

# The relationship between LMX and performance: the mediating role of role breadth self efficacy and crafting challenging job demands

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## Abstract

This paper explores the relationship between leader-member exchange (LMX), role breadth self-efficacy (RBSE), a specific job crafting behavior such as increasing challenging job demands (ICJD) and overall work performance (OP). Thanks to a three-path mediation model, we show that RBSE and ICJD mediate sequentially the relationship between LMX and OP. This result contributes to research on LMX by showing that its positive effect on work performance depends on its influence on both motivational and behavioral variables. It is also shown that the influence of self-efficacy on performance becomes significant only when it is translated into specific proactive behaviors. Finally, this paper also contributes to current job crafting literature by providing evidence about job crafting antecedents and outcomes.

**Key words:** Proactivity, Job crafting, LMX

## 1. Introduction

Leader-member exchange (LMX) theory shows that leaders develop different kinds of relationships with their followers. The nature of these relationships influences attitudes and behaviors of both leaders and members (Graen,

Scandura, 1987; Graen, Uhl-Bien, 1995; Liden, Sparrowe, Wayne, 1997). Over time our knowledge about the effects of dyadic partnerships, systems of interdependent dyadic relationships (Graen, Uhl-Bien, 1995), and LMX differentiation (Liden, Erdogan, Wayne, Sparrowe, 2006) increased progressively. However, processes likely to be relevant to the relationship between LMX and work performance are still largely unexplored (Chen, Lam, Zhong, 2007; Moss, Sanchez, Brumbaugh, Borkowski, 2009; Walumbwa, Cropanzano, Goldman, 2011). In particular, even though LMX theory generally recognizes that a high level of LMX may facilitate proactive behaviors, just a limited number of research contributions tried to study the connection between LMX and proactivity (Janssen, Van Yperen, 2004; Scott, Bruce, 1994; Tierney, Farmer, Graen, 1999; Van Dyne, Jehn, Cummings, 2002; Van Dyne, Kamdar, Joireman, 2008). With a few exceptions (Moss, Sanchez, Brumbaugh, Borkowski, 2009; Walumbwa, Cropanzano, Hartnell, 2009), and the same is true for the mediating role of proactive behaviors between LMX and job performance. In this paper we try to help filling this literature gap by answering the following question: how LMX leads to work performance improvement? In order to do so, we also focused on other variables that have been so far neglected by available research contributions such as self-efficacy and the JD-R (job demands - job resources) job crafting model.

Building upon LMX theory, self-efficacy literature and the JD-R (Job Demands – Resource) job crafting model, in this contribution we test a three-path mediation model (Hayes, 2013; Hayes, Preacher, Myers, 2008). We hypothesize that a better relationship with the supervisor (higher LMX) will increase worker's role breadth self-efficacy (RBSE) which, in turn, will increase some specific job crafting initiatives (increasing challenging job demands - ICJD) and, finally, will improve the worker's overall performance (OP). The rationale for our model is the following.

For several decades, research repeatedly found that a high level of LMX improves work performance. As showed by Social Exchange Theory, the existence of this effect depends on favorable reciprocal exchanges between leader and member (Volmer, Niessen, Spurk, Linz, Abele, 2011). A good leader-member relationship allows the latter to receive more resources, wider responsibility, more autonomy, trust and support. Also, he will be induced to reciprocate through increased effort. All these elements lead to improved performance. However, as observed by Walumbwa and colleagues (2011), while Social Exchange Theory explain “why” workers may be motivated to devote more effort, it is still unexplained “how” workers are able to obtain better performance. The same authors identify in self-efficacy literature an opportunity to better understand the dynamics through which higher LMX leads to better performance. Building on such premises, authors conclude that these two research streams, once combined, may help understanding the LMX-performance relationship. In our view, such a conceptual framework can be fruitfully extended even more by referring to the literature about proactivity. We propose that proactivity constructs can help us identifying what specific behaviors and initiatives may positively affect performance when a good leader-member relationship is present.

In our study, we concentrate on a specific type of proactive behavior such as job crafting, with a specific focus on initiatives aimed at increasing challenging job demands (ICJD). There are several reasons for such approach.

First, an increasing number of authors emphasize the relevance of job crafting as a bottom-up job redesign approach, especially because of the possible consequences on individual performances (Bakker, Tims, Derks, 2012; Tims, Bakker, Derks, Van Rhenen, 2013). At the same time, some authors speculate that some personal characteristics, including self-efficacy (Tims, Bakker, 2010), may influence job crafting behavior, even though we still don't have empirical evidence of this effect. Also, a small number of research contributions show that a good relationship with the supervisor may play an important role in facilitating bottom-up job redesign processes, but attention has been paid only to formal work re-design, based on explicit negotiations between workers and supervisors – i.e. task i-deals (Hornung, Rousseau, Glaser, 2009). We currently have no empirical research about the mechanisms by which LMX may facilitate informal bottom-up job redesign initiatives. By focusing on ICJD we try to help filling this gap. This proactivity form implies adding tasks to one's job. Thus, its focus is on those tacit, informal, bottom-up initiatives aimed at generating "physical changes" in one's work (Berg, Grant, Johnson, 2010). On the contrary, other proactivity forms are usually oriented toward the organization (Griffin, Neal, Parker, 2007), while other job crafting behaviors are aimed at changing either the job resources or the cognitive and/or relational aspects of one's work, but not the nature of tasks and their actual, concrete content.

Thus, our paper contributes to current research in two ways. First, we aim at clarifying the processes through which a good leader-member relationship (high LMX) increases work performance, both by showing the relevance of motivational and behavioral aspects, and by emphasizing the significance of bottom-up job redesign initiatives. Second, we aim at contributing to job crafting literature by providing evidence about job crafting antecedents and outcomes.

## **2. Theory and Hypotheses**

### ***2.1 The relationship between LMX and job performance***

There is a widespread consensus in literature about the fact that work performance is influenced by LMX in a variety of ways. A significant number of scholars focused their attention on member performance as an antecedent of LMX (Bauer, Green, 1996; Dansereau, Graen, Haga, 1975; Liden, Graen, 1980; Liden, Wayne, Stilwell, 1993; Scandura, Graen, 1984; Scandura, Graen, Novak, 1986; Wayne, Ferris, 1990). Trust, delegation and the assignment of increased responsibility by the leader are "a reward for performance" and occur "after that member is seen as performing well" (Bauer, Green, 1996, p. 1560). Other

scholars focused instead on performance as an outcome of a good leader / member relationship (Bauer, Erdogan, Liden, Wayne, 2006; DeIVecchio, 1998; Walumbwa, Mayer, Wang, Wang, Workman, Christensen, 2011; Zhang, Wang, Shi, 2012). According to such perspective, a high quality relationship gives the member more opportunities to receive support from the leader, thereby multiplying the possibilities to utilize work resources, to receive better assignments, more feedback, more encouragements, clearer information, more prizes and career opportunities (Graen, Uhl-Bien, 1995). The combination of these elements, in turns, generates a sense of obligation and motivates workers to reciprocate the received trust with increased effort, commitment, energy, even beyond the employment contract (Wayne, Shore, Liden, 1997). Recently, several authors specifically investigated the connection between LMX and job performance, and showed that a high LMX may improve job performance in various ways - e.g., by changing the member's attribution about the nature of supervisors' coaching (other-focused interests versus self-focused interests) (Walumbwa, Cropanzano, Hartnell, 2009); by increasing the member's self-efficacy and his commitment to the supervisor (Walumbwa, Cropanzano, Goldman, 2011); by promoting the emergence of informal leaders within the team (Zhang, Waldman, Wang, 2012); by generating a better allocation of resources (i. e. empowerment and job assignments) and resource development (i.e. obligation and norms) (Goh, Wasko, 2012).

Research also shows that LMX may improve work performance by encouraging some proactive behaviors – e.g., by stimulating employees to define their job breadth close to or beyond the level of his/her supervisor's expectation (Hsiung, Tsai, 2009), by facilitating voluntary learning behavior (Walumbwa, Cropanzano, Hartnell, 2009), or by inhibiting feedback avoidance behavior (Moss, Sanchez, Brumbaugh, Borkowski, 2009). Overall, based on the existing literature, we predict that:

*H1 There is a positive association between LMX and job performance.*

## **2.2 The mediating role of role breadth self-efficacy**

Role breadth self-efficacy (RBSE) refers to one's perception to be able to perform a set of tasks that go beyond those strictly prescribed by his / her formal role (Axtell, Parker, 2003; Parker, 1998; Parker, Williams, Turner, 2006a). Such notion derives from the concept of self-efficacy introduced by Bandura (1977), which refers to one's judgment about his / her ability to execute a certain task (Bandura, 1986). There are two relevant differences between these concepts. RBSE "has a broader focus than other forms of self-efficacy that are typically concerned with a specific task or activity. RBSE focuses on a range of proactive, integrative, and interpersonal tasks that make up an expanded role – such as solving long-term problems , designing improved procedures" (Axtell, Parker,

2003, p. 114). Thus, in this respect, while self-efficacy refers to a specific task, RBSE emphasizes the concept of role and whole set of activities and responsibilities within one's own job (Parker, 1998). Furthermore, and crucially for our goals, RBSE specifically encapsulates the idea of proactivity at work (Bindl, Parker, 2010; Den Hartog, Belschak, 2012; Fuller, Marler, 2009; McAllister, Kamdar, Morrison, Turban, 2007; Parker, 2000; Parker, Collins, 2010; Strauss, Griffin, Rafferty, 2009; Tornau, Frese, 2013) as it emphasizes not only one's perception of being able to act proactively within his / her job, but also of being effective in activities that go "beyond" the boundaries of his / her current formal role. Some evidence about the relationship between LMX and self-efficacy can be found in research literature (Murphy, Ensher, 1999) Later, Schyns (2004) Walumbwa et al 2011a.

Thus, we hypothesize that a higher LMX may positively influence RBSE. Self-efficacy literature allows to explain the rationale for such hypothesis. Bandura (1977, 1986) identified four main elements upon which the development of self-efficacy is based: enactive mastery experiences, vicarious experiences (comparisons), verbal persuasions and physiological and affective state.

The most important source of self-efficacy is enactive mastery, which is about to past success experiences, as they increase confidence for future performance. Vicarious modeling refers to the idea that subjects may evaluate their own ability to deal with a certain task depending on the performance of others chosen as useful references because they are perceived as similar in terms of ability, knowledge and skills. The third source is verbal persuasion. Those receiving positive, realistic feedback and reassurance about their own performance will develop better self-efficacy than those who did not receive any feedback. Finally, arousal also increases self-efficacy. For example, a state of tension may be interpreted as a possible predictor of vulnerability or low performance. Literature shows that LMX may positively influence each one of these aspects, and improve self-efficacy.

First, by improving the worker's enactive mastery thanks to a wider and more proactive role. Indeed, one of the elements that in literature is often ascribed to a good leader / member relationship is delegation (Liden, Sparrowe, Wayne, 1997), usually described as a foundational aspect of LMX (Scandura, Graen, Novak, 1986). If, on the one hand, increased decision influence and job latitude are "incrementally and cumulatively related to LMX development" (Bauer, Green, 1996, p. 1538), on the other hand is also true that enjoying more autonomy and wider responsibilities provides more opportunities to develop mastery on more numerous and complex activities (i.e solving problems or conflicts, making improvements, setting goals, ecc.), thereby improving RBSE (Parker, 1998).

Second, LMX may influence RBSE through vicarious experiences and social persuasion. When a good leader / member relationship exists, exchanges and interactions between them increase (Kramer, 1995), as well as mutual trust (Brower, Lester, Korsgaard, Dineen, 2009). In such situation, it is more likely that the leader becomes a role model for workers (Walumbwa, Cropanzano, Goldman, 2011). Also, occasions for verbal persuasion and continuous encouragement increase as well (Schyns, 2004). Such communication may

improve RBSE not only through social support, but also thanks to a better understanding and awareness of what goals and initiatives will meet expectations (Axtell, Parker, 2003; Parker, 1998).

RBSE, in turns, may influence job performance (Parker, 2000), especially in work roles where requirements cannot be easily codified, so that personal initiative and proactivity become necessary (Griffin, Neal, Parker, 2007). Research shows that efficacy perceptions may indeed influence work-related performance in a variety of ways – for a meta-review see (Sadri, Robertson, 1993; Stajkovic, Luthans, 1998) –e.g., through decisions about whether to tackle a problem (or, more generally, to perform a certain activity), the amount of time and effort to commit, or the challenging nature of selected goals (Bandura, Locke, 2003).

For similar reasons we believe that a higher level of RBSE may lead to better work performance. Workers with higher RBSE might show more personal initiative, devote more effort and dedication in selecting and performing a set of proactive, integrative, and interpersonal tasks, with positive consequences on job performance. As a result, we predict the following:

*H2 The relation between LMX and job performance is mediated by RBSE.*

### **2.3 The mediating role of increasing challenging job demands**

As proposed by the JD-R framework, job crafting describes bottom-up initiatives aimed at changing job demands and job resources in order to achieve a better balance between job characteristics and personal needs and preferences. Job demands refer to those aspects of a worker's job that require sustained physical and/or psychological (cognitive and emotional) effort. Job resources include all the physical, psychological, social resources that allow to decrease job demands, to improve personal growth and to facilitate an effective execution of work. A worker believing that he / she doesn't have adequate resources to tackle his job will be inclined to either increase his / her structural job resources (e.g., by requesting more autonomy and decision latitude, or by developing new skills and personal abilities) or to increase his / her social job resources (e.g., asking for feedback or social support). As far as job demands are concerned, crafting initiatives may be aimed at decreasing hindering job demands (i.e., cognitive and emotional demands which create obstacles to the achievement of goals and decrease well-being and performance) or at increasing challenging job demands (ICJD) (Tims, Bakker, 2010).

The benefits of ICJD are numerous. On the one hand, by increasing their challenging job demands, workers may be able to better utilize their competences and skills, and to achieve personal goals and aspirations. On the other hand, while challenging job demands may be experienced as complex and difficult, they offer the opportunity to improve mastery and to increase satisfaction and self-efficacy (Gorgievski, Hobfoll, 2008), vigor (Lorente, Salanova, Martínez,



Schaufeli, 2008), work engagement (Bakker, Van Emmerik, Euwema, 2006; Sonnentag, 2003), excitement, passion and personal development (Berg, Dutton, 2008), positive emotion and attitude, sense of achievement and work / job motivation (Lepine, Podsakoff, Lepine, 2005), mastery, feeling of competence, satisfaction (Crawford, Lepine, Rich, 2010) and psychological well-being (De Jonge, Dollard, Dormann, Le Blanc, Houtman, 2000).

Two recent meta-analysis show that organizational commitment, job satisfaction (Podsakoff, LePine, LePine, 2007) and work engagement (Crawford, Lepine, Rich, 2010), if associated to challenging demands, may offset the negative indirect effect of strain and burnout.

For these reasons, while an extended exposure to high job demands without adequate job resources may lead to a variety of negative consequences (Bakker, Demerouti, Euwema, 2005; Fernet, Austin, Trépanier, Dussault, 2013; Schaufeli, Bakker, Van Rhenen, 2009), workers with sufficient job resources may be interested in increasing their challenging job demands (Tims, Bakker, 2010). Building on these premises, we hypothesize that a high LMX may have an influence on increasing challenging job demands in a variety of ways.

First, the leader may help the member to face job demands, and this may alleviate fatigue and exhaustion (Bakker, Demerouti, Euwema, 2005). Research shows that the quality of the relationship with the supervisor and his support are important social job resources that decrease the influence of job demands on burnout (Bakker, Demerouti, Taris, Schaufeli, Schreurs, 2003; Fernet, Austin, Trépanier, Dussault, 2013). This not only helps to preserve the necessary energy to actively tackle work challenges (Lepine, Podsakoff, Lepine, 2005), but also facilitates the development of motivation and positive states which may encourage initiative and proactive behaviors at work (Bakker, 2011).

Working in resourceful work environments, characterized by frequent feedbacks, coaching and support, may lead to positive emotions that are fundamental to develop personal resources (Xanthopoulou, Bakker, Demerouti, Schaufeli, 2012) and to stimulate initiatives aimed at pursuing greater achievements in the future (Fredrickson, 2003). Indeed, literature shows that the availability of job resources, including supervisor support, improve the engagement of workers (Hakanen, Bakker, Schaufeli, 2006; Xanthopoulou, Bakker, Demerouti, Schaufeli, 2007) and this, in turns, facilitates both dedication and efforts in new initiatives and new challenges (Hakanen, Perhoniemi, Toppinen-Tanner, 2008). At the same time, job resources improve the capacity to develop new resources, in a sort of virtuous cycle described by COR theory (Hobfoll, 1989; 2011) as gain spiral.

Also, literature shows that when a high quality LMX is present, leaders tend to push members to engage in non-routine behaviors (Graen, Cashman, 1975; Tierney, Farmer, Graen, 1999) by granting them wider decision latitude, autonomy and less severe control (Scandura, Graen, Novak, 1986). All these elements are described by job crafting research as fundamental in stimulating job crafting initiatives (Berg, Dutton, Wrzesniewski, 2013; Berg, Wrzesniewski, Dutton, 2010; Wrzesniewski, Dutton, 2001)

At the same time, literature shows that when LMX is high, members tend to reciprocate received trust, respect, obligation, loyalty, commitment (Cropanzano, Mitchell, 2005), by exerting efforts that go beyond their job contracts (Brouer, Harris, 2007; Liden, Sparrowe, Wayne, 1997) and by including new, wider and more challenging responsibilities (Liden, Graen, 1980) in their work.

It is reasonable to assume that efforts to seek further job demands lead to performance improvements. Broadly speaking, the relation between job crafting and work performance depends on how an individual chooses to craft his job (Wrzesniewski, Dutton, 2001). It is possible that the changes that one secretly makes to his / her job improve his / her performance but do not translate into an organizational performance because such changes may damage other workers or activities (Lyons, 2008). However, a good number of research contributions show evidence of a positive relationship between job crafting and job performance (Bakker, Tims, Derks, 2012; Petrou, Demerouti, Peeters, Schaufeli, Hetland, 2012; Tims, Bakker, Derks, Van Rhenen, 2013). More specifically, by crafting a more challenging job, a worker may create for himself the opportunity to execute more complex tasks, thereby promoting his personal development, adopting an active or problem solving style of coping and increasing the effort and energy devoted to his job. All these elements may lead to better work performance (Crawford, Lepine, Rich, 2010; Podsakoff, LePine, LePine, 2007). As Lepine, Podsakoff and Lepine (2005) observe, this phenomenon may be related to a well known motivational process described by expectancy theory (Vroom, 1964). Contrary to what happens with hindering demands, challenging demands may increase motivation (and performance) by strengthening the belief that there is a positive relationship between effort and the likelihood of meeting the demands (Lepine, Podsakoff, Lepine, 2005).

Thus, it is hardly surprising that subsequent research kept finding a positive relationship between ICJD and job performance through work engagement, both at the individual level (Bakker, Tims, Derks, 2012) and at the group level (Tims, Bakker, Derks, Van Rhenen, 2013). Here, we hypothesize that:

*H3 increasing challenging job demands mediates the relationship between LMX and job performance.*

In this paper we also argue that within the relationship between LMX and job performance both RBSE and ICJD play a significant role. Indeed, literature shows a close relationship between the latter two variables. On the one hand, individuals with a high level of self-efficacy are more inclined to provide their own interpretations of work situations and to intervene more actively in their environment in order to create favorable conditions for satisfying their expectations and fully utilize their abilities (Wood, Bandura, 1989) even by setting more challenging goals (Locke, Latham, 1990; Wu, Parker, 2003). On the other hand, acting proactively may constitute a risk in terms of social costs (Crant, 2000) or even punishments (Ghitulescu, 2006) for initiatives that are not consistent with formal role prescriptions. In that sense, the belief to be able to



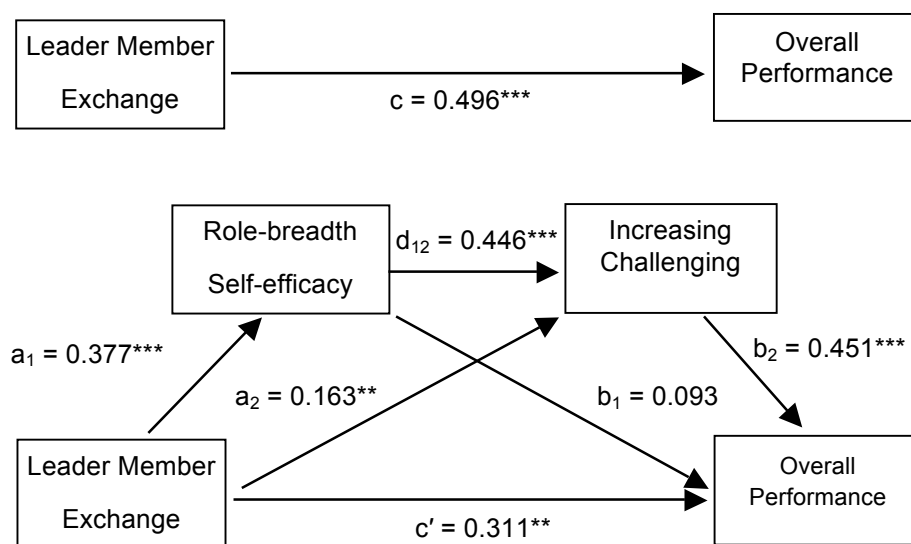
master new situations and to succeed when facing challenging goals is likely to constitute a fundamental antecedent of proactivity.

Coherently with these assumptions, authors in the proactivity literature argue (Bindl, Parker, 2010; Wu, Parker, 2003) and provide evidence (Morrison, Phelps, 1999; Speier, Frese, 1997) about the relevance of self-efficacy beliefs in facilitating proactive behaviors at work. RBSE, as a specific form of self-efficacy, may also facilitate proactivity at work. One’s belief to be able to execute tasks going beyond the prescribed technical core, may encourage actions such as suggesting improvements (Axtell, Holman, Unsworth, Wall, Waterson, Harrington, 2000), personal initiative (Ohly, Fritz, 2007), self-starting and initiative (Strauss, Griffin, Rafferty, 2009) proactive problem solving (Parker, Williams, Turner, 2006a), and other behaviors characterized by the intention to intervene in one’s work (or in one’s work environment) by proactively embracing new, more challenging activities. Building on such evidence, and consistently to Tim’s speculation on job crafting (Tims, Bakker, 2010), we argue that RBSE may encourage job crafting actions aimed at increasing challenging job demands.

If we integrate all our hypothesized relationships, it is possible to delineate a three-path mediation model (Hayes, 2013), depicted in figure 1, in which RBSE and ICJD mediate sequentially the relationship between LMX and overall job performance (OP).

*H4: The relationship between LMX and OP is sequentially mediated by RBSE and ICJD.*

**Figure 1. Three-Path Mediation Model**



### **3. Method**

#### **3.1 Sample and Procedure**

Research was conducted within an Italian Local Health Department. Such a choice is explained by the significant transformations that recently characterized these organizations, aimed at developing the managerial skills of the directors and other roles (Molinari, 2005). Several authors share the idea that the possibility to improve the performance of health care organizations depends on initiatives aimed at providing managerial and organizational skills of their personnel (Buchanan, Denyer, Jaina, Kelliher, Moore, Parry, Pilbeam, 2013). That is why we believe this is a particularly interesting context for our research. For the same reason, we decided not to limit our analysis to a specific professional group. Instead, we extended our research to all organizational positions and roles where this new logic aimed at developing managerial skills was implemented. This has led us to test our hypothesis on a variety of professional groups, which provides more solid grounds for the validity of our results.

After explaining in detail the research goals to the Director of the Department, he helped us to identify participating workers (within non managerial positions) and supervisors. Overall, we contacted and informed about the research 192 independent leader–member dyads. In those cases where more than one member shared the same leader, we picked one randomly. 170 dyads decided voluntarily to participate. Researchers then distributed to leaders and members a paper questionnaire. In order to increase the reliability of the responses, questionnaires were accompanied by a letter in which it was explicitly stated that nobody outside the research team would have access to the responses, and data would be given back to the Department in anonymous and aggregated form. After about a month 149 independent leader–member dyads filled correctly all questions. 10% of members are technical workers in non-health related jobs, 44% had administrative roles, 46% had health related roles. Age ranged from 20 to 67 ( $M = 43.71$ ;  $SD = 11.79$ ); 60% were males and mean tenure in position was 9.69 ( $SD = 10.05$ ). Because of explicit limitations that the Department required, supervisors were only asked to evaluate the performance of their collaborators (members). No other information was provided by supervisors.

#### **3.2 Measures**

As the mother tongue of all participating employees was Italian, all measuring items were translated by a professional translator. In order to verify the full

consistency with the original items, we utilized the back translation method (Brislin, Lonner, Thorndike, 1973).

*Leader member exchange* (LMX). In order to measure LMX we utilized Scandura and Graen (1984) LMX-7 scale, which is widely used in literature. Its 7 item version has excellent psychometric characteristics (Graen, Uhl-Bien, 1995). The scale was anchored on a 5-point format ranging from 1 (=strongly disagree) to 5 (= strongly agree). An example of item is the following: “I have an effective working relationship with my supervisor”. Cronbach’s alpha for this study was .93.

*Role-Breadth Self-efficacy* (RBSE) was measured through the scale proposed by Parker (1998). Although in some cases a 10 item version has been used (Axtell, Parker, 2003), in our study, similarly to other studies (Parker, Williams, Turner, 2006b), we decided to utilize a more parsimonious version by choosing the seven highest loading items from Parker’s scale. Other studies utilized smaller versions, reduced to six items (Griffin, Parker, Mason, 2010) or even three items (Strauss, Griffin, Rafferty, 2009). Employees were asked how confident they would feel about carrying out a set of tasks beyond their technical job, for example analyzing a long-term problem to find a solution. The response scale ranged from 1 (= not at all confident) to 5 (= very confident). Cronbach’s alpha for this study was .90.

*Increasing Challenging Job Demands* (ICJD). We measured ICJD through the sub-dimension job crafting scale developed by Tims, Bakker and Derks (2012). This scale is one of the most commonly used in order to measure this kind of job crafting behavior (Bakker, Tims, Derks, 2012; Tims, Bakker, Derks, 2013). It includes 5 items. The response scale ranged from 1 (= never) to 5 (= often). An example of items is the following: “I try to make my work more challenging by examining the underlying relationships between aspects of my job”. Cronbach’s alpha for this study was .79.

*Overall Performance* (OP). We measured the supervisor rating of OP through a scale developed by Motowidlo and Van Scotter (1994). It includes three items on a seven-point scale through which supervisors evaluate how the worker performs in relation to the performance standards of his / her job, both in relation to others of the same rank, and to others in the same unit or group. In other studies (Bledow, Frese, 2009) this scale showed an excellent internal consistency. Cronbach’s alpha for this study was .91.

*Control variables*. Since previous research shows that age and job tenure may influence the variables included in our study, we controlled for such variables. We also included other personal variables such as gender.

### **3.3 Analytical strategy**

Before testing our hypothesis, we verified the reliability of each measure utilized in our study. Then, we conducted confirmatory factor analyses (we used AMOS 21.0) in order to verify the validity of utilized measures by comparing the

measurement model with four competing models, described in detail in Table 2. Later, in order to estimate the indirect association of LMX with OP we adopted bootstrap procedures for serial multiple mediator model (Hayes, 2013; Hayes, Preacher, Myers, 2008). We considered such approach particularly useful for the goals of our research as it offers a rigorous method by which mediation hypotheses may be assessed, allowing to test indirect effects of each mediator. Our model (see Figure 1) consider LMX as independent variable (X), RBSE as first mediator (M1), ICJD as second mediator (M2) and OP as dependent variable (Y). Thus, we built three regression models in which each mediator and the dependent variable were each utilized as outcome. Age, Gender and Job Tenure were used as control variables in each model.

The total, direct, and indirect effects of LMX on OP were estimated by the SPSS version of the PROCESS macro (Hayes, 2013), which generates bias-corrected 95% confidence intervals for making statistical inference. A point estimate was considered significant when zero was not included between the upper (ULCI) and the lower (LLCI) bounds of the 95% bootstrap confidence intervals calculated. In our study bootstrap confidence intervals were constructed using 5000 resamples. One of the advantages of the bootstrapping procedure is that bootstrap confidence intervals better respect the irregularity of the sampling distribution, allowing more accurate inferences than when the normal theory approach is used.

#### 4. Results

In table 1 we reported means, standard deviations, and correlations of all variables.

**Table 1. Descriptive statistics and correlations of the variables**

Variab	Mean	SD	1	2	3	4	5	6	7
1 Age	43.71	11.79	-						
2 Gender	0.60	0.49	-0.25**	-					
3 Tenure	9.69	10.05	0.53**	-0.22**	-				
4 LMX	2.92	1.00	-0.35**	0.22**	-0.28**	(0.93)			
5 RBSE	3.25	0.82	0.01	0.02	0.18*	0.36**	(0.90)		
6 ICJD	3.43	0.79	-0.25**	0.17*	-0.19*	0.47**	0.51**	(0.79)	
7 OP	5.13	1.14	-0.06	0.15	-0.13	0.42**	0.31**	0.46***	(0.91)

Notes: n = 149; \*\* p < 0.01; \* p < 0.05;

Reliability estimates (Cronbach's alpha) are listed in parentheses on the diagonal.

Gender is coded as 1 = male, 0 = female.

*Source: own computations*

Each measure demonstrated strong internal reliability coefficients (αs ranging from .79 to .93).

All the variables in the model show a significant correlation. Also, tenure shows a significant correlation with age. This can be easily explained because of the specific career policies of the Health Care Department where we conducted our study.

Before testing the mediation hypothesis, we analyzed the structural validity of each scale that we utilized by performing a confirmatory factor analysis in AMOS. More specifically, we compared the four-factor model with some alternative models with three, two and one factor. In table 2 the results of CFA are reported in detail. The proposed model, with a four-factor measurement, shows acceptable indexes ( $df/\chi^2 = 1.92$ , SRMR = 0.07, RMSEA = 0.06, CFI = 0.94, TLI = 0.93) and it appears significantly better than the other four alternative measurement models, which, instead, show poor fit.

**Table 2. Fit statistics for alternative measurement models**

Model	df	$\chi^2$	$df/\chi^2$	SRMR	RMSEA	CFI	TLI
One-factor <sup>a</sup>	209	1244.35	5.95	0.18	0.19	0.50	0.44
Two-factor <sup>b</sup>	208	770.30	3.70	0.13	0.14	0.73	0.70
Three-factor <sup>c</sup> -1	206	656.41	3.19	0.11	0.13	0.78	0.75
Three-factor <sup>d</sup> -2	206	512.58	2.49	0.10	0.10	0.85	0.83
Four-factor <sup>e</sup>	203	389.85	1.92	0.07	0.06	0.94	0.93

Note: N = 149.

SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation; CFI= comparative fit index;

TLI = Tucker–Lewis index.

<sup>a</sup> All indicators load on a single factor.

<sup>b</sup> LMX and OP load on one factor, and RBSE and ICJD load on a second factor.

<sup>c</sup> LMX and OP load on one factor and RBSE and ICJD load on their respective factors.

<sup>d</sup> LMX and OP load on their respective factors and RBSE and ICJD load on one factor.

*Source: own computations*

The first regression model (table 3) shows a positive relationship between LMX and RBSE [ $a_1 = 0.377$ ,  $t(144) = 5.74$ ,  $p < 0.001$ ]. In model 2 a significant relationship between LMX and ICJD emerges [ $a_2 = 0.163$ ,  $t(143) = 2.66$ ,  $p = 0.008$ ] and between RBSE and ICJD [ $d_{12} = 0.446$ ,  $t(143) = 6.37$ ,  $p < 0.001$ ]. In the third model results show that the relationship between RBSE and OP is not significant [ $b_1 = 0.093$ ,  $t(142) = 0.74$ ,  $p = 0.459$ ], while the relationship between ICJD and OP is significant [ $b_2 = 0.451$ ,  $t(142) = 3.40$ ,  $p < 0.001$ ]. We also found



a significant direct effect of LMX on OP [ $c' = 0.311$ ,  $t(142) = 3.12$ ,  $p = 0.002$ ], even though it is definitely lower than the total effect [ $c = 0.496$ ,  $t(144) = 5.35$ ,  $p < 0.001$ ] because of mediators.

Overall, Hypothesis 1 is supported. Hypothesis 2, which states that the relationship between LMX and job performance is mediated by RBSE, is not supported. Indeed, the indirect effect of LMX on OP through RBSE (LMX  $\rightarrow$  RBSE  $\rightarrow$  OP), estimated as  $a1b1 = 0.03$  cannot be considered significant since the bootstrap confidence interval includes zero (LLCI =  $-0.065$ , ULCI =  $0.164$ ). On the contrary, Hypothesis 3, which predicted ICJD as mediator between LMX and OP, is supported. Indeed, the indirect effect of LMX on OP through ICJD (LMX  $\rightarrow$  ICJD  $\rightarrow$  OP), estimated as  $a2b2 = 0.07$ , is significantly positive (LLCI =  $0.023$ , ULCI =  $0.153$ ). Finally, Hypothesis 4 is also supported, since the indirect effect of LMX on OP through RBSE and ICJD in serial (LMX  $\rightarrow$  RBSE  $\rightarrow$  ICJD  $\rightarrow$  OP) is significantly positive ( $a1d12b2 = 0.076$ ; LLCI =  $0.024$ , ULCI =  $0.165$ ).

**Table 3. Path Coefficients and Indirect Effects for Mediation Models**

Predictors	Path Coefficients						Indirect Effect				
	Model 1		Model 2		Model 3		Effect	SE	LLC	ULC	
	Outcome = RBSE		Outcome = ICJD		Outcome = OP						
	Coeff.	SE	Coeff.	SE	Coeff.	SE					
Intercept	1.953***	.368	1,804***	.338	1,670**	.587					
Age	0.003	.006	- 0.006	.005	0.016	.008					
Gender	- 0.086	.128	0.136	.107	0.130	.172					
Job Tenure	0.024**	.007	- 0.011	.006	- 0.010	.010					
LMX	$a_1 \rightarrow$	0.377***	.066	$a_2 \rightarrow$	0.163**	.061	$c' \rightarrow$	0.311**	.099		
RBSE	-		$d_{12} \rightarrow$	0.446***	.069	$b_1 \rightarrow$	0.093	.126			
ICJD	-		-		$b_2 \rightarrow$	0.451***	.133				
Total							0.184	.083	.053	.381	
Ind 1	LMX $\rightarrow$ RBSE $\rightarrow$ OP						0.035	.057	- .065	.164	
Ind 2	LMX $\rightarrow$ ICJD $\rightarrow$ OP						0.074	.033	.023	.153	
Ind 3	LMX $\rightarrow$ RBSE $\rightarrow$ ICJD $\rightarrow$						0.076	.035	.024	.165	

Notes: N = 149. Model 1,  $R^2 = 0.22$ ,  $F(4, 144) = 10.11$ ;  $p < 0.001$ ; Model 2,  $R^2 = 0.40$ ,  $F(5, 143) = 19.22$ ;  $p < 0.001$ ; Model 3,  $R^2 = 0.29$ ,  $F(6, 142) = 9.55$ ;  $p < 0.001$ . \* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

Source: own computations

#### 4.1 Alternative analysis

Since our study is cross sectional, it is problematic to establish with certainty the causality of observed relations. Even though we justified theoretically our hypotheses, some inverted relations are also plausible. For example, it could be argued that self-efficacy might be the result of continuous initiatives aimed at increasing challenging job demands, so that the order of mediators is inverted. At the same time, some authors proposed performance as an antecedent of a good leader / member relationship. Similarly, some authors argue that self-efficacy is increased by the experience of good past performances. Thus, a serial mediation model could be hypothesized in which OP improves LMX through RBSE and ICJD. For this reason, we decided to test two alternative models. In the first one, we inverted the order of mediators (model 1: LMX → ICJD → RBSE → OP). In the second one, we inverted LMX and performance (model 2: OP → RBSE → ICJD → LMX). Neither one provided significant results, since the bias-corrected bootstrap confidence intervals include zero in both cases [model 1: effect = 0.015, LLCI = -0.027, ULCI = 0.082; model 2: effect = 0.019, LLCI = -0.004, ULCI = 0.063].

### 5. Discussion

The understanding of the relation between LMX and job performance is crucial for organizations' competitiveness. It also implies significant research challenges. Several other studies show that the development of a good leader / member relationship may improve job results (Chen, Lam, Zhong, 2007; Moss, Sanchez, Brumbaugh, Borkowski, 2009; Walumbwa, Cropanzano, Goldman, 2011). In the attempt to achieve a deeper and more comprehensive understanding of such phenomenon, we proposed a model in which both the perception of role breadth self-efficacy and a specific form of job crafting (increasing challenging job demands) mediate the relation between LMX and job performance sequentially.

Overall, we found support for our hypotheses. A higher LMX, thanks to its effect on the members' belief about their ability to perform tasks beyond their formal role, may increase their propensity to seek challenging job demands, with positive benefits on work performance. This result provides empirical evidence to the existing theoretical literature. Wood and Bandura (1989) argued that the specificity of individuals with high self-efficacy is their capacity and willingness to engage in personal initiatives, and their attempt to constantly intervene actively in the selection and change of the environments in which they operate. In this study we focused on the idea that such behaviors may result in bottom-up job re-design initiatives, with positive consequences on work performance. The relevance of this idea is strengthened and clarified by a more detailed analysis of our results.

While RBSE by itself does not mediate the relation between LMX and OP, ICJD does. Since in a post-hoc analysis we verified the absence of a non-linear relationship between these two variables (RBSE and OP), a possible explanation (consistent with our results and with the theoretical background) is that RBSE does not lead to higher OP unless it is factually translated into concrete actions aimed at increasing proactivity and, more specific, initiatives aimed at increasing challenging job demands. On the one hand, this idea emphasizes the need for an integrated model in which motivational and behavioral elements are jointly considered in order to explain the relation between LMX and performance. On the other hand, this idea also emphasizes the relevance of proactive job redesign initiatives as a “vehicle” for “translating” higher self-efficacy into actual, better performance.

This result enriches our knowledge about how LMX may activate job redesign processes that are quite different from traditional top-down and management-initiated job redesign approaches (Hackman, Oldham, 1980). This perspective has been already partially explored within the job design literature, as summarized by Hornung, Rousseau, Glaser, Angerer and Weigl (2010) through the task i-deal concept. However, the crucial difference is that job crafting describes proactive job re-design initiatives that are not necessarily negotiated with the management. Thus, while we agree that higher LMX leads to a more flexible and / or expandable zones of acceptance that job occupants and role senders define in relation to the acceptable job activities and performance, thus favoring proactive job re-design processes, our results show that such processes not always (or not necessarily) depend on formal negotiations, at least in cases in which bottom-up changes imply an increase of challenging job demands. While it is reasonable to argue that higher LMX facilitates dialogue which, in turns, facilitates negotiated changes, it is also reasonable to affirm that the very same ingredients of higher LMX (delegation, decision latitude and support climate) may nurture self-determination processes and psychological empowerment (Chen, Lam, Zhong, 2007), thereby stimulating individuals to act autonomously and proactively (Fuller, Marler, 2009; Parker, Bindl, Strauss, 2010; Zhang, Bartol, 2010) as a consequence of high success expectations (high self-efficacy).

We should also consider that other factors such as availability and trust, typical of high LMX, may decrease the fear of sanctions and disapproval for actions that are not formally prescribed, especially if such actions require more effort, dedication and commitment (as it is often the case for challenging job demands). Furthermore, by crafting their jobs tacitly rather than through explicit negotiations, employees may implement changes more flexibly (Hornung, Rousseau, Glaser, Angerer, Weigl, 2010).

We believe that our study also contributes to the current job crafting literature. One of our goals was to increase our knowledge about job crafting antecedents and outcomes. In this respect, our results help to clarify and provide evidence (as far as we know, for the first time) about the role of leaders and supervisors in the job crafting process, which many authors consider a key element of job crafting (Berg, Grant, Johnson, 2010; Berg, Wrzesniewski, Dutton, 2010; Tims, Bakker, 2010; Wrzesniewski, Dutton, 2001). Available literature repeatedly insisted that

job crafting happens in a bottom-up fashion and without a clear awareness of managers and supervisors. However, several authors also hypothesize that supervisors may play a key role in nurturing or inhibiting job crafting, even indirectly or unwillingly. In the seminal paper by Wrzesniewski and Dutton (2001, p. 195) it is argued that when managers choose to include their collaborators in “strategic conversations about what they are trying to accomplish and why”, collaborators are able to develop more opportunities and better awareness about how they could modify their own jobs in order to meet their needs, while at the same time maintaining or even improving their work performances. Almost all research contributions about job crafting emphasize the relevance of the leadership style adopted by leaders. Indeed, managers may facilitate job crafting by allowing more freedom for autonomous actions and loosening managerial control. On the contrary, when managers exercise tighter control over work activities, workers may perceive less opportunities to craft their jobs (Lyons, 2008). Our results support such claim, but they also offer another interpretive key. Indeed, it seems to emerge the idea that a high LMX may activate job crafting by enacting psychological processes such as an increase in self-efficacy. Our results are consistent with previous studies in which an association was found between self-efficacy and other forms of proactive behavior such as taking charge (Morrison, Phelps, 1999) and personal initiative (Speier, Frese, 1997). Our study also provides evidence of what Tims and Bakker (2010) speculated – that a good quality relationship with one’s supervisor may generate better opportunities to experience mastery / success at work, better communication and feedback, may ensure means consistent with the responsibilities and, by consequence, may increase the perception to be effective at tasks that go beyond the formal roles.

## 6. Managerial Implications

In this study we found that higher LMX may lead to better work performance by increasing self-efficacy and stimulating job crafting. We believe that organizations may support such process through different actions and policies involving different actors: supervisors, managers with job design and human resource management responsibilities, and workers.

Supervisors have a great deal of responsibility, as they are in the position to stimulate RBSE and ICJD in a variety of ways. Indeed, by providing more information about work to their collaborators, supervisors can improve the sense and meaning of workers’ tasks, stimulate their personal development, increase their opportunities for success experiences, enrich their decision responsibilities, create a climate of trust and recognition, encourage high expectations, self observation and self-goal setting. This appears to be particularly relevant in organizations, such as the Health Department in which our study was carried out, characterized by a tradition of relatively low emphasis on managerial skills and



orientation to goals and performance, and where an organizational and cultural change process in such directions is being developed.

Organizations should help supervisors to achieve these results. For examples, through education and training programs about leadership techniques (Aryee, Zhen Xiong, 2006; Kellerl, Dansereaul, 1995), leadership knowledge and skills (Wang, Law, Hackett, Wang, Chen, 2005), organizations could help supervisors to manage their relationships with collaborators more effectively. The awareness that a high quality leadership / member relationship may help developing bottom-up job redesign initiatives should also imply an increased effort, by the supervisors, to communicate with workers in order to influence their job crafting choices in ways that are consistent with the organizational goals. While in our study we found a positive relationship between job crafting and performance, workers might choose to craft their job just for personal advantages while, at the same time, damaging the organizational results. Thus, the way supervisors influence workers' decision premises about their job crafting choices is likely to be a crucial issue for the organizational performance.

Moreover, another element deserves attention. If a supervising style that ignores or neglects the relevance of LMX may be negative for workers' self-efficacy and autonomous initiative, what can be even more negative for workers' proactivity is the lack of discretion allowing them to craft their jobs. While our study reveals that self-efficacy may bring about higher performance through job crafting, this is not a sufficient condition for that to happen. Indeed, other job characteristics may create obstacles to job crafting. For example, Wrzesniewski and Dutton (2001) show that, besides low autonomy, also a high level of interdependence with other workers might constrain job crafting because of the possible consequences that crafted activities would have on colleagues or the whole organization. For this reason, we argue that managers with job design prerogatives may play a crucial role in encouraging or inhibiting job crafting by removing obstacles to the exercise of discretion. The literature on job landscape could provide important conceptual references in order to support managers in designing jobs characterized by the right balance between structure and freedom to enable job crafting (Berg, Dutton, Wrzesniewski, 2013).

## 7. Limits and future research

Our study is limited in various ways. First, the cross-sectional nature of data does not allow to establish with certainty the causality of relations. Even though we did test models with different orders of variables and found no support to such alternative hypotheses, only a longitudinal study would allow to fully clarify this potential limitation.

Second, we obtained performance data directly from supervisors. While the fact that we gathered data from different sources may have reduced the threat of common method variance (Podsakoff, MacKenzie, Lee, Podsakoff, 2003), a

more objective measure of performance would have been more desirable, as subjective and objective measures of performance cannot be equated (Bommer, Johnson, Rich, Podsakoff, MacKenzie, 1995). Future studies could replicate our research with more objective performance data.

Third, more attention could be devoted to contextual data. We agree with Parker (2000) when he states that while RBSE may influence positively different forms of proactivity, at the same time the consequence on performance may be significantly influenced by context. For example, in work situations that are particularly uncertain and dynamic, some forms of proactive and self-directed behavior may improve performance or even be indispensable, while in routinized contexts the non conformity to standards and prescriptions may even have a negative impact on performance. Future research could investigate whether these and other contextual factors have significant moderating effects.

Fourth, in this paper we focused on one specific job crafting behavior (increasing challenging job demands), because of the specific research goals of our study. However, we suspect that other job crafting behaviors might mediate the relationship between LMX and job performance as well, especially those aimed at increasing both social and structural job resources. According to COR theory (Hobfoll, 2001), workers with significant job resources tend to accumulate even more resources. Within the logic of the Job Demands - Resources model, we believe that a high LMX might constitute in itself a relevant job resource – or, it might contribute to make other resources available – which could motivate workers to seek further resources. And, we can also speculate that such process could have positive consequences on job performance. Further research is necessary to test these hypotheses.

Finally, we would like to emphasize the need for more research about the role that other forms of proactivity, other than job crafting, may have in mediating the relationship between LMX and performance. This is a very promising and interesting area where empirical research is still very sparse.

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