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School leadership practices of Portuguese principals: Matching perceptions of principals and teachers.

Abstract

This paper presents a study on teachers' and principals' perceptions of school leadership practices in Portuguese schools. Using the Multifactor Leadership Questionnaire, perceptions about transformational, transactional and *laissez-faire* leadership practices and its consequences on leadership outcomes (followers' extra-effort, leaders' effectiveness and followers' satisfaction with leader) were collected from representative samples of Portuguese teachers (N=21082) and principals (N=122). Results point to differences in the perceptions on leadership practices between principals and teachers: (i) teachers tended to rate principals lower than the latter rate themselves in all transformational and transactional dimensions of leadership; (ii) most teachers did not perceive a dominant leadership style in their principals, whereas most principals see themselves as predominantly transformational. Female principals are perceived as building more trust and as being more encouraging and inspirational than male leaders. In both samples, the importance of contextual variables (e.g., age, academic qualifications, schools' size) is not very marked when analysing their relation to perceptions about leadership outcomes, but for teachers, leadership practices have a higher impact on leadership outcomes than for principals. These results and their practical implications are discussed in the last sections of the article.

Keywords: Leadership practices; Leadership outcomes; Followers' and Leaders' perceptions; School leadership.

1. Introduction

Leadership research abounds (Gumus, Bellibas, Esen, & Gumus, 2018) across various fields and its relevance is well established in literature (Avolio, Walumbwa, & Weber, 2009; Madanchian, Hussein, Noordin, & Taherdoost, 2017; Zhu, Song, Zhu, & Johnson, 2018). Particularly in the educational field, the importance of leadership to the functioning and improvement of schools is unquestionable, mainly because schools tend to be loosely coupled systems (Orton & Weick, 1990; Weick & Sutcliffe, 2007; Weick, 2009). It has been shown that leadership is strongly linked to pupils' outcomes (e.g., Bloom, Lemos, Sadun, & Van Reenen, 2015; Pina, Cabral, & Alves, 2015), having a significant effect on student learning, "second only to the effects of the quality of curriculum and teachers' instruction" (Leithwood & Riehl, 2003, p. 2). Leadership definitions are usually related to the underlying conceptual model(s), and these are plentiful (Dinh et al., 2014; Lord, Day, Zaccaro, Avolio, & Eagly, 2017) - over 49 leadership theories were identified by Meuser and colleagues (2016) in management and organizational psychology journals. Day and Antonakis (2012), put forth a multifaceted definition, where leadership is seen as an influencing process that occurs between leader and followers, where the degree of influence is explained by the leader's dispositional characteristics and behaviours, by the follower's perceptions about the leader, and also by the context in which the influencing process occurs.

The main purpose of this article is to assess leaders' and followers' perceptions about leadership practices and the relation between these practices and leadership outcomes (followers' extra-effort, leader's effectiveness, and satisfaction). The study focuses on Portuguese public schools and assesses the perceptions of a representative sample of principals (leaders) and teachers (followers). To our knowledge, no study about leadership practices covering this entire country has been carried out before.

2. Literature review

2.1. Full Range Leadership Model (FRL): Transformational, Transactional and Non-Leadership styles

In the present study, we approach leadership practices framed within the ***Full Range Leadership Model*** **(FRL)** (Avolio, 2011; Bass, 1999) developed by Bernard Bass and Bruce Avolio (see Figure 1 for a schematic representation of this model). This theory has undergone several revisions, and in its most recent version the FRL includes transformational leadership and components of transactional leadership and non-leadership (Bass & Riggio, 2006).

[*Please insert Figure 1 about here*]

The theories of transformational and transactional leadership emerged in the political, business and military fields (Berkovich, 2016). Originally, Burns (1978) distinguished *transforming* and *transactional leaders* as being two different types of leaders, two poles of a continuum of leadership behaviours. On the other hand, Bass (1995) claimed that excellent leaders are both transformational and transactional: transformational behaviours augment the effect of transactional behaviours (Bass, 1999; Bass & Riggio, 2006; Leithwood & Janzi, 2005; Woods, 2007). This became known as the *augmentation effect* (Bass, 1995, p. 474), meaning that "it is the combination of both, not the exclusion of one versus the other that represents optimal leadership behaviour" (Bass & Avolio, 1990, p. 23). Indeed, as it can be seen in Figure 1, the FRL model places both transformational and transactional leadership behaviours within a continuum that goes from non-leadership to transformational leadership (Avolio, 2011; Bass, 1999). The frequency of each behaviour is what distinguishes effective from non-effective leaders: it is the most frequent display of transformational behaviours, and less of transactional behaviours that makes leaders excellent, impacting positively on their followers' engagement and organizational results (Bass & Riggio, 2006).

Zhu and colleagues (2018), in a recent review, claim that transformational leadership remains a focal model of leadership research, despite recent developments in the area (see also Bush, 2017;

Lord et al., 2017; Meuser et al., 2016 who corroborate this view). The main focus of a transformational leader is to make followers develop high levels of personal commitment towards organizational goals (Bush & Glover, 2014; Marks & Printy, 2003), by inspiring and supporting them (Bass & Avolio, 1990; Dvir, Eden, Avolio, & Shamir, 2002). They are seen as mentors, coaches and role models, who help followers to assimilate the culture of the organization (Bass & Avolio, 1993; Bass, 1995; Gumus et al., 2018).

In the educational field, there is evidence of the positive effects of transformational leadership in educational outcomes (Gumus et al., 2018; Shatzer, Caldarella, Hallam, & Brown, 2014). Transformational leadership is considered to increase levels of satisfaction and commitment, mostly among teachers, which contributes to positive changes in schools (Hauserman & Stick, 2013). A meta-analysis conducted by Chin (2007) suggests that transformational leadership, within the educational context, has positive and significant direct effects on school outcomes, such as teachers' job satisfaction, school effectiveness, and students' achievement.

The concept of transformational leadership has evolved since its origins (Bass & Riggio, 2006), but there are four components (known as the four I's) considered to be the core behaviours that transformational leaders tend to adopt, (e.g., Bass & Avolio, 1990; Bass & Riggio, 2006; Bass, 1997; Eagly, Johannesen-Schmidt, & Van Engen, 2003): **Inspirational motivation (IM)** - leaders are seen as promoters of team spirit, motivating and inspiring followers to be optimistic and to move together towards a common vision**; Individualized consideration (IC)** - leaders create a supportive climate that recognizes individual differences and attends to them**; Intellectual stimulation (IS)** - leaders provide a role model for followers to be more creative, innovative and encourage them to become more effective problem solvers**; Idealised influence (II)** - leaders show high standards of ethical and moral conduct and have the respect and admiration of their followers (**Idealised influence - attributed (IIA)),** while simultaneously leaders communicate values, beliefs and the purpose (mission and vision) of the organization (**Idealised influence - behaviour (IIB)) (see also** Figure 1**).**

So, transforming leaders intend to empower followers, making them leaders on their own, whereas transactional leaders, as described by Burns (1978), operate based on an exchange system: in order to get what they need from their followers, they "exert influence by setting goals, clarifying desired outcomes, providing feedback and exchanging rewards for accomplishments" (Dvir et al., 2002, p. 735). As it can be seen in Figure 1, in the FRL model this style involves two main components: **Contingent reward (CR) -** the leader exchanges a reward for the accomplishment of something agreed with a follower who shows a good performance and **Active Management-by-Exception (MBE –A)** - the leader is focused on monitoring the tasks and deviations from the rules/standards and approaches mistakes by correcting them as they appear (e.g., Broome, 2013; Kara, Uysal, Sirgy, & Lee, 2013).

In the FRL continuum, ineffective leadership practices are associated with a higher frequency of non-leadership behaviours. The non-leadership style is divided into: **Passive Management-by-Exception (MBE –P)** - the leader acts in a passive way, taking corrective actions in a passive/avoidant manner and not setting a direction, expectations or standards; and ***Laissez-Faire* Leadership (LF)** or non-leadership behaviour - the leader shows avoidance or absence towards most of the responsibilities of leadership (e.g., Avolio, Bass, & Jung, 1999; Broome, 2013).

2.2. Multifactor Leadership Questionnaire

Bass and Avolio (2004) developed the ***Multifactor Leadership Questionnaire* (MLQ)** in order to measure the concepts of the FRL explained above. This scale became a benchmark as the most widely used instrument to measure transformational leadership and, in a more comprehensive approach, the FRL (Bass & Riggio, 2006). Recent and past research on scales to measure transformational leadership and other leadership models has pointed MLQ as the most widely used instrument to test transformational and transactional models across several contexts, such as business, education, health and military (Chin, 2007; Hater & Bass, 1988; Hauserman & Stick, 2013; Lee & Carpenter, 2018; Leithwood & Jantzi, 2005; Yammarino & Bass, 1990). For example, Pittenger (2001) reviewed the MLQ, concluding that available research "does provide

evidence that the instrument consistently measures constructs in keeping with Bass's theory" (Pittender, 2001, p. 2).

The current version of MLQ (MLQ-5X) has some differences from the original version and is structured in a nine-correlated factor model (Antonakis, Avolio, & Sivasubramaniam, 2003; Avolio et al., 1999; Bass, 1997; Muenjohn & Armstrong, 2008). The MLQ includes two forms, the rater and the leader forms, in order to assess the followers' perceptions about leadership practices and the leaders' self-perception, respectively (Bass & Riggio, 2006). It comprises a total of 36 items (four items per factor) that measure nine leadership components, plus 9 additional items that measure three outcomes – followers' extra-effort, leaders' efficacy and followers' satisfaction with the leader (Bass & Riggio, 2006). The ***extra effort outcome*** is related to the ability of the leader in leading followers to do more than they would be expected to in a given circumstance, to strive for better performance and ultimately, to increase followers' willingness to persist. Another outcome is the ***efficiency/effectiveness of the leader***, which means bringing effectiveness to the group by leading the followers to achieve higher organizational levels, meeting followers' job-related needs, as well as achieving the organizational goals. The final outcome is the ability of the leader **to *generate satisfaction*** in his/her followers, referring to how leadership is implemented and to the leader's ability to work in a way, which is considered to be satisfactory (Bass & Avolio, 2015).

So, this questionnaire informs about self or followers' perception about leadership practices, considering the FRL model with its three dimensions of leadership, comprising five subdimensions of transformational leadership (Idealised Influence is divided into two distinct components), two subdimensions of transactional leadership and two subdimensions of *laissez-faire* leadership. It also assesses the three leadership outcomes above mentioned.

3. Current study aims and scope

In this study we applied the MLQ questionnaire to representative samples of Portuguese principals and teachers, aiming to answer three main research questions:

Research question one: Are Leadership styles and outcomes perceived differently by teachers and principals?

RQ1.1 In case there is a difference in the perception of teachers and principals, is the principal gender an important variable?

Research question two: Do principals display a *dominant* leadership style, both in the perception of teachers and in their own perception?

RQ2.1: If there is a *dominant* leadership style or styles, is this / are these related to different perceptions about leadership outcomes?

Research question three: Are the determinants of leadership outcomes different for teachers and principals?

This study contributes to the literature in several ways. The scope of the study is one important contribution, since there is no study in Portugal with a national amplitude. Secondly, this study sheds light on the differences between leaders and teachers in what concerns to their perceptions about leadership practices, a topic that is not widely addressed in literature, particularly with large samples. In addition, we put forth a causal model to explain leadership outcomes, which we conceptualize as a function of perception of leadership FRL style – by principals and teachers; and contextual variables relating to (i) leader characteristics; (ii) school characteristics and (iii) respondent characteristics. In short, this study contributes to a better understanding of leadership practices in Portuguese schools, relating them to leadership outcomes. Its findings reveal the dimensions of leadership that are perceived to better impact on these results, which can help to optimise the effectiveness of leadership in schools. Moreover, the fact that our findings corroborate international research on the same topic contributes to strengthen those conclusions and to establish general leadership frameworks that enable the understanding of optimal leadership practices in education, regardless of specific action contexts.

4. Method

4.1. Measure

To measure the perception of leaders' FRL style, as well as the three outcomes of leadership, an adapted Portuguese translation of the most recent version of the MLQ rater and self-forms was applied. Details about this questionnaire were already given in section 2. The MLQ was chosen mainly for three reasons: (i) this scale is an international benchmark and the most widely used instrument to measure transformational leadership and, in a more comprehensive approach, to measure the FRL (Bass & Riggio, 2006); (ii) the questionnaire can be acquired in the Portuguese language, which was considered to be an advantage for the research process, since this avoids eventual biases in the process of translation; and (iii) it comprises forms for both leaders and followers, allowing for the comparison of perceptions that we intended to do.

This questionnaire includes a total of 45 questions: 36 that measure leadership practices (four items per subdimension) and 9 that measure leadership outcomes. It allows respondents to rate themselves or others in what concerns to leadership behaviours, ranging from zero to four, depending on the perceived frequency of a given behaviour that each item describes (*not at all*; *once in a while*; *sometimes*; *fairly often; frequently, if not always*). A higher score on a certain item of the dimension means a higher perception of the display of that behaviour/attitude. The items are the same in both versions (administered to teachers and principals), but in the self-form they are formulated in the first person.

4.2. Data collection procedures

This study sought to collect data on a national scope covering all levels of schooling (pre-school to secondary education). Considering the interest from the Portuguese government in the data to be collected, a partnership with the Department of School Administration (DSA) was established. The online questionnaire, built on *Google Forms*, was sent directly from the DSA Services to their database, which contains the emails of all teachers and principals working in public schools in Continental Portugal. Principals and teachers received different e-mails, considering the specifications of each group. Data collection occurred during the last term of the 2016/2017 school year and was open for 15 days. Beyond the questions in the MLQ, we also inquired

teachers and principals about some contextual/demographic variables. In doing so, it was important to ensure complete anonymity of the respondent, of the school and of its principal. So, considering the literature review and the specific interests of the researchers, but respecting anonymity issues, the contextual variables shown in Table 1 were collected for each of the samples and used in the analyses to be reported.

[*Please, insert Table 1 about here*]

A total of 21533 responses were received from teachers, 451 of which were eliminated for one of the following reasons: (i) the respondent was not a teacher and received the email by mistake; (ii) over 50% of the questionnaire's items were not answered by the participant. The final sample has 21082 teachers, which, according to data provided by the Department of School Administration, represents 18.82% of the total number of teachers in Portuguese public schools. Also, the proportion of teachers per region in the sample resembles the distribution of teachers per region in the universe of Portuguese public schools (see Figure 2). The principals' sample has 121 participants, representing approximately 15% of the total number of principals in Portuguese public schools. A more detailed description of the participants from both samples can be seen in Table 2.

[*Please insert Figure 2 about here*]

[*Please insert Table 2 about here*]

4.3. Data analysis

Responses to the questionnaires were analysed with *IBM SPSS Statistics 24*. The two samples were analysed separately and cross-compared (note that the two samples could not be matched due to the anonymity of the questionnaires).

Starting with the teachers' sample, exploratory factor analysis (EFA) and Cronbach' Alpha coefficients revealed problems with five items: 17, 25, 31, 32 and 33. These items had a low alpha

coefficient when compared to the items from their dimension, and internal consistency of the dimensions improved when these items were excluded. Moreover, items 25, 32 and 33 did not present significant correlations with most of the items in the questionnaire. Also, in EFA communalities' results, item 17 exhibited a low self-value (.278). In addition, none of these items saturated in the same component as the rest of the items from their dimensions did, when EFA was performed with *varimax rotation*. As a result, we excluded the referred items from further analysis. All the dimensions had a high internal consistency (see Appendix). As far as the principals' questionnaire is concerned, considering the lower number of participants and the goal to cross-compare samples, we decided to exclude the same items without performing the EFA.

In order to answer the research questions, the tools used were descriptive statistics, *t* tests for independent samples and ordinal regression.

5. Results

5.1. Descriptive statistics of responses to the questionnaire

Table 3 shows descriptive statistics for each subdimension and for leadership outcomes in both samples (T standing for teachers and P, for principals). As far as the teachers' sample is concerned, all the transformational subdimensions have higher averages when compared to the other leadership styles, and non-leadership subdimensions have the lowest average. This means that transformational leadership behaviours were more frequently perceived by teachers than non-leadership behaviours. The same happens when we consider principals' self-perception, except for the *Idealised Influence-Attributed* subdimension, which shows a lower average within the transformational style among principals, even lower than transactional leadership subdimensions.

[Please insert Table 3 about here]

5.2. Research question one: Are Leadership styles and outcomes perceived differently by teachers and principals?

Cross comparing the subdimensions' averages from the two samples (see Figure 3), we can see that teachers tend to rate principals lower than they rate themselves in all transformational and transactional subdimensions and higher in non-leadership ones. In both samples, *Inspirational Motivation* shows the highest average. As for the subdimension *Idealised Influence – Attributed,* the perceptions of teachers and principals do not differ that much.

[*Please insert Figure 3 about here*]

T tests for independent samples show that the differences between the averages in the two samples (teachers and principals) are statistically significant (note that non-parametric tests were also performed, confirming these results), except for the perceptions about *Idealised Influence – Attributed*. This result confirms our first hypothesis that leadership styles are perceived differently by teachers and principals.

RQ1.1 In case there is a difference in the perception of teachers and principals, is the gender of the principal an important variable?

In Table 4 the perceptions of teachers and principals are shown, considering the gender of the principal. Average perceptions differ for female or male principals and higher values are generally observed for female principals. Differences in perceptions were tested within each sample, according to the gender of the principal. Statistically significant differences are signalled in bold in Table 4. Figure 4 complements this Table and shows that female principals tend to have higher self-perceptions than male principals in most transformational leadership subdimensions, but only *individualised consideration* is statistically significant.

[*Please insert Figure 4 about here*]

[*Please insert Table 4 about here*]

Teachers tend to perceive female principals as showing more frequent behaviours in most transformational and transactional subdimensions than male principals, as well as less frequent *laissez-faire* behaviours (comparison between the bottom lines in Figure 4). In this case, more differences are statistically significant (exceptions are *Idealised Influence- Behaviour, Intellectual Stimulation*, *Individualized Consideration*, *Contingent Reward*), although the values are lower than those observed in the principals' sample, due to the larger size of the teachers' sample.

5.3. Research question two: Do principals display a dominant leadership style, both in the perception of teachers and principals themselves?

The FRL model takes various leadership characteristics into account, and implicitly assumes that leaders' behaviours occur across a leadership continuum where some behaviours should be more frequently observed for a leader's effectiveness to be higher. In order to understand if there was a perceived "*dominant*" leadership style (i.e. perceptions pointing to more frequent transformational or transactional leadership behaviours of the principal), we created some auxiliary dummy variables, by considering that a behaviour was dominant if the average answer to the dimension was three or above (*fairly often or frequently, if not always*). Transformational leadership style was analysed as a unique dimension, considering the average of all the items from this construct, and transactional and *laissez-faire* leadership styles were analysed by considering their subdimensions independently. This option was grounded in the results from EFA, which showed that transformational leadership items were a consistent dimension, but transactional and *laissez-faire* leadership items could be split into two dimensions. Moreover, the literature supports that *Contingent Reward* from transactional leadership is the component that contributes the most to leadership outcomes (e.g., Jackson, Rossi, Hoover, & Johnson, 2012), so it was important to analyse the subdimensions of transactional leadership separately.

The frequency analysis of the dominant style variables shows that there are four most common profiles of leadership, both from the teachers' perception and the principals' self-perception: (i) no *dominant* style perceived; (ii) transformational style combined with Contingent Reward perceived as *dominant*; (iii) transformational style combined with Contingent Reward and Active Management-by-Exception (which is the transactional style), perceived as *dominant*; and (iv) transformational style on its own, perceived as *dominant* (see Table 5).

[*Please insert Table 5 about here]*

It is interesting to note from Table 5 that half of the teachers in the sample does not perceive any dominant style in their principals, and only 14.7% of teachers perceive transformational style with *Contingent Reward* to be dominant. However, principals perceive themselves as having a predominantly transformational style (either combined or not with transactional leadership subdimensions), and only 6% of principals perceive themselves as having no dominant style. These results show a discrepancy between self and hetero perceptions in what concerns to the frequency of different leadership styles.

The fact that the average of teachers' ratings for each item of the FRL is situated between 1.2 (lower average) and 2.67 (higher average) can explain why most teachers' answers do not point to a dominant style (see Figure 3). These averages point out to behaviours that are *once in a while* or *sometimes* perceived. Since we decided to consider dominant behaviours the ones that have an average of three or above (*fairly often* or *frequently, if not always*), it is understandable that the answers of more than 50% of the respondents do not enable us to identify a *dominant* leadership style. This also means that there is still significant scope for improvement for Portuguese principals in what concerns to the adoption of transformational-transactional behaviours and, therefore, to the improvement of their leadership practices' effectiveness. Interestingly, the average of principals' ratings towards their own behaviours is below one for the dimensions related to non-leadership behaviours, and above three for almost every subdimension of

transformational leadership (see Figure 3). Their answers, in contrast to the teachers' answers, point out to *fairly often* adopted behaviours, which enabled us to determine a *dominant* perceived profile: transformational style and contingent reward (see Table 5). These findings lead to a positive answer to research question two.

RQ2.1: If there is a dominant leadership style or styles, are these related to different perceptions of leadership outcomes?

It seems important to understand if the perceptions about leadership outcomes are significantly different, depending on the profile of leadership. Table 6 shows descriptive statistics for each leadership profile, cross compared with each leadership outcome.

[*Please insert Table 6 about here]*

In both samples, the leadership profile exhibiting the highest perceived averages in all leadership outcomes is the combination of transformational and transactional leadership (TRF & TRS), which is aligned with the augmentation effect referred by Bass (1995).

The significance of the observed differences per profile was tested using ANOVA (and by means of a *Kruskall-Wallis Test*, showing the same results), and in both teachers' and principals' samples differences were statistically significant for all leadership outcomes ($p<.001$). We also performed *Post-Hoc tests*, and results point to non-significant differences in teacher's satisfaction when the leader is dominantly transformational and *Contingent Reward* or only transformational. All the other pairwise tests show statistically significant differences in outcomes between dominant styles. In the principals' sample most pairwise differences are not statistically significant, except when one of the styles is non-dominant.

As a result, the most relevant conclusion is that teachers and principals agree that a non-dominant leadership style is less effective, less satisfying and leads to lower extra-effort than a transformational style on its own or combined with transactional leadership. For teachers, the

combination of transformational and transactional styles as the dominant style is perceived as leading to significantly higher averages in extra-effort, satisfaction, and effectiveness.

5.4. Research question three: Are the determinants of leadership outcomes different for teachers and principals?

The impact of perceived FRL dimensions on leadership outcomes was tested by using regression models that accounted for the ordinal scale of the dependent variable. The dependent variable is not an ordinal variable *per se*, but an average of ordinal variables. It would be possible to treat the dependent variable as continuous if the number of its categories was large enough. In this study, however, this wasn't the case for some of the outcomes, and as a result, ordinal regression models were used. Three regression models were produced, one for each outcome, for the two samples (teachers and principals). In addition to FRL dimensions, socio-demographic and school context variables were also used as control variables.

- **Teachers' sample**

Results from ordinal regression for the 3 outcomes in the teachers' sample showed that not all parameters for goodness fit of the models were reached and that the chi-square test of parallel lines was rejected. As a result, a Generalized Ordered Logistic Model (GOLM) was used, since it corrects for this situation (Williams, 2006) and it is also available in SPSS (Table 7). All the models are statistically significant (we can reject the hypothesis that all coefficients are null through the likelihood ratio chi-square) and have a high percentage of variation explained (above 77%) as it can be seen through Pseudo R^2 values (Table 7). The full results of the regressions are shown in Table 8.

[*Please insert Table 7 about here*]

[*Please insert Table 8 about here*]

Most leadership subdimensions had a significant impact in generating extra-effort, satisfaction and effectiveness (all these subdimensions have a positive impact, except for *Passive*

Management-by-Exception, which shows a negative and significant influence on all the outcomes, and for the *laissez-faire* behaviour, which shows a negative influence on satisfaction and effectiveness). Note that *Active Management-by-Exception* shows a positive influence on teachers' perceptions about effectiveness, but not on their perceptions about satisfaction. The subdimension *Idealised Influence – Behaviour* is only significant in explaining the effectiveness outcome.

In the teachers' sample the main determinants of outcomes are the variables reflecting the style of leadership, since contextual variables are not much relevant. The principals' gender, for example, does not have an impact on any of the outcomes (note that research question two does not relate to the impact of gender on outcomes, but on leadership practices, so it appears that the principal's gender may have an impact on the perceptions of the followers towards their leadership practices; however, the principal's gender does not seem relevant in explaining the perception of the leadership outcomes). Teachers' gender only has a negative impact on their satisfaction, meaning that female teachers tend to be less satisfied with leadership. Teachers' age appears mostly as non-relevant, except in what concerns to the perception of extra-effort, with younger teachers showing a higher perception of extra-effort than older teachers. The number of years as a teacher at the current school (the school where teachers were working when they replied to the questionnaire) may have some impact on extra effort (teachers working at the school for less than 1 year and between 1 to 5 years tend to perceive higher extra-effort than teachers working at the school for more than 25 years) and on satisfaction (teachers working at the school for less than 5 years are less satisfied with the leader than teachers that have been working at their current school for 25 years or more).

Teachers' academic qualifications do not seem to be very relevant, except in what concerns to the perception of satisfaction. Teachers with a bachelor's degree seem to be less satisfied with leadership than teachers that have higher qualifications. Interestingly, the leadership roles played by teachers have a significant positive impact on all outcomes, implying that teachers that play intermediate leadership roles have a more positive view of the outcomes of leadership. These

findings echo previous research. As Lee and Carpenter (2018) explain, observers who frequently interact with the leaders or work in proximity to them, have probably more opportunities to get to know their work. Therefore, these are variables that can influence teachers' ratings on principals' leadership practices, as well as contribute to a greater convergence between principals' and teachers' perceptions.

In what concerns to school size, it is important to refer that the Portuguese government created clusters of schools (*Agrupamentos de Escolas*) based on their geographic proximity. Clusters are organizational units within the educational system that aggregate schools by geographic proximity, from pre-school to secondary education. They have common management bodies (administrative, financial and pedagogical), and the principal is the same for every school in a cluster. The number of school establishments aggregated in a cluster may vary, and some clusters have more than five schools. Although most Portuguese public schools have been clustered, there are also some non-clustered secondary schools. However, despite the significant differences in size among Portuguese schools, results show that from the teachers' point of view this is not a relevant variable in predicting leadership outcomes.

- **Principals' sample**

Results from ordinal regression in all three models in the principals' sample showed that all parameters for goodness fit of the models were reached (Table 9) and all the models were significant ($p < .001$). The percentage of variation explained in the models is lower than in the teachers' sample (between 32% and 46%). Full results are shown in Table 10.

[*Please insert Table 9 about here*]

[*Please insert Table 10 about here*]

In contrast to the analysis performed with the teachers' sample, leadership subdimensions do not seem very important in determining the self-perception of leadership outcomes by leaders. Only *Idealised influence Attributed* and *Behaviour*, has a significant positive impact on leaders'

self-perception of extra-effort. Only *Inspirational Motivation* seems to have a positive impact on effectiveness, and principals recognize that *laissez-faire* behaviour has a negative impact on the effectiveness of leadership. Regarding satisfaction, leaders perceive that only *Inspirational Motivation* and *Management by Exception- Active* may have a positive impact on perceived satisfaction.

Regarding other variables, the gender and the age of principals do not seem to impact their self-perception about leadership outcomes. The experience as a principal at their current school (the school where the principal was working when he / she replied to the questionnaire) may have some impact on extra-effort, since principals who have been working at this position at the current school for 9 to 12 years perceive significantly lower levels of extra-effort than those leading it for more than 12 years. Principals who have worked up to 4 years as principals in their current school also perceive lower levels of effectiveness than those with more than 12 years of experience. Satisfaction is not significantly affected by this variable.

The school size seems to have an impact only on the self-effectiveness perceived by principals, since in clusters with less than five schools, principals perceive their effectiveness as significantly lower than in clusters with more than five schools.

Based on the above-mentioned findings, it is possible to respond affirmatively to the third research question *Are determinants of leadership outcomes different for teachers and principals?* Globally, the most relevant difference is that in the teachers' perception almost all the FRL subdimensions are significant in predicting leadership outcomes; on the other hand, principals' results show that not all subdimensions are relevant. In both samples the importance of contextual variables is not very marked. For teachers, their age, their experience and the fact that they play some leadership role have an impact on their perception about leadership outcomes. For principals, only their experience as a principal in their current school and the size of the school seem to have some influence on their perceptions about leadership outcomes.

6. Discussion

Our findings seem to reinforce previous research on leadership styles and outcomes, showing that:

i. Leadership styles and outcomes are perceived differently by teachers and principals, since teachers tend to rate principals lower than the latter rate themselves in all transformational and transactional dimensions of leadership. When interpreting these results, it is important to refer that principals were evaluating themselves, which may have led to a social desirability bias, i.e., the tendency of research subjects to give socially desirable responses instead of choosing responses that are reflective of their true feelings (Grimm, 2010; Posner, 2018). Self-rating and self-evaluation may suffer from inflation, unreliability and bias (Yammarino & Atwater, 1997), becoming inaccurate perceptions. Nonetheless, it is interesting to notice that the *dominant* profile perceived by most principals is precisely the profile that is pointed out in literature as the most efficient one (Bass, 1995; Bass, 1999; Bass & Riggio, 2006; Leithwood & Jantzi, 2005; Woods, 2007). If we consider that these answers may suffer from a social desirability bias, we can assume that principals know what they should be doing in order to become more effective, but still, the answers given by the teachers point out to an important margin for improvement in what concerns the adoption of more effective leadership practices.

Though these seem to be relevant findings, there are limitations to this analysis, mainly because it was not possible to directly associate teachers' responses to principals' responses and vice-versa, and because although the percentage of represented teachers and represented principals in our sample is similar, the absolute size of the principals' sample is very small.

ii. The principals' gender seems to have some influence on the teachers' perceptions about leadership styles. Teachers tend to perceive female principals as having more frequent behaviours in most transformational and transactional subdimensions than male principals, as well as a lower frequency of *laissez fair* behaviours. These findings echo previous research. A meta-analysis of 45 studies (Eagly et al., 2003) showed that the principals' gender has an impact on leadership practices. Results from this analysis reveal that women tend to be less hierarchical, more cooperative and more concerned with encouraging others than men. Female leaders were also

found to be more transformational than male leaders; male leaders tend to engage more in contingent reward practices. Another study found school female leaders to have a more participative leadership style (Sfakianaki, Matsiori, Giannias, & Sevdali, 2018), which also relates to transformational leadership. As Bass and Riggio (2006, p. 115) synthesize:

> anecdotal, research, and meta-analytic evidence all point to the greater tendency for women in leadership positions to be somewhat more transformational and to display less management-by-exception and laissez-faire leadership than their male counterparts. Concomitantly, they are seen by their subordinates and colleagues as slightly, but significantly, more effective and satisfying as leaders.

Moreover, studies also indicate that the followers' gender may, to some extent, determine the behaviours that leaders display (Eagly & Johnson, 1990).

iii. Principals who have taken up this position in their current school up to four years perceived themselves with lower levels of effectiveness than those with more than 12 years' experience. These findings may be related to the fact that the more years a principal works at a given school, the more he/she has the chance of knowing the school's characteristics (teachers' cultures and identities, context variables, among others) and the better he/she can adapt his/her leadership practices to those characteristics, increasing the chances of an efficient leadership. Moreover, as another study has shown, the leadership skills of the school leader improve with time and experience (Brinia & Papantoniou, 2016).

iv. The school size seems to have an impact only on the self-effectiveness perceived by principals, since in clusters with less than five schools, principals perceive their effectiveness as significantly lower than in clusters with more than five schools. Although one would easily assume that the smaller a cluster is, the more effective a principal would feel (because in smaller clusters it is easier for principals to know schools and their problems), in some cases, a greater proximity to problems may lead to a lower sense of effectiveness. On the other hand, in clusters with more than five schools it is very difficult for the principals to have a clear vision of every schools' problems. In larger clusters, where it is almost impossible for principals to ensure a direct

management of every school, the tendency may be for teachers to develop a self-governing strategy that, depending on the prevailing professional culture, may lead them to avoid confronting the principal with existing problems, establishing trust based on the presumption of competence, in an organized hypocrisy logic (Brusson, 2006). This may drive the principal to the illusion of being more effective, although problems still exist but are not clearly stated or addressed, as it frequently happens in schools where the culture of *the big family* prevails (Nias, 1989; Staessens, 1991; Thurler, 2004).

v. When the leadership profile that combines transformational and transactional styles is perceived as dominant by teachers, there are significantly higher averages on extra-effort, satisfaction, and effectiveness. As Bass (1995) claims it, the excellent leaders are both transformational and transactional, and transformational behaviours augment the effect of transactional behaviours (Bass, 1999; Bass & Riggio, 2006; Leithwood & Janzi, 2005; Woods, 2007). Indeed, our findings seem to be aligned with previous research. By applying the MLQ, Ghaus, Lodhi, and Shakir (2017) showed that transformational leadership in faculty members was positively correlated with leadership effectiveness, with the satisfaction of followers and their drive for extra effort. Transactional leadership dimensions were only correlated with satisfaction. In what concerns specifically to extra effort, in a study with school principals Bass (1985, cit in., Geijsel, Sleegers, Leithwood, & Jantzi, 2003), found it to be more positively associated with transformational dimensions than transactional leadership dimensions, and the *Intellectual Stimulation* subdimension was particularly associated with generating extra effort. In some studies in different fields (e.g., Jackson et al., 2012), *Contingent Reward* from transactional leadership directly and indirectly influenced the extent to which employees apply extra effort to accomplish performance on tasks that may be more difficult to complete than anticipated. Non-corrective transactional behaviours, on the other hand, were found to have a negative influence on extra-effort (Hater & Bass, 1988), as well as *laissez-faire* behaviours (Judge & Piccolo, 2004).

Considering research on the outcome *effectiveness*, a meta-analytic review of the MLQ literature by Lowe, Kroeck and Sivasubramaniam (1996) focused on the links between transformational

and transactional constructs and leader effectiveness and concluded that transformational dimensions are reliable and significantly predicted work unit effectiveness. Dumdum, Lowe, and Avolio (2002), reached the same conclusion and reported that *Contingent Reward* is positively associated with measures of effectiveness and satisfaction, but less than transformational leadership dimensions are. Another study, with teachers from secondary schools, revealed that their perceptions of leader effectiveness were significantly linked to transformational leadership behaviours (Menon, 2014). Recently, Hussain and colleagues (2016) found that in a higher education context transformational leadership and transactional leadership style also had a relevant impact on followers' outcomes, such as followers' performance.

Regarding satisfaction with the leader, transformational leadership seems, as well, to have unique effects on this outcome (Quintana, Park, & Cabrera, 2015). Particularly in school settings, the use of the MLQ has shown positive relations to satisfaction with leaders' practices (Barnett, Marsh, & Craven, 2005; Bodla & Nawaz, 2010). In a study with teachers and principals, Barnett and colleagues (2005) found teachers to be more influenced by principals' *Individualized Consideration* behaviours, understanding that they value principals that seem to know them individually. In addition to this, another study (Alkhyeli & Ewijk, 2018) recently found that teachers value *recognition* from their leaders, and this sense of acknowledged appreciation of their work is actually one of the behaviours that most contribute to their job satisfaction. On the other hand, *laissez-faire* behaviours proved to have a significant negative impact on their satisfaction with the principal.

The above-mentioned similarities between our findings and previous research extend the knowledge about the research field and reinforce current thinking on effective leadership practices in schools.

7. Conclusion

The present study uses data from a wide span of Portuguese public schools and analyses transformational, transactional and *laissez-faire* leadership practices and its consequences on leadership outcomes (followers' extra-effort, leaders' effectiveness and followers' satisfaction with leader, as measured by the Multifactor Leadership Questionnaire).

As a synopsis of our findings, we can say that transformational and transactional leadership behaviours are more frequently perceived by Portuguese teachers and principals than non-leadership behaviours. There is a tendency for teachers to rate principals lower than the latter rate themselves in all transformational and transactional subdimensions of the FRL and higher, in non-leadership subdimensions. In both samples *Inspirational Motivation* subdimension shows the highest average. This subdimension is related to leaders who are perceived as promoters of team spirit, motivating and inspiring followers to move together towards a common vision and being optimistic. It is important to reinforce, once again, that principals have a much more positive perception of their *Inspirational Motivation* practices than teachers.

In what concerns to the principal's gender, this seems to have some influence on leadership practices, mainly for the teachers, who tend to perceive female principals as building more trust, being more encouraging and motivational, more prone to monitor deviations and mistakes and less prone to showing *laissez-faire* behaviours.

In both samples, the combined perceived dominant style of transformational and transactional leadership is the one related to the highest averages in all leadership outcomes (followers' extra effort, leaders' efficacy and followers' satisfaction with the leader). Teachers and principals agree that a non-dominant leadership style is less effective, less satisfying and leads to less extra effort than a transformational or a transformational-transactional dominant style. However, the results show that the behaviours related to these more effective leadership styles, tend to be perceived only *sometimes* by most of the teachers.

Moreover, teachers who play intermediate leadership roles have a more positive view of the outcomes of leadership, which may be explained by the fact that they tend to have more contact

with principals, what makes them understand their motivations better, sharing a common sense of responsibility for achieving the school's goals.

The findings of this study may have important implications for educational policy and practice. On the one hand, on a political level, it seems advisable for educational policy to focus on the development of training programs for principals that enable them to develop transformational and transactional practices, with a predictable impact on schools' organizational development and outcomes. On the other hand, these findings can also contribute to a higher awareness of principals in what concerns to the importance of strategically adopt transformational and transactional leadership styles. The fact that these behaviours tend to be perceived by teachers, on average, only *once in a while* or *sometimes*, makes us assume that there is still significant scope for improvement for Portuguese principals to adopt transformational-transactional behaviours and, therefore, to improve the effectiveness of their leadership practice.

Moreover, the discrepancy between self and hetero perceptions in what concerns to leadership practices, also advises leaders to reflect upon the intentions underlying their behaviours and how these behaviours are being perceived by their followers, in order to adjust intentions to real impacts.

This study also points out the importance that intermediate leaders may have in schools, acting as intermediates between the principal and teachers without leadership roles and as catalysts of the organizational mission and vision.

As far as future research is concerned, it would be important to enlarge the principals' sample size and to be able to directly relate principals to the teachers they lead. This is because most of the research on leadership styles resorts to the perceptions of the followers about their leaders' practices. Some studies also include the self-assessment of the leader, although these are a minority, and even fewer studies compare the perceptions of the followers with the self-perception of the leader.

It would also be important to further explore the causal model that emerged from this research to explain leadership outcomes, conceptualised as a function of perception of leadership FRL

styles – by principals and teachers – and contextual variables relating to (i) leader characteristics; (ii) school characteristics and (iii) respondent characteristics, improving it with more leaders' and schools' characteristics than those included in this study.

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Figures Captions:

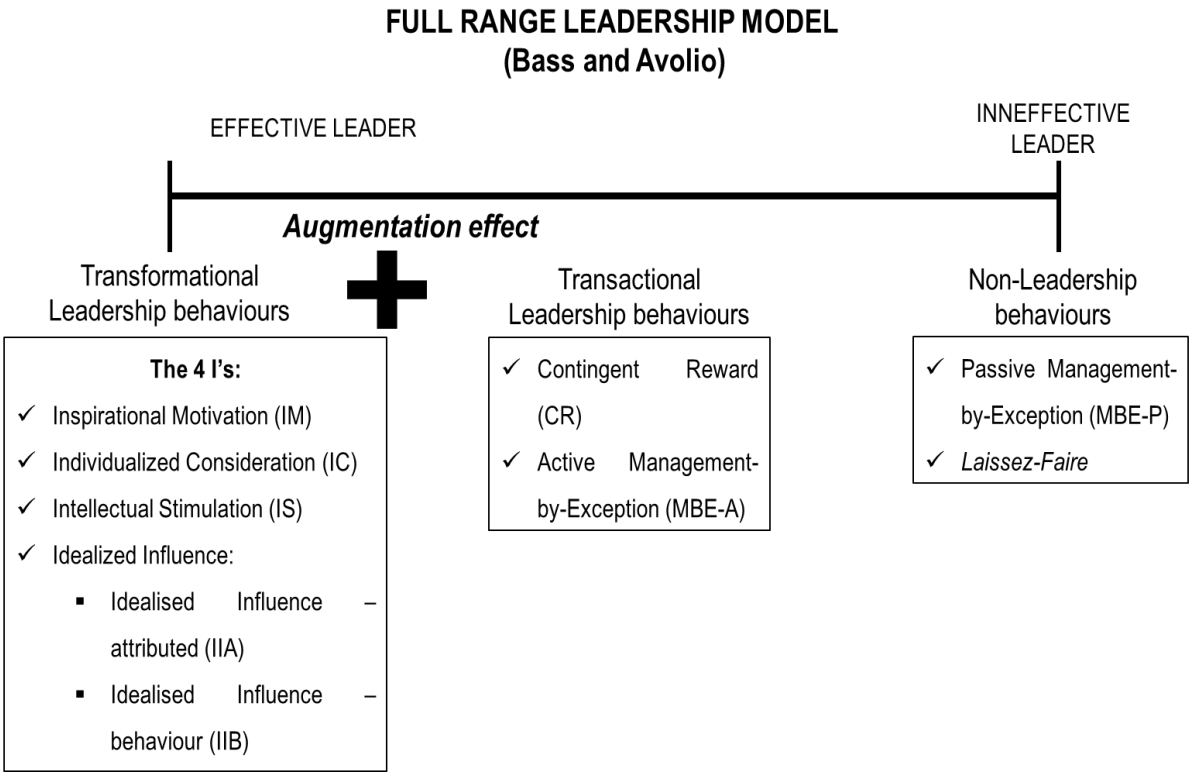


Figure 1. Full Range Leadership Model (FRL): a visual synthesis of the model constructed by the authors of the article based on the theory. Source: By Authors.

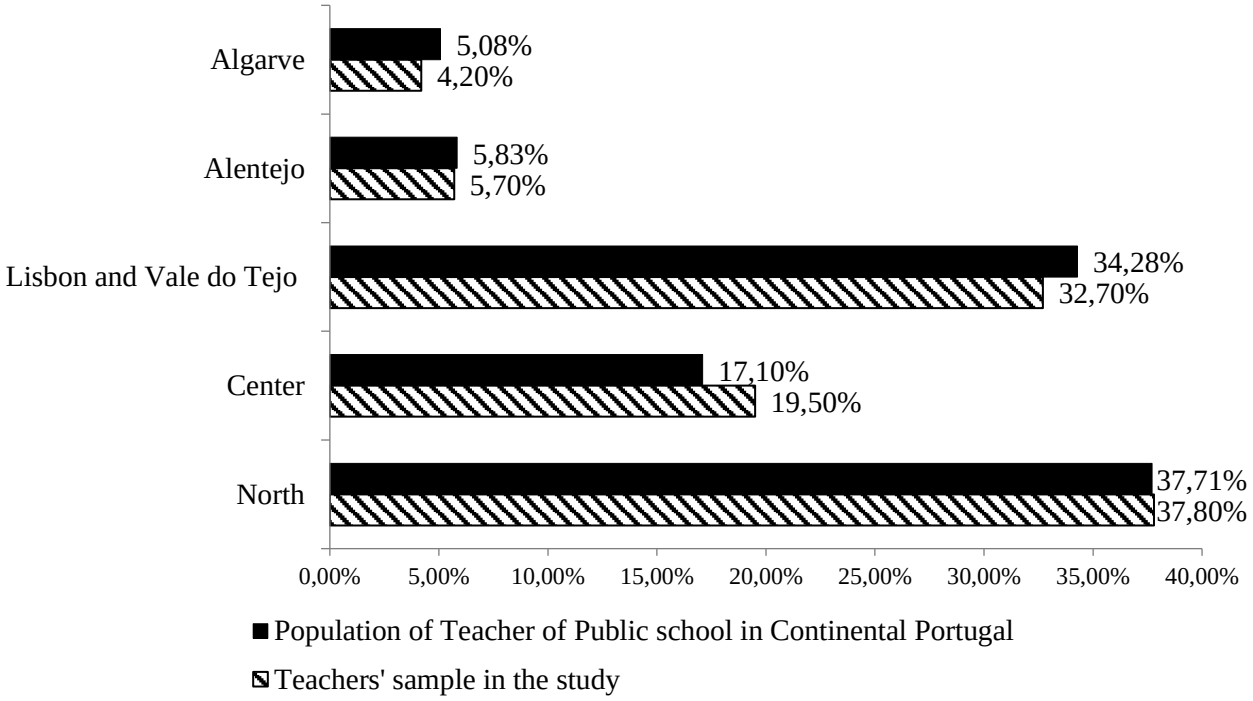


Figure 2. Proportion of teachers per region of continental Portugal (sample vs. population). Source: By Authors.

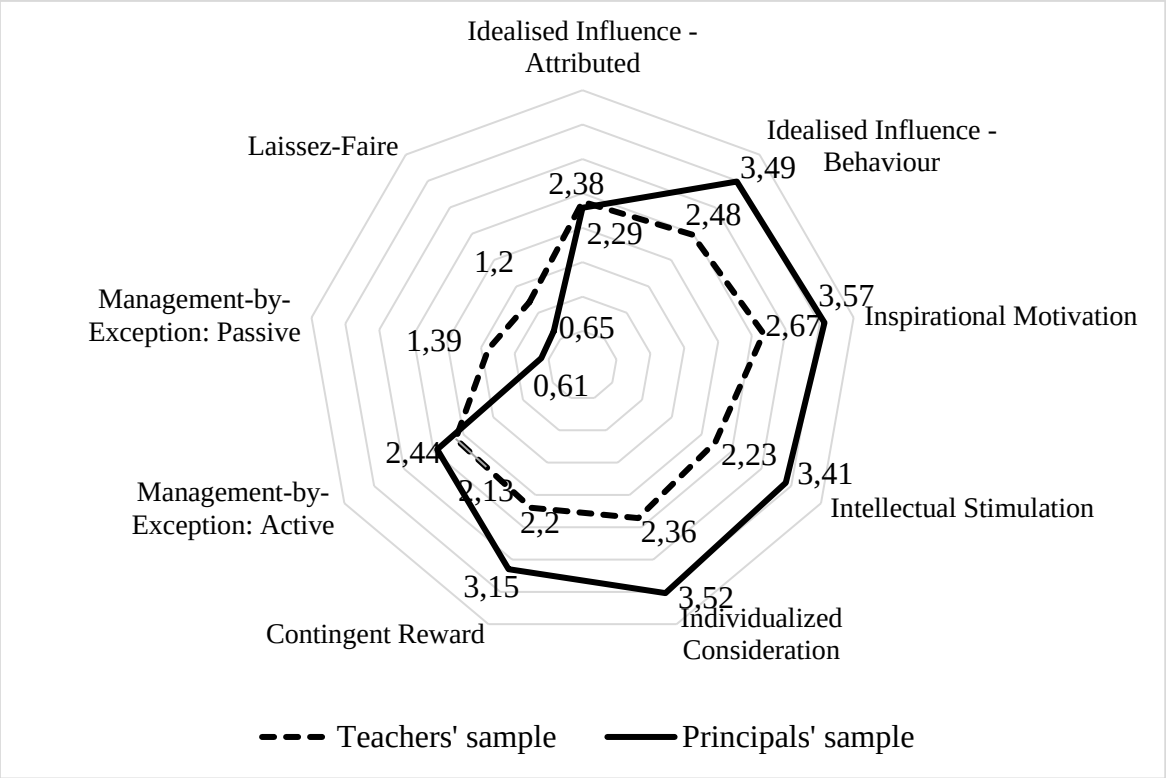
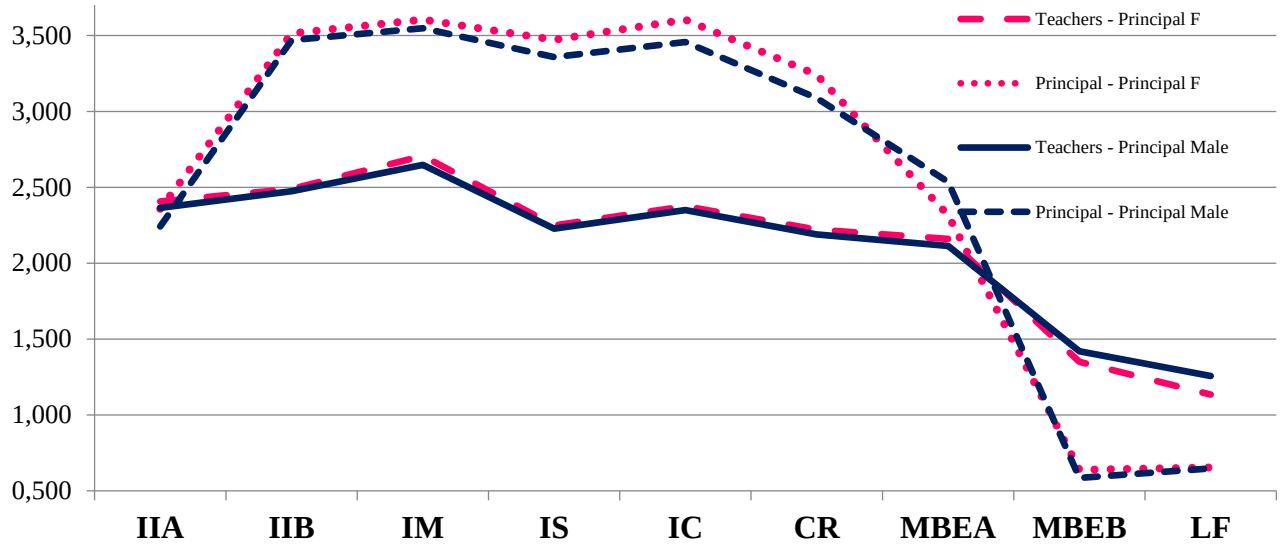


Figure 3. Radar graphic representing the averages in each subdimension from both questionnaires. Source: By Authors.



Note: IIA=Idealised Influence-attributed; IIB=Idealised Influence-behaviour; IM=Inspirational Motivation; IS=Intellectual Stimulation; IC=Individualized Consideration; CR=Contingent Reward; MBEA=Management-by-Exception active; MBEB=Management-by-Exception passive; LF=Laissez-faire

Figure 4. Comparison of dimensions averages between teachers' and principals' samples, according to principals' gender. Source: By Authors.

Tables captions:

Table 1:

Description of contextual variables collected

	Teachers/Principals	Variables collected
Principals' characteristics	Teachers	Principals' gender
	Principals	Principals' gender
		Principals' age
		Number of years working as a Principal at current school
		Principals' academic qualifications
Respondents' characteristics (when the respondent was a teacher)	Teachers	Teachers' gender
		Teachers' age
		Number of years working as a Teacher at current school
		Teachers' academic qualifications
		Teachers' role as intermediate leaders
Schools' characteristics	Teachers	Clustered or non-clustered school
	Principals	Clustered or non-clustered school

Note: Source – By Authors.

Table 2.

Participants' descriptive statistics, teachers' sample (n = 21082) and principals' sample (n = 121)

		Teachers' Sample (%)	Principals' Sample (%)
Principals' characteristics			
Principals' gender	Women	42.8	43.8
	Men	57.1	56.2
	Missing information	0.1	0
Principals' age	≤ 35	N/A	0
	36 – 45	N/A	9.1
	46 – 55	N/A	49.6
	≥56	N/A	41.3
	Missing information	N/A	0
Number of years working as a Principal at current school	0 – 4	N/A	38
	5 – 8	N/A	32.2
	9 – 12	N/A	10.7
	>12	N/A	19.9
	Missing information	N/A	0
Principals' academic qualifications	Bachelor's Degree	N/A	53.7
	Master and/or Doctorate	N/A	46.3
	Missing information	N/A	0
Respondents' characteristics (when the respondent was a teacher)			
Teachers' gender	Women	80.1	N/A
	Men	19.9	N/A
	Missing information	0	N/A
Teachers' age	≤ 35	1.9	N/A
	36 – 45	29.7	N/A
	46 – 55	43.3	N/A
	≥56	25	N/A
	Missing information	0.1	N/A
Number of years working as a Teacher at current school	≤1	14.1	N/A
	>1 – 5	26	N/A
	>5 – 10	17.3	N/A
	>10 – 15	14.2	N/A
	>15 – 25	17.6	N/A
	>25	10.2	N/A
	Missing information	0.7	N/A
Teachers' academic qualifications	Bachelor's Degree	80	N/A
	Master and/or Doctorate	20	N/A
	Missing information	0	N/A
Teachers' role as middle leaders	Teachers with leadership roles	17.8	N/A
	Teachers without leadership roles	82.2	N/A
	Missing information	0	N/A

School's characteristics			
Clustered or non-clustered schools	Non-clustered	8.70	11.60
	Clustered (maximum five schools in the cluster)	40.30	35.50
	Clustered (more than five school in the cluster)	50.70	52.90
	Missing information	0.20	0.00

Note: Source – By Authors; N/A=Not applicable for that sample

Table 3:

Descriptive statistics of the questionnaires' responses: teachers and principals

	n		*M*		*SD*	
	T.	P.	T.	P.	T.	P.
Idealised influence – Attributed	21032	121	2,38	2,29	1,025	0,442
Idealised influence – Behaviour	21056	121	2,48	3,49	0,905	0,472
Inspirational Motivation	21068	121	2,67	3,57	0,934	0,465
Intellectual Stimulation	21009	121	2,23	3,41	0,955	0,469
Individualized Consideration	21066	121	2,36	3,52	0,996	0,390
Contingent Reward	21054	121	2,20	3,15	0,984	0,617
Management-by-Exception: Active	21006	121	2,13	2,44	0,695	0,783
Management-by-Exception: Passive	21007	121	1,39	0,61	0,980	0,509
Laissez-Faire	21062	121	1,20	0,65	0,920	0,437
Extra-effort	20902	121	2,20	3,07	1,068	0,532
Effectiveness	21025	121	2,46	3,26	0,943	0,435
Satisfaction	20953	120	2,45	3,32	1,049	0,497

Note: Source – By Authors; T= Teachers; P.=Principals.

Table 4

Averages of FRL dimensions in each sample, according to the gender of the principals

		Principal female	Principal male	Gap Female-male
Teachers	Idealised influence – Attributed	**2,408**	**2,365**	0,043
	Idealised influence – Behaviour	2,490	2,475	0,015
	Inspirational Motivation	**2,707**	**2,648**	0,059
	Intellectual Stimulation	2,248	2,227	0,021
	Individualized Consideration	2,376	2,350	0,026
	Contingent Reward	2,220	2,190	0,031
	Management-by-Exception: Active	**2,160**	**2,113**	0,047
	Management-by-Exception: Passive	**1,351**	**1,419**	-0,069
	Laissez-Faire	**1,134**	**1,257**	-0,122
Principals	Idealised influence – Attributed	2,358	2,243	0,116
	Idealised influence – Behaviour	3,514	3,471	0,044
	Inspirational Motivation	3,604	3,548	0,056
	Intellectual Stimulation	3,472	3,358	0,114
	Individualized Consideration	**3,604**	**3,456**	**0,148**
	Contingent Reward	3,242	3,087	0,155
	Management-by-Exception: Active	2,316	2,535	-0,219
	Management-by-Exception: Passive	0,638	0,585	0,053
	Laissez-Faire	0,654	0,647	0,007

Note: Source – By Authors.

Table 5.

Percentages of main dominant leadership profiles found in both samples (teachers and principals)

Main dominant leadership profiles	Teachers' sample (%)	Principals' sample (%)
(NDS) No dominant style perceived	50,1	6
(TRF &CR)Transformational style & Contingent Reward	14,7	39,7
(TRF & TRS) Transformational style & Transactional style	7,3	24
(TRF) Transformational style	6	12,4

Note: Source – By Authors.

Table 6.

Average outcomes per main leadership profiles (teachers and principals' samples).

	Extra-Effort						**Effectiveness**						**Satisfaction**					
	Teachers' sample			Principals' sample			Teachers' sample			Principals' sample			Teachers' sample			Principals' sample		
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*
NDS	10472	1.83	.01	12	2.67	.17	10539	2.14	.01	12	2.78	.13	10506	2.13	.01	12	2.96	.14
TRF & CR	3079	3.34	.01	48	3.12	.06	3089	3.47	.01	48	3.37	.06	3076	3.54	.01	48	3.33	.06
TRF & TRS	1521	3.45	.01	29	3.32	.08	1526	3.58	.01	29	3.40	.07	1520	3.61	.01	29	3.59	.09
TRF	1243	2.95	.02	15	3.16	.14	1252	3.16	.01	15	3.26	.13	1247	3.23	.02	14	3.25	.14

Note: *Source – By Authors. TRF = Transformational leadership; CR = Contingent Reward; TRS = Transactional leadership*

Table 7.

Parameters for Teachers' sample GOLM models

	GOLM Regression	
Dependent variable	Likelihood ratio Chi-Square (p-value)	Pseudo R^2 (Cox and Snell)
Extra-Effort	30568.76 (0.000)	77.6%
Effectiveness	36605.86 (0.000)	83.2%
Satisfaction	33186.91(0.000)	80.3%

Note: Source – By Authors.

Table 8.

Results of regression models, teachers' sample

		EFT	EFF	SAT
		B	***B***	***B***
Full Range Leadership (FRL) dimensions				
	Idealised influence – Attributed	**.829****	**1.021****	**1.182****
	Idealised influence – Behaviour	.020	**.087***	.031
	Inspirational Motivation	**.373****	**.629****	**.345****
	Intellectual Stimulation	**.739****	**.604****	**.660****
	Individualized Consideration	**.517****	**.612****	**.813****
	Contingent Reward	**1.105****	**.865****	**.788****
	Management-by-Exception: Active	.030	**.203****	**-.045***
	Management-by-Exception: Passive	**-.216****	**-.418****	**-.277****
	Laissez-faire	-.024	**-.406****	**-.296****
Principals' characteristics				
Principals' gender	Women	-.010	-.025	.022
Respondents' characteristics				
Teachers' gender	Women	.053	.029	**-.248****
Teachers' age	≤ 35	**.216***	-.113	-.150
	36 – 45	**.166****	.004	-.006
	46 – 55	**.095***	-.026	.044
	≥56	Ref	Ref	Ref
Number of years working as a Teacher at current school	≤1	**.130***	-.117	**-.276****
	>1 – 5	**.122***	-.061	**-.208****
	>5 – 10	.064	-.048	-.091
	>10 – 15	.053	-.035	-.090
	>15 – 25	.081	-.066	-.051
	>25	Ref	Ref	Ref
Teachers' academic qualifications	Bachelor Degree	.012	-.028	**-.149****
	Master and/or Doctorate Degrees	Ref	Ref	Ref
Teachers' role as middle leaders	Teachers with a leadership role	**.148****	**.095***	**.210****
	Teachers without a leadership role	Ref	Ref	Ref
Schools'characteristics				
School Size	Non-clustered	.003	.013	.051
	Clustered (< 5 schools in the cluster)	.007	-.018	.055
	Clustered (> 5 school in the cluster)	Ref	Ref	Ref

Note: Source – By Authors; EFT =Extra-Effort; EFF= Effectiveness; SAT =Satisfaction; *** *p* < .05; **p < .001**; Ref.=category of reference in an ordinal or nominal variable

Table 9.

Parameters for principals' sample regression model

Dependent variable	Likelihood Chi-Square (p-value)	Pseudo R^2 Cox and Snell
Extra-Effort	60,72 (0.000)	39,5%
Effectiveness	68.44 (0.000)	43.2%
Satisfaction	39.84(0.002)	28.3%

Table 10.

Results of regression models, principals' sample

		EFT	EFF	SAT
		B	***B***	***B***
Full Range Leadership (FRL) dimensions				
	Idealised influence – Attributed	**1.478***	.365	-.377
	Idealised influence – Behaviour	1.055	.052	.510
	Inspirational Motivation	.813	**1.224***	**1.133***
	Intellectual Stimulation	.313	.284	.178
	Individualized Consideration	-.049	.768	.573
	Contingent Reward	.097	.555	.100
	Management-by-Exception: Active	.366	.391	**.679****
	Management-by-Exception: Passive	.117	.215	.019
	Laissez-faire	-.548	**-1.260***	-.651
Principals' characteristics				
Principals' gender	Women	-.055	.297	.494
	Men	Ref.	Ref.	Ref.
Principals' age	36 – 45	-1.055	-.389	-.132
	46 – 55	.541	-.474	.442
	≥56	Ref.	Ref.	Ref.
Number of years working as a Principal at current school	0 – 4	-.323	**-1.100***	-.689
	5 – 8	-.307	-.721	-.781
	9 – 12	**-1.346***	-.468	-.422
	>12	Ref.	Ref.	Ref.
Principals' qualifications	Bachelor's Degree	-.444	-.673	.080
	Master and/or Doctorate Degrees	Ref.	Ref.	Ref.
Schools' characteristics				
School Size	Non-clustered	-.251	-.470	-.280
	Clustered (<5 schools in the cluster)	.316	**-.835***	.142
	Clustered (>5 school in the cluster)	Ref.	Ref.	Ref.

Note: Source – By Authors; EFT =Extra-Effort; EFF= Effectiveness; SAT =Satisfaction; ***p* < .05; ****p* < .001**; Ref.=category of reference in an ordinal or nominal variable

Appendix: Table with reliability results using teachers' sample

Questionnaires' subdimensions	α (with all original items)	α (after removal of mentioned items)	Items in present study (n)
Idealised influence – Attributed	.888	.928	3
Idealised influence – Behaviour	.898	.898	4
Inspirational Motivation	.953	.953	4
Intellectual Stimulation	.815	.935	3
Individualized Consideration	.793	.918	3
Contingent Reward	.919	.919	4
Management-by-Exception: Active	.779	.779	4
Management-by-Exception: Passive	.865	.927	3
Laissez-Faire	.797	.921	3