

What Drives Teacher–Parent Collaboration? Multilevel Evidence from Moroccan Secondary Schools

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Abstract

Despite ongoing reform efforts to improve educational outcomes in Morocco, the dynamics of parent–teacher collaboration remain underexplored. Using TALIS 2024 data for Morocco, this study applies multilevel mixed-effects modeling, with survey weights and cluster-robust standard errors, to examine institutional, professional, and contextual factors affecting school–family partnerships. The results show that a favorable school atmosphere, marked by effective instructional leadership and high teacher job satisfaction, strengthens this partnership. Notably, neither parents’ support for their children’s achievement at home nor their participation in school activities predicts teacher–parent collaboration, a disconnect that represents a missed opportunity in the Moroccan home–school relationship, where existing family commitment is not converted into pedagogical partnership. Parental collaboration is significantly greater in private institutions than in public institutions, whereas the urban–rural distinction becomes irrelevant once the school setting is considered.

Introduction

School–family partnerships have been consistently identified as significant predictors of student achievement, the school climate, and teacher effectiveness across educational systems worldwide (Epstein, 2008; Galindo & Sheldon, 2012; Hampden-Thompson & Galindo, 2017). However, despite this consensus, the mechanisms that enable or inhibit teacher–parent collaboration remain poorly understood, particularly in non-Western and lower-middle-income country contexts. This paper addresses that gap via newly available data from Morocco's first participation in the OECD Teaching and Learning International Survey (TALIS 2024).

Research has consistently documented three dimensions of the school climate—the physical environment, safety, and teaching/learning quality—as structural antecedents of educational relationships (Cohen et al., 2009; Koth, Bradshaw & Leaf, 2008). A fourth dimension, the relational climate, encompasses the school's engagement with families and community partners and has been linked to parental involvement across a range of national contexts (Epstein, 1991, 2010; Goodall & Montgomery, 2014; Jeynes, 2007). Within this relational dimension, instructional leadership and teacher job satisfaction have been proposed as proximal drivers of teacher willingness to engage with families (Hampden-Thompson & Galindo, 2017), although direct empirical evidence, especially at scale, remains scarce.

Research consistently shows that families want to be involved in their children’s schooling and seek more information about how to support learning at home (Baker & Stevenson, 1986; Dauber & Epstein, 1989). The concept of family school partnerships encompasses the notion of family involvement and participation in their children's education. The involvement of parents in their children's education can be facilitated through various activities at the domestic, school, and community levels. Conversely, the concept of participation is more closely associated with the notion of empowerment, which refers to the ability to make decisions regarding their children's education. Epstein (1987) has demonstrated through

a range of theoretical models and conceptualizations that many of these models illustrate how the interaction between home, school, and community fosters a positive environment for child development. Bronfenbrenner's (1994) seminal work on the subject, however, has analyzed child development through an understanding of ecological systems, focusing on the relationship between child development and the mesosystem, i.e., the system involving parent–school connections. Epstein's theory provides a framework for comprehending the diverse manifestations of parental involvement in education. According to the tenets of sociocultural cognitive theory, the involvement of parents in their children's education is of paramount importance. This notion underscores the importance of families and communities playing a pivotal role in the educational journey of children. The theory of social constructivism posits that a pedagogical conceptualization of family and community partnerships with schools is one in which learning is viewed as an ongoing social process in which families and communities play an integral part (Bourdieu, 1977; Bourdieu and Passeron, 1977). When families are included in the educational process and their children, such as indigenous children (Harslett, Harrison, Godfrey, Partington & Richer, 1999; Yunkaporta, 2009) or other children who are not part of the dominant culture (Comer, 2005; Kalantzis & Cope, 2008), the involvement and success of families increases. Collaborations between families and schools have been shown to be important in providing support and developing children in their academic endeavors. This is achieved through the cultivation of cultural understanding, as well as the utilization of children's prior knowledge and context. The impact of family involvement on student achievement in a school setting is a well-documented phenomenon, with a significant body of research highlighting long-term planning strategies with parents and children regarding their future in school (Epstein, 2008), academic achievement (Epstein, 2008; Cooper, Crosnoe, Suizzo & Pituch, 2010), short-term effects on behavior problems (Fox, Dunlap, & Cushing, 2002), and student absences (Sheldon & Epstein, 2004).

The development of relationships with families is a complex issue. In fact, a range of individual and structural factors have been identified as barriers to school–family collaboration. The following are included: (a) parental knowledge and attitudes toward their children (Eccles & Harold, 1996), including social and psychological resources (e.g., parental health/well-being, parental role, social support networks, parental efficacy, and methods of child socialization); (b) family/school differences, e.g., cultural and class differences (Campbell-Whatley & Gardner, 2002; Soutullo, Smith-Bonahue, Sanders-Smith, & Navia, 2016), parents' concerns with segregating their children from their peers (Boyd & Correa, 2005; Kirmani, 2007), lack of communication from school (Soutullo, Smith-Bonahue, Sanders-Smith, & Navia, 2016), and excessive negative communication from school (Epstein, 2008). Teachers' failure to collaborate with parents has been identified as a key issue in the field (Epstein, 2005; Epstein & Sanders, 2006; Flanigan, 2007). This is further compounded by the impact of family dynamics and the cultural, ethnic, and religious backgrounds of parents, as well as their history with their children's education (Yamaiuchi, Lau-Smith, & Luning, 2008). Transport problems are also cited as a key obstacle to parental participation in school activities (Yamaiuchi, Lau-Smith, & Luning, 2008).

A substantial body of research has focused on examining school–family partnerships in primary grades (e.g., Sheldon, 2003; Sheldon, Epstein & Galindo, 2010). However, comparatively less research has been

conducted on the same issue in secondary education. Previous studies have demonstrated that the quality of family relationships within educational institutions may be subject to variation between primary and secondary schools (Catsambis, 2002; Crozier & Davies, 2007). This is attributed to the absence of a robust connection between school and home, as evidenced by the presence of more formal parent evenings in upper grades, in contrast to the frequency of parent contacts observed in lower grades.

The importance of education as a vehicle for the social and economic development of all countries is well established, and this is no less true in Morocco than in other countries. However, the public school system in Morocco has experienced long periods of dysfunction during the last two decades. This has been due to very frequent state intervention and reform dating back to the 1960s through various iterations of the content-based approach (1956–1984), the objective-based approach (1985–1998), the national charter (1999), the competency-based approach (2000–2009), the emergency plan (2009), and the strategic vision (2015–2030). Many of these reforms were introduced before earlier reforms were evaluated, eroding public confidence in the system. Furthermore, the perception that the system is characterized by improvisation rather than systematic planning or implementation is pervasive. A substantial body of evidence has revealed a decline in the academic achievements of the student population owing to the dysfunctional mode of functioning of the Moroccan education system. This is corroborated by Morocco's performance in international comparative assessments, including PIRLS (2016) and TIMSS (2019), which consistently place Moroccan students below international benchmarks in terms of literacy and numeracy. These studies demonstrate somewhat disparate data trends with respect to the academic achievements of students, particularly concerning their performance in science and language arts, as well as their urban–rural distinctions. The failure of the student population to demonstrate any improvement in academic achievements, as evidenced by the results of the NAEP (2019), can be attributed to the limited number of educational institutions available to the rural populations enrolled in these programs, compared with the greater number of opportunities available to students in urban areas. This phenomenon has been highlighted in the results of the TIMSS (2019) survey, which revealed that schools in rural areas consistently underperform in mathematics and science compared with their urban counterparts, which typically enjoy greater economic resources.

From a developmental and change perspective, the Higher Council for Education, Training and Scientific Research (CSEFRS) (2017) has identified seven areas for development with respect to values-based education in Morocco. The fifth area relates to educational relationships between schools and their surrounding environment, institutional partners, and civil society. The objective of this study is to undertake a comprehensive review of the extant methodologies and theoretical frameworks underpinning school-family collaboration/partnerships. The overarching goal of this research is to facilitate the active involvement of family members in the creation of value-based education programs for their children.

The nature of the education system itself has created hurdles in the utilization of the theoretical advantages of the parental role in the education of the child, as highlighted by the literature reviewed

above. The presence of large classes (comprising over 30 students), the absence of supplementary support for students experiencing difficulties, and the limitation of access to preschool education have collectively engendered substantial disparities in the extent of parental support. Moroni et al. (2015) highlighted that although parents from disadvantaged communities may exhibit high levels of teaching behavior, students from more privileged communities are likely to have access to more supportive behaviors as well. The nature of the Moroccan education system itself creates significant hurdles, as it follows the "follow-the-wave" concept, whereby high achievers are the ones who make it through the system and weak achievers are the ones who end up dropping out of school. The paucity of follow-up on supervision and early deficits through the "fil à patte" model – a tracking system that advances students on the basis of performance thresholds rather than developmental support – in conjunction with the absence of attitudes or behaviors described by "mobilisatrices" – referring to active, goal-oriented parenting behaviors that mobilize educational resources on behalf of children – (Zahia Zeroulou, 1988) serves to reinforce social inequities and fails to contribute to their reduction. The degree of limitation that parents of children in Morocco experience as a result of their socioeconomic circumstances is documented in the international literature and represents a barrier to their ability to support their child. This creates a school system that serves as a mechanism of segregation, more so than integration.

As previously mentioned, in collectivist and Islamic societies such as Morocco, parental involvement in children's education extends beyond merely academic monitoring. It encompasses various dimensions, including financial, spiritual, and cultural support. Despite the prevailing economic conditions in both urban and rural areas, students frequently find themselves unable to pursue a career aligned with their personal interests. Instead, they often opt for professions that they perceive to offer the greatest job security, such as teaching and policing, as a means of mitigating their concerns regarding unemployment (Zemzami & Lotfi, 2024). Consequently, a student may reach a decision regarding their future career path that is contingent on its alignment with the student's responsibility to provide financial support to one (or more) of his/her/her/her/caregiver. This decision may result in a career that is incongruent with the student's self-concept (Super, 1953, 1980).

In the recent TALIS 2024 survey, parents' participation was minimal. As few as 14 percent of lower secondary teachers and 28 percent of primary school teachers reported engaging in regular collaboration with parents in the process of facilitating students' education; however, oddly, almost 80 percent of Moroccan teachers believe that parents value their profession. This disparity is interesting and worth pondering. With respect to pedagogical approaches in the classroom, Moroccan teachers rely mostly on systematic approaches to teaching, such as lesson objectives, classroom management, and the consolidation of knowledge bases. They modify teaching approaches on the basis of individual students and offer regular feedback. It is much less common for them to encourage creative problem-solving or critical thinking skills development.

The extant literature on educational reform and the influence of an effective work environment in schools would benefit from the development of knowledge regarding how the school climate leads to the achievement of more school-family relationships. This study was informed by a model that examined

the impacts of various types of school environment conditions on Moroccan families' implications for their children's lives. The 2024 TALIS survey constituted the primary empirical testing framework for this research project. Thus, this study explores the impact of the school environment on school-family partnerships by examining the impacts of conditions, the school climate and leadership style on the educational processes of children.

In summary, this study addresses a gap in the literature by providing one of the first multilevel analyses of school–family collaboration in the MENA region and the first to draw on Morocco's newly released TALIS 2024 data. Specifically, this study asks which school-level and teacher-level factors predict the frequency of teacher–parent collaboration in Moroccan lower-secondary schools, and does this relationship vary by school sector and geographic location?

The outline of this paper is as follows. Section 2 describes the data used and the econometric methods used. Section 3 presents and discusses the study results while suggesting some policy implications and appropriate applications. Finally, some concluding remarks are presented in Section 4.

Methods

Data source

This study conducted a secondary data analysis of TALIS data collected by the OECD in 2024 (OECD, 2025). Data were collected from school principals and teachers via self-administered questionnaires. Stratified two-stage random sampling was used for data collection. The sample included principals selected randomly in stage one and teachers randomly selected from the selected schools in stage two, 280000 school staff members in 55 education systems in the 2024 survey cycle, including those from Morocco for the first time.

Morocco's participation in the 2024 cycle reflects a national commitment to modernizing its education system. This survey provides valuable indicators on the level of primary and lower secondary education, allowing us to compare the Kingdom's performance and challenges with those of other countries. The data used in this study came from 6,112 lower secondary school teachers and 398 school principals in a nationally representative sample.

The Moroccan education system is characterized by rapid demographic change, a large proportion of young, inexperienced teachers, and a strong ambition for digital transformation. According to international benchmarks, the Moroccan teaching force is relatively young and inexperienced; secondary teachers who are less than 29 years old in Morocco constitute 24% of the sample; for OECD countries, this figure stands at 13%. Thirty percent have been teaching for less than five years, compared with only 19% for OECD countries. The issue is further complicated by the motivation levels of these individuals. A total of 78% of secondary teachers in Morocco chose the occupation as their first preference rather than as an alternative choice. Hence, the challenge lies in motivating young and inexperienced teachers, who

choose the profession on their own accord, as opposed to being forced into it owing to a lack of other options.

Forty-six percent of secondary teachers in Morocco are women, whereas 69% of those in OECD countries are women, which is another difference. Sixty percent of secondary teachers in Morocco teach more than 35 students per class. For OECD countries, this percentage is 13%. This difference can hardly be addressed through effective pedagogical practices.

Furthermore, 30 working hours are reported per week, ten fewer than the OECD average. The pairing of enormous class sizes and fewer hours spent teaching highlights immediate concerns. Either the out-of-classroom time is underestimated, or it is not possible to compare the intensity per hour with that of smaller classes. Most likely both. The percentage of secondary teachers teaching in rural areas is 17%, which is just the international average of 12% in the OECD. Twenty-one percent teach in private institutions.

Model

This study aims to examine the institutional, professional, and contextual factors that affect school–family collaboration in Morocco. To control for unobserved heterogeneity related to the school context and to correct for within-class correlation, we estimate a multilevel random intercept model (mixed-effects linear model). Two levels of data must therefore be considered: data on the teachers and data on the school to which they belong from the principal’s survey. The multilevel model is specified to consider this type of hierarchical data. The equation is specified as follows:

$$Y_{ij} = \alpha_0 + \beta X_{ij} + \gamma K_j + u_{0j} + e_{ij}$$

where Y_{ij} represents school-family collaboration; X_{ij} denotes the vector of teacher-level variables; K_j denotes the vector of the school level; α_0 is a constant; β and γ are the variable coefficients; e_{ij} represents the residuals; and u_{0j} represents school heterogeneity (the context effect).

Variables

The school-family collaboration dimension is mentioned in the TALIS questionnaire in different situations. At the teacher level, the teachers’ questionnaire asks teachers to reply via a 6-point option scale (never; once a year or less; 2–4 times a year; 5–10 times a year; 1–3 times a month; once a week or more) to determine how they collaborate with parents or guardians to enrich students’ learning activities in general (TT4G26H). At the school level, the principal’s questionnaire addresses family engagement through two questions: whether parents or guardians support student achievement (TC4G39D) and whether parents or guardians are involved in school activities (TC4G39E). Both questions are measured on a 4-point Likert scale.

In the present study, to better represent the frequency of interactions between Moroccan teachers and parents, we operationalize collaboration via the TT4G26H item by calculating a standardized score (Z score). Standardization was adopted to facilitate interpretation of coefficients relative to the overall distribution of collaboration frequency across the sample and to place the outcome on a common scale with the model's continuous predictors. While TT4G26H is technically an ordinal six-point scale, its use as a continuous outcome in a multilevel linear model is consistent with established practice in large-scale TALIS analyses (Ainley & Carstens, 2018), and residual diagnostics confirmed the approximate normality of the standardized scores. At the school level, TC4G39D and TC4G39E are used to represent family support and participation, respectively. Additional variables were incorporated at the contextual level, namely, school sector (private/public) (TC4G13) and school location (rural/urban) (T4SCHLOC).

At the teacher level, the analyses further account for the teacher's age (T4TAGEGR), gender (TT4G01) and experience (T4TYEXPTT). In addition, two scales from TALIS 2024 are employed to represent these factors. The first is the scale of instructional leadership (T4INSTLE), which is measured by a set of three items.¹ Teachers were asked to indicate their level of agreement with each of these items via the following response categories: "Strongly disagree", "Disagree", "Agree" and "Strongly agree". Higher values on this scale reflect greater perceived instructional leadership. The second subscale is overall job satisfaction (T4JOBSAT), which was created as the average of two subscales: –job satisfaction with profession (T4JSPROT)² and job satisfaction with the work environment (T4JSENV)³. The confirmatory factor analysis (CFA) results indicated good model fit for all scales. All models are estimated by (pseudo)maximum likelihood with the TALIS final teacher weight decomposed into a within-school (level-1, rescaled to cluster size following Rabe-Hesketh & Skrondal, 2006) and a school (level-2) component and with standard errors clustered at the school level; an unweighted specification is reported alongside as a robustness check. Missing data are handled by listwise deletion, which is unbiased here because the rotated-form missingness is missing completely at random by design. Because instructional leadership is carried out only on a subset of the rotated forms, 3,968 teachers are observed, yielding an analytic sample of 3,694 teachers in 390 schools for the fully specified model.

Results and Discussion

This study's empirical results provide an in-depth analysis of the key factors influencing the relationship between schools and families within the Moroccan teaching community, utilizing data from the 2024 TALIS survey. Tables 1 and 2 present the weighted descriptive statistics and bivariate correlations for the continuous variables. The dependent variable, parent–teacher collaboration, is operationalized as a standardized Z score with a mean of zero and standard deviation of one across the 5,941 valid observations. The instructional leadership scale has a weighted mean of 12.43 (SD = 2.03; range 6.72–15.15); because of the TALIS rotated-form design, it is observed for 3,968 teachers rather than the full sample, which – under listwise deletion – sets the analytic N for the main model. Job satisfaction averages 9.65 (range 3.15–13.53), and family–student support and family–school participation have weighted means of 2.54 and 2.27, respectively, on a 1–to-4 scale.

Table 1
Descriptive Statistics

Variable	N	Mean	Std. Dev.	Min	Max
School-Family Collaboration	5,941	0.00	1.00	-0.84	2.64
Instructional Leadership	3,968	12.43	2.03	6.72	15.15
Job Satisfaction	5,917	9.65	1.94	3.15	13.53
Family-Student support	6,088	2.54	0.79	1.00	4.00
Family-School participation	6,084	2.27	0.84	1.00	4.00

The baseline measurements reflect a teaching environment where psychological and leadership factors are moderately positive. Bivariate correlations show that both leadership and job satisfaction are positively and significantly associated with collaboration ($r = 0.19$ and $r = 0.19$, respectively; $p < 0.05$), with a moderate intercorrelation between the two predictors ($r = 0.43$) – enough overlap to note, but sufficient distinctiveness to retain both. In contrast, school–family collaboration is only weakly correlated with family–student support ($r = 0.06$) and essentially uncorrelated with family–school participation ($r = 0.01$), an early signal of the null school-level involvement effects that the multilevel model confirms.

Table 2
Pearson correlation matrix

Variable	School-Family Collaboration	Instructional Leadership	Job Satisfaction	Family-Student support
School-Family Collaboration	1.0000			
Instructional Leadership	0.1902*	1.0000		
Job Satisfaction	0.1893*	0.4301*	1.0000	
Family-Student support	0.0620*	0.0547*	0.0495*	1.0000
Family-School participation	0.0090	0.0490*	0.0207	1.0000

Table 3 reports the weighted distribution of the categorical variables; percentages are estimated with the TALIS final teacher weight, so they reflect the national teacher population rather than raw sample counts. On this basis, the sample is 53.8% male and 46.2% female. The age structure is young – the two youngest brackets account for approximately 59% of teachers – and experience is spread fairly evenly across the four bands. Weighting materially changes the institutional picture relative to raw counts: 22% of teachers work in private schools (versus approximately 5% unweighted) and 16.6% in rural schools,

figures that align with the national TALIS benchmarks cited in Section 2 and resolve the discrepancy that unweighted tabulation would otherwise introduce.

Table 3
Demographic and Institutional Characteristics of the Sample

Characteristic	Frequency (N)	Weighted (%)
<i>Gender</i>		
Male	3,422	53.81
Female	2,690	46.19
<i>Age Group</i>		
Under 29 years	1,406	23.55
30–39 years	2,334	35.71
40–49 years	1,207	20.77
50–59 years	886	14.50
60 years or above	279	5.48
<i>Teaching Experience</i>		
5 years or less	1,781	30.34
6–10 years	1,781	26.66
11–20 years	1,231	21.84
More than 20 years	1,319	21.16
<i>School Sector</i>		
Private	309	22.01
Public	5,803	77.99
<i>School Location</i>		
Urban	5,288	83.41
Rural	824	16.59

Our model assumes that school-level residuals u_{0j} are normally distributed with a mean of zero and constant variance and that teacher-level errors e_{ij} are independent and conditional on school membership. The initial step in understanding the determinants of variance within this phenomenon is

calculating the intraclass correlation coefficient (ICC). This suggests that approximately 7% of the variation in teacher-parent cooperation can be attributed to school-specific characteristics. While the majority of variation occurs at the individual teacher level, this result confirms the significant and structured effect of the institutional context on teacher–family interactions, justifying the use of a multilevel approach over a standard OLS regression (see Table A1).

When the influence of individual characteristics on collaboration with parents is analyzed, demographic and professional features produce markedly different effects (Table 4; Fig. 1). The central finding — that instructional leadership and teacher job satisfaction are both significant positive predictors of collaboration — is consistent with a body of research establishing the school climate as a structural enabler of family engagement (Cohen et al., 2009; Hampden-Thompson & Galindo, 2017). What the present results add to this literature is a within-country, multilevel decomposition of these effects in a context where school–family relationships have historically been constrained by resource scarcity, high teacher turnover, and weak institutional communication norms. In contrast, teacher demographics carry little weight, gender is statistically insignificant, and once weighting and the multilevel structure are accounted for, age shows no systematic gradient, and none of the age brackets differ significantly from those of teachers under 29 years. Professional experience matters only at one point in the career, where teachers with 6–10 years of service collaborate significantly more than those with the least experience ($\beta = 0.250$, $p < 0.01$), whereas the more senior brackets are indistinguishable from novices.

This localized mid-career premium is telling. Early-career teachers likely lack the training and confidence needed to initiate contact with parents, a gap documented in the literature (Daniel, 2011; Lohmann et al., 2018); by the age of 6–10 years, this barrier appears to have receded. The fact that the premium does not persist among the most senior teachers suggests that it reflects a transient gain in confidence rather than a cumulative return to experience — veteran teachers may fall back on institutional routine or authority-based relationships with families that reduce the need for active outreach.

Table 4
Mixed-Effects Multilevel Model

Teacher Level (Level 1)	Coefficient	Standard Error	z value
<i>Female (Ref: Male)</i>	0.041	0.058	0.71
<i>Age Group (Ref: Under 29)</i>			
30–39 years	-0.025	0.100	-0.25
40–49 years	0.100	0.127	0.79
50–59 years	0.174	0.161	1.08
60 years or above	-0.038	0.207	-0.18
<i>Experience (Ref: ≤ 5 years)</i>			
6–10 years	0.250***	0.093	2.69
11–20 years	0.148	0.110	1.34
More than 20 years	0.087	0.141	0.61
Instructional Leadership	0.083***	0.016	5.25
Job Satisfaction	0.052***	0.016	3.31
School Level (Level 2)			
Family-Student support	-0.021	0.058	-0.35
Family-School participation	0.052	0.061	0.85
Public School (Ref: Private)	-0.834***	0.129	-6.46
Rural School (Ref: Urban)	-0.083	0.063	-1.32
Constant	-0.969***	0.240	-4.04
Random Effects	Estimate	Std. Error	
School Variance	0.071	0.031	
Residual Variance	0.889	0.044	
LR test vs. linear model χ^2 (unweighted)	103.89		
<i>Note. Weighted mixed-effects estimates: the TALIS final teacher weight is decomposed into within-school and school components (Rabe-Hesketh & Skrondal, 2006), with standard errors clustered at the school level; N = 3,694 teachers in 390 schools. The LR test is reported from the unweighted model, as it is not defined under pseudomaximum likelihood. Full robustness comparisons – the unweighted specification and a higher-N model excluding instructional leadership – appear in Appendix Table A2; see also Fig. 1; ***p < 1%; **p < 5%; *p < 10%.</i>			

Teacher Level (Level 1)	Coefficient	Standard Error	z value
Model Fit Statistics			
Number of Observations	3,694		
Number of Groups (Schools)	390		
Wald χ^2	203.10***		
<i>Note. Weighted mixed-effects estimates: the TALIS final teacher weight is decomposed into within-school and school components (Rabe-Hesketh & Skrondal, 2006), with standard errors clustered at the school level; N = 3,694 teachers in 390 schools. The LR test is reported from the unweighted model, as it is not defined under pseudomaximum likelihood. Full robustness comparisons – the unweighted specification and a higher-N model excluding instructional leadership – appear in Appendix Table A2; see also Fig. 1; ***p < 1%; **p < 5%; *p < 10%.</i>			

Among all the psychological and relational factors at the individual level, job satisfaction and effective leadership in schools clearly have a significant impact. Teachers with high satisfaction scores are involved in the educational system as a whole rather than just teaching and establishing relationships with parents. This finding is supported by research establishing that strong school–family relationships are mediated by high levels of school satisfaction and a positive climate (Hampden-Thompson and Galindo, 2017). More theoretically, it is coherent with self-determination theory, which holds that intrinsically motivated professionals are more likely to invest effort in discretionary behaviors, such as initiating contact with parents, that exceed formal role requirements (Skaalvik & Skaalvik, 2014). Similarly, strong instructional leadership functions as a catalyst for engagement. Teachers can confidently contact their parents when the headteacher provides a safe and supportive learning environment. These two variables indicate that collaboration is a behavior practiced in the educational field, with significant emphasis placed on the psychological well-being of teachers and effective school management (Fig. 2).

Considering the organizational level, the most striking result is a negative one; neither dimension of parental involvement measured at the school level moves teacher–parent collaboration. Parents’ active backing of their children’s achievement and parents’ involvement in school activities and governance are both statistically indistinguishable from zero, in the main model and in a higher-powered specification that recovers the full satisfaction sample (Appendix Table A2). This is not the pattern one would expect if home engagement and school engagement fed naturally into pedagogical partnership; it points instead to a disconnect between the involvement that Moroccan families already provide and the collaboration that teachers extend in return.

Contrary to expectations, family–student support does not translate into greater teacher outreach ($\beta = -0.021$, $p = 0.724$ in the main model; $\beta = 0.003$, $p = 0.957$ in the full sample). In a system where parents, including those in disadvantaged households, invest heavily in their children’s success, this null is a

missed opportunity rather than a neutral finding. The home-based support that Moroccan families supply is not met by reciprocal teacher initiative. In other words, the reservoir of parental commitment exists, but the school does not convert it into a partnership. In Bronfenbrenner's (1994) terms, the mesosystem link between home and school is left dormant—the resource is present on the family side and unclaimed on the institutional side. This failure to build a bridge, more than any deficit of parental will, is what the data expose.

Family–school participation tells the same story from the other direction ($\beta = 0.052$, $p = 0.394$; the negative association reported earlier, unweighted specifications do not survive correct weighting and listwise estimation). Bringing parents physically into schools' meetings, events, and governance does not, on its own, generate the teacher–parent collaboration that supports learning. Participation and pedagogical partnerships are decoupled; a parent can be present in the building and still never be engaged by a teacher about their child's progress. Taken together, the two null results reframe the problem. The Moroccan home–school relationship does not fail for want of parental support or parental presence; it fails at the point where those inputs should be translated into sustained, teacher-initiated contact, which represents an institutional gap, not a family gap (Epstein, 2010; Goodall & Montgomery, 2014).

Furthermore, a clear distinction emerges between the two systems: while levels of parental collaboration were significantly higher among teachers in private institutions, they remained low among those in public schools, even when teacher characteristics and psychological factors were taken into consideration. This significant discrepancy may be associated with different parental expectations or organizational control and communication mechanisms. Notably, private Moroccan schools, unlike public institutions, function under a client-oriented system, meaning that parental contacts are formal and supervised by the institution. Moreover, these patterns are documented in other stratified education systems where private school accountability mechanisms foster stronger family engagement regardless of individual teacher characteristics (Catsambis, 2002; Crozier & Davies, 2007).

Another interesting area to compare against the sector variable is geographical location. Although the initial descriptive analysis initially indicated a lack of collaboration among rural teachers, this difference disappears when the entire multilevel model is examined. This suggests that being located in a rural region reduces teacher–parent collaboration, although this effect does not reach statistical significance, contradicting some studies that cite geography and transportation as primary hurdles to engagement (Lohmann et al., 2018). Instead, the differences in collaboration apparent in the raw data stem from rural locations containing public schools, having a specific profile of school leadership and a greater proportion of new teachers. Once these factors are taken into account, it becomes apparent that the geographic location of a teacher has no bearing on their collaborative behavior. In addition to geography, other institutional metrics measuring participation and engagement were found to be insignificant in explaining the actions of individual teachers (Fig. 3). This null holds in the weighted main model; the rural penalty edges toward significance in the unweighted and reduced-form specifications (Appendix Table A2), so the geographic gap is better read as strongly attenuated than wholly absent.

In summary, teachers are skilled professionals whose allocation of time and energy among competing professional obligations, such as communicating with families, performing administrative tasks, and instructing students, constitutes a form of nonmarket labor supply (Freeman, 1978). Institutional factors that shape teacher productivity, such as school climate, leadership quality, and job satisfaction, are therefore not merely organizational variables but also determinants of discretionary effort, and school–family cooperation should be understood as resulting from the same incentive structures that govern teacher effort and retention more broadly. The public–private sector distinction found in this study further echoes a long-standing issue in labor economics about how sector-specific governance arrangements affect worker behavior and institutional performance (Gunderson, 1979; Borjas, 2002).

This research makes a theoretical contribution to multilevel school-climate research by showing that teacher-level psychological constructs, such as job satisfaction, are as important as school-level organizational variables, such as leadership, in predicting family-engagement behavior. It refines Epstein’s (1987, 2010) partnership model by locating affective working conditions in addition to parental involvement as the proximal driver of teacher outreach, and it adds to the thin body of multilevel evidence on school–family relationships in the MENA region. Three practical implications follow for Morocco’s education policy. First, improving collaboration means investing in the teacher’s immediate working environment: school-leadership training and the acute job-satisfaction deficits of the public sector are the most direct levers, since these are the factors the data show actually move outreach. Second, leadership-development programs should treat family engagement as a core leadership responsibility rather than an administrative chore. Third, parental involvement cannot be assumed to convert itself into a partnership: the home support and school presence that Moroccan families already provide do not reach classrooms, so policy should target the missing translation mechanism directly, building routine, teacher-initiated channels such as structured parent–teacher contact, protected communication time, and feedback loops that turn existing family commitment into pedagogical collaboration. Finally, targeted support for early-career teachers should help them integrate parental communication into their practice before the mid-career point at which it currently emerges.

Conclusion

Moroccan teachers collaborate more often with parents when they report higher job satisfaction and stronger instructional leadership in their school, according to a weighted multilevel analysis of TALIS 2024 data. These predictors act on teachers’ own initiative rather than on institutional requirements, suggesting that teachers reach out because they feel supported in their daily work, not because they are compelled to do so. The sharpest structural divide is by sector: collaboration is markedly greater in private schools than in public schools, even after teacher characteristics and psychological factors are held constant. Just as important is what does not predict collaboration. Neither parents’ support for achievement at home nor their participation in school activities has any measurable effect, a result that reframes the Moroccan home–school problem as a missed opportunity, in which real family

commitment goes unconverted into teacher–parent partnership. In theoretical terms, collaboration emerges as discretionary teacher behavior driven by leadership and satisfaction rather than by parental inputs. Because the cross-sectional design cannot rule out reverse causality between school climate and teacher behavior, future research should examine mediating mechanisms such as teacher self-efficacy and should incorporate parents’ and school administrators’ perspectives rather than relying on teachers’ reports alone.

Several limitations of this study must be acknowledged. First, its cross-sectional design does not allow for causal inference; the observed relationship between school climate and collaboration may be reciprocal. Second, all variables rely on self-reported data collected in a single survey, raising concerns about common method bias, particularly within levels. Third, the measure of “collaboration” captures the frequency of contact rather than its quality or depth. Finally, the findings are limited to lower secondary education and may not be generalizable to other levels, where patterns of parental involvement can differ.

Declarations

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- **Ethics declaration:** not applicable.
- **Competing interests:** none of the authors have any competing interests in the manuscript.

Author Contribution

A.I. and O.E.A. wrote the main manuscript text, prepared figures and tables. All authors reviewed the manuscript.

Data Availability

Data will be made available on request

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Footnotes

1. TT4G66B: The principal encourages co-operation among teachers to develop new teaching practices; TT4G66C: The principal ensures that teachers take responsibility for improving their teaching skills; TT4G66D: The principal ensures that teachers feel responsible for their students' learning outcomes.
2. TT4G78A: The advantages of being a teacher clearly outweigh the disadvantages; TT4G78B: If I could decide again, I would still choose to work as a teacher; TT4G78D*: I regret that I decided to become a teacher; TT4G78J: All in all, I am satisfied with my job. (Note: * Item was reverse coded)
3. TT4G78C*: I would like to change to another school if that were possible; TT4G78E: I enjoy working at this school; TT4G78G: I would recommend this school as a good place to work. (Note: * Item was reverse coded)

Figures

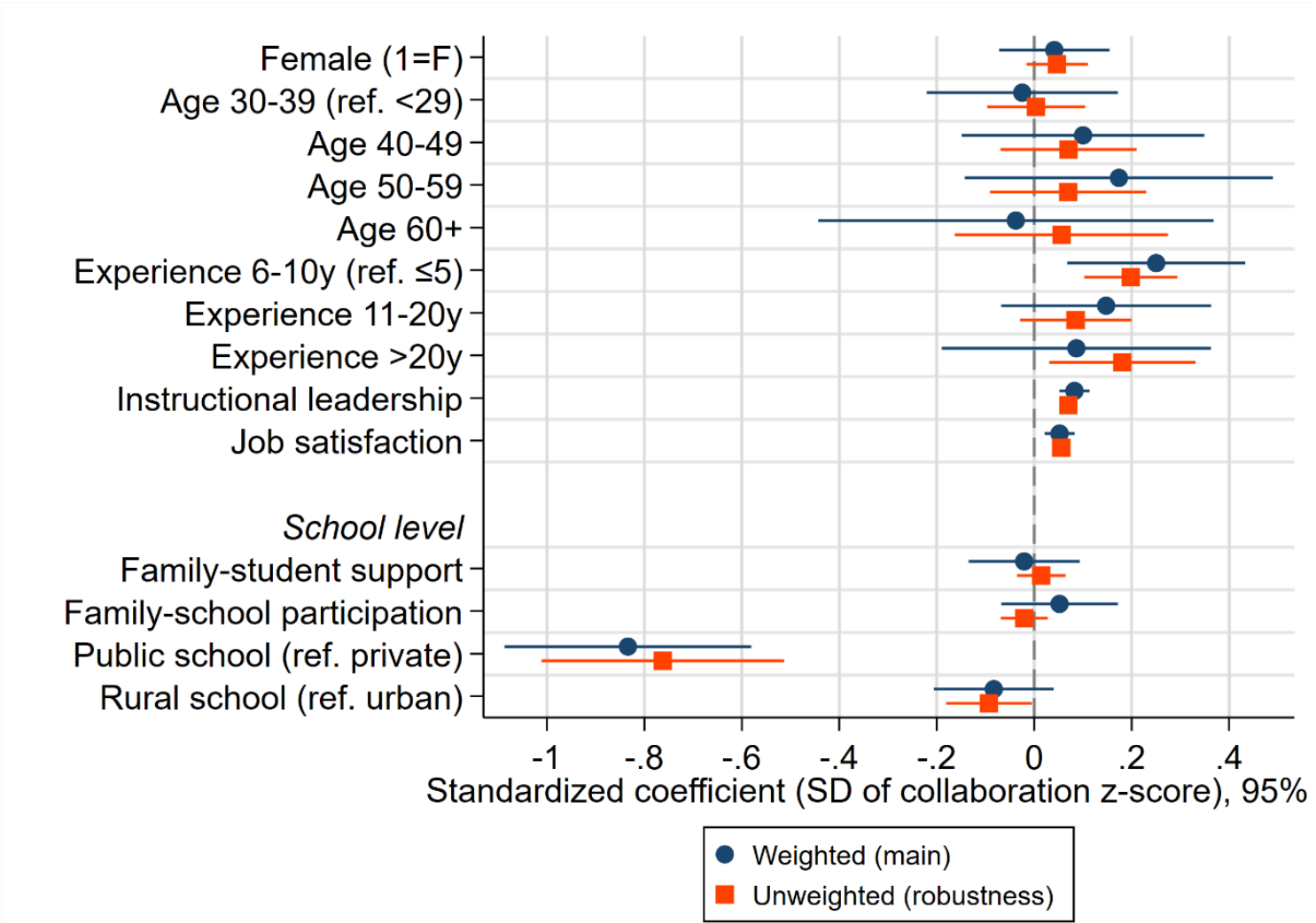


Figure 1

Determinants of teacher–parent collaboration

Note. Point estimates with 95% confidence intervals from the weighted main model (navy circles) and the unweighted robustness model (orange squares); hollow markers indicate coefficients whose 95% CI includes zero. Both specifications use N = 3,694 teachers in 390 schools.

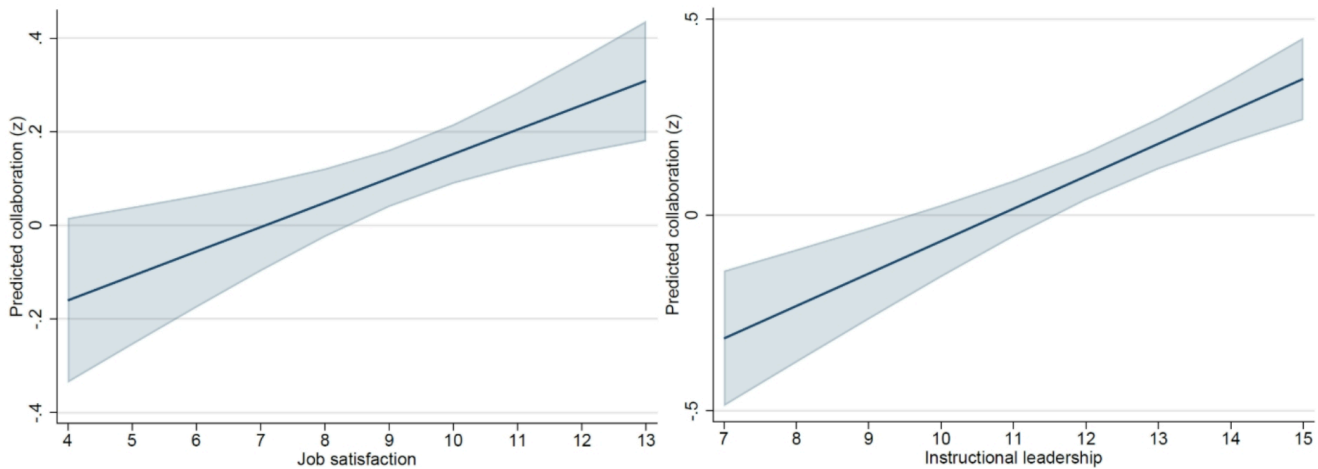


Figure 2

Predicted teacher–parent collaboration across instructional leadership and job satisfaction

(a) Instructional leadership. (b) Job satisfaction.

Note. Predicted values of standardized collaboration (z) from the weighted main model, with 95% confidence intervals (shaded), holding all other covariates at their observed values; $N = 3,694$ teachers in 390 schools. Both slopes are positive and significant (leadership $\beta = 0.083$, $p < 0.01$; satisfaction $\beta = 0.052$, $p < 0.01$). Across the observed range of each scale, the predicted change is substantial — approximately 0.7 SD of collaboration over the leadership range (6.7–15.1) and approximately 0.5 SD over the satisfaction range (3.1–13.5) — indicating that affective and organizational working conditions, not parental inputs, are the operative drivers of teacher outreach.

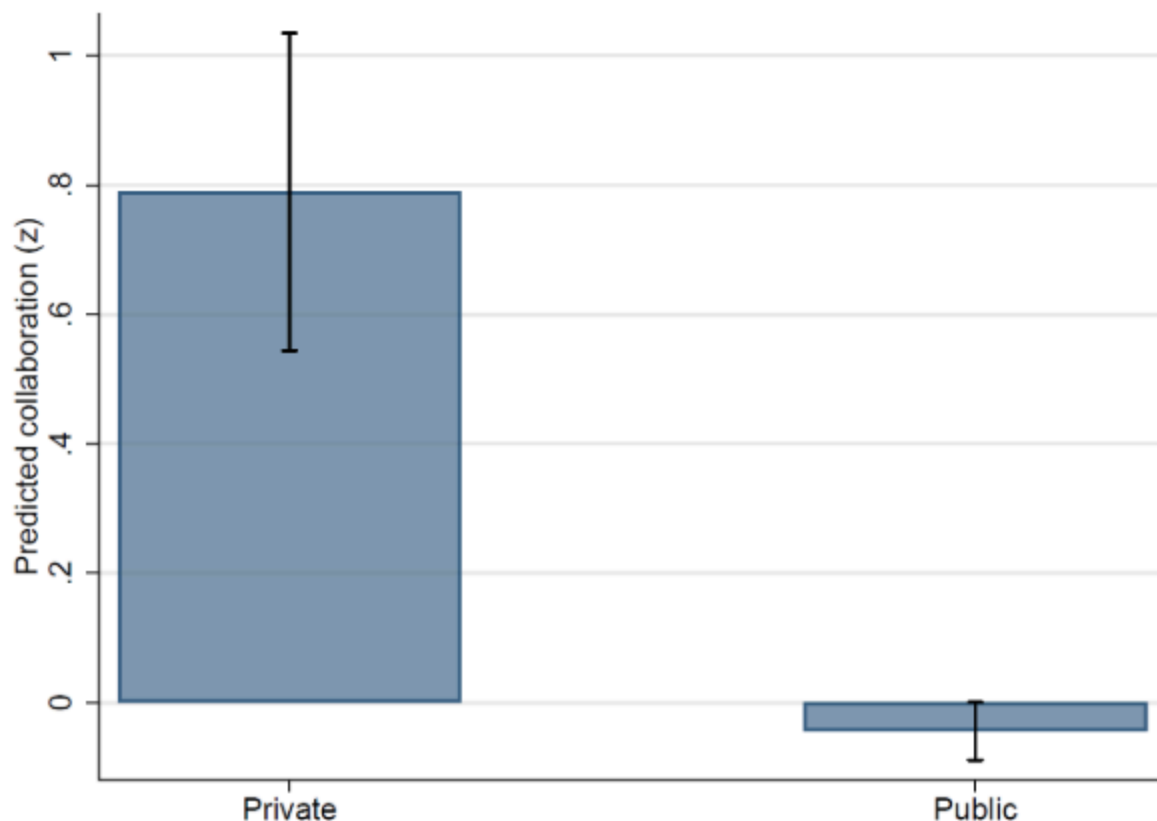


Figure 3

Predicted teacher–parent collaboration by school sector

Note. Adjusted predictions of standardized collaboration (z) for public versus private schools from the weighted main model, with 95% confidence intervals, holding teacher characteristics, instructional leadership, job satisfaction, and school-level involvement measures at their observed values; N = 3,694 teachers in 390 schools. The private–public gap of approximately 0.83 SD ($\beta = -0.834$, $p < 0.001$) is the single largest effect in the model and persists after all individual and psychological factors are controlled, pointing to sector-level governance and accountability mechanisms rather than teacher composition as its source.

Supplementary Files

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