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#### DIVERSITY ROLE ON LMX RELATIONSHIPS

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**DIVERSITY ROLE ON LMX RELATIONSHIPS**  
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**Abstract**

High quality leader-member relationships (LMX) provide huge opportunities for strategic and organizational benefits (see Graen & Uhl-Bien, 1996; Liden et al., 1997). Despite the many positive effects of high LMXs, one area in need of empirical investigation is evidence of what leads to higher and lower quality relationships (Uhl-Bien, et al., 2000). The present analyses the antecedents of LMX, following the similarity-attraction paradigm at the dyad and at the team level, and specifically explores the consequences on team innovation. Our results support prior research, about demographic variables positive related to quality of LMX development, adding evidence on the importance of combine many demographic variables together. Focusing on gender role in the development of LMX and team composition, this investigation point out that the gender of the leader is the more relevant determinant for developing high LMXs. We also explore the consequences of these relationships on team outcomes, specifically team innovations.

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**Keywords:** Leader-Member Exchange, Demography Role, Gender Role, Teams, Team innovation

## 1. INTRODUCTION

The quality of the relationship between supervisor and subordinate has risen as a key element for an effective leadership (Graen & Uhl-Bien, 1995). High quality relationships provide great opportunities for strategic and organizational behaviour benefits –as job satisfaction, commitment, subordinate´s loyalty and extra role tasks. Despite the many positive effects of high quality relationships (Hollander & Offerman, 1990), one area in need of empirical investigation is evidence of what leads to higher and lower quality relationships in organizations (Uhl-Bien et al., 2000).

Since Vertical Dyad Linkage (Dansereau et al., 1975) documented that leaders develop differentiated relationships with their direct reports, leader-member exchanges research has primarily focused on the benefits that those high quality relationships between leader and subordinate could bring to the organization (for revision see Graen & Uhl-Bien, 1995; Liden et al., 1997). All of this line of research has dedicated high amount of theoretical and empirical works examining why to generate an effective leadership relationships (leadership making). But surprisingly, although literature widely recognize positive effects of high quality relationships, comparatively, the amount of work devoted to answer the question about what are the determinants or the antecedents of high quality of leader/member relationships, is very scarce.

As the antecedents of the quality of LMX, studies examined upward maintenance tactics and interaction patterns (Waldron, 1991), subordinate loyalty (Scandura & Graen, 1984), influence tactics (Wayne & Ferris, 1990), attitudes (Phillips and Bedeian, 1994), similarities in values between leader and subordinates (Turban & Jones, 1988) or demographic variables (Liden et al., 1993).

Specifically related to demographic variables, the relationship of demographic similarity of dyad members has inconsistently predicted quality LMX. Several studies investigating the role of dyad members´ sex and quality LMX examined the effect of sex in an aggregated variable, “demographic similarity” -which included other demographic characteristics, such as age, education level and race. But at the same time, several empirical studies directly examine the role of sex variable of dyad members in the development of quality leader-member exchanges

(Wayne et al., 1994; Tsui & O'Reilly, 1989; Liden et al., 1993; Duchon et al., 1986) regardless other demographic variables. Specifically, sex role has been examined in several ways (see Goertzen & Fritz, 2004), finding mixed results. For instance, Bauer and Green (1996) found that sex similarity of dyad members did not predict quality leader-member exchanges. Duchon et al., (1986) found that sex similarity was more characteristic of high quality exchanges but only early in the dyad tenure. What it seems be clear on both studies is that dyads differing sex were more likely to be characterized with lower quality of exchanges. Murphy and Ensher (1999) showed that female managers were rated as providing higher quality LMX than male managers. And finally, works conducted by Pelled and Xin (2000) or Varma and Stroh (2001) found a positive relationship between sex similarity of the dyads and quality of LMX. But the need for works in this area remains (Goertzen & Fritz, 2004; Vecchio & Brazil, 2007). For this reason, the objective of this study is providing with empirical evidence on the demographic role in the development of quality LMX, specifically considering the role played by gender of the dyads and teams.

We briefly summarize our contributions on exploring the relationship between relational demography and quality of LMX at the dyad and the team level, offering added evidence about the similarity-attraction paradigm and LMX. And secondly, the contribution is the analysis of the gender role in the LMX relationships, in order to make clearer what the role of the leader or subordinate gender in the development of quality of LMXs and team composition is.

## **2. ANTECEDENTS OF LMX: similarity demography**

### **At the dyad level**

The exchange relationships between leaders and subordinates are explained under social exchange theory (Blau, 1964; Emerson, 1976). Following this framework, human behaviour and social interaction could be conceptualized as tangible or intangible exchange activities between individuals (Homans, 1961). Under this approach, it is assumed that there is an exchange process between two individuals -leader/member, and such process is characterized by reciprocity. Both

individuals establish and maintain relationships based on the potential benefits which those relationships could carry out to themselves.

The relationship-building model described by Uhl-Bien, Graen and Scandura (2000) help us to better understanding about how quality of leader-member relationships is developed. This model identified the importance of generating more high-quality relationships within organizations and described a process for how these may be realized in practice. They described the relationship as a process of dyadic partnership building (leadership making model) (Graen & Uhl-Bien, 1991; Uhl-Bien & Graen, 1993a). The process for Leadership Making is conceptualized in terms of a life cycle of leadership relationship maturity, beginning with a “stranger” phase (low LMX) –in which individuals come together as strangers occupying organizational roles, and ending with a “mature partnership” exchanges (high LMX) –in which individuals can count on each other for loyalty and support.

The process starts with two individuals experiencing an interaction or a exchange sequence. The outcomes of initial testing sequences cause the individuals to formulate perceptions, attributions, and attitudes about the other individual and the potential relationship (Liden, Wayne & Stilwell, 1993). Reactions and evaluations of the interactions build expectations and influence behaviors exhibited by the individuals in subsequent interactions (Wayne & Ferris, 1990). Quality of LMXs is the result of the interaction success or failure between the members. However, it seems that interactions between leader-member arise as the most important element for success in the process. In this sense, scholars wonder if organizations or leaders could find some way to promote or facilitate the interactions between leaders and members.

Although the whole exchange process is important to develop final high quality relationships between leaders and members, the present is interested on what the factors determining the interactions are. In this sense, interpersonal attraction seems to be most likely to influence the initial interaction. Dienesch and Liden (1986) in their oriented developmental model of LMXs, argued that leaders and subordinates both possess unique personal characteristics that shape their initial interaction. They argued that the mutual affection the leader and member have for each other is based primarily on interpersonal attraction.

To explain interpersonal attraction effects, examination of similarity between individuals in organizations has been theorized as being critical to understanding organizational behaviour (Schneider, 1987). Similarity between supervisors and subordinates on individual characteristics as age, race, sex, education, and tenure may help to understand the interactions between two individuals and therefore, to better understanding of the development of quality LMXs.

There is a high amount of research on the similarity-attraction paradigm (Harrison, 1976). That research provided key evidence on the strong association between similarity and interpersonal attraction. The similarity-attraction framework suggests that people are attracted to and prefer to spend time with others who hold attitudes that are similar to their own. Under this logic, it has been suggested that people who have demographic similarities presume that their attitudes are also similar and, therefore, are more likely to be more attracted to one another than people who are demographically different from them (Tsui & O'Reilly, 1989).

Research to explain the effects of demographic similarity has been conducted, for instance, by Glaman, Jones and Rozelle (1996). They found that demographically similar coworkers liked and preferred to work with each other more than with coworkers who were demographically different. Zenger and Lawrence (1989) or Lincoln and Miller (1979) examined interpersonal attraction and demographic similarity with the more frequent communication. And O'Reilly, Caldwell & Barnett (1989), found that demographic similarity was positive related to more positive affect and commitment. Demographic similarity is negatively related to turnover within the work group (Jackson et al., 1991). But one of the most robust findings from the relational demography literature is that people who are more dissimilar to a group are more likely to express lower commitment and affect and are more likely to leave (Williams & O'Reilly, 1998).

Specifically, work on demography and leader/member relationships has shown that it is significantly related to supervisors' ratings of the degree to which they liked a subordinate and the extent to which they felt that the subordinate had met role and responsibility expectations. By other hand, demographic similarity between leader-member has been found a positive predictor of subordinate job satisfaction and job performance rating (Turban & Jones, 1988). All of these works taken together suggest that demographic similarity play an important role in the development of LMXs.

It seems clear that demographic similarity enhances attraction (Byrne, 1971) and increases the frequency and quality of interaction (Tsui & O'Reilly, 1989) between individuals, in such a way that individuals of the same age or sex are more likely to associate with one another and interact more frequently. Similarity also suggests shared experiences and values, which further facilitate interaction (Byrne, 1971). Indeed, demographic similarity may facilitate the development of high quality of LMX by increasing interpersonal liking and reducing role ambiguity (Tsui & O'Reilly, 1989). For all of this, we proposed the following set of hypotheses:

*H1: Dyad demographic similarity, -such in age, study level and gender, is positively related to high quality of LMX.*

### **At the team level**

As noted Vecchio and Brazil (2007), more research is needed in order to clarify the potential contribution of demography on quality LMX beyond an individual perspective. In this sense, research examining the separate dynamics associated with group-level analyses is needed.

The concept of organizational demography refers to the composition of a group in terms of the distribution of attributes such as age, gender, tenure, race, education, and so on among potential noninteracting members (Pfeffer, 1983). Tsui and O'Reilly (1989) proposed that knowing the comparative similarity or dissimilarity in given demographic attributes of a superior and a subordinate or of the members of an interacting work team may provide additional information about the members' characteristics attitudes and behaviors and, insight into the process through which demography affects job outcomes.

Specifically, the effects of gender composition in work groups have received empirical attention. For instance, Ely (1994, 1995) found that a higher proportion of female partners in a law firm influenced beliefs and attitudes among female associates. Women in more male dominated firms experienced more conflict among women. Organizational commitment and intention to stay were negatively related to dissimilarity from the team with respect to gender, and absence was

positively related (Tsui, Egan & O'Reilly, 1992). The effects of dissimilarity were stronger for men than for women.

A work group's sex composition may also influence how cooperative members are within the group (Chatman & O'Reilly, 2004). Following the logic of similarity-attraction paradigm, Chatman and O'Reilly (2004) expected that men were attracted to work groups with more men, while women were attracted to groups with more women. They suggested that men and women were likely to react differently depending on whether their work groups consist exclusively of members of their own sex, or more or less balanced numbers of men and women. Baugh and Graen (1997) suggested that variability in gender composition may have negative effects on both men and women, founding that there were not differences in quality of team leader relationships among the members of teams homogeneous on gender.

Research on demography similarity at individual or dyad level, has shown that the similarity on age, gender or study level provide of a higher interactions and frequency of communication between them (Lincoln & Miller, 1979; Tsui & O'Reilly, 1989; Zenger & Lawrence, 1989). At the team level, and translating our arguments for attraction-similarity from the dyad level at the team level, we can think that when a team is homogeneous in age, gender or study level, the interactions between each dyad of the team will be higher and could provide higher number of high quality of LMX. Teams where the majority or all dyads are homogeneous in demographic variables as, age, gender or study level, will positively related to high quality of LMX.

For that reason we proposed the following hypothesis:

*H2: Similarity demographic diversity in a team is related to the number of high quality of LMX, in such a way that homogeneous demographic team could bring higher number of high quality of LMX and heterogeneous demographic team bring lower number of high quality of LMX.*

At this point, we have argued that when a dyad or team is homogeneous in gender or age, it is positively related to the number of high quality LMXs. But we wonder if homogeneity or heterogeneity demography of the team members could affect to the whole team, in such a way

that a higher or lower diversity bring a higher homogeneity in the total amount of LMXs of each team.

Vertical Dyad linkage research discovered differentiated dyads in the unit work (Dansereau et al., 1975). Then, it is logical and known (Sherony & Green, 2002; Seers, 1989) to think that leaders develop differentiated dyads relationships within a team. The study of LMXs in a team has been difficult and few explored, due to the dyad approach taken for the majority of the studies. In this sense, our study walks one step further and proposes also study the LMX differentiation inside the team.

Taking into account that homogeneity demography diversity could be positively related to a higher number of high quality of LMXs in a team, we specifically propose that the relationships developed in a team could be the same, it is to say, all of them could be high or low quality LMX. If all the relationships within a team have the same quality, teams will be low LMX differentiated, then:

*H3: Homogeneous demographic diversity in a team –such in age, gender or study level, is positively related to lower LMX differentiation*

### **3. GENDER ROLE: Exploring effects.**

The increase in female leaders has been accompanied by changes in theories and practices of leadership. Contemporary views of good leadership encourage teamwork and collaboration and emphasize the ability to empower, support, and engage workers (Goleman, Boyatzis & McKee, 2002). These contemporary approaches to leadership not only recommend a reduction in hierarchy but also place the leader more in the role of coach or teacher than previous models of leadership (Kanter, 1997). This line of research agree with the development of mature relationships between leader-member. And in this sense, there is some work that recognizes that female leaders have an advantage over male leaders. For example, Rosener (1995) labeled women's leadership as interactive, involving collaboration and empowerment of employees, and men's leadership as command-and-control, involving the assertion of authority and the accumulation of power.

Leadership research prior to 1990, with a laboratory studies conducted as experiments on group process with students, found that women, more than men, manifested relatively interpersonally oriented and democratic styles, and men, more than women, manifested relatively task-oriented and autocratic styles. In contrast, studies in organizational studies, did not find too many differences in the tendency to manifest interpersonally oriented and task-oriented styles between male and female managers. However, women also manifest somewhat more democratic style and a less autocratic style than men did. In this sense, Eagly and Johnson (1990) concluded that gender-stereotypic sex differences were less frequent in organizational studies than in other types of studies because male and female managers were selected by similar criteria and subjected to similar organizational socialization (forces that tend to equalize the sexes).

By other hand, transformational leadership literature recognized that transformational leadership entails establishing oneself as a role model by gaining followers' trust and confidence. By mentoring and empowering followers, such leaders help followers to develop their potential and thus to contribute more effectively to their organization (Bass, 1985). Research in this area has argued that transformational leadership might be particularly advantageous to women because of its qualities (Yoder, 2001). Eagly, Johannesen-Schmidt, and van Engen (2003) revealed that female leaders were more transformational, female leaders were engaged in more of the contingent reward behaviors. Then, transformational leadership may be especially advantageous for women because it involves some behaviors that are consistent with the female gender role's demand for supportive, and considerate behaviors.

Stereotypes about women are prescriptive as well as descriptive. A study conducted by Heilman and Chen, (2005) examined how gender role prescriptions can affect reactions to women as compared with reactions to men in work settings, with a special altruism behaviour role focus. Being a helper is central to female gender stereotype prescriptions, which dictate that women be nurturing and socially oriented (communal) rather than competitive and achievement oriented (agentic) (Eagly & Mladinic, 1989, Heilman, 2001; Heilman, Block & Martell, 1995). Behaviors described as appropriate for women involve supportiveness and being concerned about the well-being of others. These prescribed women behaviors create expectations on the part of others

about how women are likely to behave. It is argued that women, will engage in altruistic citizenship behaviour, and not avoid it (Heilman and Chen, 2005). Related to the extent that risk-taking is relevant to leadership, it is also notable the sex difference in the tendency to take risks for female leaders, -lower than men (Byrnes, Miller & Schafer, 1999).

Leader-Member Exchange (LMX) theory supports the idea that it is the leaders who are responsible for leadership and action to be taken as well as decision-making in relation to policies and procedures in the organization. As such, they are, then, key members in building their subordinates' perceptions on their work environment (Kozlowsky and Doherty, 1989).

All of the mentioned above make us think that women could have an advantage to exhibit appropriate behaviors to develop high quality of LMX relationships. The female stereotype behaviors prescriptions like being supportive, communal, cooperative, democratic management styles, seems support the idea that it could be easier to develop higher number of high quality of LMX for women leaders than for men. But following LMX and social exchange theory (Blau, 1964), it is known that LMXs is based on the interactions between two persons, then one could wonder who is more decisive to develop high LMXs?, Could it be the leader?, or the subordinate?. Research has shown that it could be easier for women being a leader develop higher LMXs (Heilman & Chein, 2005; Yoder, 2001), but what does happen from a subordinate position, could women develop higher LMXs?. The stereotype about women could be the same for a follower than for a leader. When leader and subordinate achieve matures relationships of LMX, female members could be more helper, supportive and considerate, and those behaviors could bring higher maintenance of high quality of LMX.

For that reason, we propose the following hypothesis:

*H4: Gender subordinate will be related to the quality of LMX, in such a way that women subordinates will report higher quality of LMXs, regardless gender leader.*

Taking into the account the idea that the leader of a team could be a determinant element for the group composition, -because he/she has usually the final decision about recruitment and selection-, and following similarity-attraction paradigm (Harrison, 1976), it could be logical to think that leaders will form their teams according their own preferences, in such a way that women leaders could prefer women members, and male leaders could prefer male members. Literature (Ibarra, 1992) showed that women were more likely than men to differentiate their networks, choosing women as friends but choosing men to gain access to instrumental rewards. Men evidenced no such distinction in their relationships, preferring relationships with men for both their instrumental and social support needs.

Then it is not clear if women will prefer form their teams with women or men, and vice verse. For that reason, we'll propose a hypothesis for the effect of leader gender on the sex team composition, and we will explore the specific effects on the sex team composition, not asserting the direction of the hypothesis.

Then, we propose that:

*H5: The leader gender will be related to demographic composition team.*

#### **4. METHOD**

##### *Sample and respondents*

For this study our population consisted of research and development teams. The institutions which house these research teams are funded by the Spanish Research Council (CSIC) and different universities. Specifically, this study was conducted in the national biomedicine research area. We began by meeting with the director of one of these institutions in order to understand how these teams work. We then conducted phone interviews with each team leader in order to establish the team's willingness to participate in this study.

We sent separate questionnaires to leaders and to team members. The team member's questionnaire included items measuring Leader-Member Exchange, In the leader's questionnaire were items measuring, leader-member exchange (leaders version), and demography information about all the team members. Questionnaires were administered via mail. We received 532 questionnaires responses. These represented 105 complete teams: two teams with around 75-95% of team member's responses, and 7 teams with member's response rates around 65-75%. The team sizes ranged from 3 to 17 members. We also could fit 410 dyads (leader-member). Related to team leaders, 79 percent were male, the average age for men and women ranged between 48 to 53 years. Related to team members, 33.58 percent were men and the average time with the current team was 37.17 months (s.d= .24) and the average age for them was around 30 years.

Translation. In order to translate the items of the questionnaires, we followed the method of the back translation, which has been used in a wide number of cross cultural leadership studies (e.g., Zagorsek, et al., 2004; Ensari & Murphy, 2003). The original items were in English, they were translated into Spanish and then back translated into English by a professional translator to ensure equivalence. All the items of the questionnaire were in Spanish.

### *Measures*

**LMX.** Leader member exchange relationships were measured using LMX-7 (Graen & Uhl-Bien, 1995). The LMX-7 consists of seven items that characterize various aspects of the relationship between supervisor and subordinate, including trust, support and mutual respect. Sample items include: "how well does your leader understand your job problems and needs?" or "Regardless of how much formal authority he/she built into his/her position, what are the chances that your leader would use his/her power to help you solve problems in your work?" Managers completed a mirror version of the LMX-7 that asked them to think of their relationship with the subordinate. Sample items include: "how well does this subordinate understand your job problems and needs?". The CFA conducted showed a quite good fit of the data (Bentler, 1990), ( $\chi^2= 12.9$ ,  $df(7)$ ; RMSEA= 0.04; CFI= .99; GFI= .99). Cronbach's alpha for this scale was 0.89.

**LMX differentiation:** Understanding LMX differentiation as the standard deviation of LMX scores in a team.

**Team diversity.** Following the approach made by Jehn & Bezrukova (2004) and originally suggested by Ancona and Caldwell (1992) and Teachman (1980), we used the entropy index to measure how group members are distributed across the possible categories of a diversity variable.

Empirical formula: 
$$-\sum_{i=1}^s P_i (\ln P_i)$$

Where  $P$  represents the fractional share of team members assigned to a particular grouping within a given characteristic and  $i$  is the number of different categories represented on a team (Ancona & Caldwell, 1992). Gender: Female = 0, Male= 1. Level of Education: Some school= 1, High/trade school graduate= 2, Courses beyond high school= 3, College courses but no degree= 4, Bachelor degree= 5, Postgraduate courses but no degree= 6, Master's degree= 7, Doctorate degree= 8. Age: 1=>20, 2=21>25, 3=26>30, 4=31>35, 5=36>40, 6=41>45, 7=46>50, 8=51>55, 9=56>60, 10=>60.

Entropy diversity index (Teachman, 1980) is measuring how group members are distributed across some categories of a diversity variable. The present was interested in the analysis of an index measuring same demography variables in conjunction to analyse how homogeneous or heterogeneous demography were teams. For that reason we calculated an index measuring how entropy indexes (age, gender or study level) were distributed inside each team.

**Demographic variables.** Age, study level and gender dyad similarity were a dichotomy variables, being 1= similarity and 0= no similarity; Subordinate and leader gender were 1= female and 0= male.

## 5. RESULTS & ANALYSIS

We used multiple and hierarchical regressions to test our hypothesis. Table 1 and 2 presents the summary statistics, and correlations among the constructs for both level analysis (dyads and teams).

Related to H1, we conducted a multiple regression. The results (Table 3) showed that H1 is supported for study level and gender dyad similarity variables, but not for age dyad similarity. When there is similarity in study level and gender ( $X = 1$ ) there is a positive relationship to quality LMX. The coefficients are statistically significant, as F change it is as well. Then H1 is partially supported.

**Table 1. Descriptive Statistics. Dyad level (n=410)**

Variables	Mean	SD	1	2	3	4	5	6
1. Leader_gender	1.2	0.4	1					
2. Subordinate_gender	1.56	0.49	<b>.106*</b>	1				
3. Similarity_gender	1.49	0.50	<b>-.157**</b>	<b>.601**</b>	1			
4. Similarity_age	1.93	0.24	.081	-.030	-.064	1		
5. Similarity_StudyLevel	1.62	0.48	.047	<b>.121*</b>	.049	<b>.011*</b>	1	
6. LMX	3.72	0.73	.068	-.036	-.095	-.063	<b>-.153**</b>	1

p<.01\*\*; p<.05\*

**Table 2. Descriptive Statistics. Team level (n=105)**

Variables	Mean	SD	1	2	3	4	5	6	7	8
1. Tenure	-----	-----	1							
2. StudyLevel_Diversity	.75	.25	.042	1						
3. Gender_Diversity	.53	.22	.188	.031	1					
4. Age_Diversity	1.09	.30	<b>.236*</b>	-.044	<b>.284**</b>	1				
5. Diversity_Index	.60	.12	<b>.510**</b>	<b>.349**</b>	<b>.548**</b>	<b>.656**</b>	1			
6. Number_High_Lmx	3.07	1.67	<b>.284**</b>	.036	.151	<b>.390**</b>	<b>.425**</b>	1		
7. LMX_differentiation	.58	.30	.001	.124	-.050	.007	-.004	-.131	1	
8. Leader_gender	1.21	.41	-.090	.174	<b>-.375**</b>	-.200	-.165	.005	-.060	1

p<.01\*\*; p<.05\*

We explored the interactions effects between demographic variables in order to find a behavior pattern to describe the influence of demographic variables on LMX relationships. The finded plots through a univariate analysis of variance showed that it seems there is one significant interaction, between study level dyad similarity and gender dyad similarity. Profile plot is shown in figure 1.

**Table 3.**  
Regressions at the dyad level analysis (H1 & H4)<sup>a</sup>.

	<b>MODEL A (H1)</b>		<b>MODEL B (H4)</b>	
	$\beta$		$\beta$	
Step 1				
Age dyad similarity	<b>.057</b>			
Study level dyad similarity	<b>.121**</b>			
Gender dyad similarity	<b>.102*</b>			
Subordinate gender			<b>-.08+</b>	<b>-.112*</b>
Leader gender			<b>.07</b>	<b>-.035</b>
Step 2				
Subordinate gender X leader gender (Interaction term)				<b>.137+</b>
R <sup>2</sup>	.023		.007	.011
$\Delta F$	4.21**		2.76+	3.23*

<sup>a</sup>n= 410; Standard Coefficients. Adjusted R Square. Dependent Variable: LMX.

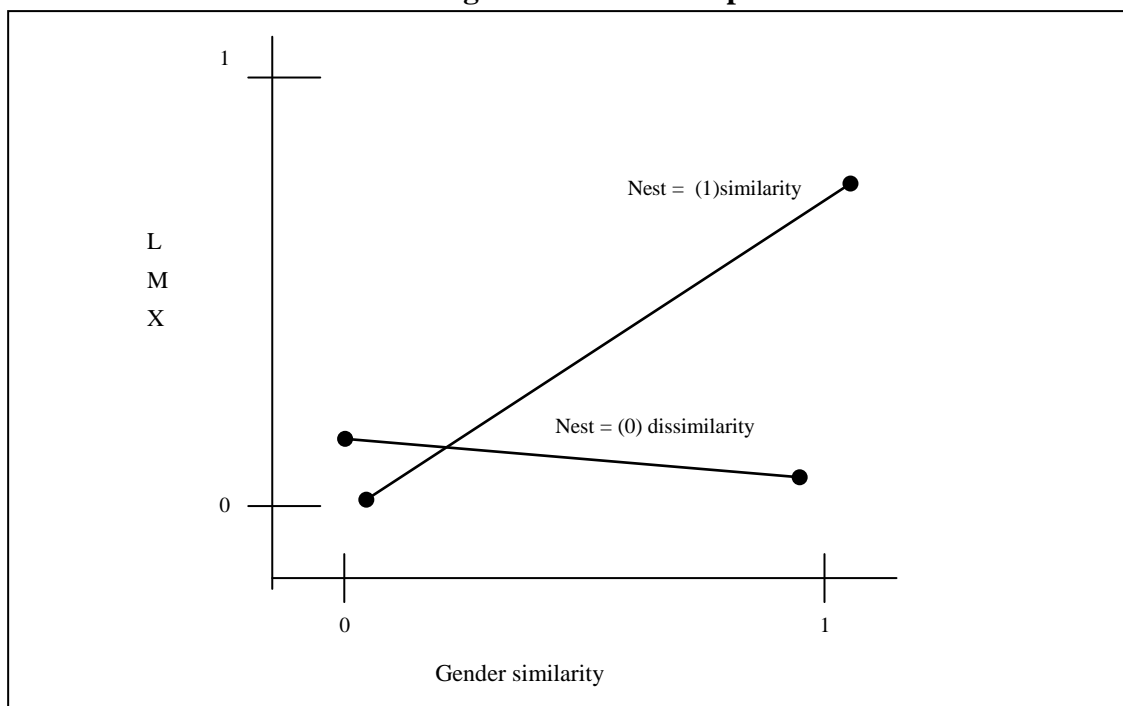
\*\*p<.01; \*p<.05; +p<.09

The profile plot (Figure 1) seems to confirm our hypothesis about the effect of similarity demographic of the dyads, both level study and gender similarity is related to quality LMX. But it also shows that there is an interaction effect of dyad study level. The points of study level

similarity or dissimilarity when there is gender dissimilarity, do not appear significantly different. The interaction is occurring at similarity in study level when there is similarity in gender. To find a high LMX it should be dyad similarity in level study and dyad similarity in gender. What it means that when there is dissimilarity in gender, the study level is not important for high LMX, but when there is similarity in gender, then, study level should be similarity to get high LMX.

To test H4 (at dyad level as well), we used hierarchical regressions. In a first step, we introduced member and leader gender, as main variables, and in a second step, the interaction term leader and subordinate gender. It can be seen in table 3, model B, that results not supported the Hypothesis 4. The team member gender affect to LMX relationships but not in the expected direction. In this case, if subordinate is female ( $X=1$ ), quality in LMX is lower, affecting negatively. After this finding, we explored for leader gender interaction, and we found that if leader is also female (with the interaction term), that affects positively to quality of LMX. Our findings at this point, support the idea about similarity in dyad gender, but not for a key effect of gender subordinate on quality LMX.

**Figure 1. Interaction plot.**



Relating testing H2, H3 & H5, we also used multiple and hierarchical regressions. But in those cases, our variables were calculated at the team level. Related to H2, the results (table 4) supported the hypothesis. We can see that H2 is fully supported (entropy diversity Index coefficient is statistically significant after control for team members tenure), while we did not find support to H3. Related to H2, when entropy index is =1, the team is demographically more heterogeneous, then, the negative sign confirms that if the index is = 1, the relationship with high number of high LMX relationships in a team is negative.

**Table 4.**  
Regressions at the team level analysis (H2 & H3)<sup>a</sup>.

	MODEL C (H2)		MODEL D (H3)	
	$\beta$	$\beta$	$\beta$	$\beta$
Step 1: Control variables				
Tenure	.299**	.111	-.028	-.035
Step 2: Main Variables				
Index entropy diversity		-.368**		.014
R <sup>2</sup>	.08	.173	-.01	-.02
$\Delta F$	9.42**	11.74**	.07	.01

<sup>a</sup>n= 105; Standard Coefficients. Adjusted R Square. Dependent Variable for Model C: number high LMX.; For Model D: LMX differentiation.

\*\*p<.01; \*p<.05; +p<.09

Finally, to test H5, we also used multiple regressions, and we found support for the idea that leader gender affect to team diversity composition, for level study composition, and in a stronger way to gender and age team composition. Specifically, it seems that when leader is female (X=1) the team study level diversity will be higher, the team gender diversity and team age diversity will be lower. Then H5 is fully supported (Table 5).

**Table 5.**

Regressions at the team level analysis (H5)<sup>a</sup>.

	MODEL 1	MODEL 2	MODEL 3
	$\beta$	$\beta$	$\beta$
Leader_Gender	.184+	-.37**	-.20*
R <sup>2</sup>	.02	.13	.02
$\Delta F$	3.08+	14.2**	3.6*

<sup>a</sup>n= 105; Standard Coefficients. Adjusted R Square. Dependent Variable for Model 1: Team Study level diversity; ; For Model 2: Team gender diversity; For Model 3: Team age diversity.

\*\*p<.01; \*p<.05; +p<.09

## 6. DISCUSSION AND CONCLUSIONS.

The bulk of the prior evidence suggests that quality of the relationship between superior and subordinate is affected by similarity demography variables as age, study level or gender, in a dyad. But the demographic similarity had inconsistently predicted quality in LMX (George & Fritz, 2004). Surprisingly, the more robust finding showed in similarity demography literature is about dissimilarity. It is, when there is dissimilarity in demographic variables, there is low quality in LMX. For that reason, the present is more focused on the consequences of the similarity, in order to make clear what the consequences are.

In the first place, our findings support the idea that demography similarity in a dyad is positively related to high quality of LMX. Our results show that similarity in study level and gender, bring higher LMX. Not being for the case of age dyad similarity. The reason could be in the specific variability of the dyad age variable (mean = 1.93; sd= .24) in our sample. It is, member age was highly different from leader age, and it is the same case for almost all of dyads. This is usual for our sample, in which leaders are usually older than team members.

Once we report the results for the first hypothesis, we explore for potential interactions between demography variables. What we were interested consisted of there would be a demography combination affecting quality LMX. In that sense our results showed that there was an interaction for the similarity of demographic variables and quality LMX. Specifically, when there is dissimilarity in gender, the study level is not a key element for achieve high LMX or not, because

in every case there is low LMX –that finding supports and extends the work of Bauer and Green, (1996); and Duchon et al., (1986). But when there is similarity in gender dyad, the study level should be also similar to achieve high LMX.

That is an interesting finding, because until this moment, research in demography similarity and quality LMX, had been explored the relationship as a separate demographic variables (such age, gender, background or tenure). This finding is pointing out that it could be possible that what leads a higher or lower quality of LMX is not just a single demographic variable, but a combination of same ones. For practical implications, maybe we should starting to study and exploring how to combine demography variables in order to facilitate higher quality of LMX, and by this way bring more potential benefits to the firms.

Continuing on the dyads results evidence, and relating to the role of the subordinate gender on the quality of LMX, we support the idea that gender subordinates affect to the quality of LMX. Although we found support for the H4 and female subordinate is related to quality LMX, regardless gender leader, the effect is not in the expected direction. Specifically, we predict that women subordinates report higher number of high LMX than male subordinates. But our results show that when subordinate is female, quality of LMX is lower. Then, we explored leader gender role in that relationship, and we found that if leader is also female, that affects positively to quality of LMX. At this point, our results are supporting the idea about similarity in dyad gender, but not for a key effect of gender subordinate on quality LMX.

Contributing to the research focused on exploring the potential contribution of demography on quality LMX beyond an individual or dyad perspective (Vecchio & Brazil, 2007), our investigation shows a positive relationship between similarity demography diversity (homogeneity) in a team and the higher number of high quality of LMX (Hypothesis 2). We are not considering each demographic variable separately, but we are considering that if a team is more or less homogeneous in same demographic variables in conjunction. That is a contribution to the literature because, it seems not enough that a team will be homogeneous in gender, or age to achieve higher number of high relationships of LMX, but they need to be even more homogeneous in same demographic variables at the same time, to achieve good relationships of LMX. The idea mentioned above gives also support to our own findings from the hypothesis 1, at

the dyad level, where the interaction between gender and study level similarity were needed to achieve high LMX.

Finally, our investigation supports the idea that leader gender will be related to team demographic diversity composition. In our case, we did not assert the direction of this hypothesis (H5) in a first moment, but our findings show that when leader is female, the team study level diversity will be higher, the team gender diversity and team age diversity will be lower. Then leaders prefer form their teams with homogeneity in gender and age, but more diversity for study level.

The research conducted by many diversity scholars (Bauer & Green, 1996; Duchon et al.,1986; Liden et al., 1993; Tsui & O'Reilly, 1989; Wayne et al., 1994) had pointed out that demography variables play an important role on the development of high relationships of LMX. Our research helps to the better understanding about how demography role affect to LMX relationships in two different senses. First, because one of the more robust finding from this investigation, shows that it is important to consider demographic variables in conjunction, and to analyze the potential interactions between them. Secondly, specifically extending work on gender role, founding that leader gender more than subordinate role, is more decisive to develop high quality of LMX relationships.

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