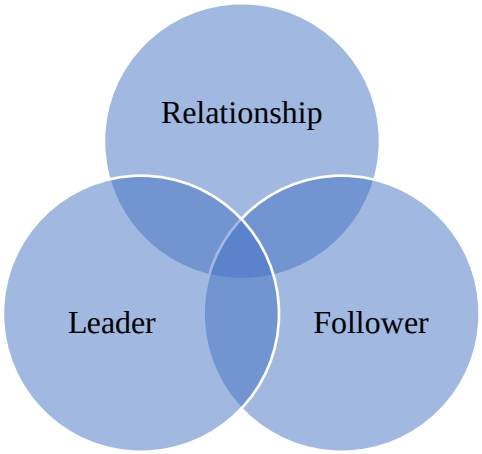

Figure 3. The domains of leadership (Graen & Uhl-Bien 1995).

The LMX model is originally based on the Vertical Dyad Linkage (VDL) model developed by Dansereau, Graen & Haga (1975). The model shifted the focus of leadership research from the domain of leaders to the domain of relationships of leaders and followers. It was recognized that leaders do not necessarily implement one leadership style, but instead, they have different kinds of leadership relationships with their subordinates (Dansereau et al. 1975; Graen & Schiemann 1978; House & Aditya 1997). The strength of the LMX model is that it examines leadership on the relationship level, whereas many other leadership theories only evaluate the characteristics and qualities of

a good leader (Graen & Uhl-Bien 1995; House & Aditya 1997). LMX has a significant mediating role between the leadership behavior and employee outcomes; desirable behavior from the leader does not necessarily create positive outcomes on the follower's side, but with high-quality LMX, the causality is more likely (Dulebohn, Bommer, Liden, Brouer & Ferris 2012).

When the leader and follower experience a high level of mutual trust, respect and obligation, they form a high-quality LMX relationship. In turn, when they experience low levels of these feelings, they form a low-quality LMX relationship and their relationship is based on formality. In early studies of LMX research, relationships of these two qualities were categorized into "ingroup" and "outgroup", which indicated that the followers of the leader can be divided into two groups based the quality of their LMX relationship. (Graen & Uhl-Bien 1995.) In current research, the division into ingroup and outgroup has mostly been dropped and the quality of relationship is addressed with the terms of "high-quality" and "low-quality" LMX relationships (e.g. Cogliser, Schriesheim, Scandura & Gardner 2009; Kim, Lee & Carlson 2010; Martin, Guillaume, Thomas, Lee & Epitropaki 2016).

Dienesh & Linden (1986) contributed the LMX research by emphasizing the multidimensionality of the LMX model. Based on the former research, they conducted that LMX relationship consist of three dimensions: perceived contribution to the exchange, loyalty and affect. They reasoned that since the LMX model emphasize the interaction between the leader and follower, these dimensions need to be something that both parties can influence in. In later studies, the affection dimension has also been labelled as "liking" (e.g. Liden & Maslyn 1998; Dulebohn, Wu & Liao 2017).

Graen & Uhl-Bien (1995) divide the development of the LMX theory in academic literature into four stages. The first stage of the research noted that managers have limited resources to build close relationships with their subordinates which leads to unequal relationships. The focus of research was on "dyads within units" and the VDL model. On the second stage of the research, the terminology of the subject shifted from the VDL theory to the LMX theory (Graen, Noval & Sommerkamp 1982), and studies focused on examining the characteristics of LMX relationships and their outcomes for the organization (e.g. Dienesh & Linden 1986; Gerstner & Day 1997; Graen & Uhl-Bien 1995; Ilies, Nahrgang & Morgeson 2007).

The third stage of research focuses on how high-quality relationships can be built, in other words, the antecedents of high-quality LMX (e.g. Bauer & Green 1996; Dulebohn et al. 2012). It also highlights the partnership of a manager and an employee in a leadership relationship. Research on the fourth level examines the influence of LMX relationships on group and network levels (e.g. Harris, Li & Kirkman 2014; Henderson, Liden, Glibkowski & Chaudhry 2009; Ma & Qu 2010). It is questioned how different quality of LMX affects organizations and work groups and to what extend it is possible for a manager to develop high-quality relationships. (Graen & Uhl-Bien 1995.) An important construct in this line of research is LMX differentiation. LMX differentiation refers to a situation where one leader forms different quality of relationships with one's followers (Gooty et al. 2012). The research of LMX differentiation discusses the effects of LMX on group-level; how LMX appears and what are its consequences in teams.

In the following sections, the second, third and fourth levels of LMX research are introduced and discussed. Firstly, the antecedents of high-quality LMX relationships are examined, followed by a discussion of the outcomes of LMX. The roles of LMX differentiation and other external factors are noted in these sections.

2.1. The antecedents of LMX

The antecedents of high-quality LMX relationships have been widely examined. In their meta-analysis, Dulebohn et al. (2012) divide the antecedents of LMX into three categories: follower characteristics, leader characteristics and interpersonal relationship. In other words, the quality of LMX relationship is influenced by qualities of both the leader and the follower, but also the connections between them, like similarity and trust. A line of research has also emphasized the role of external factors, such as the organization and the work unit (e.g. Aryee & Chen 2006; Cogliser & Schriesheim 2000), as the antecedents of LMX quality.

The meta-analysis by Dulebohn et al. (2012) reveals that even though LMX is a dyadic phenomenon, leader's behavior and perceptions seem to influence more on LMX quality than follower's behavior and perceptions. Especially, leader's transformational leadership behavior, contingent reward behavior and expectations of follower success have the most impact on LMX quality. Schyns, Maslyn & van Veldhoven (2012) also argue that leaders with certain personality characteristics are able to create high-quality relationships with many of their subordinates. These kinds of characteristics are, for example, extraversion

and conscientiousness. A multilevel analysis by Henderson, Liden, Glibkowski & Chaudhry (2009) suggests that leaders who practice transformational or servant leadership tend to have low LMX differentiation. Ma & Qu (2010) also suggest that LMX differentiation arises from leader's personal values: leaders who are universalists, in other words, follow certain rules and customs regardless of the situation, tend to have low LMX differentiation in their teams. This is because universalistic leaders treat their subordinates the same way, regardless of subordinate's personality or performance.

Even if the leader had more influence in building the LMX relationship, the characteristics of the follower also matter. For example, subordinate's self-efficacy (Murphy & Ensher 1999), emotional intelligence (Jordan & Troth 2011) and performance (Deluga & Perry 1994; Nahrgang, Morgeson & Ilies 2009) are known to have positive impact on the quality of LMX relationship. Instead, emotional masking, i.e. covering one's true feelings, by the subordinate is known to have a negative effect on LMX relationship (Xu, Liu & Guo 2014).

Similarity between the leader and the follower seems to have an important role in high-quality LMX relationships. Perceived similarity of the leader and the follower is known to be an antecedent of a high-quality LMX relationship (Engle & Lord 1997; Murphy & Ensher 1999). Moreover, similarity in personalities regarding affectivity (Bauer & Green 1996) and emotional intelligence (Sears & Holmvall 2010) have been found to be important in creating high-quality LMX relationship. Also, when the leader likes the personality of the subordinate and thinks that the subordinate will have a positive career development in their organization, they will have a higher quality of LMX (Wayne et al. 1997).

Despite the similarity in high-quality relationships, it does not seem to matter whether the parties of the leader-follower pair are the same or opposite gender (Bauer & Green 1996; Murphy & Ensher 1999). However, there are differences between male and female leaders; women seem to have more high-quality relationships as leaders than men, and only among women leaders, self-efficacy and optimism have a positive impact on subordinate's ratings about the LMX quality. Self-efficacy and optimism have an impact on leader's own ratings among both genders. (Murphy & Ensher 1999.)

Naturally, the length of the relationship also influences the development of the relationship. A branch of LMX research has highlighted that high-quality LMX relationships can be developed over time, and therefore the relationships should not be

considered as something that is unchangeable (Graen & Uhl-Bien 1995). Nahrgang, Morgeson & Ilies (2009) found that in new LMX relationships, extraversion and leadership agreeableness have an effect on relationship quality, but during a long time period, both leader's and subordinate's performance have a greater effect. Followed by good performance, managers tend to increase delegation of work and give their subordinates more responsibility, which in turn enhances the trust-building in the LMX relationship (Bauer & Green 1996). A high-quality relationship is built, not given. When a subordinate feels that their manager puts effort into building the relationship, the higher is the quality of the relationship (Maslyn & Uhl-Bien 2001).

The organizational factors as the antecedents of LMX quality have also been studied. Organizational climate and work group cohesiveness have an impact on LMX relationships (Cogliser & Schriesheim 2000). Aryee & Chen (2006) found that co-operative and friendly work unit climate is a suitable environment to create high-quality LMX relationships. Also, if the group values mutual respect and team orientation, the LMX differentiation is likely to be low (Henderson et al. 2009). Similarly, Le Blanc & González-Romá (2012) have found that dissimilarity regarding work values and work orientation between team members increases the risk of LMX differentiation.

Leader power in decision making also has an effect LMX quality (Cogliser & Schriesheim 2000). The supervisor's control of rewards, i.e. control of resources, financial rewards and career opportunities, has a positive effect on LMX quality (Aryee & Chen 2006). According to Henderson et al. (2009), organizations that are well-structured and bureaucratic may not suffer from LMX differentiation due to the control of norms and customs, but the mix of full-time and part-time employees as well as regular and fixed-term employees might create differentiation. Also, the size matters; the bigger the group, the higher the differentiation.

Table 1. Antecedents of LMX relationship.

Leader characteristics	**Follower characteristics**	**Interpersonal relationship**	**External factors**
transformational leadership *(Dulebohn et al. 2012)*	self-efficacy *(Murphy & Ensher 1999)*	perceived similarity *(Engle & Lord 1997; Murphy & Ensher 1999)*	organizational climate *(Cogliser & Schriesheim 2000)*
contingent reward behavior *(Dulebohn et al. 2012)*	emotional intelligence *(Jordan & Troth 2011)*	similarity in affectivity *(Bauer & Green 1996)*	work group cohesiveness *(Cogliser & Schriesheim 2000)*
expectations of follower's success *(Dulebohn et al. 2012)*	performance *(Deluga & Perry 1994; Nahrgang et al. 2009)*	similarity in emotional intelligence *(Sears & Holmvall 2010)*	leader's power in decision making and control of rewards *(Aryee & Chen 2006; Cogliser & Schriesheim 2000)*
personality (e.g. extraversion & conscientiousness) *(Schyns et al. 2012)*	emotional masking *(Xu et al. 2014)*	liking *(Wayne et al. 1997)*	work unit climate *(Aryee & Chen 2006)*
		length of the relationship *(Bauer & Green 1996; Nahrgang et al. 2009)*	

2.2. The outcomes of LMX

High-quality LMX relationships have been proved to have positive effects on the subordinate's side, such as diminished stress (Harms et al. 2017) job satisfaction and organizational commitment (Bhal & Ansari 2007; Cogliser et al. 2009; Gerstner & Day 1997; Jordan & Troth 2011), employee altruism (Loi, Ngo, Zhang & Lau 2011), energy and creativity (Atwater & Carmeli 2009) and role engagement (Li & Liao 2014). Also, it

is proved to diminish turnover intentions and role conflicts (Gerstner & Day 1997; Jordan & Troth 2011). Subordinates who have high-quality LMX relationship feel that they are very much involved with decision making with their managers. Also, managers feel that they ought to have high-quality LMX with their subordinates to involve them in important decision making. (Scandura, Graen & Novak 1986.)

Studies show that there is a positive connection with LMX and job performance (Cogliser et al. 2009; Kahya & Şahin 2018; Loi et al. 2011). Also, the quality of LMX relationship have also been proved to correlate with managers' performance ratings of their subordinates (Bauer & Green 1996; Gerstner & Day 1997). It is noted that LMX quality not only affects the performance ratings by manager but also customer-based performance ratings. This enhances the claim that there is a connection between the LMX relationship quality and the actual performance. (Li & Liao 2014.) However, the influence of LMX differentiation on performance ratings has also been examined. LMX differentiation in a work group seems to have an effect on a manager's performance ratings; when the LMX differentiation is low, the manager's ratings of individuals' performance are more equivalent to individuals' own performance ratings than in a group where LMX differentiation is high. (Gooty & Yammarino 2013.) Also, when the differentiation is high, leaders tend to rate the performance of their best workers even higher. (Ma & Qu 2010.) However, Le Blanc & González-Romá (2012) found that LMX differentiation actually had a positive impact on team performance, but only when the LMX quality median within the team was low.

The negative effects of low-quality LMX relationships have also been examined. For example, Bolino & Turnley (2009) claim that subordinates with low-quality relationships suffer from feelings of relative deprivation. These feelings are strengthened, for example, when the subordinate has invested a lot of effort on building the relationship or one's friends have high quality relationships. Luckily, LMX relationships can be changed. A study by Scandura & Graen (1984) showed that with an leadership intervention, job satisfaction, productivity and supervisor satisfaction of initially low-quality LMX members increased substantially compared to initially high-quality LMX members. Also, improving LMX relationship seems to elevate subordinate's self-efficacy (Murphy & Ensher 1999).

Kim, Lee & Carlson (2010) found that among supervisors, intentions to leave diminished as the LMX quality risen, but among non-supervisory positions, the results were a bit more peculiar; there was a U-shaped connection with the LMX quality and leaving

intentions, meaning that leaving intentions were high on people whom had high-quality and people whom had low-quality LMX relationships. It is possible that subordinates with high LMX have better opportunities to change organization due to good performance etc., whereas supervisors with high LMX have been working in the organization for a long time and therefore unwilling to leave. Also, LMX differentiation has been found to mediate the relationship between LMX quality and leaving intentions (Harris et al. 2014).

High-quality LMX relationships benefit the whole organization. A meta-analysis by Ilies et al. (2007) shows that there is a clear connection between the quality of LMX and citizenship behaviors. The connection was especially strong with individual-targeted behavior, in other words, behavior that benefits directly the employee and indirectly the organization. Another meta-analysis (Martin et al. 2016) indicates that high-quality LMX has an positive impact on task and citizenship performance, such as reaching your goals and helping others, and also negative effect on counterproductive performance, like inability to work with colleagues.

Table 2. Outcomes of high-quality LMX relationship.

Individual outcomes	diminished stress *(Harms et al. 2017)*
	job satisfaction *(Bhal & Ansari 2007; Cogliser et al. 2009; Gerstner & Day 1997; Jordan & Troth 2011)*
	energy and creativity *(Atwater & Carmeli 2009)*
	role engagement *(Li & Liao 2014)*
	diminished role conflict *(Gerstner & Day 1997)*
	involvement in decision making *(Scandura et al. 1986)*
	job performance *(Cogliser et al. 2009; Kahya & Şahin 2018; Li & Liao 2014; Loi et al. 2011)*
Organizational outcomes	organizational commitment *(Bhal & Ansari 2007; Cogliser et al. 2009; Gerstner & Day 1997)*
	employee altruism *(Loi et al. 2011)*
	diminished turnover intentions *(Gerstner & Day 1997; Jordan & Troth 2011; Kim et al. 2010)*
	citizenship behavior *(Ilies et al. 2007)* and citizenship performance *(Martin et al. 2016)*

Some studies indicate that organizations should help managers to develop their LMX relationships and to diminish LMX differentiation. These studies show negative effects rising from differentiation. (e.g. Cobb & Lau 2015; Gooty & Yammarino 2013; Li & Liao 2014.) LMX differentiation seems to have a negative impact on co-worker communications, relationship conflict, team-member exchange, the strength of justice climate (Cobb & Lau 2015) and quality of customer service (Auh, Bowen, Aysuna & Menguc 2016). It also affects indirectly team's financial performance negatively when it disturbs the coordination of team members' activities (Li & Liao 2014). A study by Kauppila (2016) shows that LMX differentiation has more negative impact on work outcomes of people with a high rather than a low LMX quality because differentiation might increase the workload and rivalry among ingroup members.

The leader and the follower do not always have a similar perception about the quality of their LMX relationship. It is noted that when the relationship is long term and the leader and follower are in close interaction, the similarity of the ratings of LMX quality increases (Sin, Nahrgang & Morgeson 2009). A study by Cogliser, Schriesheim, Scandura & Gardner (2009) showed that when the leader and follower had different perceptions about their LMX quality, the follower's performance, job satisfaction and organizational commitment were on an average level. Also, followers who estimated their LMX lower than their leaders had a high job performance and followers who overestimated their LMX relationship were highly satisfied with their work and committed to their organization. The study shows how important it is to consider both leader's and follower's perception when LMX relationships are measured.

The organization culture and ways to work also have an impact on the outcomes of LMX. For example, leader's perceived organizational support moderates the relationship of LMX with job satisfaction and job performance. When the leader feels that the organization supports them, it has a positive effect on job satisfaction and performance. (Erdogan & Enders 2007.) Golden & Veiga (2008) found that among people with low LMX, those who get to work often virtually performed better than those who had to work at the office. However, working virtually did not enhance job commitment or satisfaction of those subordinates.

A meta-analysis (Rockstuhl, Dulebohn, Ang & Shore 2012) conducted from studies from 23 countries show that LMX has different effects in different cultures. It shows that in horizontal-individualistic countries, the connections between LMX and organizational citizenship behavior, justice perceptions, job satisfaction, turnover intentions and leader

trust are stronger than in vertical-collectivistic countries. However, it was also noted that cultural differences do not affect the relationships of LMX with task performance, organizational commitment and transformational leadership.

2.2.1. LMX, health and well-being

This study focuses on the connection between the LMX theory and the ERI model. As the ERI model represents the research field of employee health and well-being, it is important to discuss what kind of connections has already been found in the LMX research regarding health and well-being. Studies show that a high-quality LMX can improve follower's subjective well-being (Brunetto et al. 2011; Rousseau et al. 2008; Schyns & Wolfram 2008) as well as affective well-being (Audenaert, Vanderstraeten & Buyens 2017). However, Hooper & Martin (2008) found that LMX differentiation in a team has a negative impact on team members well-being.

Several studies show that LMX is positively connected to overall job satisfaction (e.g. Bhal & Ansari 2007; Cogliser et al. 2009; Gerstner & Day 1997; Jordan & Troth 2011). In high-quality LMX relationships, subordinates receive more support and appreciation than other subordinates. Therefore, subordinates with high-quality LMX have higher satisfaction with pay than other subordinates. Also, they are more satisfied with their supervisor. (Dulebohn et al. 2012.) According to Dulebohn et al. (2012), similar findings about LMX and pay satisfaction has been found by Sparrowe (1994) and Stepina, Perrewe, Hassell, Harris, & Mayfield (1991). Bhal & Gulati (2007) also found an indirect connection between LMX and satisfaction with pay among Indian software professionals.

One important aspect of health and well-being is stress. The relationship between leadership and stress has been widely studied. Stress has been examined as an antecedent of leadership behavior, but also as an outcome of leadership. It has been discussed that leadership can be not only the cause of follower's stress, but it can also diminish it. (Harms et al. 2017.) Many studies have proved that especially high-quality LMX relationship can diminish emotional exhaustion and burnout (Becker et al. 2005; Gregersen et al. 2016; Huang et al. 2010; Kumar et al. 2012; Son et al. 2014; Thomas & Lankau 2009).

High-quality LMX also diminishes role stress, i.e. stress that is caused when people feel that they need to implement contradicting or unclear roles in their work (Thomas & Lankau 2009). Through diminishing work stress and pressure, high-quality LMX is also

known to diminish work-family conflicts (Bernas & Major 2000; Tummers & Bronkhorst 2014). The key factor in stress relief might be the open and accepting atmosphere that good LMX relationships create; LMX is proved to diminish stress through constructive controversy, i.e. open discussion about contradicting opinions in teams (Chen & Tjosvold 2013).

However, Harris & Kacmar (2006) found that the relationship between the quality of LMX and stress is not linear. In fact, not only followers with low-quality LMX relationship experience high levels of stress, but also followers with very high-quality LMX experience it. It seems that close relationship with one's supervisor increases the expectations and pressure, which in turn creates stress. Similar findings were found by Hesselgreaves & Scholarios (2014). They found a curvilinear relationship between LMX quality and job strain among nurses working in senior roles, which means that senior nurses with very low and very high level of LMX quality experienced high job strain. Additionally, LMX quality was not able to diminish the connection between job demands and job strain. However, among nurses working in junior positions, LMX quality had a negative linear effect on both job demands and job strain.

In their study, Hesselgreaves & Scholarios (2014) used the Job Demands – Resources (JD-R) theory which is, in some cases (e.g. Bergin & Jimmieson 2013), compared to the ERI model as they both are theories explaining job stress. If a high-quality LMX relationship diminishes job demands like it was discovered among junior nurses in Hesselgreaves & Scholarios' study (2014), it is possible that LMX could influence similarly on the effort component of the ERI model. Since the findings about the connection between LMX and job demands in Hesselgreaves & Scholarios' study (2014) were contradicting, more research about the subject should be made.

3. EFFORT-REWARD IMBALANCE

The Effort-Reward Imbalance model was created by Johannes Siegrist (1996) to study cardiovascular health effects arising from stressful experiences at work. Particularly, the focus of the ERI model was on the stress that is caused by the imbalance between workers' efforts and received rewards. The core idea of the model is that when people are investing high effort in their work, they expect to receive corresponding rewards in turn. If they do not receive them, they will experience growing amount of stress. Siegrist (1996) asserted that high efforts arise from extrinsic and intrinsic sources; both demands from the work itself and workers' own motivation. Rewards, in turn, include money, esteem (or approval) and status control which refers to worker's social status in organizations. The contribution of the ERI model is that it takes into account both individual (intrinsic) and organizational (extrinsic) factors affecting occupational stress and well-being (Aust, Peter & Siegrist 1997; Van Vegchel, De Jonge, Bosma & Schaufeli 2005).

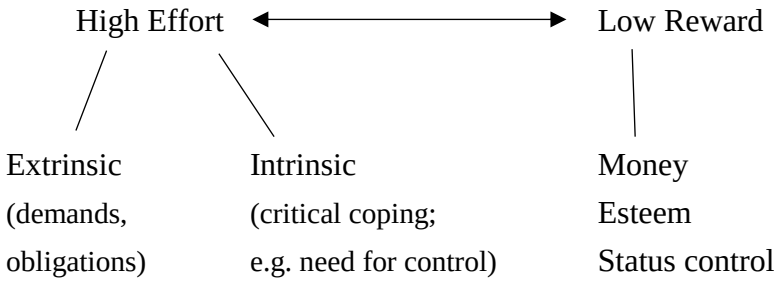

Figure 4. The effort-reward imbalance model at work (Siegrist 1996: 30).

As the research of the ERI model has gone on, the core components of the model have slightly changed their form. According to the latest perception, the ERI model consists of three components: effort, reward and overcommitment. Contradicting the original model, the current interpretation about the effort component refers to extrinsic efforts, whereas overcommitment indicates the intrinsic efforts. Also, the subscales of the reward component have went through changes. (Van Vegchel et al. 2005.)

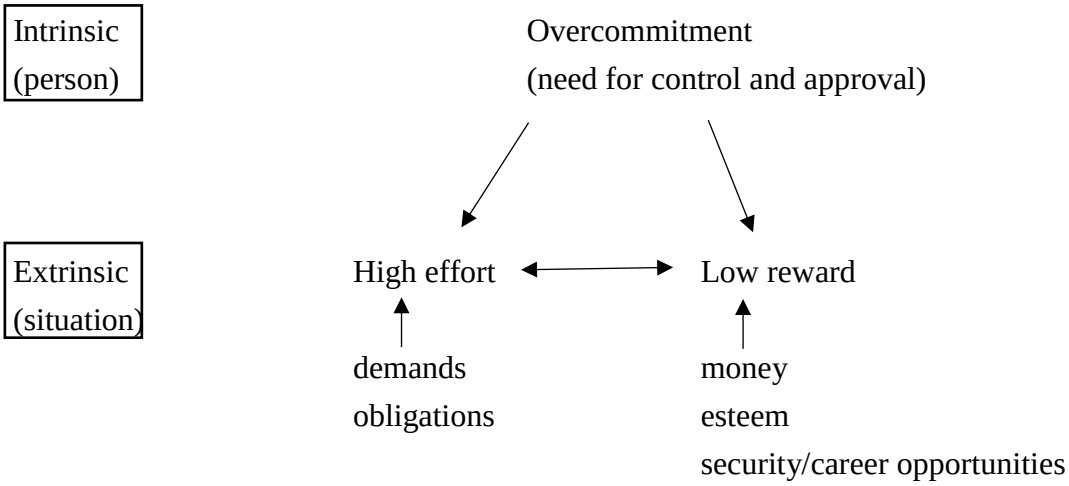

Figure 5. Current ERI model by Siegrist (1999) in Van Vegchel et al. (2005: 1119).

Based on the latest version of the model, Siegrist (2002) formed three hypotheses in order to investigate the full effect of the effort-reward imbalance. The hypotheses are the following;

1. *Extrinsic ERI hypothesis:* the imbalance between effort and reward (i.e. high effort and low reward) has negative health effects, more than the effort and reward components have separately.
2. *Intrinsic overcommitment hypothesis:* overcommitment, which may or may not be caused by prolonged ERI, is also injurious for health.
3. *Interaction hypothesis:* the effort-reward imbalance and overcommitment together create the highest risk of poor health.

Researchers have used these hypotheses varyingly. Some studies focus only on measuring the effort-reward imbalance but including the overcommitment component into examination has become more common over time. (Van Vegchel et al. 2005.) In the following chapter, each of the three components of the ERI model and their development are discussed.

3.1. Effort, reward and overcommitment

The effort component in the ERI model refers to exertions of the employee. It considers not only the work load of the employee, but also interruptions, disturbances,

responsibility and pressure to work overtime, which all burden the employee. (Siegrist et al. 2004.) Since the effort component has been under varying interpretations over time, its evolvement and its relationship to overcommitment component should be discussed.

Siegrist (1996) presents efforts in two dimensions: intrinsic and extrinsic efforts. Siegrist & Matchinger (1989) measured intrinsic effort with the scale of "need for control" (Siegrist 1996; Van Vegchel et al. 2005). The need for control scale is divided into two subscales, vigor and immersion. Vigor refers to successful control that follows from hard work and perfectionism. Immersion, on the other hand, refers to exhaustion arising from continuous negativity associated with employee's efforts. Immersion was measured with four further scales: need for approval, competitiveness, disproportioned irritability and inability to withdraw from work. (Siegrist 1996; Van Vegchel et al. 2005) However, later studies could not successfully replicate this way of measuring intrinsic efforts, but it was noted that especially the scale "inability to withdraw from work" was especially apposite measure to characterize intrinsic efforts. In later studies, term "overcommitment" was seen even more relevant to describe inability to withdraw from work and, therefore, intrinsic efforts. (Siegrist et al. 2004; Van Vegchel et al. 2005.)

Because of the development of the ERI model, many studies have now included the overcommitment component in their examination (e.g. de Jonge et al. 2000; Hyvönen et al. 2010; Preckel et al. 2007; Siegrist et al. 2004; Weiß & Süß 2016). Even though some studies consider overcommitment independently, some have followed the original research frame and have included overcommitment to the effort component as an intrinsic effort. This variation in research makes it harder to evaluate and compare different studies together. (Van Vegchel et al. 2005)

The extrinsic efforts refer to stressors arising from the work environment. (Siegrist 1996; Siegrist, Peter, Junge, Cremer & Seidel 1990.) These stressors might differ depending on the nature of the work. For blue-collar workers, extrinsic efforts mainly occur from piecework, shiftwork, noise, work pressure or increase of workload (Siegrist et al. 1990). As Siegrist (1996) compresses from his and his colleagues' former study (Peter, Siegrist, Stork, Mann & Labrot 1991), middle managers, in turn, experience more extrinsic effort the more people they have under their supervision. Also, interruptions, inconsistent demands and difficult problems are external efforts that might occur in any kind of work (Siegrist 1996). Nevertheless, it seems that employees with higher education level experience more efforts than employees with lower education level (Siegrist et al. 2004),

as well as permanent workers report higher efforts than fixed-term workers (Inoue, Tsurugano & Yano 2011).

The construction of the reward component has also changed through research. In the original model, Siegrist (1996) stated that the reward component included money, esteem (approval) and status control. In some later studies, the subscales of the reward have been determined with the terms of money, esteem and job security/career opportunities (Van Vegchel et al. 2005). Despite the changes, the idea of the model has stayed the same. The model has often been adjusted to a cultural context, for example, Brazilian, Japanese, Chinese, Italian and Norwegian versions of the measuring methods can be found (Griep, Rotenberg, Vasconcellos, Landsbergis, Comaru & Alves 2009; Tsutsumi, Ishitake, Matoba, Peter & Siegrist 2001; Lau 2008; Li, Yang, Cheng, Siegrist & Cho 2005; Zurlo, Pes & Siegrist 2010). The ERI model and its consequences have also been studied in Finland (e.g. Hyvönen, Feldt, Kinnunen & Tolvanen 2011; Hyvönen et al. 2010; Kinnunen, Feldt & Tarvainen 2006). In these studies, the reward component has included the subscales of career opportunities, job security and esteem. The financial reward has been omitted from the model probably because the financial rewards are usually closely connected with the career opportunities (see Siegrist et al. 2004, p. 1487).

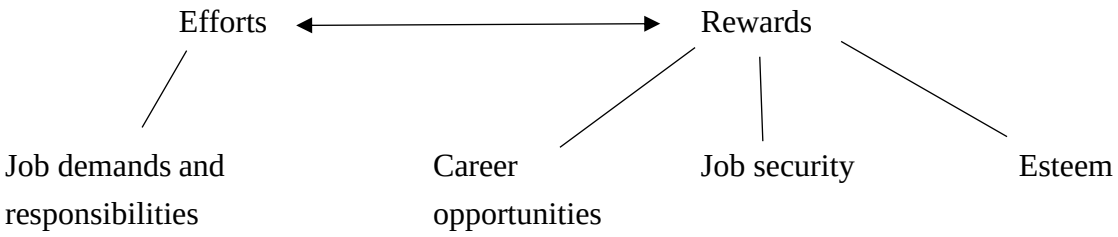

Figure 6. The effort-reward imbalance model modified (Hyvönen et al. 2010; Kinnunen et al. 2006).

The esteem component refers to the respect and support that the employee receives at workplace, both from superiors and colleagues. The career opportunities component measures how the employee feels about one's opportunities for job promotion and how employee's current position reflects one's education. This component also includes how adequate the employee experiences the financial rewards. The job security component refers to unwanted changes at the work place and a general feeling of the security of

keeping the job. (Siegrist 1996; Siegrist et al. 2004.) Experienced rewards tend to increase with age, particularly with men. Also, high-educated people and people working on higher employment grade seem to experience more rewards than low-educated and low employment grade people. (Siegrist et al. 2004.)

The ERI model has received some critique; it is considered to be overly complicated in some cases. Preckel, Meinel, Kudielka, Haug & Fischer (2007) suggest that the effects of efforts, rewards and overcommitment can be discovered by measuring these variables separately and the effort-reward ratio or the interaction between ERI and overcommitment add no value to the examination. Likewise, in a study by Willis et al. (2008) it was also noted that variables of effort, reward and overcommitment explained adequately the findings and the imbalance of those variables did not add significant value to the findings. Other studies have also found results that contradict the ERI model regarding the three hypotheses (e.g. Ertel, Pech, Ullsperger, Von Dem Knesebeck & Siegrist 2005; Inoue et al. 2011; Kouvonen et al. 2006; Van Vegchel, De Jonge, Meijer & Hamers 2001).

3.2. The outcomes of ERI and overcommitment

Both young and old people seem to experience the consequences of high effort-reward imbalance the same way (de Jonge et al. 2000), and the ERI model has been even successfully adjusted to measure the psychological stress of school students (Li, Shang, Wang & Siegrist 2010). However, there are contradicting findings about the differences between genders (e.g. de Jonge et al. 2000; Li et al. 2006; Nakata et al. 2011; Steptoe, Siegrist, Kirschbaum & Marmot 2004; Ertel, Pech, Ullsperger, Von Dem Knesebeck & Siegrist 2005). It is difficult to tell whether a difference between genders regarding the ERI outcomes exists, since a large amount of studies have only examined men (Van Vegchel et al. 2005).

The research of the Effort-Reward Imbalance model has mainly been focused on naming the health outcomes that follow effort-reward imbalance and overcommitment. Studies can be divided considering physical health, psychological health and behavioral outcomes. (Van Vegchel et al. 2005.)

3.2.1. Physical health outcomes

As the ERI model was originally developed to study cardiovascular diseases (CVD), many studies had continued this research. Meta-analyses show that those studies have been giving generally unanimous results; ERI and overcommitment increase the risk of cardiovascular diseases. (Backé, Seidler, Latza, Rossnagel & Schumann 2012; Van Vegchel et al. 2005.) High effort-reward imbalance might even lead to cardiovascular mortality (Kivimäki, Leino-Arjas, Luukkonen, Riihimäki, Vahtera & Kirjonen 2002). As in every research field, there are also contradicting studies. For example, Hintsanen, Elovainio, Puttonen, Kivimäki, Koskinen, Raitakari & Keltikangas-Järvinen (2007) found only a partial support for the connection between ERI and the increased risk of cardiovascular diseases and only among women. Some studies have examined the influence of ERI and overcommitment on cardiovascular disease symptoms and risk factors, like high cholesterol and blood pressure. This line of research has also found clear connection between CVD symptoms and risk factors and ERI, but the findings of connection with overcommitment are contradicting. (Van Vegchel et al. 2005.)

High effort-reward imbalance is also known to increase the risk of coronary heart disease, although the risk is rather small. However, the commonness of ERI enhances the risk when it comes to a large population. (Kuper, Singh-Manoux, Siegrist & Marmot 2002.) A study by Aboa-Éboulé, Brisson, Maunsell, Bourbonnais, Vézina, Milot & Dagenais (2011) also indicate that increased risk of recurrent of coronary heart decease events is in connection with ERI and low rewards. Studies show that high effort-reward imbalance also enhances physical job strain (Zurlo et al. 2010) as well as impairs general physical well-being (Watanabe, Tanaka, Aratake, Kato & Sakata 2008) and both genders' health functioning (Li, Yang & Cho 2006).

Krause, Burgel & Rempel (2010) studied the connection between ERI and neck-shoulder and upper-extremity pain on call center computer operators. Interestingly, they found that during a year, ERI increased the pain in the right upper-extremity but not in the left upper-extremity or in the neck-shoulder area. Even though other explanatory factors, such as physical workload and ergonomics, were adjusted in this study, it is still questionable that effort-reward imbalance would create physical health problems in such precise area of human body.

Van Vegchel, De Jonge, Meijer & Hamers (2001) investigated the effects of ERI by dividing the effort component into three categories; physical, psychological and

emotional demands. They found out that effort-reward imbalance always had a negative effect on employees' well-being, whether it was physical, psychological or emotional demand in question. However, they also found out that the risk of exhaustion raised when both psychological effort and rewards were high. Contradicting to the core idea of the ERI model, in this case, the balance of efforts and rewards also had negative health effects. The reason for this might be that the employees in case demanded a lot from themselves to match their high rewards.

In a ten-year follow-up, it was noted that effort-reward imbalance predicted risen body weight (Kivimäki et al. 2002). Another study also shows that high ERI increases the risk of being overweighed, at least among women. However, it is also known that low efforts at work are also associated with overweight, which indicates people who do not invest a lot of efforts in their work life might have inactive life-style as well. (Kouvonen, Kivimäki, Virtanen, Heponiemi, Elovainio, Pentti, Linna & Vahtera 2006.) The relationship of effort-reward imbalance and obesity needs more research, since it might also be that people experiencing high efforts at work also demand more of themselves regarding maintaining their physical health and appearance.

The effects of different components of the ERI model have also been reported separately. It has been noted that especially the effort component seems to have a great effect on physical health (Li et al. 2006). This finding is not surprising, since the effort component often includes physical strain especially among blue-collar workers (Siegrist et al. 1990). Also, the overcommitment component is reported to predict coronary restenosis on cardiac patients (Joksimovic et al. 1999), be connected to men's cortisol levels and blood pressure (Steptoe et al. 2004) and impair general physical well-being (Watanabe et al. 2008). Nevertheless, Kouvonen et al. (2006) discussed that the reward component might have been the only effective factor in their study regarding unhealthy life-style and Nakata et al. (2011) found that even different subscales (esteem, job promotion & salary, and job security & career opportunities) of the reward component had different effects on the cells that promote natural immune system. These findings put the basic hypotheses of the ERI model in question; is it the imbalance of intrinsic and extrinsic efforts and rewards that matters, or do the components separately adequately explain the changes in physical health?

3.2.2. Psychological health outcomes

The ERI model has been investigated from the point of view of psychological well-being. A branch of research has focused on psychosomatic symptoms of effort-reward imbalance and overcommitment. According to the meta-analysis of Van Vegchel et al. (2005), most studies have found that both ERI and overcommitment increase psychosomatic health problems. For example, de Jonge et al. (2000) found a connection between high ERI and psychosomatic health complaints. However, there are inconsistent findings about the psychosomatic health effects of the interaction of ERI and overcommitment (Van Vegchel et al. 2005).

Some studies have focused on job-related well-being with the concepts of, for example, emotional exhaustion and job satisfaction. It has been noted that imbalance between efforts and rewards is likely to create emotional exhaustion (Bakker et al. 2000; de Jonge et al. 2000; Feuerhahn, Kühnel & Kudielka 2012) and job dissatisfaction (de Jonge et al. 2000; Li et al. 2005). According to the meta-analysis (Van Vegchel et al. 2005), the results regarding effort-reward imbalance have been quite unanimous; ERI at work increases poor well-being, especially emotional exhaustion. However, the effects of the interaction of ERI and overcommitment to job well-being have been, once again, contradicting. For example, de Jonge et al. (2000) and Feuerhahn et al. (2012) claim that the risk of negative well-being effects is higher when employees experience the both ERI and overcommitment, whereas Van Vegchel et al. (2001) suggest that overcommitment had no moderating effect on the relationship between ERI and well-being. In addition, Watanabe et al. (2008), even found that overcommitment would actually improve mental well-being.

There is a wide evidence of effort-reward imbalance creating depression (Chen, Wang, Hsin, Oates, Sun & Liu 2011; Dragano, He, Moebus, Jöckel, Erbel & Siegrist 2008; Pikhart, Bobak, Pajak, Malyutina, Kubinova, Topor, Sebakova, Nikitin & Marmot 2004; Tsutsumi, Kayaba, Theorell & Siegrist 2001). Overcommitment is also found to be connected with depressive symptoms (Dragano et al. 2008; Kikuchi, Nakaya, Ikeda, Narita, Takeda & Nishi 2009). In a study among Italian teachers, the interaction of ERI and overcommitment created anxiety, depression and psychological job strain (Zurlo et al. 2010). Other studies have also found evidence that ERI decreases the ability to work by creating job strain (Bethge & Radoschewski 2010; Bethge, Radoschewski & Müller-Fahrnow 2009), psychological distress (Janzen, Muhajarine, Zhu & Kelly 2007) and sleep disturbances (Rugulies, Norborg, Sørensen, Knudsen & Burr 2009). ERI is also known

to affect employees' adjustment to shift work; high efforts and low rewards seem to increase work-family conflict and risk of burnout among shift workers. (Willis et al. 2008.)

There are contradicting findings about how the different components of the ERI model and their interactions affect self-reported health. Studies by Niedhammer, Tek, Starke & Siegrist (2004) and Weyers et al. (2006) show that ERI and overcommitment impair the results of self-reported health. Also, a study about American hotel room cleaners, which were 99% female, showed that all the components of the ERI model had a significant negative impact on cleaners' general self-rated health. (Krause, Rugulies & Maslach 2010.) However, Ertel et al. (2005) tested the three hypotheses of the ERI model on freelance media workers' subjective health. They found that ERI ratio did have a negative effect on media workers' subjective effect, but overcommitment did not. The interaction of ERI and overcommitment had an effect only on men. Also, the influence of effort and reward components on self-reported health separately seems to vary depending on measuring methods (Niedhammer et al. 2004).

There has been found gender differences in how well-being is affected by ERI and overcommitment. In a study by Wada et al. (2008) it was found that effort-reward imbalance and the effort component itself created chronic fatigue both for men and women, but overcommitment did not create as much chronic fatigue for women as it did for men. The reason for this difference is unknown. In addition, high rewards diminished the risk of chronic fatigue for men, but not for women. Studies also show that men are more likely to experience job dissatisfaction because of high invested efforts at work, whereas women's job satisfaction and mental well-being might be more influenced by rewards and overcommitment (Li et al. 2005, 2006).

Differences related to employment have been found as well. In a Japanese study, it was found that permanent workers experienced higher effort and higher effort-reward imbalance than workers who were on a fixed-term employment. However, the lack of job promotion and job insecurity created distress for fixed-term employees more than high efforts and ERI created for the permanent employees after a one-year follow-up. The results indicate that permanent workers' mental health problems were caused by high efforts and fixed-term workers' problems were caused by low rewards. (Inoue et al. 2011.) These findings contradict the extrinsic hypothesis of the current ERI model (Siegrist 2002) and support the proposition of Preckel et al. (2007) that the effort-reward imbalance ratio doe add significant value to the research of efforts and rewards separately.

Sometimes people cope well with the imbalance of efforts and rewards because it is their own strategic choice; they are perceiving to gain their rewards in the future, for example, in the form of promotion (Siegrist 1996). Even though overcommitment is known to cause psychological strain, i.e. social dysfunction, anxiety and depression among interns, ERI does not necessarily cause psychological strain to interns because they feel that they gain experience which helps them to pursue their professional goals in later life. (Oren, Reizer & Berger 2017.)

3.2.3. Behavioral outcomes

It has also been studied what kind of behavioral outcomes the effort-reward imbalance and overcommitment create. Kouvonen et al. (2006) investigated the effect of efforts, rewards and ERI to different life-style risk factors, such as smoking, heavy drinking, physical inactivity and overweight. High ERI increased the total amount of these life-style risk factors for both genders but so did low efforts and low rewards when examined separately. This finding suggests that the poor life-style choices might be because of low rewards, not effort-reward imbalance. In turn, Head, Stansfeld & Siegrist (2004) found gender differences; it seems that high ERI at work increases the risk of alcohol dependence in men, but not in women.

Nevertheless, there is a vide evidence that effort-reward imbalance increases both short-term and long-term sickness absences (Derycke, Vlerick, Van De Ven, Rots & Clays 2013; Fahlén, Goine, Edlund, Arrelöv, Knutsson & Peter 2009; Griep, Rotenberg, Chor, Toivanen & Landsbergis 2010; Head, Kivimäki, Siegrist, Ferrie, Vahtera, Shipley & Marmot 2007). However, rewards at work have been found to affect the frequency of sickness absence but not the duration of absence. There has been found differences between the subscales of rewards; job esteem, security and opportunities decrease sickness absences among men, but women's absences were influenced only by satisfaction with financial income. (Roelen, Koopmans & Groothoff 2009.)

Research has showed that low effort-reward imbalance, in other words, sense of adequate rewards compared to invested efforts, leads to pursuing organizational goals (Hyvönen et al. 2010). Instead, high effort-reward imbalance seems to make employees to pursuit better well-being and new job (Hyvönen et al. 2010; Kinman & Jones 2008; Zurlo et al. 2010). A study in health care shows that high ERI does not only encourages nurses' leaving intentions, but also intentions to leave their profession (Derycke et al. 2010). It is

noted that getting stuck into undesirable occupation or work place is a possible reason for experiencing effort-reward imbalance (Fahlén et al. 2009).

It has also been studied how ERI and overcommitment influence on job performance. The effort-reward imbalance seems to weaken the work performance through to absenteeism and limitations with being able to do one's work and working with other people (Sung Wei Chen et al. 2011). Feuerhahn et al. (2012) found that ERI as well as the interaction of ERI and overcommitment were related to supervisor-rated job performance, even though the overcommitment component itself was not. In a study by Landolt et al. (2017) it was discovered that when the monetary rewards were increased, employees performed better and had less physiological stress. Effort-reward imbalance as well as the effort and reward components themselves have been noticed to affect personal work goals of managers. In a two-year study, it was noted that when mangers' work goals changed, their felt differently about their efforts and rewards. For example, managers whom got engaged in organizational goals or developing their professional competence experienced greater rewards than in the first time of measurement. (Hyvönen, Feldt, Kinnunen & Tolvanen 2011.)

Effort-reward imbalance also increases the feeling of anger (Smith, Roman, Dollard, Winefield & Siegrist 2005). This was also noted in a study which investigated the connection between ERI and road rage; overcommitment strengthened the connection between ERI and driving anger (Hoggan & Dollard 2007). Moreover, it seems that people with low income experience higher anger caused by high effort/low reward, and the anger increases the risk of cardiovascular disease symptoms (Smith et al. 2005).

Table 3. Research of the outcomes of ERI and overcommitment.

Physical health outcomes	cardiovascular diseases *(Backé et al. 2012; Kivimäki et al. 2002; Van Vegchel et al. 2005)*
	coronary heart disease *(Aboa-Éboulé et al. 2011; Kuper et al. 2002)*
	physical job strain *(Zurlo et al. 2010)*
	impaired physical well-being *(Watanabe et al. 2008)*
	neck-shoulder and upper extremity pain *(Krause, Burgel et al. 2010)*
	risen body weight *(Kivimäki et al. 2002; Kouvonen et al. 2006)*
Psychological health outcomes	psychosomatic symptoms *(de Jonge et al. 2000; Van Vegchel et al. 2005)*
	emotional exhaustion *(Bakker et al. 2000; Feuerhahn et al. 2012)*
	low job satisfaction *(de Jonge et al. 2000; Li et al. 2005)*
	depression and anxiety (Sung Wei Chen et al. 2011; Dragano et al. 2008; Kikuchi et al. 2009; Pikhart et al. 2004; Tsutsumi, Kayaba et al. 2001)
	mental job strain *(Bethge & Radoschewski 2010; Bethge et al. 2009; Zurlo et al. 2010)*
	chronic fatigue *(Wada et al. 2008)*
Behavioral outcomes	smoking and heavy drinking *(Head et al. 2004; Kouvonen et al. 2006)*
	physical inactivity *(Kouvonen et al. 2006)*
	sickness absences *(Derycke et al. 2013; Fahlén et al. 2009; Griep et al. 2010; Head et al. 2007)*
	leaving intentions *(Derycke et al. 2010; Kinman & Jones 2008; Zurlo et al. 2010)*
	job performance (Sung Wei Chen et al. 2011; Feuerhahn et al. 2012; Landolt et al. 2017)
	work goals *(Hyvönen et al. 2010)*

3.3. The antecedents of ERI

There has been very little research about what causes effort-rewards imbalance. Of course, it is difficult to tell whether certain factors are the antecedents or the outcomes of the effort-reward imbalance. Shimazu & de Jonge (2009) point out that the effect of ERI on employees' health is not only one-way. Instead, perceived ERI and employee health have an impact on each other. A good example of this interaction is the role of overcommitment. Even though overcommitment is often seen as an intrinsic effort in the ERI model, overcommitment has also discovered to predict effort-reward imbalance. In their study, Weiß & Süß (2016) found that overcommitment had a positive effect on ERI. A plausible reason for this is that overcommitted people are not able to control how they invest their efforts (Siegrist 1996).

Despite the lack of research about the antecedents of ERI, a couple of studies have found some explanations. For example, older people seem to experience lower levels of ERI by receiving relatively high rewards compared to low efforts (Siegrist et al. 2004; Weiß & Süß 2016). Age and overcommitment seem to have an inversed U-shaped connection, meaning that people aged 45-54 experience overcommitment the most (Siegrist et al. 2004). Also, people who have "survived" from organizational downsizing feel more often effort-reward imbalance than people who have not experienced organizational downsizing at their work place (Dragano, Verde & Siegrist 2005). In addition, it has been found that good well-being diminishes effort-reward imbalance (Weiß & Süß 2016). As many studies have proved that ERI has a negative effect on well-being (e.g. de Jonge et al. 2000; Feuerhahn et al. 2012; Van Vegchel et al. 2001), the direction of causality between these two construct should be measured with a longitudinal research (Weiß & Süß 2016).

Fahlén et al. (2009) investigated the mediating role of effort-reward imbalance on the relationship between "locked-in" position (LIP) and sick leave. LIP refers to a situation where a person chooses to stay in an undesired occupation or work place because of the uncertainty of getting a permanent position somewhere else. The study showed that possibility to change work place had a strong negative effect on ERI. Controversially, LIP was positively connected to ERI. This finding is not surprising, considering that the reward component of the ERI model includes career opportunities (Van Vegchel et al. 2005). In addition, satisfaction with current occupation and work place also had a negative effect on ERI (Fahlén et al. 2009). The finding suggests that job satisfaction might diminish the effort-reward imbalance, which might connect it to Leader-Member

Exchange theory, since LMX is proved to enhance job satisfaction in many studies (e.g. Bhal & Ansari 2007; Cogliser et al. 2009; Gerstner & Day 1997; Jordan & Troth 2011). It is possible that LMX and ERI are connected through job satisfaction.

The developer of the ERI model Johannes Siegrist (2012: 18) points out that leadership is an important factor is diminishing the stress caused by the imbalance of efforts and rewards. Especially, he emphasizes the importance of "esteem, recognition and appropriate feedback" in how leaders should *reward* their subordinates. Weiß & Süß (2016) examined the relationship between transformational leadership and effort-reward imbalance. They found that transformational leadership behavior, especially "individualized consideration" which refers to how the leader considers the individual needs and opportunities of the followers, was negatively connected to experienced effort-reward imbalance. This finding proves that ERI can be diminished with good leadership and more research should be made about the connection between leadership behavior and ERI.

4. METHODOLOGY

In this chapter, the methodology of the thesis is presented. Methodology refers to "… the way research techniques and methods are grouped together to provide a coherent picture" (Easterby-Smith, Thorpe & Jackson 2012: xv). In order to create a cohesive research, it is important to examine how the methodology is formed from the research philosophy to the data. In the following chapters, the methodological choices of this study are discussed step by step. In figure 7, the choices are presented.

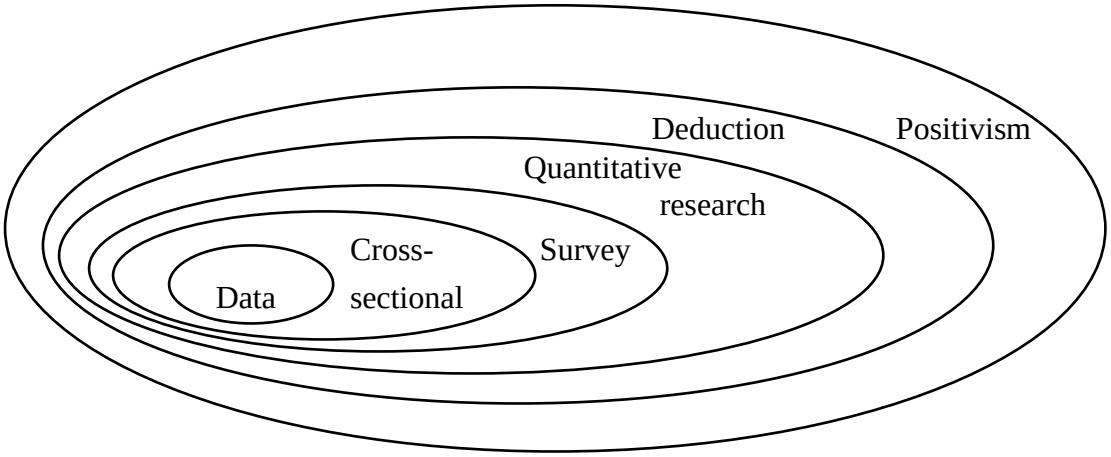

Figure 7. The research 'onion'. Adapted from Saunders, Lewis & Thornhill (2012: 128).

4.1. Research philosophy and approach

Methodology arises from the views of epistemology and ontology. Ontology refers to the view of the nature of reality and epistemology refers to the view on how the reality can be examined. (Easterby-Smith et al. 2012: 18.) According to Easterby-Smith et al. (2012: 21-24), there are two main epistemologies that apply in management research; positivism and social constructionism. Positivists see that the reality can and should be measured objectively, whereas social constructionists see that the reality is shaped by people and therefore each research is subjective.

This study represents positivism by aiming to examine the causality between two concepts, leader-member exchange and effort-reward imbalance. The goal of the study is to find a general pattern of how these two behavioral constructs affect one another. The study does not consider how individuals experience these concepts or the causality of the concepts. Additionally, the study pursues objectivity, meaning that the author does not affect the findings with one's own interpretation.

According to Saunders et al. (2012: 143-148) there are three alternative research approaches. They are deduction, induction and abduction. Deductive research approach refers to research that aims to generate facts based on facts; the research is conducted by testing hypotheses based on the theory that is showed to be accurate. Deductive research approach is commonly used in natural sciences. In turn, inductive research approach is used to understand and reform the theory by examining separate cases. This is often done by interviewing people and the theory is formed form the results of the interviews. This approach is very common in social sciences. The abductive research approach tends to combine deduction and induction. In abductive approach, a "surprising fact" has discovered from previous research and inspired by that, plausible theories are being tested by using both deductive and indictive approaches. The research approach used in this thesis is deductive. This study uses deductive methods by forming the research questions by combining two different research fields and by testing the accuracy of the theory in quantitative methods.

4.2. Research design, strategy and data

There are three options when it comes to research design; quantitative, qualitative or multiple methods. Generally, quantitative refers to research where the data is numeric and qualitative refers to research where the data is non-numeric, such as interviews. In quantitative research, relationships between variables are tested and data is used to test the theory. In turn, qualitative research aims to analyze participants' answers and find new information based on that. Multiple methods research design uses both quantitative and qualitative methods. For example, a survey can include not only numeric answers, but also open questions. (Saunders et al. 2012: 161-165.)

The present study follows quantitative research design. The research strategy is to collect the data with a cross-sectional survey from one organization. The data was collected with LÄIKE research project by University of Vaasa during 2011-2013 (see Mäkelä, Viitala,

Tanskanen, Säntti & Uotila 2013). The data was collected with an internet-based (or alternatively with a paper form) survey from a Finnish insurance company as a cross-sectional study. The sample includes 295 respondents who work in non-supervisory positions. People in supervisor positions were excluded from this study. The mean age of the respondents was 37.33 years. 67.1% of the respondents were women, 21.7% were men and gender of 11.2% is unknown. 58.6% of the respondents had completed secondary education level and 41% had completed a higher education level. 82% of the respondents were on a permanent employment and 17.3% were fixed-term or agency-hired employees. More than a half of the working units had over 40 people in their teams. The survey was conducted in Finnish.

4.3. Research variables

The quality of LMX relationship was measured with a new measurement scale LMX-UVA by the University of Vaasa research group. This was because the previous measurement scales such as LMX-7 and LMX-MDM describe the relationship mostly only from the subordinate's point of view, whereas the LMX-UVA scale was more suitable for both leaders and subordinates. (Tanskanen, Mäkelä & Viitala 2018: 8.) LMX was measured with 9 questions. The answers were collected with seven-scaled Likert scales, in which 1 = "strongly disagree" and 7 = "strongly agree". The questions descripted how the subordinate reviews the quality of their relationship with their supervisor, for example, "we trust each other", "we appreciate each other's competence at work", and "we can truly listen each other's opinions". The questions were summed into one variable and the reliability of this variable was measured with Chronbach's α ($\alpha = 0.973$). The normality of the LMX variable was tested with Kolmogorov-Smirnov test and Shapiro-Wilk test. The tests showed that LMX is not normally distributed ($D = 0.132$, $p < 0.001$; $W = 0.884$, $p < 0.001$).

The components of the ERI model were measured with a Finnish version of Siegrist's 23-item survey developed by Kinnunen et al. (2006). Effort was measured with 6 questions. The answers were collected with four-level scales in which 1 = "strongly disagree" and 4 = "strongly agree". The questions included, for example, "my job is physically demanding", "I often feel pressured to work overtime" and "my job is very responsible". The questions were summed into one variable and the reliability of this variable was tested ($\alpha = 0.703$). The normality tests show that effort is not normally distributed (D =

0.103, $p < 0.001$; W = 0.977, $p < 0.001$), but the bias is not significant with skewness of -0.43.

Reward was measured with 11 questions. The answers were also collected with four-level scales in which 1 = "strongly disagree" and 4 = "strongly agree". The questions aimed to describe three subscales of rewards; esteem, career opportunities and job security. The questions included, for example, "I get the appreciation I deserve from my supervisor", "my promotion opportunities are weak" and "there are a lot of insecurities in my work". The variables were turned into parallel and summed into one variable. The reliability of reward variable was tested ($\alpha = 0.811$). The normality tests show that reward is not normally distributed (D = 0.062, $p < 0.05$; W = 0.988, $p < 0.05$), but the bias is not significant with skewness of -0.27.

ERI ratio was formed by dividing effort with reward. Since there were 6 questions indicating effort and 11 questions indicating reward, the reward variable was multiplied with a correction factor of 0.5454. As recommended in former study by Kinnunen et al. (2006: 9), the logarithmic ERI ratio was used to reduce skewness of the scale. The normality tests show that ERI is not normally distributed (D = 0.057, $p < 0.05$; W = 0.990, $p < 0.05$), but bias is not significant with the skewness of -0.093.

Finally, overcommitment was measured with 6 questions. The answers were collected with four-level scales in which 1 = "strongly disagree" and 4 = "strongly agree". The questions included, for example, "I start to think work matters immediately when I wake up", "people who are close to me say that I sacrifice too much for my career" and "when I come home, I can easily relax". The variables were turned into parallel and summed into one variable. The reliability of overcommitment variable was tested ($\alpha = 0.821$). The normality tests show that the overcommitment is not normally distributed either (D = 0.084, $p < 0.001$; W = 0.963, $p < 0.001$), but the bias is not significant with the skewness of 0.5.

4.3. Research quality

The foundation of academic research is that it is trustworthy. The quality of research is usually determined with two concepts; reliability and validity. From the point of view of positivism, reliability means that the measurement methods produce same results in different studies. Reliability is a sign of objectivity. (Easterby-Smith et al. 2012: 71.) The

data used in this study is not collected by the author, which can either enhance or diminish the reliability of this study. Since the author has not collected the data, the author has not been able to influence how the survey is compiled or conducted. Therefore, there is no possibility that the author would have led the study to a predeterminated direction. However, when receiving the data from another party, the credibility of the source should always be considered. As in this case the source is the University of Vaasa, it can be considered as a reliable source. When it comes to the reliability of the variables, each sum variable was tested with Chronbach's α.

Validity means that the study measures the variables that it is supposed to measure. In positivist research, validity can be divided into internal validity and external validity. Internal validity means that other plausible explanations for the causality in case are eliminated, whereas external validity refers to how well the research findings can be generalized. (Easterby-Smith et al. 2012: 45.) The current study aims to ensure the internal validity by considering the background variables, age, gender and the length of supervisor-subordinate relationship, which might influence on the outcome. Age and gender are examined because former research suggests that there are differences between age groups (Siegrist et al. 2004; Weiß & Süß 2016) and genders (e.g. Head et al. 2004; Li et al. 2006; Wada et al. 2008) in experiencing ERI. The length of the supervisor-subordinate relationship is included to the analysis to make sure that the possible connections between LMX and the components of ERI are caused by the quality of the supervisor-subordinate relationship, not because of the length. The study considers a sample of 295 people in a Finnish insurance company, so the generalization of the findings should be considered with precaution.

5. RESULTS

In this chapter, the connection between LMX and each component of the ERI model is examined. Firstly, the differences based on background variables, gender, age and the length of supervisor-subordinate relationship, are examined with a t-test and two variance analyses. Secondly, the correlations between the variables are represented. Finally, the influence of LMX and background variables on effort, reward, ERI and overcommitment are examined with four linear regression models. Additionally, the means of the ERI components are compared based on LMX outgroup, middle-group and ingroup with a variance analysis.

5.1. Background variables

Firstly, the differences based on background variables were tested. The differences between genders on LMX, effort, reward, ERI and overcommitment were tested with a t-test. The results are represented in table 4. The T-test shows that there is no significant difference between genders in any of the variables.

Table 4. The means of LMX, effort, reward, ERI and overcommitment based on gender, results of t-test.

Variables	Gender				
	Men (M)	Women (M)	*t*	*df*	*p*
LMX	5.65	5.52	0.719	259	0.473
Effort	2.56	2.59	-0.503	260	0.616
Reward	2.86	2.77	1.327	260	0.186
ERI	0.48	0.53	-0.926	260	0.355
Overcommitment	1.96	1.92	0.367	260	0.714

Men n = 64, Women n = 197-198

The differences between age groups in LMX, effort, reward, ERI and overcommitment were tested with a variance analysis (one-way ANOVA). The results are presented in

table 5. The test shows that only overcommitment had significant differences between age groups. Bonferroni comparisons show that regarding overcommitment, the means of under 35-year-olds (1.86) and 35-50-year-olds (1.88) did not have a significant difference, but the mean of over 50-year-olds (2.21) differed significantly ($p < 0.05$) from other two age groups. The finding means that, on average, over 50-year-olds experience higher overcommitment than other age groups.

Table 5. The means of LMX, effort, reward, ERI and overcommitment based on age groups, results of variance analysis.

	Age groups[1]						
Variables	1 (M)	2 (M)	3(M)	*F*	*df1*	*df2*	*p*
LMX	5.66	5.85	5.31	2.492	2	201	0.085
Effort	2.52	2.58	2.64	0.766	2	201	0.466
Reward	2.86	2.87	2.86	0.007	2	201	0.993
ERI	0.47	0.48	0.53	0.475	2	201	0.623
Overcommitment	1.86	1.88	2.21	4.120	2	201	0.018*

* $p < 0.05$

[1)] 1 = under 35 years ($n = 94$), 2 = 35-50 years ($n = 80$), 3 = over 50 years ($n = 30$)

The influence of the length of the supervisor-subordinate relationship on LMX, effort, reward, ERI and overcommitment was tested with a variance analysis (one-way ANOVA). The results are presented in table 6. The test shows that the length of the supervisor-subordinate relationship did not create significant differences in LMX, reward or overcommitment. However, the length of the relationship created significant differences in effort ($p < 0.001$) and ERI ($p < 0.001$). Bonferroni comparisons show that regarding effort, group 1 (2.43) differentiated significantly from groups 3 (2.67, $p < 0.05$) and 4 (2.78, $p < 0.01$), and group 2 (2.50) differentiated significantly from group 4 (2.78, $p < 0.01$). Regarding ERI, group 1 (0.44, $p < 0.01$) and group 2 (0.46, $p < 0.05$) differentiated significantly from groups 3 (0.60) and 4 (0.63). These findings indicate that, on average, among those who have had longer supervisor-subordinate relationship experience higher effort and ERI than those who have had shorter relationship with their supervisors.

Table 6. The means of LMX, effort, reward, ERI and overcommitment based on the length of supervisor-subordinate relationship, results of variance analysis.

	Length of supervisor-subordinate relationship[1]							
Variables	1 (M)	2 (M)	3 (M)	4 (M)	*F*	*df1*	*df2*	*p*
LMX	5.63	5.49	5.46	5.54	0.278	3	287	0.842
Effort	2.43	2.50	2.67	2.78	6.572	3	288	0.000***
Reward	2.84	2.86	2.69	2.73	2.336	3	288	0.074
ERI	0.44	0.46	0.60	0.63	6.561	3	288	0.000***
Overcommitment	1.84	1.88	2.06	2.01	2.196	3	288	0.089

*** $p < 0.001$

1) 1 = under 7 months ($n = 73$), 2 = 7-12 months ($n = 88$), 3 = 1-2 years ($n = 80$), 4 = over 2 years ($n = 51$)

5.2. Correlations

The correlations of the background variables and LMX, effort, reward, ERI and overcommitment were tested with Pearson Correlation analysis. The results of this analysis are presented in table 7. Several significant correlations were found. Age had significant positive correlations with effort ($r = 0.184$, $p < 0.01$), ERI ($r = 0.160$, $p < 0.05$) and overcommitment ($r = 0.230$, $p < 0.01$). These findings suggest that older people experience higher levels of effort, ERI and overcommitment than younger people.

The length of the supervisor-subordinate relationship correlated significantly with gender ($r = 0.294$, $p < 0.001$) and age ($r = 0.236$, $p < 0.001$), suggesting that on average, men had longer supervisor-subordinate relationships than women and naturally, older people had longer relationships than younger people. Otherwise, the length of the supervisor-subordinate relationship did not correlate with any other variables significantly.

LMX had significant negative correlations with effort (r = -0.163, $p < 0.01$), ERI (r = -0.398, $p < 0.001$) and overcommitment *(*$r = -0.124$, $p < 0.05$). LMX was also positively correlated with reward ($r = 0.481$, $p < 0.001$). These findings suggest that as the quality of LMX relationship lowers, people experience more effort, ERI and overcommitment, whereas as the LMX quality rises, people experience more rewards. Overcommitment

had very significant positive correlation with effort (r = 0.475, p < 0.001) and ERI (r = 480, p < 0.001) and very significant negative correlation with reward (r = -0.297, p < 0.001). Effort and reward also had very significant negative correlation (r = -0.265, p < 0.001).

Even though there are correlations between variables, none of the correlations is not high enough to prevent the regression analysis between the variables except the correlations between ERI and effort (r = 0.832, p < 0.001) and ERI and reward (r = -0.741, p < 0.001) but this is natural because of the formulation of ERI.

Table 7. Means, standard deviations and results of Pearson Correlation analysis.

			Correlations						
Variables	M	SD	1.	2.	3.	4.	5.	6.	7.
1. Gender (man)	-	-							
2. Age	37,33	11.07	-.046						
3. Length of relationship			.294***	.236***					
4. LMX	5.53	1.25	.060	-.045	-.006				
5. Effort	2.58	.51	.013	.184**	-.009	-.163**			
6. Reward	2.78	.48	.077	-.060	.034	.481***	-.265***		
7. ERI	.53	.32	-.035	.160*	-.027	-.398***	.832***	-.741***	
8. Overcom-mitment	1.94	.62	-.016	.230**	.052	-.124*	.475***	-.297***	.480***

* p < 0.05, ** p < 0.01, *** p < 0.001

5.3. Regression analyses

To investigate how LMX influences the components of the ERI model, four linear regression analyses were made. For each regression analyses, gender and length of supervisor-subordinate relationship were dummy-coded. In gender, woman = 0 and man = 1. In length of supervisor-subordinate relationship, the baseline was ‘under 7 months’.

Firstly, effort was predicted with background variables (gender, age and the length of supervisor-subordinate relationship) and LMX. The model is represented in table 8. Step 2 shows that effort differentiates significantly (β = 0.280, $p < 0.05$) when the length of supervisor-subordinates relationship is over 2 compared to under 7 moths. Step 3 shows that LMX (β = -0.062) has a negative and statistically significant ($p < 0.05$) connection to effort. The model explains 10.3 % ($p < 0.001$) of the variation of effort.

Table 8. Hierarchical linear regression model predicting effort.

	β	ΔR^2	R^2
Step 1.		0.034*	0.034*
Gender (man)	0.000		
Age	0.006		
Step 2.		0.046*	0.080**
7-12 months[1]	0.017		
1-2 years[1]	0.185		
Over 2 years[1]	0.280*		
Step 3.		0.023*	0.103***
LMX	-0.062*		

* $p < 0.05$, ** $p < 0.01$, ***$p < 0.001$

[1)] Length of supervisor-subordinate relationship

β = regression coefficient from the last step of the model, R^2 = coefficient of determination, ΔR^2 = change in coefficient determination

Secondly, reward was predicted similarly with control variables and LMX. The model is represented in table 9. The model shows that LMX (β = 0.181) has a positive and statistically significant ($p < 0.001$) connection to reward. The model explains 25.5 % ($p < 0.001$) of the variation of reward.

Table 9. Hierarchical linear regression model predicting reward.

	β	ΔR^2	R^2
Step 1.		0.009	0.009
Gender (man)	0.001		
Age	-0.001		
Step 2.		0.023	0.032
7-12 months[1]	0.052		
1-2 years[1]	-0.113		
Over 2 years[1]	-0.088		
Step 3.		0.223***	0.255***
LMX	0.181***		

*** $p < 0.001$

[1)] Length of supervisor-subordinate relationship
β = regression coefficient from the last step of the model, R^2 = coefficient of determination, ΔR^2 = change in coefficient determination

After examining effort and reward separately, ERI was examined with similar linear regression analysis. The model is represented in table 10. Step 2 shows that ERI differentiates significantly ($p < 0.05$) when the length of supervisor-subordinates relationship is 1-2 years or over 2 years compared to under 7 months. This indicates that ERI increases with the length of the relationship. Step 3 shows that LMX (β = -0.098) has a negative and statistically significant ($p < 0.001$) connection to ERI. The model explains 20.3 % ($p < 0.001$) of the variation of ERI.

Table 10. Hierarchical linear regression model predicting ERI.

	β	ΔR^2	R^2
Step 1.		0.026	0.026
Gender (man)	0.000		
Age	0.003		
Step 2.		0.051*	0.077**
7-12 months[1]	-0.008		
1-2 years[1]	0.125*		
Over 2 years[1]	0.154*		
Step 3.		0.149***	0.203***
LMX	-0.098***		

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[1)] Length of supervisor-subordinate relationship
β = regression coefficient from the last step of the model, R^2 = coefficient of determination, ΔR^2 = change in coefficient determination

Finally, overcommitment was predicted with control variables and LMX. The linear regression model is presented in table 11. The model shows that age (β = 0.012) had a positive and statistically significant ($p < 0.01$) connection to overcommitment. LMX did not have a significant connection to overcommitment. The model explains 7.9 % (p <0.05) of the variation of overcommitment. However, the Durbin-Watson test shows that there is positive autocorrelation (DW = 0.545) in the sample, so the model is not completely reliable.

Table 11. Hierarchical linear regression model predicting overcommitment.

	β	ΔR^2	R^2
Step 1.		0.053**	0.053**
Gender (man)	0.000		
Age	0.012**		
Step 2.		0.014	0.067*
7-12 months[1]	-0.011		
1-2 years[1]	0.162		
Over 2 years[1]	0.079		
Step 3.		0.012	0.079*
LMX	-0.055		

* $p < 0.05$, ** $p < 0.01$

[1)] Length of supervisor-subordinate relationship
β = regression coefficient from the last step of the model, R^2 = coefficient of determination, ΔR^2 = change in coefficient determination

5.4. LMX groups

In order to get a fuller understanding about the connection between the quality of LMX and the ERI components, the quality of LMX is divided into three classes. The subordinates were divided into three groups based on the quality of the LMX relationship; outgroup, middle-group and ingroup. In outgroup, the average quality of LMX was under 4, in middle-group the average was 4-5, and the ingroup had the average LMX quality between 5-7. This division was made according to the study by Mäkelä et al. (2013: 19). With a variance analysis, it was examined how the components of the ERI model emerged in LMX groups. The results are shown in table 12.

The result show that there is no significant difference in the mean of effort between the LMX groups. This contradicts with the regression analyses presented in table 8., which showed a significant negative connection (β = -0.062, $p < 0.05$) between LMX and effort. However, there are significant ($p < 0.001$) differences in LMX groups regarding reward and ERI. Bonferroni comparison shows that regarding reward, outgroup (2.25) differentiate significantly from middle-group (2.63, $p < 0.01$) and ingroup (2.88, $p < 0.001$). Also, middle-group (2.63) and ingroup (2.88) differentiate significantly ($p < 0.01$). Regarding ERI, outgroup (0.83) differentiates significantly from middle-group

(0.56, $p < 0.001$) and ingroup (0.48, $p < 0.001$), but the difference between middle-group and ingroup is not significant.

Table 12. The means of effort, reward, ERI and overcommitment based on the LMX-group, results of variance analysis.

	LMX groups[1]						
Variables	1 (M)	2 (M)	3(M)	*F*	*df1*	*df2*	*p*
Effort	2.79	2.55	2.56	2.822	2	290	0.061
Reward	2.25	2.63	2.88	32.366	2	290	0.000***
ERI	0.83	0.56	0.48	19.508	2	290	0.000***
Overcommitment	2.16	1.95	1.91	1.425	2	58,08	0.249

*** $p < 0.001$

[1)] 1 = LMX quality under 4 ($n = 31$), 2 = LMX quality 4-5 ($n = 46$), 3 = LMX quality 5-7 ($n = 216$)

6. CONCLUSION

The aim of this study was to examine the connection of Leader-Member Exchange and Effort-Reward Imbalance. This was done by examining how the quality of LMX affects each component of the ERI model, effort, reward, effort-reward imbalance and overcommitment. There were four research questions in this study; *is there a connection between the quality of LMX relationship and subordinate's experienced effort/reward/ERI/overcommitment*? In order to answer these research questions, four linear regression analyses and a variance analysis were made. In this chapter, the results of the analyses are discussed and compared to existing literature.

6.1. LMX and the components of ERI

The regression analyses showed that the quality of LMX relationship does have an influence on effort, reward and effort-reward imbalance. More precisely, LMX had negative connections with effort and ERI and a positive connection with reward. However, it did not have an influence on overcommitment. These findings are similar with a study by Weiß & Süß (2016); they also found that transformational leadership was negatively connected with ERI, but not with overcommitment. A connection between transformational leadership and ERI has also been found by Keisu et al. (2018).

However, contradicting results were found in this study regarding the connection between the quality of LMX and effort. Even though the regression analysis showed a significant connection between these two variables, the variance analysis where the mean of effort was compared in the LMX groups showed no significant differences between the outgroup, middle-group or ingroup. The reason for these contradicting results is unknown and therefore more research about the subject should be made. It is possible that the skewness of the data in the LMX quality might have influenced the results. Further research about the connection between LMX and effort should be made.

The regression analyses show that LMX was more significantly connected to reward than to effort. In addition, the variance analysis showed that each LMX group differentiated significantly from another regarding reward. Based on this, it can be concluded that the quality of LMX especially arises subordinates experienced rewards and therefore balances the effort-reward imbalance. The finding is aligned with findings by Bhal &

Gulati (2007) and Dulebohn et al. (2012) which indicate that high-quality LMX relationship increases the satisfaction with pay. It is not surprising that high-quality LMX is connected to increased reward since the quality of LMX is based on matters like trust, support, loyalty and affect (Dienesh & Linden 1986; Wayne et al. 1997) and the reward component of the ERI model includes esteem, career opportunities and job security. It seems that in a high-quality LMX relationship, the supervisor can offer the appreciation that the employee needs to balance the efforts and rewards.

However, the variance analysis of the LMX groups indicates that even though people with low-quality LMX experience significantly higher ERI, there is not a significant difference between people with middle-quality LMX and high-quality LMX. This means that in order to diminish effort-reward imbalance, it is enough that the leader forms adequately good LMX relationships with their followers. In turn, low-quality LMX lays a foundation for high effort-reward imbalance.

6.2. Background factors

In order to maximize the reliability of the study, the background factors gender, age and length of supervisor-subordinate relationship were included to the examination. The influence of these factors was tested with separate t-test and analyses of variance and they were also included in the final regression analyses.

The t-test as well as the regression analyses showed that there were no differences between genders regarding any of the variables. This is not a surprising finding considering LMX, since the literature represented in this thesis has not acknowledged that gender would have influence on the quality of LMX. It has been found that the gender of the leader might have an influence on the LMX quality (Murphy & Ensher 1999), but since people in supervisory positions were excluded from this study, the finding does not contradict the existing literature. When it comes to the research of the ERI model, there are differing findings about how genders experience the outcomes of effort-reward imbalance and overcommitment (e.g. de Jonge et al. 2000; Li et al. 2006; Nakata et al. 2011; Steptoe et al. 2004; Ertel et al. 2005). However, since the ERI research has mostly neglected the antecedents of ERI, there is not yet information if gender influences experiencing ERI or overcommitment. According to this study, it does not.

The variance analysis of the influence of age showed that over 50-year olds experienced significantly higher overcommitment than younger age groups. Similarly, the correlation analysis showed a connection in age with overcommitment, but also in age with effort and ERI. From the regression analyses, age had significant connection only to overcommitment. These results indicate that at least overcommitment is influenced by age, in other words, older people seem to experience more overcommitment than younger people. This contradicts with the finding by Siegrist et al. (2004), which claims that people aged 45-54 experience overcommitment the most.

The variance analysis of the influence of the length of supervisor-subordinate relationship as well as the correlation analysis showed that there was no connection between the length of the relationship and the quality of LMX. Previous studies have shown that the length of the relationship influences on which matters are important in the LMX relationship (Bauer & Green 1996; Nahrgang et al. 2009), but it seems that there is no direct connection between the length and the quality of the relationship. To get more reliable results of the influence of the length of the supervisor-subordinate relationship, a longitudinal study should be made to examine how the LMX relationship evolves with the same person. The variance analysis as well as the regression analyses showed that the length of supervisor-subordinate relationship has some connections to effort and ERI, but not to reward or overcommitment.

7. DISCUSSION

The aim of this study was to connect the Leader-Member Exchange theory with the Effort-Reward Imbalance model. Especially, the influence of the quality of LMX relationship on the components of the ERI model was examined. The results showed that the quality of LMX is positively connected to reward and negatively connected to ERI, meaning that the quality of LMX relationship can balance out the imbalance of efforts and rewards. Also, it seems that there is no need to create the best quality of LMX relationship with everyone; an average LMX quality is enough to diminish effort-reward imbalance. The connection between LMX quality and effort remains unclear, but findings suggest that the connection is plausible. However, no connection was found between LMX and overcommitment. Instead, it was found that age was positively connected to overcommitment, meaning that older people experience more overcommitment than younger people. In this chapter, the implication and limitations of this study are discussed. Also, suggestions for future research are made.

7.1. Implications

This study contributes new information about how LMX can affect subordinates work well-being and health. The connection between LMX and ERI has not yet been examined, so this study offers scientific contribution by finding the unknown connection between the two academically well-known theories. By examining the connection between these theories, this study also connects the research fields of leadership and work health and well-being. The study shows that leadership style of the supervisor can influence on subordinates' experience of how they are rewarded compared to their efforts, which is an important information for anyone working in a supervisory position.

Another contribution of this study is that it supplements the ERI research by answering what causes effort-reward imbalance. The antecedents of ERI have been widely neglected in academic literature, when most of the ERI research has focused only the outcomes of ERI. This study shows that ERI is likely to occur when the quality of LMX relationship is low, and controversially, the imbalance of efforts and rewards can be prevented with the support provided by the supervisor. This study supports the findings of Keisu et al. (2018) and Weiß & Süß (2016) who have also found that ERI can be diminished with great leadership. Also, this finding suggests that there is no connection between LMX and

overcommitment, which also adds information about the neglected antecedents of overcommitment.

7.2. Limitations of the study

One of the biggest limitations of this study is that the study is cross-sectional, meaning that completely reliable causal relationships between LMX and components of ERI cannot be concluded. Since LMX is based on the exchange between the supervisor and subordinate, the subordinate also influences the quality of the leadership relationship. Because of this, it is possible that the components of ERI influence on the quality of LMX. For example, as effort-reward imbalance causes low job satisfaction (de Jonge et al. 2000; Li et al. 2005), it is possible that it also causes dissatisfaction with the supervisor. A longitudinal research about the subject should made so that the causality could be recognized.

Another limitation arises from the fact that the quality of LMX relationships was measured only from the point of view of the subordinate. As the study by Cogliser et al. (2009) shows how differing perceptions about the quality of LMX can have significant consequences in job performance, satisfaction and organizational commitment, it is important that the quality of LMX is measured from both subordinate's and supervisor's point of views. However, the inclusion of supervisors' LMX ratings would have required more advanced analyses than it is expected on the level of master's thesis.

Even though the sample used in this study is rather large, it is not particularly suitable for generalization of the results. As Rockstuhl et al. (2012) found in their meta-analysis, there are cultural differences in the outcomes of LMX quality. Especially, differences were found between horizontal-individualistic and vertical-collectivistic cultures. As the sample of this study was collected in Finland, which is a country of a horizontal-individualistic culture, the findings of this study should be applied in vertical-collectivistic cultures with precaution.

7.3. Suggestions for future research

One of the reasons to include all the components into this study was to give a favorable ground for future research regarding the connection between LMX and ERI. As it is noted

in this study that LMX has a connection with effort, reward and ERI, the mediating effect of these variables can be examined when investigating the connection between LMX and health and well-being. Even though the current study did not find a connection between LMX and overcommitment, the role of overcommitment should not be neglected in future studies since it is known to have a significant interaction with ERI on negative health outcomes (Siegrist 2002). As LMX itself is known to have connection with improved well-being (e.g. Harms et al. 2017; Rousseau et al. 2008), it would be interesting to examine what is the mediating role of ERI in this equation. This might give a new insight about how leadership can improve employees' health and well-being. Suggestion for future research is that the mediating effect of ERI in the relationship between LMX and health and well-being outcomes should be examined.

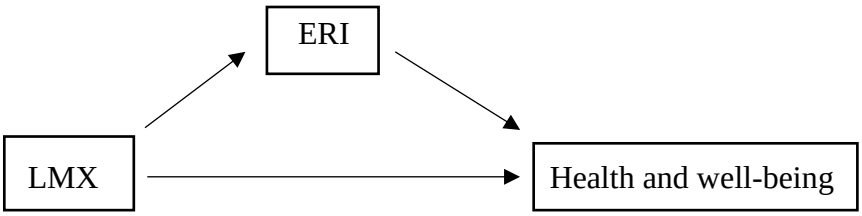

Figure 8. The mediating role of ERI between LMX and health and well-being.

Even though this study found that there was a significant connection between the quality of LMX and reward, the subscales of the reward components were not investigated separately in this study. In the future, it should be examined how LMX is connected to esteem, career opportunities and job security to get fuller understanding on how high-quality LMX arises the sense of being rewarded. Also, as this study found contradicting results about the connection between the quality of LMX and effort, more research about the subject should be made.

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