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Sweden

# Predicting quality in leader-member exchange relations

*The role of Impersonal Trust in predicting LMX-quality*



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## Abstract

The aim of this study is to test if the impersonal trust sub-constructs serve as predictors of quality in LMX-relations. By performing structural equation modeling with empirical data, a model was developed that optimally predicts quality in LMX-relations. A cross-sectional survey was designed in order to gather data from employees in Kalmar municipality (N=574) and was analyzed by Analysis of Moment Structures (AMOS). The result suggests that the sub-construct of HRM-practices predicts quality in LMX-relations while simultaneously being regressed by the sub-construct management of business and people and organizing the operational activities. Additionally, the result indicates that the sub-construct management of business and people correlate with other sub-constructs sustainability, fair play and communication. This study indicates the importance of HRM-practices, managerial capability and the organizing the operational activities in order to predict quality in LMX-relations by increasing the impersonal trust.

## Key words

LMX-relations; Impersonal Trust; Attribution Theory; Organization, leadership, Management, Structural Equation Modeling



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## Table of contents

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
1.1	<i>Background.....</i>	<i>1</i>
1.2	<i>Leadership relevance of the study .....</i>	<i>5</i>
1.3	<i>Subordinate relevance of the study.....</i>	<i>6</i>
1.4	<i>Human resource relevance of the study .....</i>	<i>7</i>
1.5	<i>Problem discussion.....</i>	<i>8</i>
1.6	<i>Purpose.....</i>	<i>9</i>
<b>2</b>	<b>Theoretical Framework .....</b>	<b>9</b>
2.1	<i>Attribution Theory .....</i>	<i>9</i>
2.1.1	<i>Attribution Errors .....</i>	<i>11</i>
2.2	<i>Leader-member exchange (LMX).....</i>	<i>13</i>
2.2.1	<i>Quality in LMX-relations .....</i>	<i>16</i>
2.2.2	<i>Established antecedents of quality in LMX-relations .....</i>	<i>18</i>
2.3	<i>Impersonal trust.....</i>	<i>19</i>
2.3.1	<i>Capability .....</i>	<i>21</i>
2.3.2	<i>Fairness .....</i>	<i>22</i>
2.4	<i>Hypothesis .....</i>	<i>24</i>
<b>3</b>	<b>Methodology .....</b>	<b>27</b>
3.1	<i>Procedure .....</i>	<i>27</i>
3.2	<i>Sampling.....</i>	<i>28</i>
3.3	<i>Instruments .....</i>	<i>29</i>
3.4	<i>Ethical considerations.....</i>	<i>31</i>
<b>4</b>	<b>Results .....</b>	<b>32</b>
<b>5</b>	<b>Discussion.....</b>	<b>38</b>
5.1	<i>General discussion.....</i>	<i>38</i>
<b>6</b>	<b>Conclusion.....</b>	<b>42</b>
6.1	<i>Practical implications .....</i>	<i>43</i>
6.2	<i>Implications for future research.....</i>	<i>45</i>
6.3	<i>Limitations .....</i>	<i>46</i>
	<b>List of References .....</b>	<b>48</b>



## **Appendices**

Appendix 1: Participation request	1
Appendix 2: Survey	2
Appendix 3: Result of hypothesized model	15
Appendix 4: Total-item correlation matrix	16
Appendix 5: Descriptive statistics	17

## **List of tables**

Table 1: Sampling frequency	29
Table 2: Structural correlation coefficient (Standardized)	36
Table 3: Standardized Direct Effects	37
Table 4: Standardized Indirect Effects	37
Table 5: Standardized Total Effects	38

## **List of figures**

Figure 1: Attribution Theory	13
Figure 2: Impersonal Trust Construct	21
Figure 3: Hypothesized Structural Equation Model	26
Figure 4: Fitting model Standardized	33
Figure 5: Optimal Model for Prediction LMX-relations	35



## **1 Introduction**

### *1.1 Background*

In an era of expanding workload demands and escalating pressures on organizations to be efficient and innovative, it is crucial to consider the importance of managers' ability to forge robust and productive relationships with their subordinates. In order to provide the foundation for developing social capital in organizations, strong leader-subordinate relationships are highly recommended (Sears & Hackett, 2011). Apart from the importance of relations in developing social capital, Mascareno, Rietzschel and Wisse (2020) highlighted the importance of specific dyadic relationships between leaders and subordinates when striving for innovation in organizations. Leaders and subordinates should be aware of playing an active role in developing unique relationships between themselves.

Alvesson, Blom and Sveningsson (2017) describe leadership as an asymmetrical and mutual relationship, in which leaders aim to define meaning for those who accept such an influencing act. Leadership relationships are formed in interactions between leaders and follower's unique personalities and backgrounds. These relationships develop over different phases as those involved get to know each other and exercise mutual influence. This view of leadership recognizes the relational and social character of leadership. Alvesson et al. (2017) further claims that good leadership is based on a clear sense of responsibility and mutual trust. According to Lee, Thomas, Martin, Guillaume and Marstand (2019) leaders should be aware that subordinates vary in the extent to which they perceive the leader- subordinates relationship and understanding these relationships is instrumental for their success. So, one of the crucial tasks of a leader is to build positive relationships with his/her followers. By doing so, the benefits of developing a high-quality relationship can be maximized. According to a plethora of studies the quality of the relationship between leaders and



followers is well captured by leader-member exchange (LMX) theory (Bryant & Merritt, 2019; Bhal, 2006; Graen & Uhl-Bien, 1995).

*LMX theory holds a relational approach to leadership that focuses on the quality of the relationship between leader and subordinate* (Northouse, 2019). The basic premise of LMX theory is that the more the subordinates are willing to do for their leader, the more they will get in return, and vice versa. “LMX is both transactional and transformational: it begins as transactional social exchanges and evolves into transformational social exchange” (Graen & Uhl-Bien, 1995, p. 238). As LMX is thought to be developed via a social exchange process the theory therefore heavily relies on social exchange theory (Dulebohn, Bommer, Liden, Brouer & Ferris, 2012). Social Exchange theory is one of the most influential conceptual paradigms for understanding behavior in relationships. Social exchange theory mainly refers to a general framework or conceptual point of view about how resources are exchanged and valued between two or more parties (e.g., institutions and/or individuals) (Kim, Han, Son & Yun, 2017; Cropanzano & Mitchell, 2005). According to Porter (2018) nowadays modern workplaces introduce new exchange variables which focus on conditions, characteristics, and preferences of new organizations. Further, their employees aim to get a clear understanding of *whether* and *how* employees can develop high-quality work relationships with organizational representatives. Thereof, social exchange theory is a theoretical basis for relationships between “leaders” and “members”. LMX is thus derived from social exchange theory and will be used to assess quality of relationships throughout this thesis.

The name LMX can be somewhat confusing to begin with, or perhaps even misleading for readers that are not already familiar with the theory. Why? Because a low quality LMX-relation is something that the traditional leadership scholar would not label as any leadership relation at all. In fact,





drawing upon the classical differences between leaders and managers presented by Alvesson et al. (2017, p. 104) it would rather be referred to as a *formal leader-subordinate relation* (i.e., if it is a low-quality relation), because the characteristics of such a relationship is relying on the formal employee contract *only*. This means that what is being studied in most LMX research is the relationship of managers and subordinates. The former statement is conspicuous, because according to LMX a low quality relationship is based upon the formal employee contract *only*. Moving beyond the formal employee contract indicates higher quality of LMX-relations and has the characteristics of partnership. (Northouse, 2019). Going beyond the formal employee contract is in this case strictly related to the basic premise LMX: do more, get more in return. LMX uses the rough terminology “in-groups” (i.e., for high-quality relations) and “out-groups” (i.e., for low-quality relations) when categorizing relationships. This is the point of view used when applying LMX to study leadership relationships. Supplementary information about the development of LMX, quality in LMX-relations, its definition, outcomes and antecedents are presented in section 2.

According to Tan and Lim (2009) trust has a crucial role in the quality of interpersonal relationships and is recognized as a source of competitive advantages in organizations. Trust refers to a subordinate's willingness to be vulnerable to their organization's actions. Vanhala, Puumalainen and Blomqvist (2011) argue that modern organizations face an increasing need for trust, but trust has been treated mainly as an interpersonal phenomenon and there is a need for complementary forms of organizational trust which refers to impersonal trust. “Impersonal trust” relates to trust in impersonal organizational factors such as vision and strategy, top management, the management group's goals and capability, technological and commercial competence, justice, fair processes and structures, roles, technology and reputation, and HRM policies” (Vanhala et al., 2011, p. 486). Trust in



organizations is mainly treated as an interpersonal phenomenon which consists of vertical trust referring to the organization as a whole, relations between manager and subordinates, and a lateral trust referring in between employees. Vanhala et al. (2011) argues that this approach for treating organizational trust is limited and increasing interest in the impersonal elements of trust in organizations is needed more than ever. The impersonal trust element sets prerequisites for interpersonal trust to evolve, simultaneously as interpersonal trust is more challenging in the modern organizational world to achieve.

Think about today's fluctuation in organizations, focal competence-based strategies, virtual teams, managers with dual roles, etcetera. There are many factors within an organizational structures that could foster different perceptions of the past, and also for vision of the future. These impersonal factors do in turn, affect the organization's capability to naturally evolve interpersonal trust within the organization. McCauley and Kuhnert (1992) go one step further and claim that trust in the relationship between manager and subordinate is not interpersonal by nature. Rather, it derives from organizational structures, roles, and rules.

Cropanzo and Mitchell (2005) claim that relations between "leader" and subordinate are based on mutual interaction and reciprocity. This characteristic of relations has been highlighted through social exchange theory. One of the basic tenets of social exchange theory is that individuals' relationships evolve over time into loyal, trusting and mutual commitments. Theorists agree that social exchange involves a series of interactions that generate obligations and are usually seen as contingent on actions of another person, however, these interdependent transactions have the potential to generate high-quality relationships. According to Vanhala et al., (2011) *Social exchange theory* is a foundational bloc of LMX, and it is central in the explanatory model of impersonal trust. The reason being so is that employees



can feel an impersonal debt of gratitude towards the organization, which evokes a generalized reciprocal behavior towards the organization. In addition, it can also be seen at a more interpersonal level of reciprocity, perceived as a debt of gratitude in the relation between manager and subordinate. Put differently, the norm of reciprocity overlaps with impersonal and interpersonal debt of gratitude. This truly highlights the importance of impersonal trust, because if a generalized level of reciprocal behavior is poor, then interpersonal trust can theoretically be argued to be influenced by that.

### *1.2 Leadership relevance of the study*

According to Graen and Uhl-Bien (1991) one of the crucial factors for leadership making is based on how relational exchanges take place in LMX-relations. The pivotal point is that LMX focuses on the importance of dyadic relationships with all the subordinates and that it is beneficial to make everyone a part of the in-group. In other words, leadership making promotes partnership when leaders attempt to build effective dyads with all the subordinates in their work unit. LMX leads to insightful understanding of leadership approaches because unlike other theories, addresses the specific relationships and underscores that effective leadership is contingent on effective leader-member exchanges. Another noteworthy point is that LMX directs attention to the importance of communication in leadership. The reason is that communication is a key vehicle to create, nurture and sustain useful exchanges (Northouse, 2019).

Another important point considering LMX-relations refers to individualized consideration done by the “leader”. Individualized consideration is the degree to which the “leader” considers the needs of every employee and acts as a mentor or coach and focuses on everyone’s concern. Motivating and treating all the subordinates exactly in the same way and avoiding differentiation may be ineffective. However, it is clear that subordinates do



not evaluate their LMX-relations in isolation from their co-workers, clearly social comparison in its contexts have powerful effects on subordinates (Lee, Gerbasi, Schwarz & Newman, 2019). Still, subordinates tend to reciprocate to a greater extent when they perceive a better LMX-quality with the “leader”, rather than when their co-worker’s LMX-relationship is of high quality (Lee et al., 2019). This emphasizes the importance for the “leader” to be aware of LMX-relations. Consequently, it is crucial to understand whether the subordinates' different perceptions of impersonal trust factors are associated with quality in LMX-relations, because it helps the leader in assessing and developing every unique LMX-relation.

### *1.3 Subordinate relevance of the study*

Finding strategies to promote high quality LMX-relations result in positive consequences regarding subordinates in the organizations. According to Zhao, Wu and Gu (2020) a crucial characteristic of high quality LMX-relations is team effectiveness, which depends on how subordinates share their knowledge and speak up with suggestions and opinions. Subordinate voice behavior leads to a whole range of consequences such as, team improvement, reducing team turnover, promoting team performance and team innovation. High quality LMX-relations are the key predictor of team voice, it reduces subordinates' fear of negative consequences of communication and concurrently increases subordinates' confidence to speak up (Sears & Hackett, 2011; Martin et al., 2005; Harris & Kacmar, 2005).

According to diverse studies employees with high quality LMX-relations are more creative regarding task accomplishment (Masood, Usta & Shafique, 2019; Liao, Hu, Chung & Chen, 2017). The underlying reason is that employees with high quality LMX-relations enjoy challenges in their work which fit their job values. These authors claim that challenging tasks makes work more meaningful and can provide opportunities for learning through experimentation. Put differently, high quality LMX-relations lead



subordinates toward better job performance complemented by novel ideas of completing tasks. By taking all these into consideration, one can argue that identifying factors or strategies which can promote high quality of LMX-relations are useful because engaged subordinates play an important role in organizational effectiveness.

#### *1.4 Human resource relevance of the study*

In the perspective of human resource development (HRD), trust is recognized as one of the most important components for team development and overall performance. The reason is that interpersonal trust facilitates informal cooperation. A higher level of trust in LMX-relations increases the likelihood of emotional support, cooperation and sharing of information between “leaders” and employees. In other words, trust building is recognized as one of the most important (HRD) interventions (Armstrong, 2009). Another practical implication contributed by Kang and Stewart’s (2007) study refers to observed better performance of individuals and organizations through the diagnosis of LMX-relations. Indeed, LMX can diagnose relationships so high-quality relationships can be developed where it is needed, and hence improve overall performance in organizations. The developmental features of LMX provide insightful understanding for (HRD) about the relations within the organization (Kang & Stewart, 2007). Above the potential benefits for the HR-department to have LMX-relations diagnosed, this study contributes to HR-practitioners knowledge about the role of impersonal trust in these diagnosed LMX-relations.

Exploring whether impersonal trust can significantly predict the quality of leaders- subordinate relationships is valuable especially for the strategic-management and human resource development (HRD) functions, *because HR-practitioners formally incline the authority to manipulate these activities*. Interestingly, impersonal trust is considered as a more comprehensive concept incorporating both aspects of trust, the interpersonal and impersonal



organizational factors such as vision and strategy, top management, justice, fairness and HRM policies. The crucial point is that impersonal trust is a more comprehensive measure which can be used to evaluate, analyze, and develop the concept of organizational trustworthiness. Obviously, it is of high practical value for the HR-department, which increasingly strives to differentiate the organization in terms of human capital. Those organizations which try to build a higher level of trust, can increase their efficiency and effectiveness as a result of exploiting more benefits related to organizational trust (Vanhala et al., 2011).

### *1.5 Problem discussion*

Research gap in LMX relates to two different aspects. First, LMX-relationships in its initial formulation which refers to vertical dyad linkage theory, shapes appearance of discrimination. The underlying reason is that a work unit is divided into two groups, in-groups and out-groups and this runs counter to the basic human value of fairness. Consequently, the existence of in-groups and out-groups may have undesirable effects on the group as a whole. Although LMX was not designed to do so, the theory does not elaborate on strategies for how one gains access to the in-group if one chooses to do so (Harter & Evanecy, 2002; Scandura, 1999; Nourthouse, 2019).

Second aspect is related to the fact that the basic ideas of the LMX are not fully developed. For instance, LMX does not fully explain how high-quality relationships between “leader” and subordinate are created. Scholars have claimed that “leaders” should work to create high-quality exchanges with all subordinates, but the strategies for how this is done are not clearly explained (Northouse, 2019). This research gap is what makes the study relevant to perform. In this study we want to investigate if impersonal trust factors within organizations can predict quality in LMX-relations. In this case, our contribution to research is related to evaluating strategies that can be



practical in developing high quality LMX-relations. The importance of generating such knowledge has origins for the LMX itself and inclines a subordinate-, leadership- and HR-relevance which thus encompass an overall organizational-relevance. The reason being so is the variety of positive effects associated with being an in-group member, and the variety of negative effects associated with being an out-group member (see, section 2).

### *1.6 Purpose*

The goal of this study is to test if the impersonal trust sub-constructs serve as predictors of quality in LMX-relations. By performing structural equation modeling with empirical data, we aim to develop a model that optimally predicts quality in LMX-relations. High quality of LMX-relation indicates the degree to which the relationship between “leader” and member are characteristic of partnership and mutual understanding.

## **2 Theoretical Framework**

### *2.1 Attribution Theory*

“Attribution theory deals with how the social perceiver uses information to arrive at causal explanations for events. It examines what information is gathered and how it is combined to form a causal judgment” (Fiske & Taylor, 1991, p. 23). The development of attribution theory started off with the work of Heider (1958), a psychologist known as a theoretical mastermind due to his book “*The Psychology of Interpersonal Relations*”. Heider (1958) claimed that individuals are naive psychologists when trying to make sense of the world. Put differently, people tend to seek for cause-and-effect relationships in almost every situation, even when it is impossible to truly determine it. There is a plethora of research about attribution theory in almost all kinds of contexts. In the writing moment (i.e., 2021-01-28) a search on “attribution theory” on the database *OneSearch* gives 799454 hits, whereof 604723 are peer-reviewed articles. Therefore, we had to be rather



selective in our literature choices and thus aim to get the essential parts of the theory down that are relevant for the thesis topic. Holt et al. (2019) is a well-reviewed book used *internationally* in all basic-educational psychology programs, and hence includes a comprehensible validated summary of the attribution theory's development and its relevant successors. Holt et al. (2019); Heider (1958) both emphasizes that the attempts in understanding and predicting behavior *typically* includes personal- (i.e., internal, also as *dispositional*) or situational- (i.e., external) attributions.

How does the person decide whether to attribute internally or externally? The most prominent answer to this question is provided in Kelley's (1973) covariation model. Kelley (1973) claimed that these decisions are grounded on circumstances of the present (i.e., circumstances that co-vary) at the particular time which the behavior took place. The model consists of three different types of covariation: *distinctiveness*, *consensus*, and *consistency*. By observing an individual's behavior in a particular social context Holt et al. (2019) declare that the combined impact of these three types of covariation will determine what type of attribution is made. Consensus is the covariation of behavior across different people. For example, if one student (Kim) and another student say that "History of Art" is great, then consensus is high which indicates situational attribution. But if just Kim says that "History of Art" is boring, consensus is low which relates to personal attribution. Distinctiveness refers to how unique the behavior is to the particular situation. For example, if Kim dislikes only the evening class in "History of Art", then distinctiveness is high but if she says that most of her courses are terrible, then distinctiveness is low. Consistency refers to the extent to which the individual behaves in the same way on different occasions. For example, consistency is high if Kim says that "History of Art" is always great (Holt et al., 2019).





When distinctiveness, consensus and consistency are all high, an internal attribution is most likely to occur. When consistency is high and consensus and distinctiveness is low, an external attribution is most likely to occur (Kelley, 1973). According to Holt et al. (2019) individuals can, but often do not, look for and combine the three types of components which were discussed earlier. These guidelines for ways of attributing are supported in several studies (Harris, Todorov & Fiske, 2005; Sutton & McClure, 2001). Notwithstanding, the covariation model serves as a guideline for attributes, it is insufficient for a prediction. Psychologists must also determine the plausible *causal mechanisms* between factors in the model. For a more comprehensive explanation of the high and low circumstances in the model, as well as an example of determining causal mechanisms between the factors, see (Holt et al., 2019, p. 645-647).

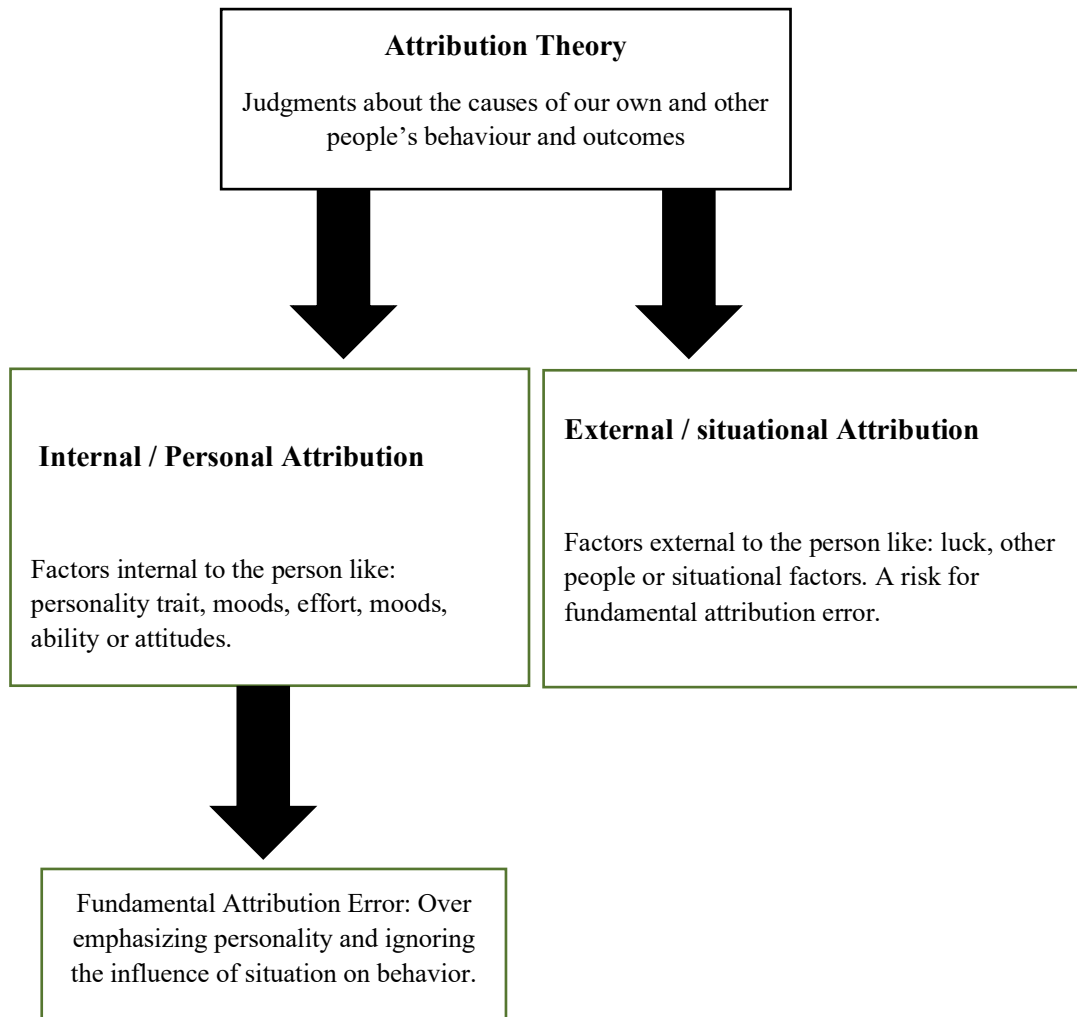
#### *2.1.1 Attribution Errors*

As the individual's process includes rather sophisticated techniques to determine an internal or external attribute, it may not be too startling to hear that systematic errors occur within this process. For the purpose of sticking to the topic of this thesis, some attribution errors have been excluded (e.g., the self-serving bias & actor-observer bias). Self-serving bias refers to individuals' tendency to make personal attributions for their own success and situational attributions for their own failures. The actor-observer bias refers to a tendency to attribute one's own action to external cause while attributing other people's behaviors to internal cause. Both types of these bias play an important role in how individuals perceive and interact with other people (Holt et al., 2019). However, our attention will be directed towards the *fundamental attribution error* for its important contribution for our hypotheses. Indeed, systematic errors in attribution processes are the main premise in the development of our hypothesis.



The *fundamental attribution error* is a systematic error where the individual tends to underestimate the impact of the situation (i.e., the external attribution), simultaneously as the individual overestimates personal factors (i.e., the internal attribution) (Holt et al., 2019). Even under circumstances in which it *should* be evident that external factors account for the behavior, individuals still overestimate internal factors (e.g., Jones & Harris, 1967; Doosje, Loseman, & Bos, 2013). It is essential to understand that the fundamental attribution error only applies to attributions of other people, rather than one own's behavior. What causes this error is still in debate but according to Holt et al. (2019); Sabini, Siepmann & Stein (2001) psychologists agree that it is inevitable. Interestingly, when individuals have time to reflect on their judgments or are highly motivated to be careful about their reflections, the fundamental attribution error is reduced. This process is summarized in figure 1.

**Figure 1.**



Note. Figure 1 reflects individuals understanding the causes of behavior.

## *2.2 Leader-member exchange (LMX)*

LMX is defined as a relational approach to leadership which focuses on the quality of the dyadic relationship between “leader” and subordinate, at the core of the leadership process. A fundamental tenet of LMX is that “leaders” develop different quality relations with their subordinates in organizations which can drive attitudinal and behavioral reactions in the dyadic LMX-relations (Afota, Robert & Vandenberghe, 2020; Harris, Li & Kirkman,



2014; Zhao et al., 2020). LMX is grounded in role-theory and social exchange theory, in addition, LMX clarifies how the quality of relationships is shaped by dyadic role-making processes and reciprocal social exchange (Anand, Vidyarthi & Park, 2016; Sears & Hackett, 2011).

Unlike most leadership theories which emphasized the leader's perspective, LMX theory conceptualized leadership as a process that is centered on the interaction between "leaders" and employees. It means that the employees play an important role in creating the relationship as well (Graen & Uhl-Bien, 1995). These authors claim that LMX-relations do not focus on the specific characteristics of leaders which is thought to be influential for effective "leaders". Clearly, LMX highlights the quality and nature of relationships and the important idea that leaders should strive to develop as many high-quality relationships as possible.

The early studies of LMX are referred to as *vertical dyad linkage* (VDL) theory. In VDL-theory the focus was oriented towards the nature of vertical linkages that leaders form with their followers. The theory sees the leader's relationship to their work unit as a series of different vertical dyads. Researchers observed the existence of two general types of vertical linkages: Those that were based on their defined roles according to the formal employment contract (*i.e., out-group*), and those that were based on increased and discussed role responsibilities (*i.e., in-group*) (Northouse, 2019). What then, determines the followers group affiliation? It depends on how well the follower works with the leader, and how well the leader works with the follower, whereof personality characteristics relate to this process (Dansereau, Graen & Haga, 1975; Maslyn, Schyns & Farmer, 2017; Randolph-Seng, Coglisier, Randolph, Scandura, Miller & Smith-genthôs, 2016). Furthermore, the membership of a group is affected by the follower's willingness to take on expanded role responsibilities that go beyond the



formal employment contract (Graen, 1976). VDL research was highly focused on comparing differences between in-groups and out-groups.

There was a shift in LMX, compared to the initial studies that primarily addressed the differences between in-groups and out-groups, modern research moves beyond investigating leader-subordinate dyads in isolation of the social contexts. LMX research started to scrutinize the role of LMX-relations structures, such as organizational effectiveness and the importance of teams in organizations (Northouse, 2019; Hooper & Martin, 2008). Note that this shift in LMX was still on a dyadic level of analysis, but the differentiated LMX-relations was in this shift validated against organizational outcomes instead of validated against relations within the work units themselves (Graen & Uhl-Bien, 1995).

There was yet another shift in LMX theory, which focused on describing partnership building. In other words, how high quality LMX-relations were being developed, a process which came to be presented in the *leadership making model* (Graen & Uhl-Bien, 1995). According to the *leadership making model*, quality in LMX-relations develops *over time* in three different phases: *the stranger-*, *acquaintance-* and *the mature partnership-phase*. The relationship building of the leadership making model was roughly described as role-finding (i.e., in the stranger-phase), role-making (i.e., in the acquaintance-phase), and role implementation (i.e., in the mature partnership-phase) (Graen & Uhl-Bien, 1991; Graen & Uhl-Bien, 1995). Yet, there seems to be no generalized established knowledge of how long this timeframe of developing the quality in LMX-relations might be, because the dispersion of such a frame is too high. Worth highlighting from this stem of LMX research is that even though the processes of development in LMX-relations was described in a widely accepted manner, no strategy was given to grow the relationship to the next level (Northouse, 2019). Put differently, we know descriptively what characterizes the process of development within



LMX-relations, but it is still not established how to execute the development in practice. Indeed, this is exactly the weak spot in LMX which this study seeks to contribute to.

Not so surprisingly, it has been yet another shift in LMX literature compared to what has been described in the last paragraph. This time, the shift in LMX had to do with an expansion in the level of analysis. LMX research moved from an independent dyadic level of analysis to a collective level of analysis, because the LMX-relations were assumed to be interdependent of each other. When the LMX-relations were assumed to be interdependent of each other, aggregations of dyads were claimed to be the most appropriate level of analysis. The aggregated level of analysis cuts across a work unit and inclines organizational boundaries, rather than being limited within the work unit. The aggregated level of analysis further seeks to investigate patterns of relationship quality within the organizational structure (Graen & Uhl-Bien, 1995). This angle of approach still seems to be relevant as we recognize several studies using this level of analysis (e.g., Xie, Li, Jiang & Kirkman, 2019; Haynie, Cullen, Lester, Winter, Svyantek, 2014).

#### *2.2.1 Quality in LMX-relations*

In-group members refer to high-quality LMX-relationships based on high generalized reciprocity, mutual support and partnership. According to Afota et al. (2020) high-quality LMX-relations are associated with protecting subordinate's emotional health. The underlying reason is that the subordinates receive material and emotional support from leaders which can reduce stress and prevent burnout. The same idea is highlighted by Harms, Crede, Tynan, Leon and Jeung (2017). As stated by these authors there is a relationship between leadership constructs, stress, and burnout. Their analysis confirms that high-quality LMX-relations are considered significant determinants of reducing stress and burnout of subordinates. Another superiority of in-group members refers to less role ambiguity and role



conflict because high-quality relationship subordinates receive more guidance in order to clarify role expectations. In turn, the subordinate can cope with job demand more effectively by receiving emotional support and resources which is associated with advantages of in-group members (Afota, 2020; Harms et al., 2017).

Zhao et al. (2020) argue that high-quality LMX-relationships lead to an increase of subordinate's confidence to speak up and concurrently, reduce their fear of negative consequences of voice. Furthermore, there are some studies which claim that subordinates' internal locus of control is positively related to quality in LMX-relationships (Sears & Hackett, 2011; Martin et al., 2005; Harris & Kacmar, 2005). As demonstrated by these authors, there is a reliable relationship between the quality of LMX-relationships and a range of psychological reactions. Consequently, having a positive relationships between "leader" and subordinates lead to a positive reaction to work.

In addition to what has been said, some studies reveal other positive aspects of good LMX-relationships. High-quality LMX-relations are related to better job attitudes and job performance, more frequent promotions, greater organizational commitment, less employee turnover, greater attention from the leader, more participation and commitment in desirable work tasks, more commitment from the leader and an overall faster career progress (Buch, Kuvaas, Dysvik & Schyns, 2014; Graen & Uhl-Bien, 1995; Liden, Wayne & Stilwell, 1993; Malik, Wan, Ahmad, Naseem & Rehman, 2015). Another positive aspect of high-quality relationships is highlighted in the studies of Ilies, Nahrgang and Morgeson (2007); Estel, Schulte, Spurk and Kauffeld (2019). As shown by these authors there is a positive relationship between high-quality LMX-relations and subordinates organizational citizenship behaviors (OCB), especially, helpfulness and altruism which can contribute to organizational performance as well. OCB is mainly described as all the positive and constructive subordinate actions and behaviors which are not



included in the job description. In line with these studies Sun, Chow, Chiu and Pan (2013) claims that if the subordinates feel that they receive more than they give to their leader, they are more likely to engage in organizational citizenship behaviors.

In-group members were seen to receive more influence, information, confidence, and apprehension from their “leader” than out-group members did. In-group members are also more communicative, dependable than out-group members (Dansereau et al., 1975). The positive effect of high quality LMX-relations has been well established by Graen and Uhl-Bien (1995). Further stated by these authors, leader-subordinate exchange quality was related to positive outcomes for followers, groups, leaders, and organizations in general.

Unfortunately, the logical coherent opposite of high quality LMX-relations are the low-quality ones, which are labeled as the out-groups. The out-groups do not only miss out on the positive effects associated with high quality LMX-relations. Low quality LMX-relations are in addition associated with *high levels* of conflict, bullying, stress, turnover and *low levels* of job-satisfaction, affectivity, participation, autonomy, social support, and perceived *fairness* (Furunes, Mykletun, Einarsen & Glasø, 2015)

### *2.2.2 Established antecedents of quality in LMX-relations*

Dulebohn et al. (2012) has conducted a meta-analysis to investigate the quality of LMX-relations mediating relationship between its consequences and antecedents. The meta-analysis included 247 studies with a total of 290 samples. In sum, it was concluded that “leader” variables account for the majority of variance in LMX quality with an average correlation coefficient of .61. Leader variables do in this case refer to the leader's characteristics, expectations, reward behavior and leadership style. These results indicate that the quality in LMX-relations is influenced more by the formal superior





than the subordinate. However, the subordinate's characteristics and interpersonal factors (e.g., perceived similarity) are also associated with the quality in LMX-relations, but not the investigated contextual factors. Interestingly, "moderator analyses revealed that the particular LMX scale, country of participants, and work setting studied did not produce meaningful influences on the relationships in the meta-analysis" (Dulebohn et al., 2012, p. 1715).

Nevertheless, authors like (Rockstuhl, Dulebohn, Ang and Shore, 2012; Gonzalez-Navarro, Talavera-Escribano, Zurriga-Llorens and Llinares-Insa, 2019) confidently claim that contextual factors influence the LMX-relationship quality. Rockstuhl et al. (2012) pointed out in their study that LMX-relations are stronger in western individualistic contexts rather than Asian collectivistic contexts. The role of culture is also highlighted by Gonzalez-Navarro et al. (2019). According to these authors culture has direct implications on LMX-relations and organizational outcomes. In other words, LMX-relations and other organizational factors may be culturally dependent. The underlying reason is that cultural approaches differ in different countries and this leads to development of different LMX-relations. Clearly, individuals in collectivist culture tend to foster the development of an interdependent self and they hold greater respect for their "leader" in comparison to individualistic societies.

### *2.3 Impersonal trust*

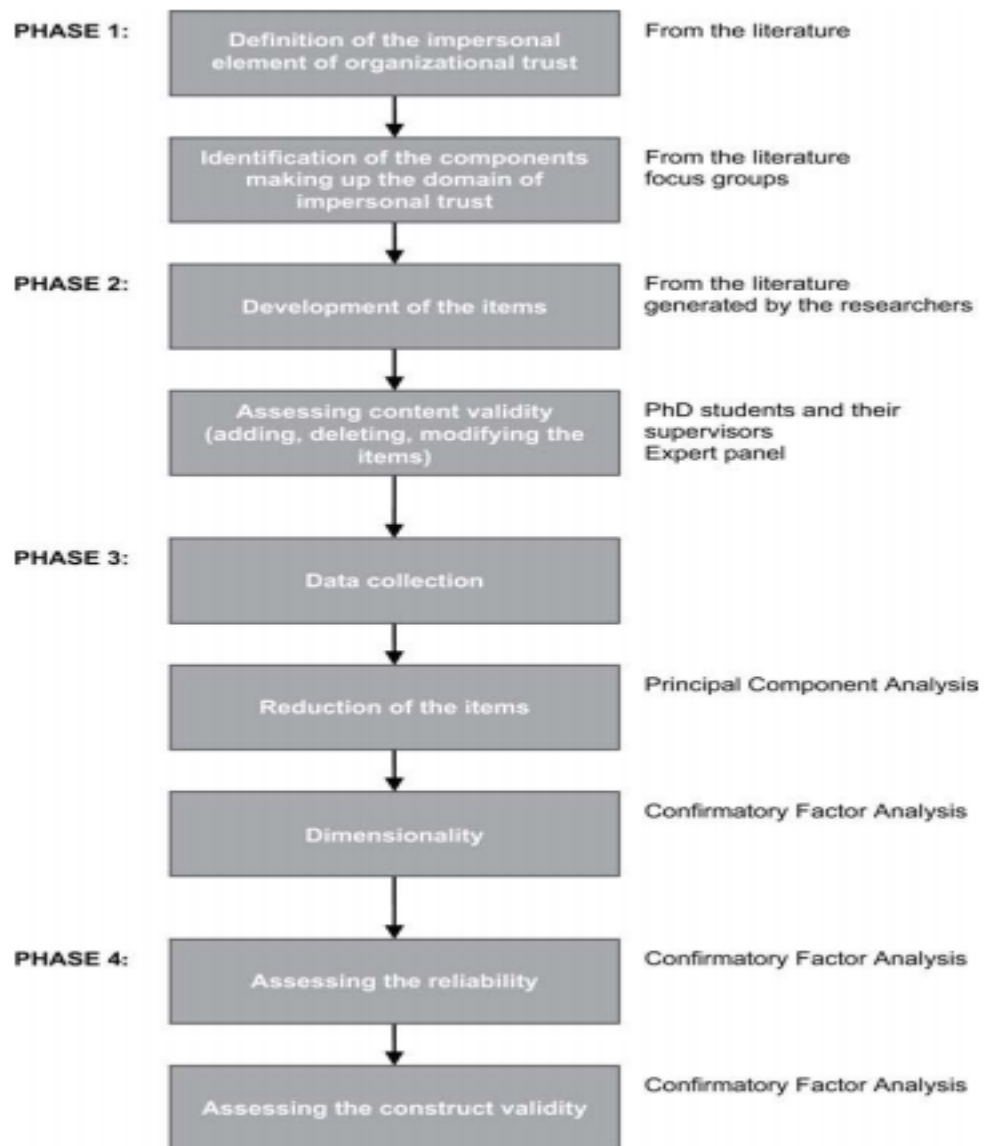
Impersonal trust is trust towards impersonal factors in organizations. These factors refer to strategy and vision, managerial capability and goals, top management, commercial- and technological competence, fairness in structures and processes, justice, reputation, human resources management (HRM) policies and technological reliability (Vanhala et al., 2011). These authors argue that *interpersonal trust within organizations is not interpersonal by nature*. Rather, efficiency and fairness of organizational



structures, rules, and roles are determiners for fostering trust in organizations. For example, one factor that determines trust in organizations is evaluated by leadership style and behavior. The thing is, that it is not always the actual leadership style that is being evaluated in relation to trust, it is the outcomes of its actions. Based on earlier outcomes, decisions, communication, goals, activities, and routines the employee develops an exchange relationship with the organization as an entity, where there exists none or less interpersonal trust. This type of trust is what Vahnala et al. (2011) labels “impersonal trust”.

The construct and scale of “impersonal trust” was developed by Vanhala et al. (2011). The purpose of the development was to create a conceptualization and clarification of impersonal elements that relates to organizational trust, which in turn has enabled a reliable and validated measure of it. The construct of impersonal trust is latent, multidimensional, and thus consists of two main dimensions, *capability*, and *fairness*. In turn, capability consists of four latent components: (1) *Organizing of operational activities*, (2) *sustainability of the organization*, (3) *management of the business and people*, (4) *technological reliability*. *Fairness* consists of three latent components: (1) *fairness in HRM-practices*, (2) *norms of reciprocity* (i.e., also labeled as “*fair play*” within the organization) and (3) *communication* (Vanhala et al., 2011). Before unpacking each component of the construct in greater detail, it is of advantage to know Vanhala’s et al. (2011) developmental approach of the impersonal trust construct. This process is summarized in Figure 1.

**Figure 2.**



*Note.* Figure 2 shows the analytic approaches of each phase in the development of the impersonal trust construct. Reprinted from "Impersonal trust: The development of the construct and the scale", by Vanhala, M., Puumalainen, K. and Blomqvist, K., 2011, *Personnel Review*, p. 487. Copyright January 29, 2021 by M. Vanhala, personal communication.

### 2.3.1 Capability

*Organizing of operational* activities refers to general operations within the organization, the organization's ability to handle extraordinary situations and



how resources are exploited. This element of impersonal trust is associated with the organization's ability to effectively utilize the expertise of employees and how the work is well organized in the organization. Apart from exploiting resources, organizing of the operational activities refers to the organization's adaptability to unexpected and changing conditions and the availability of work practices that can help employees to cope with exceptional situations (Vanhala et al., 2011).

*Sustainability* of the organization refers to changes in employment outlook and the operational environment (Vanhala et al., 2011). In other words, sustainability of the organization focuses on the importance of a solid base in the way that changes in organizations' business context do not threaten operations. *Management of the business and people* refer to decision-making processes and capabilities in top management's practices (Vanhala et al., 2011). This element of impersonal trust highlights the importance of top management's future's vision and employee's faith in his/her expertise to take the organization in the right direction. It is clear that certain changes need to take place in top management and consequently trust in top management's expertise regarding decision-making and ability to make a clear vision of organization is crucial. *Technological reliability* is described as crucial equipment for operations, support with technical issues and personal tools (Vanhala et al., 2011). It means that all tools or hardware (e.g., production machines and computer hardware) should function properly and employees could receive assistance with technical problems if they need it.

### 2.3.2 Fairness

According to Ahteela and Vanhala (2018) *HRM practices* have a wide influence in organizations and one of the growing challenges for HRM is related to building a positive cycle of trust. HRM practices involve developing, selecting, and maintaining employees' participation in the organization. Effective HRM practices result in trust-building. Vanhala et al.,



(2011) discuss fairness in HRM-practices in terms of equal career opportunities in a way that skilled employees can be offered more responsible positions. Effective HRM-practices attempt to provide environments in which every employee has discretion and chance to learn new skills and develop themselves in their profession. Reward systems and salary are also included in HRM-practices responsibility and employees' rewards are based on their success in organizations that deserve to be rewarded. In general, HRM-practices try to promote egalitarianism, information sharing, job security, selective hiring, and development in organization. *Norms of reciprocity* are according to Vanhala et al. (2011) characterized by the top management's behavior in relation to obligations and promises. According to Vanhala and Ritala (2016) if the employer demonstrates to his/ her employees that they are cared, valued and supported, the employees will be expected to express greater loyalty in response, especially if the "leader" tries to act beyond normal employment contracts. Vanhala and Ritala (2016) claim that the norm of reciprocity affects the dyadic relationship.

*Communication* component is explained in terms of information's trustworthiness, sufficiency, relevance, and the degree to which internal communication occurs within the organization (Vanhala et al., 2011). According to Ahteela and Vanhala (2018) effective communication is related to adequate information concerning organizational processes and issues and changes. It is crucial that information is up-to-date and can be communicated openly in organizations. According to Ahteela and Vanhala (2018) employees will be willing to accept policies and decisions if all information is communicated effectively and are based on fair process.

*A brief summary regarding:*

*It has been shown earlier in this study that LMX focuses on the two-way (dyadic) relationships between subordinates and "leader" and better LMX-*



*quality results in positive outcomes in the organizations. However, the crucial issue is that the LMX does not elaborate how to form high quality LMX-relationships, but instead focuses on explaining how individuals relate to and interact with each other. In order to investigate this issue, we attempt to identify factors which can predict the LMX-relationships by testing the Impersonal Trust's sub-constructs as structural predictors. The role of attribution theory is crucial here because individual attributions, evaluations and behaviors are taken into account. Causal attribution made by individuals may can affect the quality of "leaders" and subordinates LMX-relations.*

#### *2.4 Hypothesis*

Attribution theory, the fundamental attribution error and the covariation model inclines us to make a theoretical prediction between the subordinate's degree of impersonal trust towards the organization and quality in the dyadic LMX-relation. It is known that the quality in LMX-relations vary in organizations, as it lies in the nature of LMX and its categorization (in-group & out-group). This phenomenon indicates a low consensus in the subordinate's different perceptions of their dyadic relation with their leader, which calls for internal attributes of organizational events while draw upon Kelly's (1973) covariation model. In addition, the fundamental attribution error reinforces this argument by the proven tendency to incorrectly attribute external events internally (Holt et al., 2019). We believe that it is logically coherent within this argument to claim that the individual that will stand accountable for the internal attributions, is the subordinate's manager. The internal attribution of the manager which the subordinate is predicted to do, is in turn, predicted to affect the quality of the LMX-relation. We therefore hypothesis that:

*H1a – Organizing the operational activities positively predicts quality in LMX-relations.*



*H1b- Management of the business and people positively predicts quality in LMX-relations.*

*H1c- Sustainability of the organization positively predicts quality in LMX-relations.*

*H1d- Competitiveness positively predicts quality in LMX-relations.*

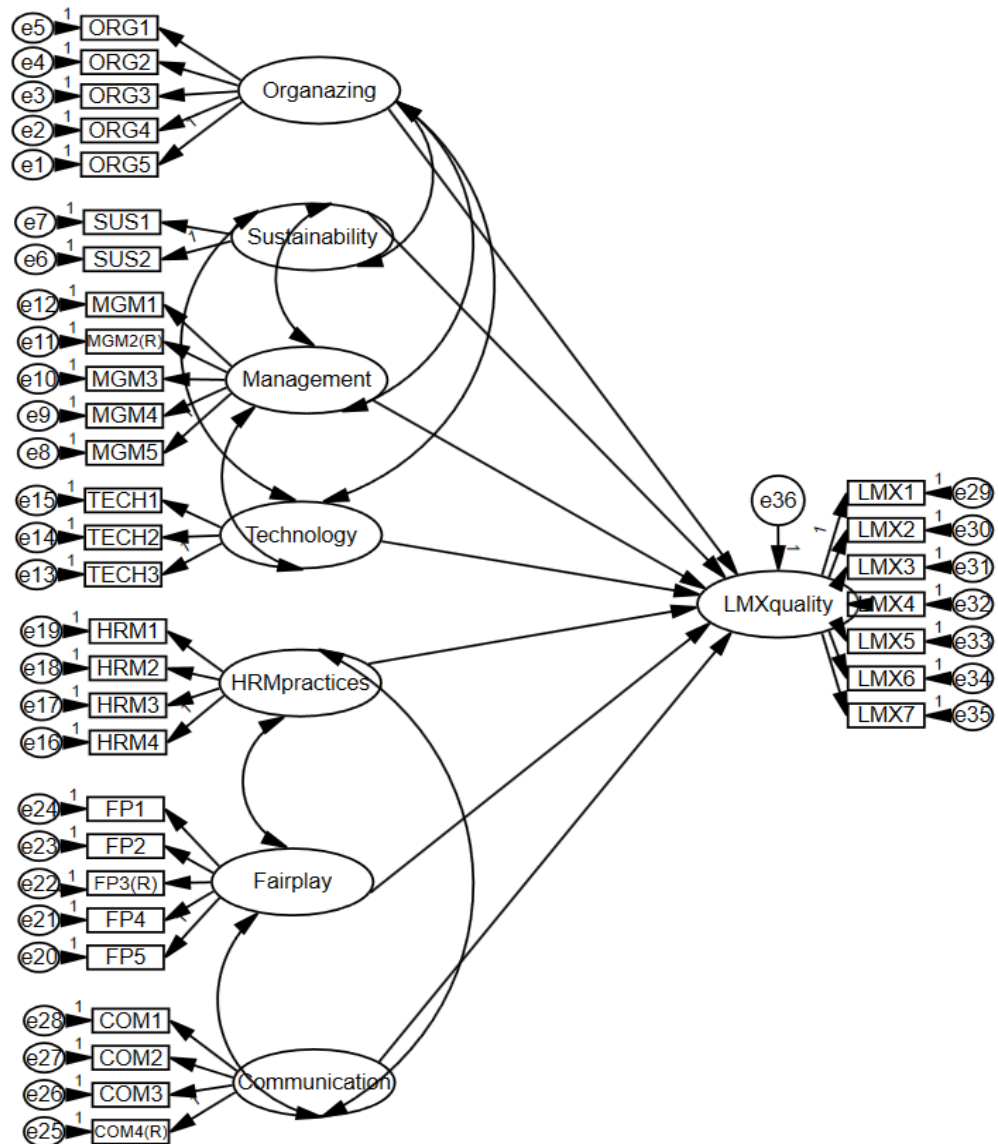
*H1e- HRM-practices positively predicts quality in LMX-relations*

*H1f- Fair play positively predicts quality in LMX-relations.*

*H1g- Communication positively predicts quality in LMX-relations.*

The theoretical foundations that build the hypothesis are not explicitly observable in our structural equation model. Therefore, we have simplified it in figure 3 with the purpose to graphically account for any ambiguities in our theoretical arguments. The hypothesized model that will be used to test the hypothesis is presented in figure 4. *The hypothesized model is heavily based on our theoretical foundations. Thus, there is no theoretical reasoning coherent with our literature review that initially speaks for any mediating effects of the latent sub-constructs when predicting quality in LMX-relations. Even though there is no straightforward theoretical reason for such relationships they will be tested to see if it matches up with the empirical data.* The hypothesized model illustrates how the indicator variables systematically and logically represent the involved latent constructs. The model is reflective because it is based upon the assumption that the latent constructs cause the indicator variables, and that the measurement error occurs because there exists an inability to fully explain these indicators. Therefore, the model is consistent with classical test theory (Hair, Black, Babin & Anderson, 2010), and similar to the construct of impersonal trust and LMX in that it remains reflective rather than formative.

**Figure 3**  
*Hypothesized Structural Equation Model*



*Note.* Figure 4 indicates ORG1-5, SUS1-2, MGM1-5, TECH1-3, HRM1-4, FP1-5, & COM1-4 = Indicator variables for the sub-construct of Impersonal Trust. (R) = Reverse coded item. LMX1-7 = indicator variables for the construct of quality in LMX-relations. e1-36 = Measurement error terms.





### **3 Methodology**

#### *3.1 Procedure*

Structural Equation Modeling (SEM) was performed to account for the purpose in this thesis. Namely, to test if impersonal trust serves as a predictor of quality in LMX-relations. The process started with individual theoretical definitions and connections of the included constructs, which were done in the section for theoretical connections (i.e., LMX & Impersonal trust, respectively). As LMX theory and Impersonal trust already had established instruments (i.e., LMX 7 & ITS), the measurement model was predefined accordingly. The structural relationships were further predefined based on our deductive argument that bridged LMX and impersonal trust together with the fundamental attribution error and the covariation model.

A cross-sectional survey was then designed to produce empirical results (See, Appendix II). A request to participate along with a hyperlink to the survey were sent to all employees within Kalmar municipality (See, Appendix I). Access to the survey closed 12 days after the initial request (2021-04-12). All the raw data was then downloaded from google forms and put into excel where items labeled with (R) were reverse coded, and each item was in turn given a concise label, these labels are presented in the instrument section below. The revised excel documents were then imported into Statistical Package for Social Sciences (SPSS), and from SPSS imported to Analysis of Moment Structures (AMOS).

The assumptions for SEM (Hair et al., 2010) were controlled, whereof multivariate normality was violated. The data set was then controlled for outliers by exploring descriptive statistics in SPSS. By looking at the descriptive statistics, the decision to keep the outliers in the data set were taken. This decision was taken because the outliers have plausible explanations for being outliers. They belong to the same administration (i.e., Kalmar/Öland airport), which has been heavily influenced by the current



Corona pandemic. Removing them would hence affect the representativeness of the sample data. To perform SEM under these conditions, the estimated discrepancies were calculated with unweighted least squares (ULS) to correct for the violation of multivariate normality. However, the correlations have still been treated as polychoric according to (Xia & Yang, 2019) recommendations of ULS analysis. The choice of performing a SEM with ULS comes with consequences (Xia & Yang, 2019). These are further elaborated in conjunction with assessing model validity and reliability (See, section 5). The end goal with the SEM was to develop a model that predicts quality in LMX-relations, in the best possible way. To achieve this goal, we tested a plethora of different models and evaluated their identification, fit, theoretical justification, and ability to accurately predict quality in LMX-relations. This process included several changes of the initial hypothesized model, which are described and presented in the results.

### *3.2 Sampling*

The population which we sampled from were employees in the public sector, in Kalmar municipality (Kalmar Kommun, 2019). The study used probability sampling, meaning that each member of the population had equal probability of being chosen, which is the most credible sampling technique for external validity (Wilson & Maclean, 2011). In this case we had access to mail-lists of every employee within Kalmar municipality, which made the sampling technique uncomplicated. In an agreement with the HR-department in Kalmar municipality the decision was taken to give everyone in the population the opportunity to participate. The sampling technique encompasses equal conditions for each administration's representativeness. The minimum sample size was calculated in a priori power analysis in G\*power. The power analysis was performed using seven predictors, an alpha set to .05 and an effect size to .08. An effect size of .08, is according to Cohen's (1977) interpretation guidelines, within the area between a small and medium effect size. The power analysis determined a minimal sample



size of 281 respondents. We got a total of 587 responses, whereof 13 responses were incomplete and had to be excluded from the analysis (i.e., not all questions were answered). Finally, this indicates a sample size of (N = 574), see (table 1) for sample frequency and comparison with the real population data.

**Table 1**  
*Sampling frequency*

Administration	N	%	Employees	%	N-E
Kalmar Vatten AB	20	3.48	110	1.97	1.51
Kalmar/Öland Airport	3	.52	40	.72	.2
Kalmarhem	4	.70	63	1.13	.43
Kommunledningskontoret	69	12.02	363	6.51	5.51
Kultur- och fritidsförvaltningen	19	3.31	160	2.87	.44
Omsorgsförvaltningen	126	21.95	1166	20.92	1.03
Södermøre kommunalförvaltning	19	3.31	351	6.30	2.99
Samhällsbyggnadskontoret	25	4.36	110	1.97	2.39
Serviceförvaltningen	52	9.06	481	8.63	.43
Socialförvaltningen	118	20.56	1053	18.89	1.67
Utbildningsförvaltningen	118	20.56	1669	29.95	9.39
Kalmar Science Park	1	0.17	7	.13	.04
Total	574	100	5573	100	26.03

Note. The sample frequency indicates a response rate of 10.3 %, based on population size data provided by the HR-department.

### 3.3 Instruments

The Impersonal Trust Scale (ITS) (Vanhala et al., 2011) and the LMX 7 questionnaire (Graen & Uhl-Bien, 1995) were coded into google forms in



order to create a complete online questionnaire due to the current corona pandemic. This section describes the used instruments and the changes we made in them.

The original ITS consists of the eight sub-constructs, with a total of thirty one indicator variables. In this thesis ITS has been revised for the context of our study. Particularly, the competitiveness sub-construct consisting of three indicator variables has been excluded because we assess that it lacks relevance when being applied in the public sector. The following seven sub-constructs and their indicator variables were given concise labels in the analysis procedure: (1) Organizing of operational activities = “Organizing”, indicator variables = “ORG1-5”, (2) Sustainability of the organization = “Sustainability”, indicator variables = “SUS1-2”, (3) Management of the business and people = “Management”, indicator variables = “MGM1-5”, (4) Technological reliability = “Technology”, indicator variables = “TECH1-3”, (5) Fairness in HRM-practices = “HRMpractices”, indicator variables = “HRM1-4”, (6) Norms of reciprocity = “Fairplay”, indicator variables = “FP1-5”, and (7) Communication = “Communication”, indicator variables = “COM1-4”. The reverse coded items were labeled with “(R)”. In tandem, the sub-constructs constitute a measurement of impersonal trust towards the organization.

LMX 7 instrument consists of seven indicator variables which measures the latent construct of quality in LMX-relations. We chose to change the word “leader” to “manager” in LMX 7, as we investigated the relation between the *closest formal manager and subordinate*. The construct of quality in LMX-relations was given the label “LMXquality” in the analysis procedure, and the indicator variables of the construct were labeled “LMX1-7”.

Both LMX 7 and ITS have been translated into Swedish by the authors. The validity of the translation has been confirmed in a pilot study consisting of 16 participants (i.e., 11 colleagues & 5 peers). The pilot study was heavily



focused on the translation of LMX 7 and ITS, therefore the original instruments were presented in contrast to our revision and each item was discussed with all participants individually. Above LMX 7 and ITS the complete cross-sectional questionnaire also includes gender categorization, employee categorization (i.e., being a subordinate or a manager), and choice of administration within Kalmar municipality. The reason for that is to be in concurrence with the aggregated level of analysis of LMX research, and to increase the ability to show representativeness of the sample data and more detailed descriptive statistics. Both ITS and LMX 7 are likert scales, meaning that we collect ordinal data. According to Hair et al. (2010) measurement scales used in SEM that are ordinal are often treated as interval data if there are at least four response categories (p. 702). However, due to the violation of multivariate normality, the data were treated as ordinal.

### *3.4 Ethical considerations*

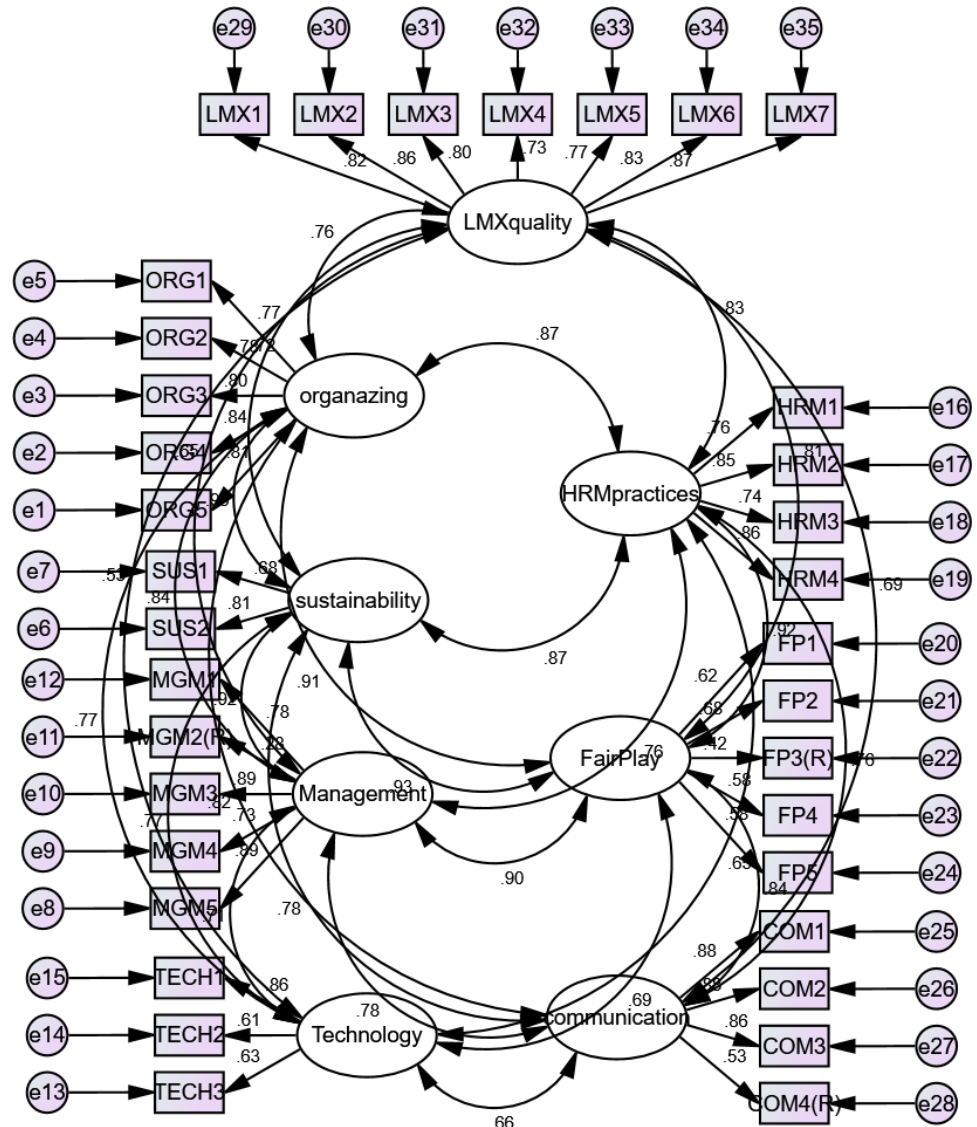
The ethical principles, that is the informational-, consent-, confidential- and utilization-requirement set by Vetenskapsrådet (1990), were followed accordingly. The requirements were met on the first page of the questionnaire (See, Appendix I). Beyond the standard procedure of the ethical requirements, this study extended the informational principle by emphasizing that the respondent will be categorized based on their answers. Information was given that the category which the respondent belongs to will remain anonymous, but still, will encompass certain attributes in which (possibly) the respondent was not aware of earlier. Indeed, it might not be pleasant to find out that one belongs to the out-group when reading this study. Therefore, we chose to emphasize it as an extension to the informational requirement, and if any concern were considered as a cause of the categorization, *we recommended rejecting the consent*



## **4 Results**

According to Brown and Moore (2012) SEM models consist of two major components: (1) CFA model which relates to the measurement model, which specifies the number of factors, how the various indicators are related to the factors and finally the relationships among indicators errors. (2) the structural model which specifies how the various factors are related to one another (the direct or indirect effects, no relationships).

*Figure 4. Fitting model standardized*



Fitting model standardized

*Note, Figure: Root Mean Square Residual (RMR) = 0.050, Goodness of Fit (GFI) = 0.867, Adjusted Goodness of Fit (AGFI) = 0.842, Formed Fit Index (NFI) = 0.902, Relative Fit Index (RFI) = 0.890. All fit indicators were calculated with unweighted least squares, correlations remained polychoric as standardized.*

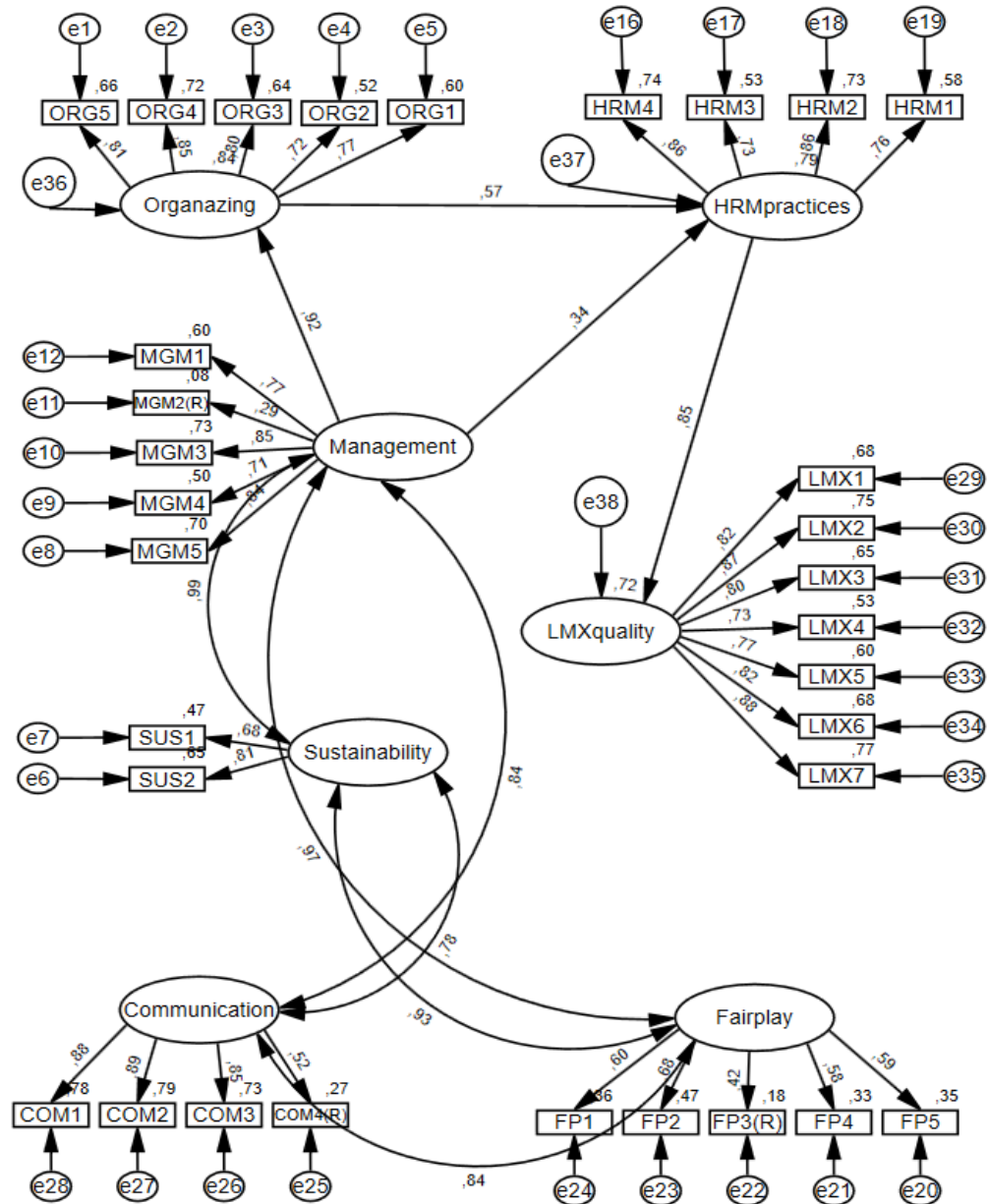


The hypothesized model was rejected due to an inability to predict quality in LMX-relations, failure in model identification, and too poor fit indices to be considered an acceptable model (see, Appendix III). As described in the methodology section, the goal was then to investigate if there were another model which successfully could predict quality in LMX-relations. Such a model does exist and is what we have chosen to emphasize in this section, as it is the model which best accounts for the purpose. The structural equation model that predicts quality in LMX-relations is revised in several ways compared to the initial hypothesized model: (1) the technology construct has been excluded as it does not fit, (2) it treats the organizing and HRM-practices constructs as endogenous rather than exogenous, and (3) the model has a hierarchical dependent structure in predicting quality in LMX-relations, which (4) includes both indirect and direct effects. These changes are made because the empirical data suggests it as optimal for predicting quality in LMX-relations. The empirical data suggest the model as optimal for predicting quality in LMX-relations in terms of polychoric correlations, fit indices, direct, indirect, and total effects (See, Figure 5). For total-item correlation matrix, central tendency and spread (See, Appendix IV & Appendix V).





**Figure 5.**  
*Optimal model for predicting quality in LMX-relations*



Note. Figure 5 :Root Mean Square Residual (RMR) = .048, Goodness of Fit (GFI) = .994, Adjusted Goodness of Fit (AGFI) = .993, Normed Fit Index (NFI) = .993, Relative Fit Index (RFI) = .992, e = measurement error terms, degrees of freedom =



454 (528-74). All fit indices were calculated with unweighted least squares, correlations remained polychoric and all estimates are standardized.

The structural equation model (Figure 5) shows how the construct of HRM-practices predicts quality in LMX-relations while simultaneously being regressed of the management and organizing construct. In turn, the management construct correlates with the sustainability-, fairplay-, and communication construct, has a direct relation with the construct of organizing activities and HRM-practices, and an indirect relation with HRM-practices and LMX-quality. This means that the construct of organizing also has an indirect relation with quality in LMX-relations, while being dependent on the management construct as well. These results are presented in table form below (See, Table 2, Table 3, Table 4 & Table 5).

**Table 2.**  
*Structural Correlation Coefficients (Standardized)*

Construct	1	2	3	4
1. Sustainability	-	.986	.778	.930
2. Management	.986	-	.841	.971
3. Communication	.778	.841	-	.837
4. Fairplay	.930	.971	.837	-

*Note.* The structural correlation estimates have been treated as polychoric



**Table 3.**  
*Standardized Direct Effects*

Construct	Communication	Fairplay	Management	Sustainability	Organizing	HRM-practices	LMX-quality
Organizing	.000	.000	.916	.000	.000	.000	.000
HRM-practices	.000	.000	.452	.000	.475	.000	.000
LMX-quality	.000	.000	.000	.000	.000	.863	.000

*Note.* The estimates have been calculated with unweighted least squares discrepancy

**Table 4.**  
*Standardized Indirect Effects*

Construct	Communication	Fairplay	Management	Sustainability	Organizing	HRM-practices	LMX-quality
Organizing	.000	.000	.000	.000	.000	.000	.000
HRM-practices	.000	.000	.435	.000	.000	.000	.000
LMX-quality	.000	.000	.766	.000	.410	.000	.000

*Note.* The estimates have been calculated with unweighted least squares discrepancy



**Table 5.**  
*Standardized Total Effects*

Construct	Communication	Fairplay	Management	Sustainability	Organizing	HRM-practices	LMX-quality
Organizing	.000	.000	.916	.000	.000	.000	.000
HRM-practices	.000	.000	.888	.000	.475	.000	.000
LMX-quality	.000	.000	.766	.000	.410	.863	.000

*Note.* The estimates have been calculated with unweighted least squares discrepancy

These results indicate that when the standard deviation (SD) increases by 1 in the construct of HRM-practices, the construct of LMX-quality increases by .863 SD. In turn, when the management construct increases by 1 SD, the construct of HRM-practices increases by .452 SD, and the organizing construct increases by .916 SD. Finally, when the organizing construct goes up by 1 SD, the HRM-practices construct increases by .475 SD. In the discussion we will further elaborate on the validity, reliability, and implications of these results.

According to our results, H1a, H1b, H1e predict the quality of LMX-relation indirectly and directly, H1c, H1f and H1g correlate with management.

## 5 Discussion

### 5.1 General discussion

The aim of this study was to investigate if the sub-constructs of impersonal trust predict the LMX-quality. On the one hand, there is no elaborated strategy in order to develop as many high LMX-relations as possible. On the



other hand, there is no theoretical reasoning with our literature review that can support any mediating effect of the sub-constructs impersonal trust in predicting LMX-relations. So, the authors of this study developed an optimal model in order to predict quality in LMX-relations. As our result suggests, effective human resource management can predict the quality of LMX-relations. Vanhala and Ritala (2016) considered the HRM-practices as a key agent which affect the formation and existence of trust in organizations. Fair HRM-practices consider human's need to be valued as human beings and as an effective part of organizations not merely personnel. The underlying reason for the importance of HRM-practices is that they affect all levels of an organization with diverse activities including, selective recruitment, extensive training and development for leaders and subordinates, regular performance, etc. HRM-practices shape employment relationships and individual's perception of HRM-practices are expected to increase their impersonal trust toward the organization which predict LMX-relations. The crucial role of HRM-practices is also shown in the result of our study (see, Figure 5).

However, according to our model, it can also be suggested that the HRM-practices are not the only way to predict LMX-qualities. The role of organizing the operational activities and management of business and people, are noticeable as well. Organizing the operational activities deals with organization's ability to survive or even maintain their vitality in a changing world that constantly requires adaptations. In doing so, organizations have to manage challenges and exploit opportunities by providing work practices and efficiently utilize the expertise of its employees. Management of the business and people also play a key role in expanding impersonal trust which leads to promoting LMX-quality. Obviously, top management's ability to create a clear vision and strategies is pivotal. Another important managerial potential refers to his/her decision-making ability and subordinate's faith in him/her to



take the organization in the right direction. However, as reflected in our model, HRM-practices are affected by organizing the operational activities and management of business and people. In other words, there is not one single sub-construct to create impersonal trust in an organization toward increasing the LMX-quality and creating impersonal trust require divers interrelated factors. In sum, increasing the investment of HRM-practices, management of business and people and organizing operational activities are associated with more impersonal trust of fairplay, communication and sustainability which serves as a predictor in LMX-relations.

The hypothesis of this study was tested by structural equation modelling with empirical data and we developed a model that optimally predicts quality in LMX-relations (Figure 5). A model that optimally predicts quality in LMX-relations means that the model has the highest predictive ability, while maintaining validated fit parameters. The process can be summarized in the following order: (1) the theoretical framework were developed, (2) individual constructs were defined, (3) impersonal trust and LMX were theoretically “bridged” with the attribution theory framework, (4) based on the” theoretical framework the hypothesized model were defined (Figure 4), (5) a cross-sectional survey to measure the constructs were designed (Section 3), (6) empirical data were collected and the hypothesized model tested, and finally (7) the hypothesized model was revised and compared to alternatives in order to present the model which optimally predicts quality in LMX-relations (Figure 5).

Changes made compared to the initial model must be theoretically motivated (Hair et al., 2010). All the changes made can be theoretically justified by the degree of distinctiveness, consensus and consistency (i.e., covariation model) that the participants psychometrically indicate in analysing the results. So, the impersonal trust factors do not contribute with one attribution error for each factor as the hypothesized model suggested. Instead, the impersonal



trust factors are interrelated in a complex way (i.e., specifically when predicting quality in LMX-relations), and altogether makes an example of the complexity of a single attribution error. It is known that the process which finally results in an attribution error is highly complex and thus hard to theoretically capture (Holt et al., 2019). Knowing this, it is not surprising that the hypothesized model had to be revised to optimally predict quality in LMX-relations. It is not surprising because attribution errors are highly context dependent, and therefore the covariation model takes different contexts dependent on specific variables when determining the characteristic of the attribution. The amount of “mapping” information of these attributions in predicting quality in LMX- relations was insufficient and was thus reflected in our hypothesis. In other words, the links of impersonal trust factors to personal relational factors could not be fully predefined with the theoretical framework but, were corrected for in performing structural equation modeling with the empirical data.

Regarding the construct validity of the structural equation model, the guidelines and accepted cutoff values for accepting fit parameters are controversial but mostly range from .90-.95. Hair et al. (2010, p. 664-672) recommends that multiple fit indices of differing types should be reported to evaluate fit and thus establish the construct validity. Therefore, absolut-, incremental-, and parsimony- fit indices were reported, and all fit indexes remained above the stricter cut-off values (i.e., the model fit is considered to be accepted). An accepted fit, altogether with grounding the structural equation model in theory, testing different structural relationships, comparing the model with the hypothesized model, means that construct validity is achieved, according to Hair et al. (2010) guidelines. However, it should once again be highlighted that the fit indices were calculated with unweighted least squares (ULS). According to Xia and Yang (2019), guidelines for



structural equation modeling analyses using ULS are lacking and conclusions drawn from these types of analysis should thus be done with extra caution. Normally the fit indices are higher when performing the calculations with ULS. However, we are still confident that the model which we present is the most validated one for this data set.

Moving beyond the data set to evaluate the reliability of the model is impossible with a cross-sectional approach. To establish model reliability, longitudinal data is needed. Until the model is tested and compared with additional data, the reliability of the structural equation model should be considered unknown, and threatened from a fit-perspective (i.e., in this case overfitting). Even though the reliability remains unknown, the attributions (i.e., functionally of the covariation model) remain context dependent. This means that at a different time, another model might be more optimal for predicting quality in LMX-relations (i.e., theoretically reasoned). Either way, it is recommended to replicate the model with additional longitudinal data, to evaluate reliability, but also to understand the phenomena of predicting quality in LMX-relations over a longer timeframe. This is crucial from a methodological point of view, but also from a LMX perspective, as it is known that the quality of the relations develop over time in different phases (Graen & Uhl-Bien, 1995).

## **6 Conclusion**

As stated earlier in chapter 1, LMX which refers to dyadic relationships between “leaders” and subordinates divided the subordinates into two groups, in-groups and out-groups. However, the theory does not elaborate on strategies for how individuals gain access to the in-groups or how high LMX-quality are created. There are plethora of studies which claim that “leaders” should work to create high-quality exchanges with all subordinates, but the strategies for how this is done or predicted is not clearly explained.





Thus, in this thesis, we aimed to investigate if impersonal trust and its sub-constructs predict the LMX-quality.

It is important to consider that there are no studies which indicates directly any mediating effects of impersonal trust's sub-constructs that can predict the quality in LMX-relations. In order to test our hypothesis Structural Equation Modeling (SEM) was performed for the purpose of this thesis. A cross-sectional survey was conducted to produce empirical data. Finally, the empirical data suggest the model (Figure. 5) as optimal for predicting quality in LMX-relations.

Our result suggests that HRM-practices predict the quality in LMX-relations. HRM-practices which include (learning and development, performance evaluation and rewards, participation, career opportunities or job design, etc.) are crucial in order to build as much high leader-member relations as possible by increasing impersonal trust. HRM-practices affect subordinate's attitudes and behaviors toward organization and have important role in representing the relationships, interactions and massaging between the organizations and its subordinates, as well as organization's whole philosophy.

However, management of business and people and organizing operational activities influence the HRM-practices and predict the quality of LMX-relations indirectly. In sum, as it was shown in (Figure. 5) HRM-practices, managerial capabilities and the capability of organizing activities increase the quality of LMX-relations. Targeting the investments of these factors are associated with increasing of communication, sustainability and fair play in organizations.

### *6.1 Practical implications*

On the basis of our findings, it could be argued that HRM practices are practical and effective in predicting high leader-member relation qualities. In



other words, organizations which strive for promoting high quality leader-member relations have to invest more on their HRM-practices. Apart from the role of HRM-practices to predict leader-member relation qualities, the organizations should consider the role of management of people and business. It means that capabilities in top management practices and his/her decision-making process can promote high relationships between “leader” and subordinates as well. Consequently, another practical implication of this study is highlighting the pivotal role of sensemaking in organizations because all decisions that need to be made and what those decisions must consist of are products of sensemaking which relates to top management’s responsibilities (Weick, 1995). Obviously, top management's capabilities to make a clear vision of organizations and the way in which she/he shapes the reality of organization are important aspects (Gioia & Chittipeddi, 1991).

Another practical implication of this study is referred to the role of organizing operational activities. Organizations can predict higher leader-member relation qualities by increasing their abilities to handle extraordinary situations and focusing on how resources are exploited. More investment in organization's adaptivity to handle unexpected and changing conditions are crucial. In other words, organization’s availability of work practices which help subordinates to cope with exceptional situations are fruitful. A clear example is related to the Covid-19 pandemic which led to massive changes especially in workplaces and society in general. Clearly, in order to promote high leader-member quality, organizations have to constantly develop their general operations and their work routines to build and maintain subordinate’s trust toward organizations. In sum, organizations which strive for higher leader-member relation qualities should invest more on impersonal trust, however, as mentioned earlier, it is crucial to consider that impersonal trust has diverse constructs and sub-constructs which are interrelated and needed to be considered in order to predict leader-member quality.



### *6.2 Implications for future research*

One interesting question regarding LMX-relations is related to the nature of these dyadic relationships (in-groups and out-groups). It means that LMX considers the quality of relationships, ranging from low to high quality. However, in reality there may exist LMX-relations coexisting with both positive and negative thoughts towards the relationships. In other words, within leader-subordinate dyads, there may also be inconsistent and conflicting thoughts about the relationships during time. By taking all this notion into consideration, one can argue that it needs more longitudinal studies to investigate the influence of impersonal trust on the quality of LMX-relations. The benefit of longitudinal study is related to its capacity to study change and development in the characteristics of the target population at both the individual and group level during time.

Another valuable implication for future studies refers to more qualitative studies. There are considerable amounts of LMX studies which have focused on the outcome of LMX-relations and possibility of in-groups and out-groups or investigated the relationships between LMX and other contextual variables. There are even plethora of studies which attempt to identify “leader” and subordinate characteristics which can affect the LMX-relations (Graen & Uhl-Bien, 1995; Northouse, 2019) Most of these studies are conducted by quantitative methods. As stated earlier in this thesis, the main question regarding how LMX-relations form and how “leaders” and subordinates can effectively create high qualities remains. Consequently, the authors of this thesis suggest more qualitative research for uncovering deeper processes in individuals, teams and organizations and understanding how these processes unfold over time. Additionally, qualitative studies are critical for gaining an understanding of how individuals experience and interpret their experiences. Understanding “leaders” and subordinates' expectations and attitudes toward each other can not solely captured by quantitative research.



### *6.3 Limitations*

The second limitation of this study is associated with the sample which was collected from a single organization (Kalmar Municipality). It means that our sample is limited to a specific setting which can lead to biased information about predicting the quality of LMX-relations by impersonal trust. It is important to bear in mind that Kalmar municipality has 5 100 employers who have various types of jobs and positions such as teacher, nurses, IT technicians, etc. Thus, finding might be influenced by unique characteristics of each administration. Consequently, it is clear that further research is needed to confirm the generalizability of this study.



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Linnéuniversitetet e-post - Vad har du för relation till din chef?

Linnéuniversitetet

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**Vad har du för relation till din chef?**

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## Vad har du för relation till din chef?

Tidigare studier har visat att bra relationsförhållanden mellan chef och medarbetare ökar produktivitet och **välstånd inom organisationen**. Nu undersöker magisterstudenter på Linnéuniversitet i samarbete med HR-avdelningen hur anställda förhåller sig till sina chefer. Vi söker därför dig som jobbar inom **Kalmar kommun**. Studien syftar att bidra till en utveckling som slutligen kan främja en bättre arbetsmiljö för dig som anställd.

Undersökning tar cirka 6 minuter och är 100% anonym.

**Klicka på länken för att delta i studien!**

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## Relationsförhållandet mellan chef och medarbetare

\*Obligatorisk

Dina rättigheter:

- Anonymitet.
- Materialet kommer enbart att användas för forskningsändamål och resultatet kommer publiceras i databasen diva.
- Du har rätt att avbryta när du vill, utan motivering och konsekvenser.

Dina svar kommer att kategoriseras och bli tilldelade attribut som är teoretiskt associerat med kategorin. Dessa attribut kan vara både positiva och negativa, om det känns oroväckande rekommenderar vi att inte delta i studien.

Jag är: \*

*Markera endast en oval.*

☐ Man

☐ Kvinna

☐ Vill inte uppge

☐ Annat



Jag tillhör: \*

*Markera endast en oval.*

- ☐ Kommunledningskontoret
- ☐ Socialförvaltningen
- ☐ Omsorgsförvaltningen
- ☐ Utbildningsförvaltningen
- ☐ Samhällsbyggnadskontoret
- ☐ Kultur- och fritidsförvaltningen
- ☐ Serviceförvaltningen
- ☐ Kalmar Hamn AB
- ☐ Kalmar Vatten AB
- ☐ Destination Kalmar AB
- ☐ Kalmarhem AB
- ☐ KIFAB i Kalmar AB
- ☐ Kalmar/Öland Airport AB
- ☐ Kalmar Energi Holding AB
- ☐ Osäker/Annat/Vill inte uppge
- ☐ Kalmar Science Park

Jag är: \*

*Markera endast en oval.*

- ☐ Medarbetare
- ☐ Chef (är du chef syftar enkätfrågorna till att undersöka relationen med din övre chef)

**Relationen med din chef (Avsnitt 1/3)**



Relationsförhållandet mellan chef och medarbetare

1. Vet du var du står i förhållandet med din chef... [och] vet du vanligtvis hur nöjd din chef är med vad du gör? \*

*Markera endast en oval.*

- ☐ 1. Sällan
- ☐ 2. Knappast
- ☐ 3. Ibland
- ☐ 4. Ganska ofta
- ☐ 5. Mycket ofta

2. Hur väl förstår din chef dina arbetsrelaterade problem och behov? \*

*Markera endast en oval.*

- ☐ 1. Inte alls
- ☐ 2. Lite
- ☐ 3. Lagom
- ☐ 4. Ganska bra
- ☐ 5. Väldigt bra

3. Hur väl känner din chef till din potential? \*

*Markera endast en oval.*

- ☐ 1. Inte alls
- ☐ 2. Lite
- ☐ 3. Lagom
- ☐ 4. För det mesta
- ☐ 5. Fullt ut



4. Oavsett hur mycket formell auktoritet din chef har i sin position, hur stor är chansen att din chef skulle använda sin makt för att hjälpa dig att lösa problem i ditt arbete? \*

*Markera endast en oval.*

- ☐ 1. Ingen
- ☐ 2. Liten
- ☐ 3. Lagom
- ☐ 4. Hög
- ☐ 5. Väldigt hög

5. Återigen, oavsett vilken formell auktoritet din chef har, vad är chansen att han eller hon skulle 'skydda och försvara' dig på hans eller hennes bekostnad? \*

*Markera endast en oval.*

- ☐ 1. Ingen
- ☐ 2. Liten
- ☐ 3. Lagom
- ☐ 4. Hög
- ☐ 5. Väldigt hög

6. Jag har tillräckligt med förtroende för min chef för att försvara och motivera hans eller hennes beslut om han eller hon inte kan vara närvarande för att göra det. \*

*Markera endast en oval.*

- ☐ 1. Instämmer absolut inte
- ☐ 2. Instämmer inte
- ☐ 3. Neutral
- ☐ 4. Instämmer
- ☐ 5. Instämmer starkt



7. Hur skulle du karakterisera din arbetsrelation med din chef? \*

Markera endast en oval.

- ☐ 1. Extremt ineffektiv
- ☐ 2. Sämre än medelmåttet
- ☐ 3. Medelmåttigt
- ☐ 4. Bättre än medelmåttet
- ☐ 5. Extremt effektivt

## Rättvisa (Avsnitt 2/3)

1. De människor som belönas för min organisations framgång är de som förtjänar att belönas. \*

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

2. Min arbetsgivare erbjuder mig möjligheter att lära mig nya färdigheter och att utveckla mig själv i mitt yrke. \*

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med





3. Kompetenta anställda erbjuds mer ansvarsfulla positioner. \*

*Markera endast en oval.*

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med



4. Min arbetsgivare har hållit sina löften om mitt jobb och min personliga utveckling. \*

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

5. Min lön är rättvis i jämförelse med andra anställda i min organisation som utför liknande arbete. \*

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

6. Högsta ledningen placerar aldrig sin framgång framför de anställdas. \*

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

7. I min organisation finns opportunist som skadar vår verksamhet. \*

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med



8. Jag behöver aldrig kompromissa med mina etiska principer för att lyckas i min organisation. \*

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

9. Toppledningen har gjort det klart att oetisk handling inte tolereras i min organisation. \*

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

10. Jag får information om de organisationsförändringar som är viktiga för mig. \*

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

11. Den information jag får i min organisation är uppdaterad. \*

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med



12. Information om frågor som är viktiga för mig kommuniceras öppet i min organisation. \*

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

13. Min organisations interna kommunikation fungerar dåligt. \*

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

## Förmåga (Avsnitt 3/3)

1. Min organisation anpassar sig väl till förändrade förhållanden.

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

2. Det finns arbetsrutiner i min organisation som hjälper oss att hantera exceptionella situationer.

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med



3. Det är lätt för mig att få saker gjorda i min organisation.

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

4. Vår organisation använder effektivt medarbetarnas expertis.

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

5. Arbetet är välorganiserat i min organisation.

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

6. Min organisation fungerar på en så solid bas att förändringar i vårt affärssammanhang inte hotar vår verksamhet.

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med



7. Anställda har en ljus framtid hos denna arbetsgivare.

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

8. Vår högsta ledning har en tydlig vision av framtiden.

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

9. Vissa förändringar måste ske i toppledningen om vi vill utveckla vår verksamhet.

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med

10. Enligt min åsikt, så tar högsta ledningen min organisation i rätt riktning.

Markera endast en oval.

	1	2	3	4	5	
Jag håller verkligen inte med	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Jag håller verkligen med



11. Högsta ledningen fattar inte beslut som kommer att riskera min organisations framtida verksamhet.

Markera endast en oval.

1 2 3 4 5

Jag håller verkligen inte med

☐☐☐☐☐

Jag håller verkligen med

12. Jag tror på den högsta ledningens expertis.

Markera endast en oval.

1 2 3 4 5

Jag håller verkligen inte med

☐☐☐☐☐

Jag håller verkligen med

13. De verktyg jag behöver i mitt vardagliga arbete fungerar ordentligt.

Markera endast en oval.

1 2 3 4 5

Jag håller verkligen inte med

☐☐☐☐☐

Jag håller verkligen med

14. Maskinvaran (t.ex. datorhårdvara och produktionsmaskiner) som är avgörande för vår verksamhet fungerar pålitligt.

Markera endast en oval.

1 2 3 4 5

Jag håller verkligen inte med

☐☐☐☐☐

Jag håller verkligen med



15. Jag får hjälp med tekniska problem när jag behöver det.

*Markera endast en oval.*

1      2      3      4      5

Jag håller verkligen inte med

☐☐☐☐☐

Jag håller verkligen med

---

Tack för att du deltog!

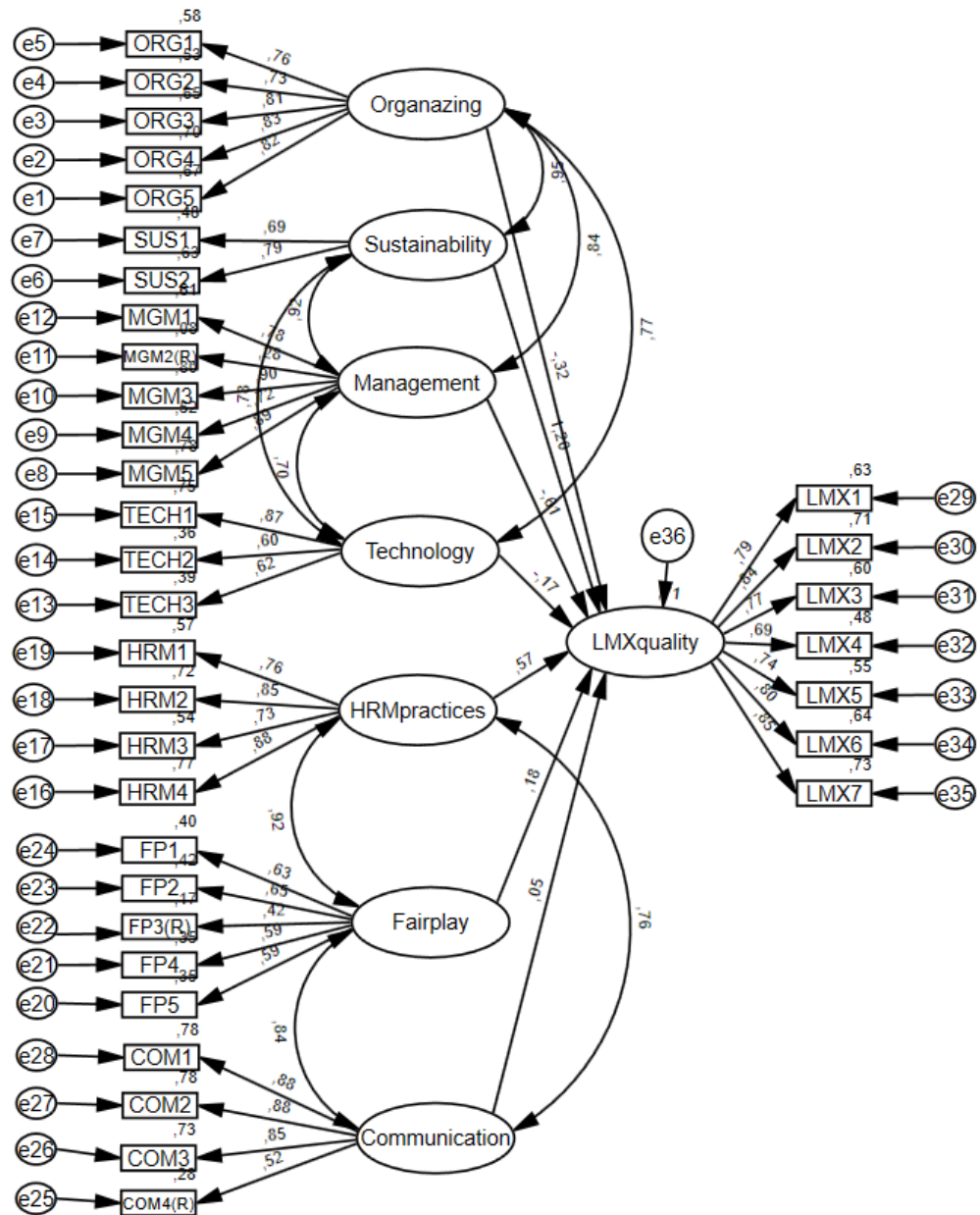
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### Appendix III

#### Results of hypothesized model



Note. Root Mean Square Residual (**RMR**) = .351, Goodness of Fit (**GFI**) = .835, Adjusted Goodness of Fit (**AGFI**) = .809, Normed Fit Index (**NFI**) = .843, Relative Fit Index (**RFI**) = .829, e = measurement error terms, degrees of freedom = 544 (630-86). All estimates in the figure are standardized.



## Appendix IV

### Total-item correlation matrix

	LMX7	LMX6	LMX5	LMX4	LMX3	LMX2	LMX1	COM1	COM2	COM3	COM4R	FP1	FP2	FP3R	FP4	FP5	HRM1	HRM2	HRM3	HRM4	TECH1	TECH2	TECH3	MGM1	MGM2R	MGM3	MGM4	MGM5	SUS1	SUS2	ORG1	ORG2	ORG3	ORG4	ORG5	
LMX7	1,000																																			
LMX6	,744	1,000																																		
LMX5	,662	,666	1,000																																	
LMX4	,626	,611	,671	1,000																																
LMX3	,701	,629	,584	,526	1,000																															
LMX2	,753	,704	,656	,623	,718	1,000																														
LMX1	,730	,640	,590	,565	,720	,734	1,000																													
COM1	,522	,508	,443	,426	,530	,527	,462	1,000																												
COM2	,491	,471	,433	,398	,499	,480	,448	,815	1,000																											
COM3	,544	,518	,522	,485	,511	,546	,486	,727	,738	1,000																										
COM4R	,404	,397	,339	,284	,357	,391	,287	,458	,418	,488	1,000																									
FP1	,388	,422	,448	,398	,397	,425	,372	,407	,397	,440	,251	1,000																								
FP2	,417	,441	,472	,379	,358	,423	,393	,472	,453	,527	,266	,430	1,000																							
FP3R	,341	,334	,272	,242	,290	,316	,255	,333	,296	,358	,440	,236	,267	1,000																						
FP4	,411	,496	,462	,380	,420	,401	,408	,424	,424	,476	,276	,315	,349	,276	1,000																					
FP5	,431	,439	,394	,390	,401	,378	,404	,439	,462	,475	,243	,351	,361	,244	,486	1,000																				
HRM1	,552	,523	,528	,474	,527	,525	,516	,505	,542	,613	,361	,506	,487	,294	,391	,397	1,000																			
HRM2	,631	,599	,543	,505	,571	,595	,573	,557	,528	,617	,365	,502	,509	,287	,458	,418	,616	1,000																		
HRM3	,472	,475	,474	,440	,478	,477	,456	,440	,464	,522	,284	,479	,492	,215	,382	,397	,571	,650	1,000																	
HRM4	,640	,640	,567	,563	,604	,651	,609	,534	,537	,617	,374	,584	,523	,318	,434	,432	,657	,749	,628	1,000																
TECH1	,408	,449	,375	,322	,415	,411	,392	,470	,504	,532	,329	,344	,364	,244	,477	,359	,417	,532	,453	,465	1,000															
TECH2	,185	,228	,220	,182	,245	,259	,243	,306	,364	,310	,177	,221	,219	,190	,259	,202	,246	,306	,259	,279	,499	1,000														
TECH3	,214	,265	,233	,190	,280	,281	,245	,360	,444	,325	,207	,259	,230	,359	,319	,255	,275	,322	,269	,343	,520	,527	1,000													
MGM1	,490	,498	,468	,377	,495	,474	,467	,574	,601	,542	,375	,378	,507	,323	,384	,418	,477	,553	,423	,517	,493	,320	,372	1,000												
MGM2R	,229	,207	,170	,155	,203	,231	,164	,242	,237	,247	,286	,129	,198	,318	,094	,118	,223	,207	,127	,188	,136	,056	,045	,220	1,000											
MGM3	,481	,515	,495	,399	,454	,492	,455	,577	,605	,633	,359	,499	,588	,308	,430	,467	,554	,588	,489	,563	,551	,344	,359	,703	,219	1,000										
MGM4	,389	,434	,409	,353	,395	,409	,332	,477	,504	,485	,301	,435	,514	,246	,372	,368	,425	,455	,406	,473	,496	,376	,390	,537	,209	,622	1,000									
MGM5	,435	,471	,487	,416	,448	,474	,407	,568	,579	,624	,345	,470	,602	,317	,407	,447	,550	,586	,487	,561	,536	,363	,350	,672	,282	,807	,666	1,000								
SUS1	,390	,453	,386	,360	,378	,379	,377	,473	,510	,538	,292	,370	,413	,289	,410	,414	,482	,476	,409	,421	,518	,315	,292	,480	,198	,562	,503	,531	1,000							
SUS2	,557	,537	,518	,482	,562	,579	,545	,517	,515	,544	,359	,482	,509	,346	,409	,394	,559	,630	,511	,621	,531	,361	,324	,636	,200	,654	,565	,642	,551	1,000						
ORG1	,486	,514	,459	,436	,496	,478	,462	,588	,579	,608	,381	,434	,493	,280	,471	,485	,509	,593	,507	,576	,542	,297	,329	,588	,225	,615	,485	,603	,525	,567	1,000					
ORG2	,470	,440	,402	,392	,493	,477	,437	,510	,558	,541	,323	,307	,371	,245	,404	,447	,509	,534	,484	,479	,511	,297	,345	,541	,195	,534	,410	,514	,490	,524	,604	1,000				
ORG3	,534	,537	,498	,441	,487	,506	,511	,524	,517	,574	,297	,415	,465	,292	,497	,430	,507	,610	,513	,554	,609	,342	,388	,539	,123	,610	,490	,552	,523	,566	,597	,588	1,000			
ORG4	,551	,561	,547	,485	,542	,527	,530	,543	,557	,663	,403	,475	,509	,353	,514	,442	,600	,658	,581	,622	,542	,288	,329	,564	,229	,640	,513	,606	,561	,626	,631	,577	,707	1,000		
ORG5	,527	,523	,476	,457	,479	,516	,530	,558	,582	,626	,447	,435	,477	,368	,422	,380	,550	,601	,500	,567	,565	,353	,310	,567	,205	,613	,489	,578	,615	,639	,591	,598	,654	,695	1,000	



**Appendix V**

*Descriptive statistics*

Indicator variable (Item)	Mean	Standard Deviation
LMX7	3.58	.974
LMX6	3.63	1.03
LMX5	3.10	1.15
LMX4	3.49	1.09
LMX3	3.60	1.10
LMX2	3.36	1.21
LMX1	3.71	1.08
COM1	3.74	1.15
COM2	3.85	1.05
COM3	3.53	1.14
COM4 (R)	3.35	1.19
FP1	2.96	1.23
FP2	3.13	1.09
FP3(R)	3.45	1.05
FP4	3.71	1.07
FP5	3.85	1.09
HRM1	3.16	1.10
HRM2	3.55	1.17
HRM3	3.25	1.16
HRM4	3.45	1.19
TECH1	3.63	1.04
TECH2	3.46	1.12
TECH3	3.85	1.04
MGM1	3.51	1.11
MGM2(R)	2.60	1.23
MGM3	3.36	1.07
MGM4	3.44	1.09
MGM5	3.21	1.15
SUS1	3.37	.959
SUS2	3.47	1.14
ORG1	3.60	1.02
ORG2	3.54	1.01
ORG3	3.50	1.04
ORG4	3.29	1.28
ORG5	3.31	1.06

*Central tendency & Spread*

*Note.* This table shows the mean and standard deviation for each indicator variable, N = 574.