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Transformational Leadership and Collective Teacher Self-Efficacy: The Mediating Role of Satisfaction with Job Resources

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This study analyzes the relationships between transformational leadership and job resources' satisfaction with collective teacher self-efficacy. It also explores the mediating role of satisfaction with job resources between transformational leadership and collective teacher self-efficacy. Primary level teachers (N = 260) from different schools in Argentina participated in this study, ranging from 21 to 60 years old. Participants responded to scales that assessed transformational leadership, satisfaction with job resources (leader, task, team, organization), and collective teacher self-efficacy. SEM models were computed using Unweighted Least Squares estimation. First, we tested if participants distinguished between the thirteen primary constructs previously measured using confirmatory factor analysis. Then, a predictive model with the three main latent variables was specified, and each dimension's average scores were used as indicators. After minor changes, the measurement and predictive models fit the data satisfactorily. Specifically, transformational leadership was a direct predictor of satisfaction with job resources and an indirect and large predictor of collective teacher self-efficacy. In turn, satisfaction with job resources is the only direct and significant predictor of collective teacher self-efficacy. Altogether, the model explained 57% of the variance of collective teacher self-efficacy. This study demonstrates the capacity of transformational leadership behaviors of school principals to influence teacher outcomes variables.

Keywords: leadership, self-efficacy, elementary school, school improvement, principals

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INTRODUCTION

In Argentina, the teaching profession is affected by different problems that place it at the center of concerns for the country's progress. Educational data are alarming. This includes students and their academic performance, unequal access to education, desertion and absenteeism (Ministerio de Educación de la Provincia de Córdoba, 2018; Presidencia de la Nación, 2018), but also teaching teams, their remuneration, training, institutional support, academic trajectories and their health (Alvites-Huamaní, 2019; Vaillant, 2016; Vélaz de Medrano & Vaillant, 2015).

Current debates indicate that policies aimed at teachers determine the quality of teaching and learning in a country (CIPPEC, 2017; Vaillant, 2016; Vélaz de Medrano & Vaillant, 2015). However, there is considerable discomfort among teachers (Alvites-Huamaní, 2019). Among the indicators of this discomfort, one could point out, on the one hand, the perceptions about one's ability to positively influence students and, on the other hand, the lack of initiative and institutional resources to promote the performance of all teachers as an organized collective. Treating these sources of discomfort would make it possible to overcome the difficulties encountered by the group of teachers in a school to carry out teamwork and result in greater perceived efficacy.

Collective teacher self-efficacy is a relevant variable for school functioning, motivation, engagement, and teachers' and students' performance (Al-Mahdy et al., 2018; Buonomo et al., 2020; Çoğaltay & Karadağ, 2017; Donohoo, 2018; Olivier & Hipp, 2006; Skaalvik & Skaalvik, 2019; Strahan née Brown et al., 2019; Zhang & Yin, 2017). Considering that collective teacher self-efficacy is an emerging phenomenon at the group level, it is important to investigate its relation with educational institution variables.

One of the variables of the educational institution that has stood out the most in research on collective teacher self-efficacy is transformational leadership, which addresses the role of the principal in the school (Cansoy, 2020; Demir, 2008; Dussault et al., 2008; Kurt et al., 2011; Liu et al., 2020; Ninković & Knežević Florić, 2018; Ross & Gray, 2006a, 2006b). Several of these studies propose collective teacher self-efficacy as a mediating variable between a principal's leadership and student performance (Fancera & Bliss, 2011; Kurt et al., 2011; Ross & Gray, 2006a, 2006b). The principal would positively impact students by contributing to their teachers' collective self-efficacy beliefs (Salas-Rodríguez & Lara, 2020).

On the other hand, teachers are generally unsatisfied with cognitive and affective aspects from a collective perspective or with the organizational aspects of their work (e.g., working condition and workload, salary, social representation of the profession, relationship with colleagues, leadership styles, Butt et al., 2005). For this reason, it is vital to consider satisfaction with job resources (Spontón et al., 2019) in the relationship between transformational leadership and collective teacher self-efficacy.

It should be noted that although the job resources provided by an institution (material and social resources) are essential for well-being and performance, two people who work in the same job position, endowed with the same job resources, may present

different degrees of satisfaction (Lent & Brown, 2008). Different studies point out that well-being levels are explained more by judgments of satisfaction and perceived support than by resources provided by the organization (Duffy & Lent, 2009). There are still few studies that, when analyzing the context in which teaching teams work, pay attention to well-being perception with work context. Thus, for example, significant relationships have been reported between collective teacher self-efficacy and job satisfaction (Buonomo et al., 2020; Klassen et al., 2010; Sánchez-Rosas et al., 2022; Skaalvik & Skaalvik, 2019).

Although the predictive capability of transformational leadership on collective teacher self-efficacy has already been analyzed (Cansoy, 2020; Demir, 2008; Dussault et al., 2008; Kurt et al., 2011; Liu et al., 2020; Ninković & Knežević Florić, 2018; Ross & Gray, 2006a, 2006b), no research is known that addresses the predictive and mediating role that satisfaction with job resources has in this relationship. Therefore, in this study, we propose to analyze the predictive relationships of transformational leadership and satisfaction with job resources in collective teacher self-efficacy. This research contributes as a theoretical novelty to the analysis of the mediating role of satisfaction with job resources to the existing literature on transformational leadership and collective teacher self-efficacy. In addition, it will be possible to determine if satisfaction with job resources promotes collective teacher self-efficacy and if transformational leadership directly or indirectly influences collective teacher self-efficacy. This will provide information to those who must decide whether to direct the actions to improve collective teacher self-efficacy towards principals and their leadership or teachers and their satisfaction with job resources.

Review of Literature

Transformational leadership

Transformational leadership can be understood as increasing organizational members' commitment, capacity, and engagement in meeting goals (Siangchokyoo et al., 2020). This leadership style has been related to employee satisfaction, satisfaction with the supervisor, and extra effort (Podsakoff et al., 2000).

In the school context, transformational leadership of principals influences collective teacher self-efficacy (Mehdinezhad & Mansouri, 2016), the development of organizational capability (Bush, 2018; Demir, 2008; Leithwood & Jantzi, 2005) and job satisfaction, organizational citizenship behavior, teacher's organizational commitment (Gómez Rada, 2019; Nguni et al., 2006). Transformational leadership has also been shown to contribute to developing an innovative climate at school (Siangchokyoo et al., 2020) and would have a small but significant effect on student achievement (Ross & Gray, 2006a, 2006b; Sun & Leithwood, 2012).

Satisfaction with job resources

Satisfaction with job resources refers to people's well-being with different factors in a work context, which facilitate the development of the task and the achievement of work objectives, stimulate the individual and collective performance, stimulate personal

development and growth and promote a positive work environment (Spontón et al., 2019). Spontón et al. (2019) discriminate four resources within satisfaction with job resources. Satisfaction with a leader covers many aspects of the relationship with the principal, such as the clarity of information, feedback, and acknowledgment of the task. Satisfaction with task resources considers the features specific to the study and the opportunity to accomplish it. Satisfaction with team resources comprises the relationship with teamwork related to cooperation, coordination, productivity, and creativity in problem-solving. Satisfaction with organizational resources includes work conditions and organizational practices (training, salary, rewards, and benefits). These researchers empirically showed how satisfaction with job resources affects engagement and burnout (Spontón et al., 2019).

Collective teacher self-efficacy

Collective teacher self-efficacy could be defined as the shared perceptions of teachers in a school that, as a whole, they will be able to organize and carry out the necessary actions to achieve specific goals (Sánchez-Rosas et al., 2022). Collective teacher self-efficacy demonstrated a positive relation with factors regarding the school faculty, such as involvement in school decision-making (Goddard, 2002), teacher commitment (Al-Mahdy et al., 2018), teacher's feeling of belonging to the institution (Skaalvik & Skaalvik, 2019), implementation of school improvement strategies, teacher leadership (Donohoo, 2018; Olivier & Hipp, 2006), job satisfaction (Buonomo et al., 2020), professional well-being (Strahan née Brown et al., 2019).

Transformational leadership and collective teacher self-efficacy

Principals who adopt transformational leadership can influence teachers' work and collective beliefs (Goddard et al., 2015). This is reflected in several studies that have informed a direct, positive, and moderate ($.13 < r$ or $\beta < .66$) relationship or influence of a principal's transformational leadership on collective teacher self-efficacy (Cansoy, 2020; Demir, 2008; Dussault et al., 2008; Kurt et al., 2011; Liu et al., 2020; Ninković & Knežević Florić, 2018; Ross & Gray, 2006a, 2006b).

Demir (2008) and Ross and Gray (2006a, 2006b) recognize that teachers' individual beliefs of self-efficacy and collective belief of self-efficacy stem from mastery and vicarious learning experiences, social pressure, and the emotional tone of the school organization. The different facets that characterized transformational leadership (charisma, inspiration, intellectual stimulation, and individual consideration) would enable principals to influence each source (Kurt et al., 2011). Thus, for example, providing feedback on practical actions, bringing an inspiring message on collective capacity, enabling situations to observe successful behaviors of other teachers, or reducing stressful situations are actions implemented by principals oriented to transformational leadership that improve the sources of collective efficacy beliefs (Ross & Gray, 2006a, 2006b).

Transformational leadership and satisfaction with job resources

Given the motivating and beneficial nature of transformational leadership at different levels of an organization (Siangchokyoo et al., 2020), it is possible to anticipate a

positive relationship with satisfaction with job resources. Some research that addressed similar variables found that transformational leadership promotes the satisfaction with team resources and employee performance (Buil et al., 2019; Gil et al., 2011), the achievement of people in the organization, and their satisfaction (Eliyana et al., 2019) and communication (Yue et al., 2019). Lai et al. (2020) and Pastor et al. (2007) found that workers who have supervisors who are characterized by transformational leadership experience positive emotions and job satisfaction.

More specifically, at the school level, transformational leadership has been shown to influence attitudes and outcomes of teaching work. Thus, teachers in schools with principals that exercise transformational leadership are more likely than teachers in other schools to express satisfaction with their principal and are also more likely to be committed to the organization and make an improvement (Andriani et al., 2018; Leithwood & Jantzi, 2005).

Satisfaction with job resources and collective teacher self-efficacy

Together with transformational leadership, job satisfaction is one of the most studied variables regarding collective teacher self-efficacy (Ramos et al., 2016; Salas-Rodríguez & Lara, 2020). Most studies analyze collective teacher self-efficacy's strong and positive influence on job satisfaction (Buonomo et al., 2020; Klassen et al., 2010; Viel-Ruma et al., 2010), concluding that the teachers feel more satisfied when they feel more confident about their collective teaching performance. Although the research that analyzed these effects in the opposite direction is scarce, it is worth mentioning a recent study by Skaalvik and Skaalvik (2019) in which they showed that the presence of job resources (supervisory support, supportive colleagues, and value consonance) predicted collective teacher self-efficacy. This research replicated the results of other similar studies (Avanzi et al., 2013; Skaalvik & Skaalvik, 2010).

Present study

This study sought to analyze the predictive relationships of transformational leadership and satisfaction with job resources on collective teacher self-efficacy. It also intends to explore the mediating role of satisfaction with job resources between transformational leadership and collective teacher self-efficacy.

When modeling and evaluating each of these three latent variables, it will be considered to measure the different dimensions of transformational leadership (charisma, inspiration, intellectual stimulation, individual consideration, Castro Solano et al., 2004), satisfaction with job resources (satisfaction with leader resources, satisfaction with task resources, satisfaction with team resources, satisfaction with organizational resources, Spontón et al., 2019) and collective teacher self-efficacy (self-efficacy for decision making, self-efficacy for teaching, self-efficacy for familial participation, self-efficacy for community participation, self-efficacy for the positive school climate, Sánchez-Rosas et al., 2022).

Based on the background, the model of transformational leadership, satisfaction with job resources, and collective teacher self-efficacy (figure 1) are specified and evaluated,

which establishes the following hypotheses: (H1) Transformational leadership increases satisfaction with job resources, (H2) Satisfaction with job resources increases collective teacher self-efficacy, (H3) Satisfaction with job resources partially mediates the influence of transformational leadership on collective teacher self-efficacy.

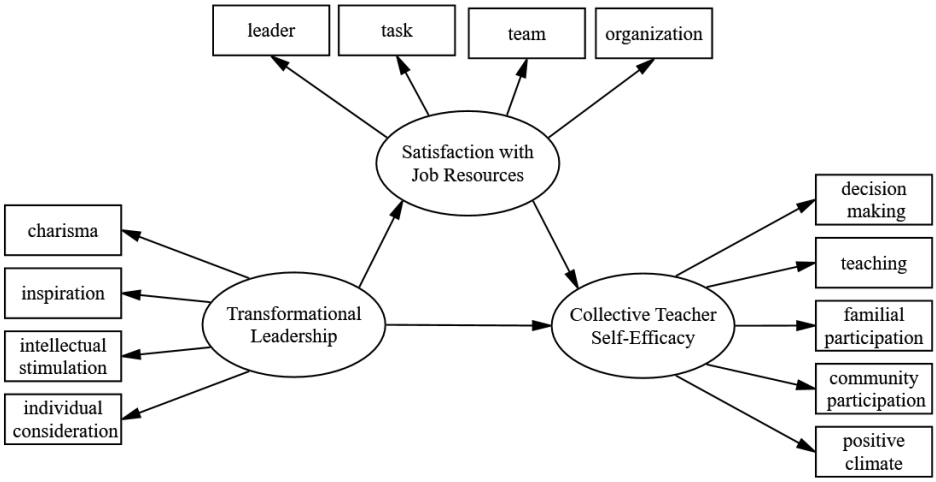

Figure 1
Model of transformational leadership, satisfaction with job resources, and collective teacher self-efficacy

METHOD

Participants

Primary-level teachers from different schools in Argentina participated in this study. Two hundred and sixty teachers (95.4% women) participated in the study, ranging from 21 to 60 years old (M = 41.6, SD = 8.63). Most teachers worked in public institutions (88.8%) and one or two schools (81.5%). On average, they had been working as teachers for 12.1 years (SD = 7.98), although, when choosing an institution concerning which the instruments of this study responded, the average number of years working in the reference institution was 6.97 (SD = 6.56).

Measures

Transformational leadership. We used the seventeen items of the CELID-S scale (Castro Solano et al., 2004) that allows for assessing transformational leadership and its four dimensions: charisma (4 items, e.g., *We are proud of working with him*), inspiration (3 items, e.g., *He gives us talks to motivate us*), intellectual stimulation (7 items, e.g., *Promotes the use of intelligence to overcome obstacles*), individual consideration (3 items, e.g., *He cares about training those who need it*). All items were answered from 1 (*strongly disagree*) to 5 (*strongly agree*) to express the extent to which the school principals presented transformational leadership characteristics.

Satisfaction with resources. With the Satisfaction with Job Resources Questionnaire (CSRL_16, Spontón et al., 2019), four dimensions of satisfaction with job resources were evaluated: satisfaction with leader resources (4 items, e.g., *I am satisfied with the clarity of the instructions I receive of my manager*), satisfaction with task resources (4 items, e.g., *I am satisfied with the level of the challenge represented by the tasks I perform*), satisfaction with team resources (4 items, e.g., *I am satisfied with the collaboration achieved in the work teams in which I participate*), satisfaction with organizational resources (4 items, e.g., *I feel valued by the school where I work*). The items were answered from 1 (*strongly disagree*) to 5 (*strongly agree*) to express the extent to which the teachers felt satisfied with the different job resources.

Collective Teacher Self-Efficacy. We assessed the beliefs about the capabilities of the teaching team with the Collective Teacher Self-Efficacy Scale (Sánchez-Rosas et al., 2022). This instrument measures five dimensions of collective teacher self-efficacy: self-efficacy for decision making (4 items, e.g., *Organize ourselves to be heard while making decisions at the school*), self-efficacy for teaching (4 items, e.g., *Share effective strategies to better the performance of students with learning difficulties*), self-efficacy for familial participation (4 items, e.g., *Work together so that families may help their kids with homework*), self-efficacy for community participation (4 items, e.g., *Design projects which include the participation of community organizations*), and self-efficacy for the positive school climate (4 items, e.g., *Establish positive relationships to make the school a safe space*). The teachers responded if they perceived themselves capable of performing different behaviors using a Likert scale of 1 (*not at all sure that we can do it*) to 10 (*sure that we can do it*).

Procedure

The evaluation protocol was developed with a set of scales selected for this research and additional personal data and work history information. The protocol included gender, age, type of school, number of schools where each teacher worked, and years of teaching. The protocol was administered through the online survey system LimeSurvey, an advanced online survey system to create quality online surveys (Plaisent et al., 2018). The participants were informed about the study's objectives, the anonymity, and confidentiality of the data and voluntarily agreed to participate. Afterward, the data was loaded into the JAMOVI statistical program (Jamovi Project, 2021) to carry out the data analysis after the items of each scale were averaged. All the SEM models were computed using Unweighted Least Squares (ULS) estimation since the scales had an ordinal rating Likert-type scale, and this study has a small sample size (Freiberg-Hoffmann et al., 2013). Precisely, the measurement and structural models were estimated using the ULS method.

Data analysis

The measurement models. As preliminary analyses, we tested if participants distinguished between the thirteen primary constructs measured in this research, considering the possible presence of overlap between variables that could introduce specification errors in the primary model. Therefore, we ran a confirmatory factor

analysis that treated all items as a general latent factor indicator. Then we compared this model with a factor structure specifying thirteen, although related, latent variables. To understand the behavior of the variables, some descriptive statistics were estimated, including the reliability omega coefficient.

The structural model. Since the conceptual interest of this study is to understand the behavior of the three variables and not the predictive interaction of their dimensions, three latent variables were specified, and the average scores of each measurement were used as indicators (Figure 1). First, a model that did not include the role of the mediating variable was estimated (satisfaction with job resources), and a direct effect of transformational leadership on collective teacher self-efficacy was tested. Then, the complete model was analyzed, including transformational leadership's direct and mediated effect on the teacher's collective self-efficacy via satisfaction with job resources.

To measure the goodness of fit, we relied on statistics besides chi-square because of its sensitivity to sample sizes ($p < .001$). Specifically, we used CFI, TLI, and SRMR, and a stricter set of criteria requires them to be above (Jordan-Muiños, 2021). The SRMR fit index was used, instead of the RMSEA index, since it is considered more appropriate in relatively small samples (Shi et al., 2020). These fit statistics and their required criteria are displayed in the results section. To analyze the indirect effects, we used bootstrap sampling to estimate the standard errors and *p*-values (Alfons et al., 2021). Importantly, we expected the 95% confidence intervals not to include zero to support the existence of indirect effects. To evaluate the size of the mediation effects, Cohen´s (1988) benchmarks of .01 for small, .09 for medium, and .25 for large effects were used for the completely standardized indirect effects (Preacher & Kelley, 2011). The reliability of the scales was computed using the Omega coefficient, and values above .70 or .90 were considered acceptable or excellent (DeVellis, 2016; Ventura-León & Peña-Calero, 2021).

FINDINGS

Preliminary Analyses

A confirmatory factor analysis treating all variables as indicators of a general latent factor showed poor goodness of fit indexes. We obtained appropriate goodness of fit indexes when specifying thirteen factors corresponding to the different constructs measured in this research. Coherently, the second model showed significantly better goodness of fit, and the effect size of this difference was high [$\Delta\chi^2$ (78) = 45373, $p < .001$]. All factor loads were significant. The satisfaction with leader dimension was found to have high co-variances with transformational leadership dimensions (> .80), indicating overlap between the constructs. For this reason, this dimension of satisfaction was omitted, and a model with twelve dimensions was estimated again, which showed a similar fit. All reliability estimates were excellent and are shown along with descriptive distribution and normality statistics (Hair et al., 2018) in Table 1.

Table 1
Descriptive statistics for the measures

		M	*SD*	Sk	Ku	ω
TL	1. Charisma	3.47	1.28	-0.48	-1.03	.94
	2. Inspiration	3.06	1.41	-0.12	-1.38	.94
	3. Intellectual stimulation	3.20	1.07	-0.26	-0.92	.92
	4. Individual consideration	3.27	1.23	-0.33	-1.04	.87
SJR	1. Satisfaction with leader	3.21	1.22	-0.22	-0.98	.94
	2. Satisfaction with task resources	3.29	0.84	-0.34	0.09	.71
	3. Satisfaction with team resources	3.42	0.97	-0.15	-0.48	.91
	4. Satisfaction with organizational resources	2.85	0.85	-0.02	-0.31	.77
CTSE	1. Decision making	6.58	1.86	-0.63	0.51	.91
	2. Teaching	7.04	1.75	-0.75	1.25	.90
	3. Familial participation	6.82	1.99	-0.72	0.32	.93
	4. Community participation	6.01	2.06	-0.36	0.03	.92
	5. Positive climate	7.34	1.81	-0.96	1.29	.91

Note. TL: Transformational Leadership; SJR: Satisfaction with Job Resources; CTSE: Collective Teacher Self-Efficacy. Sk = Skewness, Ku = Kurtosis, ω = Omega's coefficient.

Model of transformational leadership, satisfaction with job resources, and collective teacher self-efficacy

Initially, a model that did not include the role of the mediating variable was estimated (satisfaction with job resources), and a direct effect of transformational leadership was found on collective teacher self-efficacy (R^2 = 23%). When analyzing the hypothesized model, an excellent fit to the data was found, and the explained variance of collective teacher self-efficacy was 57%. Almost all the expected effects were met, except for the partially mediated direct impact of transformational leadership (β = -.06, p = .514) on collective teacher self-efficacy (Table 2).

Table 2
The goodness of fit indices for the SEM models

Models	χ^2	*df*	χ^2/df	*p*	CFI	TLI	SRMR
expected values	-	-	< 3.0	ns	> .95	> .95	< .060
Measurement Models							
1 factor	49351	1325	37.24	< .001	.924	.924	.158
13 factors	3978	1247	3.19	< .001	.996	.996	.041
12 factors	3568	1061	3.36	< .001	.996	.996	.042
Predictive models							
unmediated model	26	100	0.26	< .001	.968	.956	.027
mediated model	122	51	2.39	< .001	.998	.998	.031

Note. χ2 = chi square; df = degrees freedom; p = significance; CFI = comparative fit index; TLI = Tucker-Lewis index; SRMR = root mean square residual; ns = not significant.

Thus, transformational leadership directly predicted satisfaction with job resources, which in turn predicted collective teacher self-efficacy; transformational leadership indirectly predicted collective teacher self-efficacy (β = .54, p < .001). By adding the direct and indirect effects, it can be considered that transformational leadership has a significant total effect (β = .48, p < .001) on collective teacher self-efficacy (Figure 2).

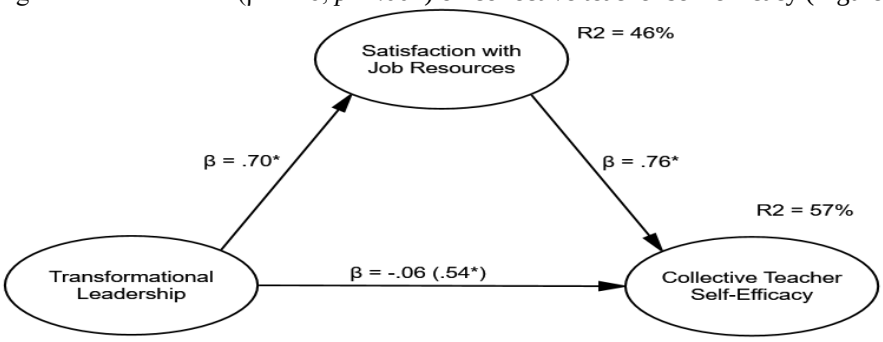

Figure 2
SEM model of transformational leadership, satisfaction with job resources, and collective teacher self-efficacy
Note. Observed variables, factor loadings, errors, and residuals were omitted to simplify the presentation. * p < .001.

Table 3 shows the factor loads for each indicator by latent variable, the explained variance, and the reliability of each of the three latent variables.

Table 3
Factor loads and explained variance for the estimated SEM model

Latent	Observed	B	*p*	R^2	ω
TL					.96
	1. Charisma	.93	< .001	.86	
	2. Inspiration	.93	< .001	.87	
	3. Intellectual stimulation	.94	< .001	.90	
	4. Individual consideration	.89	< .001	.80	
SJR					.80
	1. Satisfaction with task resources	.72	< .001	.52	
	2. Satisfaction with team resources	.69	< .001	.48	
	3. Satisfaction with organizational resources	.84	< .001	.71	
CTSE					.93
	1. Decision making	.83	< .001	.69	
	2. Teaching	.83	< .001	.69	
	3. Familial participation	.91	< .001	.83	
	4. Community participation	.80	< .001	.65	
	5. Positive climate	.87	< .001	.76	

Note. TL: Transformational Leadership; SJR: Satisfaction with Job Resources; CTSE: Collective Teacher Self-Efficacy. Sk = Skewness, Ku = Kurtosis, ω = Omega's coefficient.

DISCUSSION

Evidence was provided from a study that analyzed the predictive capacity of transformational leadership and satisfaction with job resources on collective teacher self-efficacy. In addition, the mediating role of satisfaction with job resources was explored. After a few small changes, the specified model fit the data satisfactorily. Specifically, transformational leadership was found to be a direct predictor of satisfaction with job resources and an indirect predictor of collective teacher self-efficacy. In turn, satisfaction with job resources is the only direct and significant predictor of collective teacher self-efficacy. Altogether, the model explained 57% of the variance of collective teacher self-efficacy.

Once again, this study demonstrates the capacity of transformational leadership behaviors of school principals to influence teacher outcomes variables (Cansoy, 2020; Demir, 2008; Dussault et al., 2008; Kurt et al., 2011; Leithwood & Jantzi, 2005; Liu et al., 2020; Mehdinezhad & Mansouri, 2016; Nguni et al., 2006; Ninković & Knežević Florić, 2018; Ross & Gray, 2006b, 2006a). The importance of satisfaction with job resources as a background of motivation and perceived collective capacity is also evident (Avanzi et al., 2013; Skaalvik & Skaalvik, 2010, 2019). However, some unexpected results should be interpreted carefully as they could indicate important implications for practice.

Firstly, the measurement model showed that the dimensions and items used to measure the facets of the three central variables were related. This is methodologically and conceptually relevant, but a significant relationship was found between satisfaction with the leader's resources and the facets of transformational leadership. This result makes sense since satisfaction with the leader implies feeling satisfied with the clarity of the instructions, the feedback, and the recognition of the leader (Spontón et al., 2019). To a certain extent, the principal's transformational behaviors include these behaviors (Castro Solano et al., 2004) that are relevant to teaching performance, and to the extent that teachers perceive them, they will feel satisfied with the leader (Podsakoff et al., 2000). Accordingly, some theoretical and empirical overlap was found in this relationship, showing that this aspect of the principal-teacher relationship was over-represented; hence it was decided to exclude it from the model to avoid errors in the model specification. As a result, diverse and relevant aspects of transformational leadership (Castro Solano et al., 2004), satisfaction with job resources (Spontón et al., 2019), and collective teacher self-efficacy (Sánchez-Rosas et al., 2022) were reliably and validly measured.

Second, a good fit was found to the data of the theoretical model, and almost all the expected effects were fulfilled (H1 and H2), except for the direct effect of transformational leadership on collective teacher self-efficacy (H3). As expected, transformational leadership directly predicted satisfaction with job resources (Eliyana et al., 2019; Gil, 2011; Leithwood & Jantzi, 2005; Liao & Chuang, 2007; Pastor et al., 2007). Therefore, it is shown that the trust aroused by the leader, the stimulation to use creative ways to solve problems, the support provided, and the sustained motivation contribute to satisfaction with the task, the team, and the organization. In other words,

these leadership behaviors improve the perception of the adequacy of one's abilities to solve tasks and the perception that one has the time, the emotional support, and the necessary material resources to carry out daily tasks. Furthermore, to the extent that the principal promotes a climate of trust and instrumental support, teachers experience greater satisfaction with the work team and the environment's capacity to solve the activities and challenges of teaching. Finally, well-being is also improved concerning the general conditions of the institution, such as opportunities for development, economic and non-economic compensation, or pride in the school to which one belongs.

At the same time, satisfaction with job resources predicted collective teacher self-efficacy (Avanzi et al., 2013; Skaalvik & Skaalvik, 2010, 2019). In this way, the well-being of teachers with the job factors evaluated (task, team, organization) contribute to the confidence of the teaching team to carry out relevant actions, such as decision-making, implementing teaching, achieving family and community participation, and creating a positive climate. As mentioned, satisfaction with the task, the team, and the organization facilitates the development of the activities and the achievement of work objectives, stimulates individual and collective performance, encourages personal development and growth, and promotes positive work environments (Spontón et al., 2019). Given the magnitude of the effect, it is clear that satisfaction with job resources would influence the relevant sources for collective teacher self-efficacy (Demir, 2008; Ross & Gray, 2006a, 2006b). Being comfortable with the intrinsic characteristics of the task and finding the opportunities to carry it out successfully; enjoying the cooperation and effectiveness of colleagues; feel pleasure for organizational aspects that transcend people; all of this would influence or enable experiences of successful performance and learning through observation, while creating opportunities to receive persuasive, encouraging messages and to increase affective well-being.

One of the most curious results of this study showed that satisfaction with job resources fully mediated the influence of transformational leadership on collective teacher self-efficacy (Goddard et al., 2015) and, in any case, a significant indirect effect of transformational leadership on collective teacher self-efficacy was found. Moreover, the incorporation of satisfaction with job resources increased the percentage of variance (57%) obtained if only the role of transformational leadership is considered (23%). This finding is in line with those who affirm that there is a relationship between transformational leadership and organizational conditions with collective teacher self-efficacy, but its effects could be indirect (Moosa, 2021). Thus, at least in this sample, although the direct impact of transformational leadership on collective teacher self-efficacy is suppressed when considering satisfaction with job resources, it is through this that it ends up having a positive and incremental impact.

CONCLUSION AND SUGGESTIONS

Our study shows that transformational leadership of school principals promotes satisfaction with the job resources of primary-level teachers. Satisfaction with job resources improves teachers' collective efficacy beliefs. The main novelty and knowledge added to the field is that the transformational leadership of school principals

indirectly contributes to the development of collective teacher self-efficacy beliefs through its influence on satisfaction with job resources.

These results suggest that to improve the perception of the effectiveness of teaching teams, it is possible to adopt two intervention alternatives but that their simultaneous approach enhances the effects of isolated strategies. On the one hand, and centered on teachers, the strategies to improve satisfaction with the task, team, and organization will affect collective teacher self-efficacy. On the other hand, and focused on principals, actions that improve the transformational profile of leadership will increase satisfaction with job resources and collective teacher self-efficacy.

This work addressed one of the variables that have shown to have a tremendous influence on teacher and student performance: the collective teacher self-efficacy (Al-Mahdy et al., 2018; Buonomo et al., 2020; Çoğaltay & Karadağ, 2017; Donohoo, 2018; Olivier & Hipp, 2006; Skaalvik & Skaalvik, 2019; Strahan née Brown et al., 2019; Zhang & Yin, 2017). Two remarks can be made regarding its conceptualization and operationalization. In the first step, this work considered the dimensions of collective teacher self-efficacy specified by Bandura (2006) and measured them with a recently developed instrument that has content validity (Sánchez-Rosas et al., 2021), structural and predictive validity (Sánchez-Rosas et al., 2022). Secondly, the results of this work should be compared with caution with other investigations since their conceptualization and operationalization differ. Specifically, the dimensions of decision-making, teaching strategies, family involvement, community involvement, and creating a positive climate were evaluated (Sánchez-Rosas et al., 2021). It would be necessary to increase the amount of research that considers the multidimensionality of collective teacher self-efficacy, carry out cross-cultural comparison studies, and in addition to considering the variables studied here, include other variables that could act as a background, such as instructional leadership.

Instructional leadership is an important variable that has gained notoriety among scholars over the past decades. Furthermore, their study has shown good relationships with various variables such as collective teacher self-efficacy, teacher self-efficacy, job satisfaction, and academic performance, among others (Fancera & Bliss, 2011; Goddard et al., 2015; Skaalvik, 2020). Instructional leadership is a type of leadership that differs from transformational leadership mainly because the first one focuses on aspects of curriculum and instruction. However, both types of leadership share that they significantly and positively influence collective teacher self-efficacy. Despite several studies asserting the above (Calik et al., 2012; Cansoy & Parlar, 2018; Demir, 2008; Goddard et al., 2015), few specific antecedents examine the relationship between instructional leadership and satisfaction with the labor resources. For her part, Skaalvik, (2020) has reported in a recent study on the relationship between the self-efficacy of school principals for instructional leadership, their perceptions of work-related demands and resources, emotional exhaustion, job satisfaction, and motivation to resign from the position of principal. As a result, self-efficacy for instructional leadership was negatively associated with the perception of all job demands and positively related to the perception of all job resources in the study. Given that the study of these variables is

limited, as mentioned above, new contributions to the literature on the relationship between instructional leadership, collective teacher self-efficacy, and satisfaction with job resources should be encouraged.

RESEARCH LIMITATIONS

It is worth mentioning some limitations of the study related to the selection of the variables, the sample, the data analysis, and the need to replicate the study.

Although a high percentage of the variability of collective teacher self-efficacy was explained, and the model is parsimonious, the model should include variables that are influential factors on self-efficacy and that refer to professional teacher learning, teachers' self-efficacy, and organizational factors (Hoogsteen, 2020; Moosa, 2021; Ramos et al., 2016; Salas-Rodríguez & Lara, 2020).

Although the literature on self-efficacy has been carried out at different educational levels and countries (Salas-Rodríguez & Lara, 2020), the results of the analyzed model are not generalizable to other educational classes or nationalities. The reported results allow us to explore the phenomenon in a group of Argentine primary school teachers. It would be interesting to analyze and compare this model with samples of teachers from other educational levels or different nationalities.

In addition, although the results proved valid for the entire sample used, it was impossible to distinguish whether the model behaves similarly in different groups. Given the sample size, it was impossible to conduct a multi-group analysis to contrast the fit and effects of the measurement and structural models considering samples segmented by gender, type of institution, and years of teaching, among others. Finally, this model or variants that include at least the variables of this research needs to be replicated to identify the stability of the results.

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