

Original research article

# Spanish Principals: Motives for Accession and Difficulties in Enacting the Role

M. Pilar García-Rodríguez, José Carmona and M. Luisa Fernández-Serrat

University of Huelva

Joan Teixidó-Saballs

University of Girona

Correspondence to: [carmona@uhu.es](mailto:carmona@uhu.es)

Published version: García-Rodríguez, M. P., **Carmona, J.**, Fernández-Serrat, M. L., & Teixidó-Saballs, J. (2020). Spanish principals: Motives for accession and difficulties in enacting the role. *Educational Management Administration & Leadership*, doi: 10.1177/1741143218781071

## Abstract

This work explores the relationships between principals' motivations for entering the principalship and the difficulties they experienced during the first year as principals. Survey data were collected from a sample of 2042 Spanish principals. They answered a questionnaire assessing intrinsic and extrinsic motivations, difficulties experienced when doing instructional, informational, and administrative tasks, and other personal and contextual characteristics. The scales developed to measure motivations and difficulties displayed adequate psychometric properties. The results showed the preponderance of intrinsic motivations. Administrative mundane tasks were perceived as the most difficult ones. We also found that non-administrative instructional tasks were more difficult for those principals who were more extrinsically motivated. Some gender differences were observed in motivations and difficulties. Women placed lower value on extrinsic motivations than men. Furthermore, while the difficulty of administrative tasks in their first year as principal was placed higher by women than men, those tasks that are more relationship oriented (i.e., informative and instructional tasks) were rated as more difficult by men than women. Although internal incentives and administrative overload characterize most of the public Spanish principals, some findings pointed to the possibility of other profiles of principals that should be investigated in further studies. Implications for the design of principalship training are also discussed.

## Keywords

Public school principals, motivations, performance difficulties, gender differences, principalship training.

## Spanish Principals: Motives for Accession and Difficulties in Enacting the Role

The Spanish educational system faces serious problems. The school dropout rate amongst Spanish students is over 20% (Eurostat, 2015). The results of TIMSS (Trends in International Mathematics and Science) and PISA (Programme for International Student Assessment) studies also highlight the gap between Spanish students' performance and the average of the OECD countries (Cordero and Manchón, 2014; OECD, 2014). Being aware of the influence that principals have, Spanish educational authorities have promoted significant changes in the profile and training of public school principals in the past years.

The principals' recruitment system in the Spanish public sector has changed to promote a body of professional principals by emphasizing the need for training and the importance of establishing accreditation systems (Intxausti, Joaristi and Lizasoain., 2015). During the past two decades, we have moved from a model in which teaching experience was the only requirement to become principal to a more demanding selection system. Amongst other requirements, a teacher must: (a) demonstrate a minimum of five years of teaching experience, (b) present a project with his/her proposed lines of action to lead and manage the school, and (c) complete a pre-service training program. Following the successful completion of the training program, they are appointed for a four-year period during which further assessment dictates whether they were appointed permanent principals.

In the transition from the classroom to the principalship, novice principals reduce considerably their teaching and increase their leadership and managing role, for which most of them are not fully prepared (Bush, 2016). The adaptation to their new roles has been considered a culture shock (Daresh and Male, 2000), a socialization process that may be difficult, anxiety-provoking, challenging, stressful, and sometimes even traumatic (Cottrell and James, 2016). Previous research has shown that these socialization problems are

influenced by school context characteristics, such as school size (Gretz, 2012; Leithwood and Jantzi, 2009), and by principals' characteristics, such as gender (Grissom and Loeb, 2009; Hallinger, Dongyu and Wang, 2016) and teaching experience (Browne-Ferrigno, 2003; Crow, 2006). We postulate that principals' entry motivations may also be a relevant factor in the way the novice principals learn their new roles, and in the difficulties they experience in that process.

This paper seeks to link the difficulties experienced by Spanish principals in the beginning of their careers to the motivations they have to enter principalship. In the following, we first present some of the research literature related to the socialization difficulties of novice principals. Next, we outline the Self-Determination Theory (SDT) as a framework for studying principals' entry motivations and how they are connected to the difficulties experienced by the beginning principals. After that, we address the effects of some personal and contextual characteristics as potential determinants of principals' motives and difficulties. We conclude this introduction with a statement of the objectives and hypotheses of our study.

#### *Difficulties experienced by novice principals*

As in other countries, when Spanish teachers decide to become principals they have to meet the requirements of educational administrators and the demands of the other educational agents -parents, teachers and pupils. These different demands may involve conflicting interests and principals must often cope with divergent dissatisfiers or strains. Furthermore, principals' projects and the improvements that they assume when accepting the position are not always in line with some of the stakeholders' demands or with the institutional requirements. These problems make the principals' beginnings a complex and laden with uncertainty process (García-Garduño, Slater and López-Gorosave, 2011; Oplatka, 2012; Quong, 2006; Walker and Qian, 2006). In addition, principals do not tend to be greatly

rewarded despite putting a great amount of time and effort into their jobs. More often than not they shoulder responsibility for mistakes, conflicts and slow progress in schools while they rarely receive recognition or reward when things go well.

The difficulties experienced by beginning principals can be better understood in the framework of the process of adaptation to their new unfamiliar roles (Bush, 2016). This process of adaptation or socialization of the new principals has usually been categorized in two main types (Greenfield, 1985): professional and organizational socialization.

Professional socialization refers to learning what it entails to be a principal before taking up the position, by personal experience in school settings and from training courses.

Organizational socialization refers to acquiring the knowledge, skills and values required to perform the principal's job within a specific organization. Much of the difficulties experienced by novice principals arise from the conflict of the roles anticipated -professional socialization- and the roles actually enacted -organizational socialization- (Crow, 2006).

Because newcomers' preconceptions about the roles of a principal frequently clash with the interests of other educational stakeholders, new principals must negotiate the boundaries of their roles (Cottrell and James, 2016). The establishment of role boundaries is not a straightforward process and may lead to conflict among the novice principals and the other stakeholders, causing difficulties to carry out the principals' projects.

Role workload may be another source of difficulties for new principals. When new principals take charge of school, they assume a variety of roles. According to Cuban (1988), school administrators must deal with three complex roles: managerial, political and instructional. Using the description of these roles given by Supovitz and Poglinco (2001), school principals enact a manager role when acting as an administrative chief, they hold a political role as a negotiator and facilitator with parents, administrators, and other community members, and they play an instructional role as a teacher of teachers. Novice principals feel

often overwhelmed by the volume, diversity and unpredictability of the tasks they are expected to perform (Spillane and Lee, 2014). They struggle to manage all the demands of the often-conflicting roles of manager, politician and instructional leader. In particular, previous research has indicated that the conflict between managerial and instructional roles is quite common for new principals (Spillane and Lee, 2014; Supovitz and Poglinco, 2001; Sykes and Elmore, 1989), because the usual large volume of administrative tasks can interfere with the appropriate performance of the duties of instructional leaders.

#### *Principals' entry motivations*

In spite of the problems they will face, a number of Spanish teachers apply for principalship every year. What motivates those educators to engage in a leadership position fraught with role tension and involving an increase in managerial responsibilities? We will try to answer this question by using the framework of Ryan and Deci's Self-determination Theory –SDT- (2000). According to SDT, motivation is central because it is at the core of biological, cognitive, and social regulation, because of its consequences, but specially, to those in roles such as manager or leader, because it involves mobilizing others to act. Furthermore, *“motivation is perhaps the critical variable in producing maintained change”* (Ryan and Deci, 2000: 76). SDT distinguishes between amotivation –lack of motivation-, intrinsic motivation –doing an activity for the sake of it, because of the inherent satisfaction it produces- and several forms of extrinsic motivation –doing an activity for instrumental reasons. Previous research indicated a more intrinsic than extrinsic motivation for principalship in American, Canadian and Australian principals (Friesen, Holdaway and Rice, 1983; Morton, 2011; Schutte and Hackmann, 2006; Su, Gamage and Mininberg., 2003). Su et al. (2003), for example, asked a sample of Australian and American principals about their reasons for becoming principals and found some commonalities: “to have a high paying job” and “to have job security and a steady income” were rated by both as not very important, and

“to work with teachers in school improvement efforts” and “to have an impact in school restructuring” were rated by both as the more important reasons. In a similar vein, Friesen et al. (1983: 54-55) concluded that “*the main sources of satisfaction of principals appear to be intrinsic in nature as compared with the dissatisfiers which are mainly extrinsic*”. We tried to determine whether these findings can be replicated in a sample of Spanish principals.

According to Fernet (2011), principals’ motivation varies across tasks. In support of this claim, Fernet found that the principals with more self-determined motivation for a specific role (eg., instructional) were more satisfied and had greater perceptions of self-efficacy for that role. On the other hand, Gagné and Deci (2005) pointed out that intrinsic motivation is usually associated to greater satisfaction and better performance in complex tasks, whereas extrinsic motivation has a short-term performance advantage for mundane and boring tasks. Assuming that transformational leadership involves mastering a lot of complex abilities such as being able to influence the work of school staff as well as student performance (Fernet, 2011), several studies have found relationships between leadership style and work motivation types that are consistent with Gagné and Deci’s assertions (Barbuto, 2005; Fernet, 2011; Fernet, Trépanier, Austin, Gagné, and Forest, 2015). For example, Fernet (2011) discovered that self-reported transformational leadership was positively related to self-efficacy in complex instructional tasks.

#### *Personal and contextual determinants*

The motivations and difficulties experienced by school principals are influenced by the personal characteristics of the principals and by school characteristics. Gender is one of the main factors influencing the difficulties perceived and the motivations held by potential candidates to principalship, which is reflected in the traditional underrepresentation of women in principalship positions (Carrasco, 2004; Smith, 2011). Female principals confront negative evaluations and stereotypes about their leadership abilities that can hinder their

leadership practices (Andersen 2016; Murakami and Törnsten, 2017). It does not mean, however, that female principals are at a disadvantage compared to male principals for performing any of the tasks involved in school leadership. Grissom and Loeb (2009) studied how effective principals considered themselves to be in leading schools. They found, among other results, that female principals rate themselves as more effective in instructional leadership roles than do their male counterparts. This finding is consistent with a recent meta-analysis (Hallinger et al., 2016) of studies examining gender differences in instructional leadership, which showed that female principals engaged in more active instructional leadership than their male peers. There are also gender differences in the types of motivation experienced by principals, with female principals reporting higher intrinsic motivation than male principals (Fernet, 2011). Similarly, other studies have found that external incentives, as salary, were more influential for men than for women on the decision to pursue a principalship (Harris, Arnold, Lowery and Crocker, 2000; Newton, Giesen, Freeman, Bishop, and Zeitoun, 2003),

Because a requirement to access the principalship in Spain is to have at least five years of teaching experience, the role conception of Spanish beginning principals is likely shaped by their experience as teachers (Browne-Ferrigno, 2003). According to Crow (2006), the principals' experiences as teachers represent a kind of anticipatory socialization that have implications for the way beginning principals develop their instructional orientation and their conceptions of instructional leadership. It seems probable then that the more teaching experience they have the more equipped they will be to handle instructional issues. Thus, we expected a negative relationship between teaching experience and perceived difficulty of the tasks associated with the role of instructional leader.

Large school size is accompanied by more extra and co-curricular activities and, consequently, more supervisory responsibilities and more activities to monitor (Gretz, 2012).

This increased workload usually implies greater difficulty in enacting all the roles associated with the position of school principal. Therefore, we expected that Spanish principals would find more difficulties managing and leading larger schools. Furthermore, because principals' external incentives in Spain do not depend on the size of schools, it is likely that principals in larger schools are more internally motivated.

### *Objectives and hypotheses*

The purpose of this study was to investigate Spanish principals' entry motivations and the difficulties they encountered in the beginning of their career. The study addressed the following questions and hypotheses:

1. What are the main difficulties experienced by novice principals in Spain? Given that most principals conceive instructional leadership as central for their role, and administrative paperwork as frustrating (Spillane and Lee, 2014), we expected that they should find administrative (managerial) mundane tasks as the more difficult ones.
2. What are their motives for entering the principalship? It was hypothesized that, in line with previous research (Friesen et al., 1983; Morton, 2011; Schutte and Hackmann, 2006; Su et al., 2003), intrinsic reasons would be considered as the most important ones for becoming a principal.
3. Do principals' motives and difficulties vary as a function of personal characteristics (teaching experience and gender) and contextual characteristics (school size)? In keeping with previous research (Crow, 2006; Grissom and Loeb, 2009), less difficulties in instructional tasks were expected for female principals and for those who had more teaching experience. We also expected that principals in larger schools find it more difficult to manage and lead their schools. Consistent with prior findings (Fernet, 2011), female principals were expected to

have more intrinsic motivations for entering the principalship than male principals. Finally, it was also hypothesized that those principals who have chosen larger schools were more intrinsically motivated.

4. What is the effect of entry motivations on the difficulties experienced? In agreement with SDT (Gagné and Deci, 2005), we expected that simple tasks (e.g., mundane administrative ones) would be perceived as less difficult by the principals who were more extrinsically motivated. In the same way, we expected that complex tasks (e.g., instructional ones) would be perceived as easier by those who displayed more intrinsic motivations.

Based on the above considerations, we proposed the following specific hypotheses:

H1: Principals motivations would be more intrinsic than extrinsic

H2: Principals' greatest difficulties would be with administrative tasks

H3a: Female principals would have less difficulties with instructional tasks and would be more intrinsically motivated than male principals

H3b: The higher the school size, the more intrinsic motivations of the principal

H3c: The more teaching experience, the less difficulties with instructional tasks

H4a: The higher extrinsic motivation, the less difficulties with administrative tasks.

H4b: The higher intrinsic motivation, the less difficulties with instructional tasks

## Method

The present study was a descriptive and correlational study utilizing survey data to describe novice principals' motivational and other personal variables, as well as the relationships of these variables with the difficulties beginning principals encounter in adopting their new roles.

### *Participants*

A quota sampling method was used to select the sample. We stratified the population of public school principals in Spain according to the type of school they led: primary schools, secondary schools, rural schools and adult education centers. To enhance the representativeness of the sample, the size of each stratum in the sample was determined to be proportional to the size of the corresponding stratum in the population<sup>1</sup>. The resulting sample was comprised of 2042 Spanish principals. Participants' characteristics are summarized in Table 1. Primary school principals accounted for 65.1% of the sample, with 28.3% from secondary schools. The sample also included 80 principals from rural schools (3.9%), and 55 from adult education centers (2.7%). The average number of teachers per school was 31.8 ( $SD = 23.6$ ). Approximately a third of the sample ( $n = 725$ , 35.5%) can be considered novice principals, as they were in their first term. Most of them had extensive teaching experience, with an average of 23.4 years of teaching ( $SD = 7.8$ ). There were more male than female principals (56% vs. 44%). The age mean was 47.6 years ( $SD = 7.0$ ), with an age range between 23 and 66.

#### INSERT TABLE 1

##### *Instrument*

Data were gathered by questionnaires. The questionnaire used was designed for the DIPFLE<sup>2</sup> project. The questionnaire was originally drawn up with the aid of several experts in school leadership. The items were derived from in-depth interviews with novice principals, and from a review of the literature on principals' motivations (Friesen et al., 1983; Morton, 2011; Schutte and Hackmann, 2006; Su et al., 2003) and difficulties (Cuban, 1988; Supovitz and Poglinco, 2001; Sykes and Elmore, 1989). The data in this paper come from the responses to three sections of the questionnaire: (a) identification information (principal's gender and years of teaching experience; school size), (b) motivations to become a principal (10 items), and (c) difficulties encountered during the first year as principal (10 items).

Section b included items intended to measure intrinsic motivation (e.g., “*To face a professional challenge*”) and extrinsic motivation (e.g., “*To get a financial bonus*”). Section c included three types of items designed to tap the difficulties experienced with the three main roles of principals proposed by Cuban (1988). Assuming that difficulties in the instructional role occur mainly in relationships with parents and students, and that difficulties in the political role occur mainly in relationships with other members of the school community (parents and educational authorities), three types of items were elaborated: those designed to assess the difficulties in principals’ relationships with teachers and students (e.g., “*Coordinating teachers*”), those designed to evaluate difficulties in the relationships with other members of the school community (e.g., “*In relationships with educational authorities*”), and those designed to assess the difficulties stemming from principals’ administrative role (e.g. “*Doing administrative tasks*”). In sections b and c, the items were answered with a 6-point Likert-type scale, from 1 “*Minimum degree*” to 6 “*Maximum degree*” of motivation in section b, and from 1 “*Minimum difficulty*” to 6 “*Maximum difficulty*” in section c.

#### *Factor analysis of motivations for principalship*

A principal component analysis (PCA) of the 10 items that reflected the motivations for principalship was performed. Both the Kaiser-Meyer-Olkin measure (.83) and the Bartlett sphericity test ( $\chi^2(36) = 3635.51, p < .01$ ) indicated the suitability of data for factor analysis. An inspection of the eigenvalues revealed that the first factor accounted for 36% of variance, and the second factor for 16%. The third and remaining factors each accounted for less than 10%. A two factor solution was chosen that accounted for 52% of variance, due to its theoretical basis and to the difficulty of interpreting the remaining factors. The orthogonal and oblique rotations of the factors were examined; given that similar results were obtained, a varimax rotation was preferred due to its simplicity. The matrix of factor loadings for this rotated solution is presented in Table 2. All the items had primary loadings over .5, except for

the item 'To respond to staff requests'. Only one item showed a cross-loading over .3 ('To enhance my autonomy and decision making capacity').

#### INSERT TABLE 2

The results supported an interpretation of the first factor as a measure of extrinsic motivations and of the second as a measure of intrinsic motivation. The internal consistency of each of these two subscales was tested using Cronbach's alpha. The alphas were moderate (.72 for extrinsic motivation, and .63 for intrinsic motivation). The elimination of the item 'To respond to staff requests' increased the alpha value of the intrinsic motivation subscale to .69. Because this item was also problematic in factor analysis we decided to remove it from the final subscale. Composite scores were created for each of the two subscales, based on the mean of the items which had their primary loadings on each factor. Higher scores indicated greater motivation.

#### *Factor analysis of the difficulties encountered during the first year as principal*

We also conducted a PCA of the 10 items designed to evaluate the difficulties faced by principals at the beginning after their appointments. Factor analysis was suitable for this data, as indicated by the Kaiser-Meyer-Olkin measure (.87) and the Bartlett sphericity test ( $\chi^2(45) = 6301.58, p < .01$ ). Both the scree-test and the Kaiser criterion pointed to a three factor solution that accounted for 67.94% of variance. The three factor solution was subjected to a varimax rotation that gave three factors clearly interpretable as difficulties in relationships with teachers and students (component 1), difficulties in relationships with other members of the school community (component 2), and difficulties with administrative tasks (component 3). All items had primary loadings over .5, and only two items had cross-loadings over .3 (see Table 3).

#### INSERT TABLE 3

The internal consistency of each of the three subscales was tested using Cronbach's alpha. The alphas were moderate, with values of .69, .78, and .85, for components 1, 2 and 3, respectively. All items were retained because elimination of any of the items did not lead to a substantial increase in the alpha values. Composite scores were created for each of the three subscales, based on the mean of the items which had their primary loadings on each factor. Higher scores indicated greater difficulties.

### *Procedure*

Because the Autonomous Regions are responsible for public education matters in Spain, we asked them to participate in the study. 12 out Spain's 17 autonomous regions agreed to take part.<sup>3</sup> The sampling frame was made up of 13187 principals, representing a 90.6% coverage of the total population of Spanish principals. We contacted principals in two ways. First, we used the email lists provided by educational authorities to ask all the principals in the sampling frame to participate. Those who agreed to participate were sent a copy of the questionnaire, a covering letter and a stamped return envelope. Second, we contacted a fraction of the sampling frame while they were attending mandatory training courses. In this case, the questionnaires were administered face-to-face by a research assistant at the facilities where the courses were taught. This second attempt was made in order to increase participation and to meet the proportional sampling requirements. The global participation rate was 15.5% (2042/13187). Participation rates varied largely among regions, with percentages somewhat lower than 5% in Andalusia and Madrid to percentages greater than 20% in Catalonia and Basque Country.

## Results

The statistical tests used to evaluate the research hypotheses, with an indication of the section of Results in which they are included, are presented in table 4.

## INSERT TABLE 4

*Descriptive statistics*

The descriptive statistics for the motivations and difficulties' subscales are presented in Table 5. The analysis of mean scores showed that motivations of the principals were more intrinsic than extrinsic. These differences were statistically significant ( $t = 91.43$ ,  $df = 1926$ ,  $p < .01$ ) and large ( $d = 4.17$ ). Moreover, the greatest difficulties encountered by principals at the beginning of their career were with administrative tasks (D1), followed by difficulties with teachers and students (D2), and finally by difficulties with other members of the school community (D3). The differences between the mean scores of the three difficulties subscales were all statistically significant, with a large effect size when comparing D1 to D3 ( $t = 41.74$ ,  $df = 1996$ ,  $p < .01$ ,  $d = 1.10$ ) and a moderate effect size when comparing D1 to D2 ( $t = 23.73$ ,  $df = 1996$ ,  $p < .01$ ,  $d = 0.62$ ) and D2 to D3 ( $t = 25.42$ ,  $df = 1995$ ,  $p < .01$ ,  $d = 0.53$ ).

## INSERT TABLE 5

*Gender differences*

Male principals expressed greater extrinsic motivation for becoming leaders than their female counterparts ( $t = 3.19$ ,  $df = 1899$ ,  $p < .01$ ), although these differences were small ( $d = 0.15$ ). In contrast, no statistically significant differences were found in intrinsic motivation ( $t = 1.55$ ,  $df = 1761$ ,  $p = .12$ ,  $d = 0.07$ ). In terms of gender differences, we found that female principals encountered more difficulties with administrative tasks than their male counterparts ( $t = 5.89$ ,  $df = 1971$ ,  $p < .01$ ,  $d = 0.27$ ), while male principals encountered more difficulties than female principals in their relationship with other members of the school community ( $t = 3.39$ ,  $df = 1971$ ,  $p < .01$ ,  $d = 0.15$ ). Although statistically significant, these gender differences in difficulties were also of small size.

*School size and teaching experience*

As Table 6 shows, the size of the school was directly related to intrinsic motivations and to difficulties with teachers and pupils. In contrast, the teaching experience was inversely related to extrinsic motivations, administrative difficulties and difficulties with other members of the school community.

#### INSERT TABLE 6

##### *Relationships between motivations and difficulties*

The bivariate relationships between motivations and difficulties showed the existence of a positive association of extrinsic motivations to difficulties with teachers and pupils and to difficulties with other members of the community (see Table 6). However, no significant relationship was found between intrinsic motivations and difficulties.

To ensure that the relation between extrinsic motivations and difficulties was not spurious, that could not be explained by school size and teaching experience, we conducted a multiple regression analysis with a hierarchical strategy by introducing successive blocks of independent variables. The predictive gain of each new block of independent variables was evaluated through the significance of change in  $R^2$ . In this case, the first block of independent variables consisted of school size and teaching experience. Subsequently, extrinsic motivation was introduced to evaluate whether, once the variables of the first block were controlled, its predictive capacity was maintained. The dependent variables analyzed were those that had shown a significant bivariate relationship with extrinsic motivations. The results of this analysis showed that extrinsic motivations continued to be a significant predictor of the difficulties with teachers and pupils and difficulties with other members of the community, when school size and teaching experience of principals were controlled (Table 7). The predictive capacity of extrinsic motivation was in any case small, with increases of  $R^2$  of .018 and .013 respectively.

#### INSERT TABLE 7

## Discussion

In this study, we aimed to investigate the Spanish principals' self-reported motivations for becoming principals and self-reported difficulties encountered in their first year as principals. For many novice principals, the socialization process that occur when entering the principalship can be described as a minefield full of unexpected problems largely due to role conflicts and role overloads. This study was motivated by the expectation that the socialization difficulties experienced by new principals might be related with their entry motivations, as well as with other personal and contextual factors. Although the main findings of the study are in consonance with research carried out in other countries, we present new empirical evidence and some new insights concerning newcomers' difficulties and motivations.

The results of the principal component analysis on motivations supported the distinction between two groups of motivations for principalship: (a) intrinsic motivations, such as leadership development, school improvement and professional growth, and (b) extrinsic motivations, such as social prestige, promotion, less teaching and more money. With regards to the relative importance of extrinsic and intrinsic motivations for the sample of Spanish principals studied, we found that their motivations were more intrinsic than extrinsic. Despite the contextual differences, our results match those obtained with American, Australian and Canadian principals (Friesen et al., 1983; Morton, 2011; Schutte and Hackmann, 2006; Su et al., 2003), pointing to the relative unattractiveness of the extrinsic rewards linked to the position of school principal. In any case, the relative preponderance of intrinsic motivation may result in some positive consequences. In fact, according to SDT, intrinsic motivation is the most autonomous and self-determined type of motivation and tend to yield greater psychological health and more effective performance than controlled motivation (Deci and Ryan, 2008).

Moreover, although both male and female principals tend to value more intrinsic motivations than extrinsic motivations, men place greater value on extrinsic motivation than women. These results resemble those reported by Newton, Giesen, Freeman, Bishop and Zeitoun (2003), who found that male principal candidates were significantly more likely to base their decisions on salary than female principal candidates. However, unlike other researchers (Fernet, 2011; Schutte and Hackmann, 2006), we found no gender differences on intrinsic motivations. In fact, both male and female principals rated very high on the intrinsic motivation subscale, indicating that both were strongly determined by intrinsic reasons. Women's lower ratings of extrinsic motivations may be explained by the gender-specific problems they encounter in their working environments (Coleman, 2001; Young and McLeod, 2001), which can make these low extrinsic rewards even less attractive. Schutte and Hackmann (2006) found that female principal candidates were concerned about gender discrimination whereas male principal candidates were more likely to apply to available positions. The data from our study showed that Spanish male principals outnumber their female counterparts by 10%, even though women represent more than two thirds of Spanish teachers (Ministerio de Educación, 2015).

The principal component analysis on difficulties suggested that the problems faced by principals at the beginning of their career can be grouped into three classes: (a) difficulties with teachers and students, (b) difficulties with families and authorities, and (c) difficulties with administrative tasks. This result confirms our expectation that principals' difficulties could be classified into three groups according to Cuban's (1988) three main roles of principals: managerial, political and instructional roles. A similar classification, which is even closer to what has been found, is the one proposed by Cattonar (2001). According to Cattonar, principals' work activities can be grouped around the following three roles (Fernet, 2011): (a) *instructional role*, being a pedagogical leader for the teachers and indirectly for

their students; (b) *informational role*, promoting the school to the community and being the point of contact with parents and authorities; and (c) *administrative role*, being a manager or school administrator. We found that Spanish principals viewed the administrative role as the most difficult and the instructional role as the least difficult role during their first year in the position. This result indicates the pressures to which novice Spanish principals are subjected, the excessive bureaucratic burden they experience (Author, 2010). Furthermore, difficulties in the administrative role also may reflect a conflict between the roles they expected to perform (professional socialization) and the roles they actually enacted (organizational socialization). Spanish principals view themselves primarily as instructional leaders, not as administrative managers (Vázquez, Liesa and Bernal, 2016). However, they usually spend most of their time on administrative tasks, especially when they are new to their position (Gómez, 2010). This dissonance may lead novice principals to experience their administrative role as a source of frustration and stress (Spillane and Lee, 2014). Principal preparation should include an adequate balance between instructional leadership and administrative management competencies to mitigate the ‘culture shock’ that principals experience as they cross the threshold from teaching into principalship (Daresh and Male, 2000).

Some gender differences were also observed in the perception of the relative difficulty of administrative, informational and instructional tasks. While the difficulty of administrative tasks was placed higher for women than for men, the tasks that are more relationship-oriented (i.e., informative tasks) were more difficult for men than for women. A plausible explanation of these gender differences may be the differential role played by relationships in the development of women and men (Gilligan, 1982). The crucial role of relationships in identity formation for women usually leads them to develop more social skills (Coria, Covas and Farré., 2005). For this reason, it is no surprise that female principals perceived fewer

difficulties in their relationships with teachers, pupils and families than their male counterparts.

An interesting finding of the present study was that extrinsic motivations were associated to greater difficulty performing complex tasks. We found that non-administrative tasks were more difficult for the principals who are more extrinsically motivated, even when we controlled for school size and principal's teaching experience. However, there was no relationship between extrinsic motivation and the perceived difficulty of administrative tasks. Furthermore, we found no relationship between intrinsic motivation and perceived task difficulty. Thus, these results offer only partial support for our hypotheses. On the one hand, these findings contribute to the controversial literature on the effects of extrinsic rewards on performance (Gerhart and Fang, 2015), by providing some evidence favorable to the existence of a negative effect of extrinsic incentives. It seems that those Spanish principals who were more attracted by extrinsic incentives (e.g., pay, prestige...) find it more difficult to carry out the more complex activities. On the other hand, there was an apparent lack of differential effects of intrinsic motivation which is conflicting with the prevailing view in the field of motivation (Ryan, 2012). This may be partially due to the relatively low variability of intrinsic motivations in our sample. Nevertheless, further research is needed to explore these effects. Moreover, since transformational leadership practices have been linked to both, difficulties performing complex tasks and intrinsic motivations (Barbuto, 2005; Fernet, 2011), prospective research should also control for leadership styles.

We also found that the motivations and difficulties of Spanish principals are related to some personal and contextual factors. Regarding personal characteristics, the principals teaching experience was negatively associated with extrinsic motivations and with difficulties playing administrative and informative roles. This result is not surprising because a natural consequence of increasing experience is that the desire to be promoted tends to decrease and

the knowledge of administrative tasks to increase. In addition, principals teaching experience usually involves the enhancement of the repertoire of skills for enacting the environment (Johnson and Fauske, 2000) and is crucial for effective communication strategies (Marcharia, 2012). Contrary to the expectations, we did not find a significant negative relationship between years of teaching experience and difficulties in the instructional role. Considering that recent generations of Spanish teachers have been more extensively trained in instructional methods than the older ones, it is plausible that the effects the greater teaching experience of the older principals have been compensated by the effects of the higher training in pedagogical matters of the younger ones. With respect to the contextual characteristics, we observed that the size of school was positively related to intrinsic motivations and to difficulties playing instructional and informative roles. It may be surprising that administrative difficulties were not greater in those leading larger schools, but it can be due to the greater administrative support received by larger schools in Spain. The existence of greater instructional and communicative difficulties can be explained by the increase in problems caused by a greater number of teachers, students and families. However, it is worth noting that principals' motivations seem to be more altruistic in larger than in smaller schools. Principals in larger schools tend to have more self-determined reasons for entering the principalship, which is consistent with the fact that in Spain their pay does not depend on the size of the school.

#### *Limitations of the study and future prospects*

Although the results of this study seem to indicate that the main motivation of novice principals is intrinsic, these findings may be contaminated by the tendency to give socially desirable responses. Measures based on self-reports, such as those used in this study, are particularly prone to producing socially desirable responses (Paulhus, 1991). Hence, these

results should be backed up by studies using qualitative methodologies –in-depth interviews, discussion groups- to confirm them. Furthermore, perhaps future studies should triangulate information obtained directly from principals with information provided by colleagues and other members of the school community.

Moreover, given the cross-sectional nature of the study we were not able to address some interesting questions. For instance, it would be interesting to conduct longitudinal studies to determine how principals' motivations change throughout their career. Another intriguing question is whether principals' initial motivations have any influence on factors such as future satisfaction or future self-efficacy in leadership tasks. Therefore, prospective longitudinal studies that follow principals from the early stages of their career would be needed to answer these questions adequately.

The findings of this study lead us to hypothesize the existence of two profiles of principals that should be studied in detail. Each one of these profiles would be primarily characterized by a dominant type of motivation. On the one hand, the most common type of principals would be fueled more by intrinsic motivations than by extrinsic ones. On the contrary, the second type of principals would be more motivated by extrinsic rewards than by intrinsic desires. We could call them, borrowing Daniel Pink's terms (2009), Type I's and Type X's principals, respectively. Our results suggest that principals in large schools are more likely to be Type I's principals. On the other hand, it is likely that Type X's principals would experience difficulties with instructional and informational tasks. Furthermore, we expect that type X's principals tend to be males and to have less teaching experience than type I's principals. Finally, based on Barbuto (2005), we also hypothesize that a transformational leadership style should be more common among Type I's principals than among Type X's principals. Further research should be done to confirm these hypotheses.

## Conclusion

Given the considerable number of Spanish principals who have taken part in this study, its results may be considered as a fairly accurate picture of the difficulties and motivations of Spanish principals at the start of their career. To conclude, we would like to emphasize the implications of two findings of our study: (a) the apparent unattractiveness of extrinsic rewards, and (b) the preponderance of difficulties related to the administrative role. The salary differential between teachers and principals in Spain is in a range from 10% to 30%, depending on the teachers' seniority and the school size, among other factors. Our results suggest that these incentives may not be compelling enough to convince teachers to give up the classroom for the stress of a principalship (Pijanowski, Hewitt and Brady, 2009). While recognizing the value of intrinsic motivations, we encourage policymakers to adjust incentives to make Spanish principalship more attractive to a wider pool of potential candidates. On the other hand, Spanish novice principals had special difficulties coping with the administrative burden of the position. Although principals tend to view themselves as leaders, not managers, they must face the complex reality of principals' daily practice. To avoid the "reality shocks" experienced by neophytes, principals' training programs should stress the multifaceted nature of principalship, emphasizing the importance of each of the different principals' roles for the proper functioning of the school.

Finally, we would like to highlight the importance played by motivations in coping with the difficulties in professional development, and consequently in the success of school leaders (Browne-Ferrigno, 2003; Vandenberghe, 2003). The success of the school leader could be encouraged by a system of human resources that consider both the requirements of schools and the expectations of aspiring principals (Hess, 2003; Pounder and Merrill, 2001).

## Notes

<sup>1</sup> Census data obtained from the 2009/10 Spanish Educational System Annual Report (Ministerio de Educación, 2011): 9758 (67%) primary schools, 3934 (27%) secondary schools, 474 (3.3%) rural schools, and 394 (2.7%) adult education centers.

<sup>2</sup> Design of a Training Program for School Leaders Project. This project was funded by the Spanish Government (Ministry of Education). Reference: SEJ2005-08513-C04-01. Universities of Girona, Basque Country, Zaragoza and Huelva.

<sup>3</sup> These regions were Andalusia, Aragon, Balearic Islands, Castilla-La Mancha, Castilla y León, Canary Islands, Catalonia, Valencia, Extremadura, Galicia, Madrid and the Basque Country.

## References

- Andersen K (2016) Bourdieu's distinction between rules and strategies and secondary principal practice: a review of selected literature. *Educational Management Administration & Leadership* 44(4): 688–705.
- Author (2010)
- Barbuto JE (2005) Motivation and transactional, charismatic, and transformational leadership: A test of antecedents. *Journal of Leadership & Organizational Studies* 11(4): 26-40.
- Browne-Ferrigno T (2003) Becoming a principal: Role conception, initial socialization, role-identity transformation, purposeful engagement. *Educational Administration Quarterly* 39(4): 468-503.
- Bush T (2016) Preparing new principals: Professional and organisational socialisation. *Educational Management Administration & Leadership* 44(1): 3-5.
- Carrasco MJ (2004) Análisis de los estilos directivos de las mujeres en centros escolares. *Revista Iberoamericana de Educación* 33(3): 1-13.
- Cattonar B, Lessard C, Blais, JG, et al. (2007) *School principals in Canada: Context, profile and work*. Montreal, Canada: Université de Montréal
- Coleman M (2001) Achievement against the odds: the female secondary headteachers in England and Wales. *School Leadership and Management* 21(1): 75-100.
- Cordero JM and Manchón C (2014) Factores explicativos del rendimiento en educación primaria: un análisis a partir de TIMSS 2011. *Estudios sobre Educación* 27: 9-35.
- Coria C, Covas S and Farré AF (2005) *Los cambios en la vida de las mujeres: temores, mitos y estrategias*. Barcelona: Paidós.
- Cottrell M and James C (2016) Theorizing headteacher socialization from a role boundary perspective. *Educational Management Administration & Leadership* 44(1): 6-19.

- Crow GM (2006) Complexity and the beginning principal in the United States: Perspectives on socialization. *Journal of Educational Administration* 44(4): 310-325.
- Cuban L (1988) *The managerial imperative and the practice of leadership in schools*. Albany: State University of New York Press.
- Daresh J and Male T (2000) Crossing the border into leadership: Experiences of newly appointed British headteachers and American principals. *Educational Management & Administration* 28(1): 89-101.
- Deci EL and Ryan RM (2008) Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology/Psychologie Canadienne* 49(3): 182-185.
- Eurostat (2015) *The EU is moving closer to its Europe 2020 goals on education* (Press release). Available at: <http://ec.europa.eu/eurostat/documents/2995521/6787423/3-20042015-BP-EN.pdf/b2f295ba-2e15-409c-bec9-91c4e49c5d32> (accessed 2 June 2017)
- Fernet C (2011) Development and Validation of the Work Role Motivation Scale for School Principals (WRMS-SP). *Educational Administration Quarterly* 47(2): 307-331.
- Fernet C, Trépanier SG, Austin S, Gagné M and Forest J (2015) Transformational leadership and optimal functioning at work: On the mediating role of employees' perceived job characteristics and motivation. *Work & Stress* 29(1): 11-31.
- Friesen D, Holdaway E and Rice A (1983) Satisfaction of school principals with their work. *Educational Administration Quarterly* 19(4): 35-58.
- Gagné M and Deci EL (2005) Self-determination theory and work motivation. *Journal of Organizational Behavior* 26(4): 331-362.

García-Garduño JM, Slater C and López-Gorosave G (2011) El Director Escolar Novel:

Estado de la Investigación y Enfoques teóricos. *Revista Iberoamericana sobre Calidad, Eficacia y Cambio en Educación* 9(3): 31-50.

Gerhart B and Fang M (2015) Pay, Intrinsic Motivation, Extrinsic Motivation, Performance, and Creativity in the Workplace: Revisiting Long-Held Beliefs. *Annual Review of Organizational Psychology and Organizational Behavior* 2(1): 489-521.

Gilligan C (1982) *In a different voice: Psychological theory and women's development*. Cambridge, MA: Harvard University Press.

Gómez, AM (2010) *La formación inicial para la dirección escolar como impulso para conseguir una dirección competente en Andalucía*. (Doctoral dissertation, University of Huelva). Retrieved from <http://rabida.uhu.es/dspace/>

Greenfield WD (1985) The moral socialization of school administrators: informal role learning outcomes. *Educational Administration Quarterly* 21(4): 99–119.

Gretz PM (2012) *An Analysis of the Discrepancy Between What Potential Candidates for the Principalship Desire in the Job of Principal and What They Perceive to be Provided by the Job and the Extent to Which That Discrepancy Predicts the Attractiveness of the Principalship* (Doctoral dissertation, Virginia Tech). Retrieved from <https://vttechworks.lib.vt.edu/handle/10919/77357>

Grissom JA and Loeb S (2009) *Triangulating Principal Effectiveness: How Perspectives of Parents, Teachers, and Assistant Principals Identify the Central Importance of Managerial Skills*. Working Paper 35. National Center for Analysis of Longitudinal Data in Education Research.

Hallinger P, Dongyu L and Wang WC (2016) Gender differences in instructional leadership: A meta-analytic review of studies using the principal instructional management rating scale. *Educational Administration Quarterly*, 52(4): 567-601.

Harris S, Arnold M, Lowery S and Crocker C (2000) Deciding to become a principal: What factors motivate or inhibit that decision? *ERS Spectrum* 18(2): 40-45.

Hess FM (2003) *A license to lead? A new leadership agenda for American schools*.

Washington, DC: Progressive Policy Institute.

Johnson BL and Fauske JR (2000) Principals and the political economy of environmental enactment. *Educational Administration Quarterly* 36(2): 159-185.

Intxausti N, Joaristi L and Lizasoain L (2015) Educational leadership as best practice in highly effective schools in the Autonomous Region of the Basque Country (Spain).

*Educational Management Administration & Leadership* 44(3): 397-419.

Leithwood K and Jantzi D (2009) A review of empirical evidence about school size effects: A policy perspective. *Review of Educational Research* 79(1): 464-490.

Macharia NM (2012) *Application of information communication and technology in school management practices in public secondary schools in Ruiru district, Kiambu county, Kenya* (Master dissertation, Kenyatta University). Retrieved from <http://ir-library.ku.ac.ke/handle/123456789/6445>

Ministerio de Educación (2015) *Datos y Cifras. Curso Escolar 2015-2016*. Madrid: Secretaría General Técnica.

Morton W (2011) *Factors that motivate and inhibit educators to apply for the principalship*. PhD thesis, University of Denver, USA.

Murakami ET and Törnsten M (2017) Female secondary school principals: Equity in the development of professional identities. *Educational Management Administration & Leadership* 45(5): 806-824.

Newton RM, Giesen J, Freeman J, Bishop H and Zeitoun P (2003) Assessing the reactions of males and females to attributes of the principalship. *Educational Administration Quarterly* 39(4): 504-532.

- OECD (2014) *PISA 2012 Results: What Students Know and Can Do (Volume I, Revised Edition, February 2014): Student Performance in Mathematics, Reading and Science*. Paris: OECD Publishing.
- Oplatka I (2012) Towards a conceptualization of the early career stage of principalship: Current research, idiosyncrasies and future directions. *International Journal of Leadership in Education* 15(2): 129-151.
- Paulhus DL (1991) Measurement and control of response bias. In: Robinson JP, Shaver PR and Wrightsman LS (eds.) *Measures of personality and social psychological attitudes*. New York: Academic Press, pp. 17-59.
- Pijanowski JC, Hewitt PM and Brady KP (2009) Superintendents' perceptions of the principal shortage. *NASSP Bulletin* 93(2): 85-95.
- Pink DH (2009) *Drive: The surprising truth about what motivates us*. New York: Penguin-Riverhead.
- Pounder DG and Merrill RJ (2001) Job desirability of the high school principalship: A job choice theory perspective. *Educational Administration Quarterly* 37(1): 27-57.
- Quong T (2006) Asking the hard questions: being a beginning principal in Australia. *Journal of Educational Administration* 44(4): 376-388.
- Ryan RM (2012) *The Oxford handbook of human motivation*. Oxford University Press.
- Ryan RM and Deci EL (2000) Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist* 55(1): 68-78.
- Schutte TJ and Hackmann DG (2006) Licensed but Not Leading: Issues Influencing Individuals' Pursuit of the Secondary Principalship. *Journal of School Leadership* 16(4): 438-466.

- Smith JM (2011) Aspirations to and Perceptions of Secondary Headship: Contrasting Female Teachers' and Headteachers' Perspectives. *Educational Management Administration & Leadership* 39(5): 516-535.
- Spillane JP and Lee LC (2014) Novice school principals' sense of ultimate responsibility: Problems of practice in transitioning to the principal's office. *Educational Administration Quarterly* 50(3): 431-465.
- Su Z, Gamage D and Mininberg E (2003) Professional preparation and development of school leaders in Australia and the USA. *International Education Journal* 4(1): 42-59.
- Supovitz, J A and Poglinco SM (2001) *Instructional leadership in a standards-based reform*. Philadelphia: Consortium for Policy Research in Education.
- Sykes G and Elmore R (1989) Making schools manageable. In J Hannaway and R Crowson (Eds.), *The politics of reforming school administration* (pp. 77-94). Philadelphia: Falmer.
- Vázquez S, Liesa M and Bernal, JL (2016) El camino hacia la profesionalización de la función directiva: el perfil competencial y la formación del director de centros educativos en España. *Perfiles Educativos* 38(151): 158-174.
- Walker A and Qian H (2006) Beginning principals: Balancing at the top of the greasy pole. *Journal of Educational Administration* 44(4): 297-309.
- Young MD and McLeod S (2001) Flukes, opportunities, and planned interventions: Factors affecting women's decisions to become school administrators. *Educational Administration Quarterly* 37(4): 462-502.

Table 1  
Summary table of participants' characteristics

<b>Characteristic</b>	
	<b>Mean <math>\pm</math> SD (range)</b>
Age	47.65 $\pm$ 6.96 (23-66)
Years of principalship	7.53 $\pm$ 6.22 (0-38)
Years of teaching	23.39 $\pm$ 7.82 (5-43)
School size (number of students)	346.10 $\pm$ 259.17 (4-1921)
School size (number of teachers)	31.83 $\pm$ 23.58 (1-157)
	<b>Frequency (%)</b>
Female	904 (44.3%)
Type of school	
Primary	1330 (65.1%)
Secondary	577 (28.3%)
Adult Education	55 (2.7%)
Rural	80 (3.9%)

Table 2

Factor loadings based on principal component analysis with varimax rotation of the 10 items assessing motivations

	Components	
	1	2
To get social prestige	.750	
To obtain merits for promotion	.727	
To teach less	.687	
To get a financial bonus	.674	
To consolidate work destination	.552	
To exercise leadership tasks		.727
To improve the functioning of the school		.704
To face a professional challenge		.691
To enhance my autonomy and decision making capacity	.480	.556
To respond to staff requests		.401

*Note.* Items were designed to measure extrinsic motivations (Component 1) and intrinsic motivations (Component 2)

Table 3

Factor loadings based on principal component analysis with varimax rotation of the 10 items assessing difficulties

	Components		
	1	2	3
Doing administrative tasks			.856
Managing time			.851
Increasing teacher commitment	.856		
Coordinating teachers	.798		
Promoting teacher innovation	.781		
With the implementation of the school project	.727		
With student discipline	.507	.403	
In relationships with the Educational Authorities		.794	
In relationships with non-teaching staff		.777	
In relationships with parents	.322	.770	

*Note.* Items were designed to measure difficulties with administrative tasks (Component 3), difficulties in the relationships with teachers and students (Component 1), and difficulties in the relationships with other members of the school community (component 2)

Table 4  
Summary table of research hypotheses

<b>Hypotheses</b>	<b>Analysis</b>	<b>Section</b>
<b>H1</b> Principals motivations would be more intrinsic than extrinsic	Paired Samples t test	Descriptive statistics
<b>H2</b> Principals' greatest difficulties would be with administrative tasks	Paired Samples t-tests	Descriptive statistics
<b>H3a</b> Female principals would have less difficulties with instructional tasks and would be more intrinsically motivated than male principals	Independent samples t-tests	Gender differences
<b>H3b</b> The higher the school size, the more intrinsic motivations of the principal	Pearson correlations	School size and teaching experience
<b>H3c</b> The more teaching experience, the less difficulties with instructional tasks		
<b>H4a</b> The higher extrinsic motivation, the less difficulties with administrative tasks.	Pearson correlations-	Relationships between
<b>H4b</b> The higher intrinsic motivation, the less difficulties with instructional tasks	Multiple regresssion	motivations and difficulties

Table 5  
Means and standard deviations for the two motivation subscales and the three difficulties subscales, by gender.

	Males	Females	Total
Intrinsic motivations	4.38 (0.90)	4.31 (0.99)	4.35 (0.94)
Extrinsic motivations	2.32 (1.00)	2.17 (0.99)	2.25 (1.00)
Administrative difficulties	4.05 (1.19)	4.36 (1.13)	4.19 (1.17)
Difficulties with teachers and students	3.57 (1.05)	3.41 (1.10)	3.50 (1.07)
Difficulties with other members of the school community	2.99 (1.12)	2.83 (1.18)	2.91 (1.15)

Note: Standard deviations are in parentheses.

Table 6  
 Pearson correlation coefficients between motivations subscales, difficulties subscales and background variables

	1	2	3	4	5	6	7
1 Extrinsic motivations	---						
2 Intrinsic motivations	.396**	---					
3 School size (number of teachers in the school)	.016	.126**	---				
4 Years of teaching experience	-.168**	.041	.087**	---			
5 Administrative difficulties	.033	-.017	.005	-.147**	---		
6 Difficulties with teachers and pupils	.148**	.036	.291**	-.043	.322**	---	
7 Difficulties with other members of the school community	.128**	.044	.171**	-.078**	.308**	.581**	---

Table 7

*Hierarchical Regression Analyses for Variables Predicting (a) Difficulties with teachers and pupils and (b) Difficulties with other members of the school community*

Dependent variable: Difficulties with teachers and pupils						
	Base model			Full model		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
(Constant)	3.327	0.080		2.932	.103	
Teaching experience	-0.011	0.003	-0.077**	-0.008	0.003	-0.054*
School size	0.013	0.001	0.295**	0.013	0.001	0.291**
Extrinsic motivation				0.145	0.024	0.136**
$R^2$		.089			.107	
<i>F</i> for change in $R^2$		90.010**			36.928**	

  

Dependent variable: Difficulties with other members of school community						
	Base model			Full model		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
(Constant)	2.969	0.089		2.602	0.114	
Teaching experience	-0.014	0.003	-0.093**	-0.011	0.003	-0.074**
School size	0.009	0.001	0.176**	0.008	0.001	0.172**
Extrinsic motivation				0.135	0.027	0.118**
$R^2$		.037			.050	
<i>F</i> for change in $R^2$		35.161**			25.957**	

Note: \* $p < .05$ . \*\* $p < .01$ .