

## Development and Validation of the Family Motivational Climate Questionnaire (FMC-Q)

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### Abstract

**Background:** The goal of this study was to develop and validate the Family Motivational Climate Questionnaire (FMCQ). Parental involvement (PI) affects children's academic orientations. However, PI questionnaires had not considered parenting behaviours from the perspective of motivational theories. It was therefore decided to develop the FMCQ. **Method:** 570 Secondary-School students formed the sample. To validate the FMCQ, confirmatory factor analyses, reliability analysis and correlation and regression analyses were conducted. Children's attribution to parents of perceived change in motivational variables affecting achievement, were used as external criteria. **Results:** Results support most of the hypotheses either related to the FMCQ structure or to its moderating role as predictor of school achievement and of attribution to parents of changes in different motivational variables —interest, effort, perceived ability, success expectancies, resilience, and satisfaction. **Conclusions:** The results underline the importance of acting on FMC-components in order to improve Children's motivation and achievement.

**Keywords:** Motivation; parental involvement; family motivational climate; motivational change; academic achievement.

### Resumen

**Desarrollo y validación del Cuestionario de Clima Motivacional de la Familia (C-CMF).** **Antecedentes:** el objetivo de este estudio es desarrollar y validar el Cuestionario de Clima Motivacional de la Familia (CCMF). La implicación de los padres (IP) en la vida académica de sus hijos afecta al modo en que éstos afrontan el trabajo escolar. Sin embargo, en los cuestionarios que evalúan la IP no se ha valorado el contenido a incluir desde las teorías motivacionales. Por eso se decidió desarrollar el CCMF. **Método:** 570 alumnos de Secundaria constituyeron la muestra del estudio. Para validar el CCMF se realizaron análisis factoriales confirmatorios, de fiabilidad, correlaciones y regresión. El grado en que los hijos atribuyen a los padres cambios en variables motivacionales que afectan al rendimiento se utilizó como criterio externo. **Resultados:** los resultados apoyan la mayoría de las hipótesis, tanto sobre la estructura del cuestionario, como sobre su valor moderador como predictores del rendimiento y del grado en que los hijos atribuyen a los padres cambios en diferentes variables motivacionales —interés, esfuerzo, habilidad percibida, expectativas de éxito y satisfacción—. **Conclusiones:** en conjunto, los resultados subrayan la importancia de actuar sobre los componentes del CCMF para mejorar la motivación y el rendimiento de los hijos.

**Palabras clave:** motivación; implicación parental; clima motivacional de la familia; cambio motivacional; rendimiento académico.

Parents are central figures for their children and adolescents' lives. In relation to the school, among other things, they can shape their children's orientations to achievement. Different studies had identified the main parental factors influencing these orientations as well as some of the students' characteristics that moderate such influence (Blondal & Adalbjarnardottir, 2009; Fan & Williams, 2010; Fulton & Turner, 2008; González-Pienda et al., 2002; Jeynes, 2007; Knollmann & Wild, 2007; Plunkett, Behnke, Sands, & Choi, 2009; Pomerantz, Grolnick, & Price, 2005). As parents' influence on their children can be negative, it is important that psychologists can identify such factors when they have to deal with students with academic problems. However, there are no adequate assessment

instruments that are useful for assessing *from the point of view of adolescents* the kind and degree of parental involvement in secondary student's academic activities, and for determining—on the basis of assessment—, whether or not their “parental style” is adequate. Instruments like the Family Involvement Questionnaire (Fantuzzo, Tighe, & Childs, 2000) and the Parenting Behaviour Questionnaire Head-Start (Coolahan, McWayne, Fantuzzo, & Grim, 2002) were designed to be filled in by parents and, the former, to be used with parents of preschool, kindergarten and first-grade children. Other instruments, like the Home Environment Scales (Song & Hattie, 1984) are too long and do not assess specific interaction patterns. In other cases, assessment instruments may include some aspects that are interesting for psychologists but were not developed from a motivational perspective (González-Pienda et al., 2002). So, it was decided to develop a questionnaire to allow the detection of potential deficiencies in adolescent's parental involvement (PI) from the point of view of adolescents themselves.

As most causes do not produce their effect in isolation, it was considered that the new instrument should be based on an

integrative model of parental contextual factors affecting the way children's approach achievement. Previous questionnaires to be filled in by parents were designed to assess the authoritative, authoritarian, and permissive nature of parenting practices (Coolahan et al., 2002; Robinson, Mandlco, Olsen, & Hart, 1995), the degree of involvement at home and at school (Fantuzzo et al., 2000) or factors determining behavioural PI, such as family expectations or satisfaction (Song & Hattie, 1984), but without systematically specifying the nature of such practices. For example, these instruments did not allow assessing the nature of parents' messages—whether they are centred on learning or performance, or on personal self-improvement *versus* overcoming their peers—the nature of help given, etc.

More recently, Pomerantz et al. (2005) developed a general model of psychological parenting factors. This model, supported by evidence provided by the meta-analysis carried out by Jeynes (2007), includes general parental factors—cognition, affect and behaviour—affecting children's motivational approach to achievement, but it does not describe with enough specificity the kinds of parents' behaviour that have a positive or negative effect on that approach. So, it was decided: (a) to specify and systematize the behavioural indicators of the Pomerantz, Grolnick and Price model so that they could be useful for developing a PI assessment instrument from the point of view of adolescents, and (b) to develop such an instrument and to initiate its validation.

#### Theoretical framework

Parent involvement has a positive effect on children's academic learning because, as Pomerantz et al. (2005) have pointed out, it helps children to satisfy four basic needs: competence, autonomy, relatedness and purposefulness (Deci & Ryan, 1985; Ryff & Singer, 1988). Nevertheless, which parental psychological factors related to academic achievement move them to act in ways that favour the satisfaction of their children's needs? And, more important, what specific action patterns make the influence of such factors possible? According to Pomerantz et al. (2005), there are three main factors: (a) the *affective relation* established between parents and children, (b) the way parents *value academic schooling*, and (c) their *academic expectancies* about their children.

*Parental affect*, conveyed through multiple interaction patterns, is essential for social and emotional development because it provides security when children have to cope with difficulties and it also acts as a source of *motivation* to achieve. However, affective ties develop, are maintained or become blocked depending on the nature of interaction processes between parents and their children. If parents devote time to interact with them, if they talk about their children's concerns and interests, if they listen to them with attention, if they provide guidelines and feedback so that children can feel that they are competent enough to act autonomously, then positive affective ties are likely to develop and these ties favour learning and achievement (Jeynes, 2007).

The way *parents value academic schooling* also influences how children approach school. If parents appreciate school contributions because of the intrinsic value of learning or because the social and professional opportunities that school education provides, they convey these values to their children in different ways: through messages and comments related to school activities, through the priorities they give to activities related to learning, through their relation with teachers and their implication in school activities.

They also convey this value when they help their children with their homework, especially if the children realize that this kind of help makes them more competent and autonomous. Finally, when parents model interest in reading, learning or culture, as these are experiences very closely linked to school activities, they convey that school contributions are valuable.

As for *parent's academic expectancies* towards children, according to Jeynes' (2007) meta-analysis, they constitute the factor with the largest impact on children's orientations to achievement. The way parents' perceive children's competence influences how they perceive their own competence. This perception, when conveyed to children through different kinds of comments on their successes and failures, in turn, influences children's motivation and achievement. For example, parents can say things like: "You can achieve it" or "You'll never achieve it", "If only you had studied a bit more...". They also convey their expectancies when they devote time (or do not devote it) to help their children.

It can be assumed that the three factors just described do not act in isolation. They give place to different action and interaction patterns that, when combined and depending on their specific characteristics, can configure what we have called "*Family motivational climate*" (FMC) due to its similarity with the concept of "Classroom motivational climate" (Alonso-Tapia & Fernández, 2008; Ames, 1992): "*Family*" because it is made of *parents'* behavioural patterns, "*motivational*" because these patterns may facilitate *learning or performance goal orientations*, and *climate* because it is the interaction between patterns that contributes to shaping students' motivational orientation.

From the point of view of assessment, it is especially important to distinguish between parents' psychological factors influencing students' orientations to achievement and the actions and interaction patterns that configure the FMC, through which such factors exert their influence. Figure 1 shows the fourteen action patterns that can be considered most important according to literature, through which parents shape, to some degree, such orientations, and Table 1 shows examples of each pattern.

Previous research on the motivational value of alternative action patterns in different contexts—family and school—has provided the base for establishing which teachers' and parents' behaviours do or do not motivate children to learn (Alonso-Tapia & Fernández, 2008; Alonso-Tapia & Pardo, 2006; Ames, 1992). Thus, it is better for parents' messages to stress the importance of learning and process than of grades, because achievement tends to be greater when mastery orientation is activated (Hulleman, Schrager, Bodmann, & Harackiewicz, 2010). The same occurs if messages and instructions stress self-improvement instead of stressing competition (Pardo & Alonso-Tapia, 1990). The works on parental styles have also shown the positive effect of action patterns through which parents structure students' work and activities, such as when they insist on homework completion, control leisure time, state rules clearly, give opportunities for autonomy and control the adequacy of environmental learning conditions (Coolahan et al., 2002; Jeynes, 2007; Pomerantz et al., 2005). This same work has shown the importance of a good relationship between parents and teachers, a relationship manifest in fluid communication between them, in which the teachers' point of view is positively valued by parents, and in which parents are involved in school activities in a broad sense. However, research on the relative importance of this relationship has yielded mixed results (Jeynes, 2007). Finally, research on PI and on how children acquire values has shown the

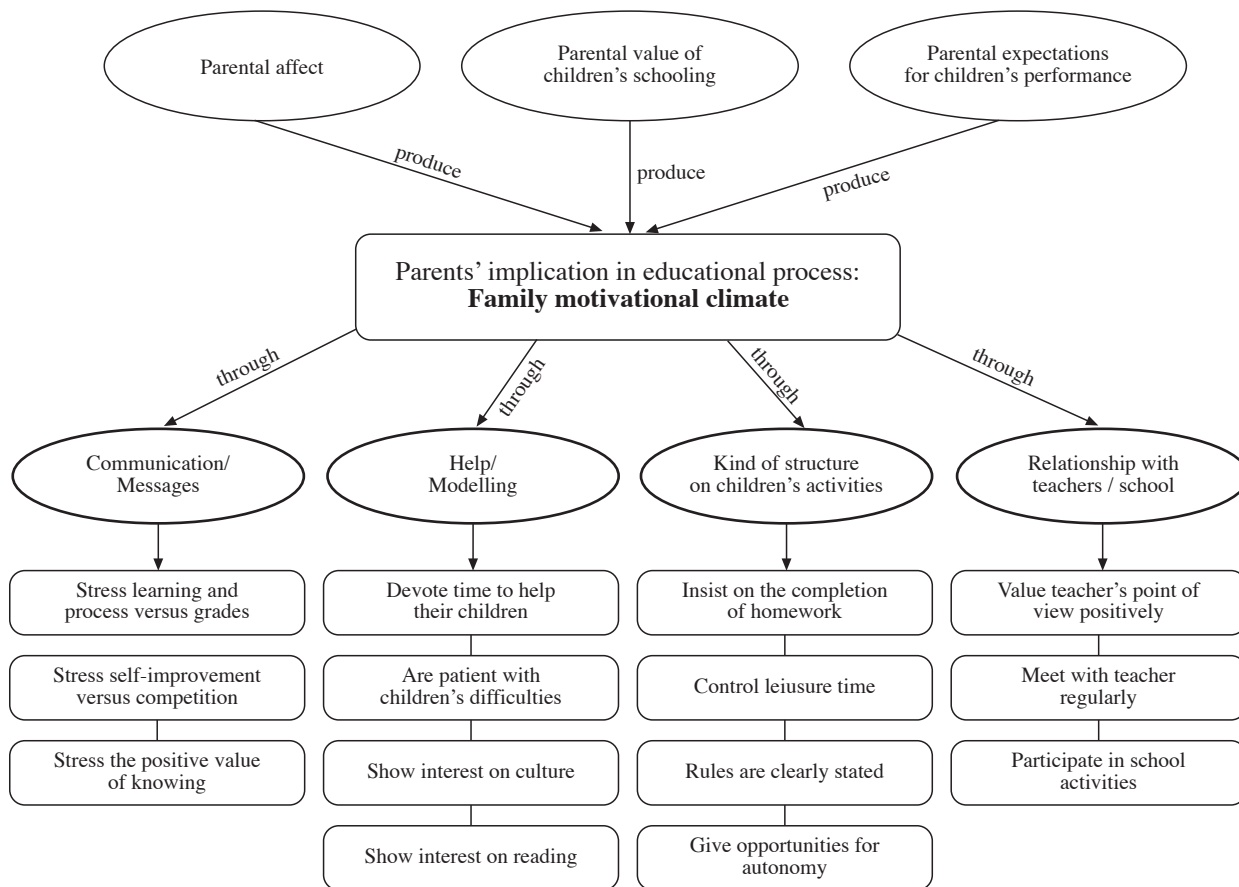


Figure 1. Sources and dimensions of family motivational climate

Table 1 Parenting patterns assessed by the FMC-Q, with item examples <sup>1</sup>	
Scales and variables	Item examples
<p><b>1. Messages.</b> Parents...</p> <p>... stress learning and process vs grades</p> <p>... stress self-improvement vs competition</p>	<p>When I fail an exam, my parents told me to look for failure reasons, instead of paying attention to grades</p> <p>My parents often told me that I have to get better grades than my peers (-)<sup>2</sup></p>
<p><b>2. Structure.</b> Parents...</p> <p>...insist on homework completion</p> <p>... control leisure time</p> <p>... state rules clearly</p> <p>... give opportunities for autonomy</p> <p>... control that environmental learning conditions are adequate</p>	<p>If I do not study or do my homework, my parents do not insist too much that I do it (-)</p> <p>My parents do not allow me to watch TV, play or access to Internet unless I have finished my homework</p> <p>My parents sometimes tell me to study and sometimes not: there are no fixed rules (-)</p> <p>If I have difficulties with a task, my parents do not do it themselves: They teach me to carry it out by myself</p> <p>My parents try not to let anyone bother me while I am studying</p>
<p><b>3. Help/modelling.</b> Parents...</p> <p>... devote time to help with academic tasks</p> <p>... are patient with children difficulties</p> <p>... show interest in culture</p> <p>... show interest and motivation in reading</p>	<p>Although my parents do not have time to help me, if I need help, they manage to make time</p> <p>I ask for help from my parents when I need it, because they (at least one of them) have enough patience to teach me</p> <p>My parents like to visit places like museums, expositions, etc., where they can learn</p> <p>My parents read books very often</p>
<p><b>4. Relationship with teachers.</b> Parents...</p> <p>... value positively teachers' point of view</p> <p>... meet with teacher regularly</p> <p>... participate in school activities</p>	<p>My parents usually appraise my teachers' points of view favourably</p> <p>My parents hardly ever meet my teachers unless the teachers insist strongly (-)</p> <p>It is very important for my parents to collaborate with the school in educational activities as often as they can</p>
<p><sup>1</sup> FMCQ= Family Motivational Climate Questionnaire</p> <p><sup>2</sup>(-) = Items scoring negatively</p>	

importance of devoting time to helping with academic tasks, of being patient with children's difficulties (Pomerantz et al., 2005), and on showing interest in reading and culture.

These action patterns can be grouped into four categories or dimensions that are mentioned in literature: *communication*—what a parent says—, *structure*—the degree and kind of control of student's activities—, *help/modelling*—amount and quality of help and modelling that parents provide—, and *relations with teacher and school* (Coolahan et al., 2002; Fantuzzo et al., 2000; Jeynes, 2007; Pomerantz et al., 2005). We consider, moreover, as previously mentioned, that the set of four interaction patterns included in these four categories configure the "Family motivational climate". This climate, depending on its nature, could contribute to shaping either an approach or an avoidance academic orientation. So, we have tried to operationalize it through a questionnaire and to study its validity for predicting the effects on perceived change in variables that influence achievement—interest, effort, perceived ability, success expectancies and resilience (Alonso-Tapia & Fernández, 2008), as well as on the degree of satisfaction with parents' work and on achievement.

## Method

### Participants

A total of 570 students from two private urban secondary schools in Madrid (Spain) participated in the study. They were large schools—with about 800 students—that accepted voluntarily to participate in the study. There were 243 females and 251 males (76 subjects did not inform of their sex). Age ranged from 12 to 18 years old ( $M=14.78$ ,  $SD=1.93$ ). The sample was randomly divided into two sub-samples with 304 and 266 subjects, respectively. The first sample was used for carrying out the initial analysis and the second sample, for cross-validating the results.

### Instruments

In order to test our hypotheses, the following instruments were used.

- "Family Motivational Climate Questionnaire" (FMC-Q) (Alonso-Tapia & Simón, 2012). This questionnaire, the structure of which is shown in Table 1, contains 28 items addressing parental behaviours that, according to theory, can positively or negatively affect students' motivation to learn and learning itself. These items are grouped in 14 variables, each one including a positive and a negative item. Students have to rate their degree of agreement or disagreement with the content of each item on a 5-point Likert scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). The Spanish version of the CMF is included in Table 6.
- Six independent scales developed for this study were also used to assess the *Perceived parents' role in changing: student's resilience* (RS) ( $\alpha=.57$ ), *perceived ability* (PAB) ( $\alpha=.80$ ), *effort expenditure* (EFF) ( $\alpha=.76$ ), *interest* (INT) ( $\alpha=.80$ ), *success expectancies* (SE) ( $\alpha=.79$ ), and *satisfaction with parents' work* (SAT) ( $\alpha=.64$ ). The first five scales have 3 items, and the SAT scale has 4 items. An item example of each scale is shown in Table 2. These scales are parallel to others previously developed for assessing

perceived teachers' role in changing the same characteristics (Alonso-Tapia & Fernández, 2008), and were used to examine whether the motivational changes they refer to are attributed to the degree to which family motivational climate is learning-oriented.

### Procedure

The students filled in the questionnaire and the six scales in one session. Nowadays, it may be that parents are not the ones in charge of the children. So, students were asked who was mainly in charge—parents, mother only, father only, grandparents, tutors, etc.—and then, before completing the questionnaire, they were told to refer to the person or persons who were in charge when reading the expression "parents".

### Data analyses

In order to determine the FMC-Q factorial structure, three confirmatory factor analyses (CFA) were carried out. First, the structure derived from the theoretical considerations was used as baseline model to be estimated with confirmatory techniques (CFA-1), using the AMOS-19 statistical software (Arbuckle, 2003). Estimates were obtained using the maximum likelihood method after examining whether data were adequate for the analysis. Absolute fit indexes such as  $\chi^2$ ,  $\chi^2/df$ , goodness-of-fit index (GFI), relative fit indexes such as the incremental fit index (IFI), and non-centrality fit indexes such as the comparative fit index (CFI) and the root mean square error of approximation (RMSEA) were used to assess model fit, as well as criteria for acceptance or rejection based on the degree of adjustment described by Hair, Black, Babin, Anderson and Tathan (2006).

Second, in order to cross-validate the results of the above analysis, a confirmatory multiple group analysis was carried out using the two sub-samples. The theoretical model proposed was used as the baseline for comparison without any restriction for parameter equality between samples. Against this model, several models were estimated and compared, in which equality between the groups was imposed for different sets of parameters. The relative decline in goodness-of-fit was assessed by means of

Scales	Item examples
Resilience	Thanks to my parents' support, I try to cope with problems at school, instead of avoiding them
Perceived ability	The way my parents help me contributes positively to my sense of efficacy
Effort	Thanks to the way my parents encourage me, I try really to learn
Interest	The good thing is that my parents make me be interested in learning
Success expectancies	In my case, it is easy to achieve good grades, thanks to my parents' help
Satisfaction	I wish all parents were like mine: I am really satisfied with the way they support me in my studies

the difference in the chi-square statistic between the model with restrictions imposed and the model without restrictions.

Third, as in previous studies with different variables related to motivation, sex seems to influence the structure of the questionnaires (Alonso-Tapia, Huertas, & Ruiz, 2010), with the aim of testing in

this case whether gender had a significant effect on the structure of the FMCQ, the sample was divided by gender in two sub-samples, and a re-estimation by groups was carried out.

Fourth, the reliability—internal consistency—of the FMCQ scales was calculated using Cronbach's  $\alpha$  coefficient.

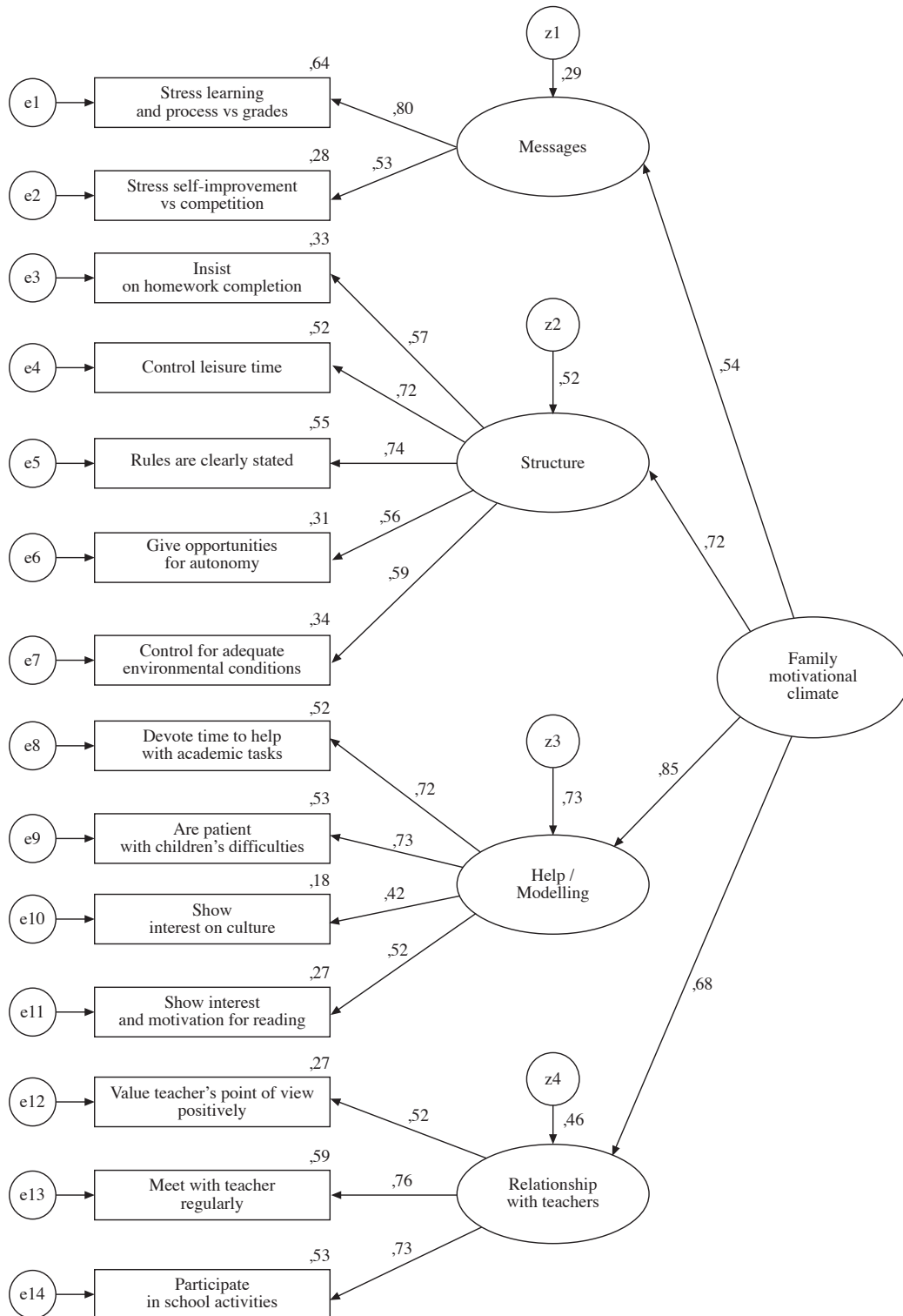


Figure 2. FMC-Q: Initial confirmatory standardized solution

Fifth, in order to obtain initial information on the external validity of the FMCQ, correlation and regression analyses were carried out to test each of the hypotheses on FMC potential effects. Correlation analysis was carried out to see if, as expected, FMC and each of its components correlated positively with perceived change in motivational variables, *satisfaction* and *achievement* (mean grade in the most important subjects—Language, Maths, Science, Social Sciences and Foreign Language). The first seven regression analyses were carried out, after examining and discarding the existence of multicollinearity, to determine the relative importance of each component of FMC as a predictor of change in the scales assessing the role attributed to parents in the degree of improvement experienced on the motivational variables—RS, PAB, EFF, INT and SE—and of school achievement as criteria. The two remaining analyses were performed in order to test whether combining FMC and perceived change in motivational variables would improve the prediction of satisfaction with parents' work and school achievement.

Results

Confirmatory Factor Analysis (CFA-1)

Figure 2 shows the standardized estimates of the confirmatory baseline model. All the estimated measurement loadings ( $\lambda$ ) were significant ( $p < .001$ ), as well as the proposed structural relations ( $\gamma$  and  $\Phi$ ). Table 3 shows the fit statistics of the proposed model (CFA-1). Chi-square statistic was significant, probably due to sample size, but the ratio  $\chi^2/df$  and the remaining fit indexes were well within the limits that allow the model to be accepted.

Multi-group Cross-validation Analysis (CFA-2. CVA)

As can be seen also in Table 3 (CFA-2, CVA), the fit indexes of multi-group analysis were within acceptable limits. Moreover,

the model comparison statistic between measurement weights ( $\chi^2 = 9.43, p = .49$ ), structural weights ( $\chi^2 = 12.14, p = .51$ ), structural covariances ( $\chi^2 = 12.26, p = .58$ ), structural residuals ( $\chi^2 = 15.29, p = .64$ ) and measurement residuals ( $\chi^2 = 33.30, p = .40$ ), shows that fit is not significantly reduced for the model without restrictions.

Multi-group Analysis by Gender (CFA-3: Males-Females)

The adjustment indexes were within acceptable limits although some of them (IFI and CFI) fell slightly short of accepted cut-off points (see Table 3, CFA-3 Males-Females). The model comparison statistics between measurement weights ( $\chi^2 = .18.557, p = .046$ ) show that fit is significantly reduced for the model without restrictions. This implies that the structure of relations between variables is not exactly the same for males as for females. So, in order to determine which relations in the model differed significantly, the Z-test proposed by Clogg, Petkova and Haritou (1995) was used. The z-test showed significant differences only between four coefficients: the factor loadings of help/modelling on FMC (females:  $\lambda = 1.17$ ; males:  $\lambda = 2.03$ ;  $Z = -2.07$ ; females < males), of relation-with-teacher on FMC (females:  $\lambda = .38$ ; males:  $\lambda = 1.02$ ;  $Z = -3.42$ ; females < males), of giving-opportunities-for-autonomy on structure (females:  $\lambda = .58$ ; males:  $\lambda = .83$ ;  $Z = -1.97$ ; females < males), and of having-patience on help (females:  $\lambda = 1.27$ ; males:  $\lambda = .91$ ;  $Z = 2.89$ ; males < females).

FMC Reliability

Cronbach's  $\alpha$  coefficients, computed for the scales of this questionnaire, are shown in Table 4. As can be seen, the index for the general FMC scale is very good and the remaining indexes are good enough to be used for the purpose of the study.

*Table 3*  
Goodness-of-fit statistics for CFA of base model, of multi-group cross-validation analysis (CVA), and of multi-group analysis by gender

	$\chi^2$	df	p	$\chi^2/df$	GFI	IFI	CFI	RMSEA
CFA-1 (N= 304) Base line model	160.88	73	.000	2.20	.93	.92	.92	.061 CI [.05, .07]
CFA-2. Cross V (N: 304-266)	338.63	146	.000	2.32	.93	.90	.90	.048 CI [.042, .050]
CFA-3 Males-Females (N: 217-258)	342.00	146	.000	2.34	.91	.89	.88	.053 CI [.046, .061]

<sup>1</sup> CI: Confidence interval

*Table 4*  
Reliability of FMC scales, and correlations with motivational scales, satisfaction with parents work and achievement<sup>1</sup>

	$\alpha$	RS	PAB	EFF	INT	SE	SAT	ACH
FMC	.85	.584***	.686***	.612***	.630***	.646***	.602***	.235***
Messages	.62	.362***	.380***	.315***	.377***	.342***	.298***	.161***
Structure	.80	.483***	.533***	.568***	.516***	.520***	.430***	.158**
Help/modelling	.76	.475***	.587***	.447***	.475***	.547***	.575***	.212***
Relation with teacher	.66	.306***	.350***	.385***	.395***	.358***	.267***	.129**

<sup>1</sup> RS: resilience; PAB: Perceived ability; EFF: Effort; INT: Interest; SE: Success expectancies; SAT: Satisfaction with parents work; ACH: Achievement; FMC: Family motivational climate  
\*\*\*  $p < .001$ ; \*\*  $p < .01$



Correlation analyses

Correlations are shown in Table 4. All of them are highly significant, which supports our expectancies. However, FMC and FMC component correlations with achievement were much lower than with motivational variables. This was also expected, as many more factors affect achievement than family support.

Regression analyses

Table 5 shows the results corresponding to the first group of regression analyses, carried out to determine the relative weight of the components of FMC in predicting: (a) perceived change in motivational variables attributed to parents' work and, (b) satisfaction and achievement. As expected, *R* was very high in all cases, except when Achievement was used as criterion. Most important, however, is that not all FMC components had a similar weight in predicting perceived changes in motivational variables. *Structure* had, on average, the highest weight (.329), followed by *Help* (.264), *Messages* (.172) and, finally, *Relation with teacher* (.092). As for Satisfaction, *Help* had the highest weight and, in the case of achievement, *Help* was the only factor that had significant weight.

Results corresponding to regression analyses carried out to determine whether scores on scales assessing perceived change in motivational variables contribute to improving the prediction of students' satisfaction and achievement scores showed that, in the case of *satisfaction* ( $R = .649^{***}$ ), the only significant predictors were CMF ( $\beta = .406, p < .001$ ), SE ( $\beta = .239, p < .001$ ) and RS ( $\beta = .120, p < .05$ ) and, in the case of *achievement* ( $R = .305^{***}$ ), CMF ( $\beta = .228, p < .001$ ), SE ( $\beta = .344, p < .001$ ) and PAB ( $\beta = .253, p < .01$ ).

Discussion and conclusion

The main objectives of this paper were to expand, specify and systematize the behavioural indicators of the Pomerantz, Grolnick and Price model so that it could be useful for developing a PI assessment instrument from the point of view of adolescents, to

develop such an instrument and to initiate its validation. What kind of contributions has our study made in relation to them?

First, our work has introduced the concept of "Family motivational climate", not as an alternative to PI, but as an extension and development of it. PI questionnaires do not consider the motivational implications of specific parental practices from the point of view of goal orientation theory (Hulleman et al., 2010), motivational climate (Ames, 1992) or intrinsic-extrinsic motivation (Deci & Ryan, 1985). However, FMC-Q items were included after considering their positive or negative relation to motivation from the point of view of such theories.

Second, CFA results had provided good support to the theory underlying the questionnaire. The four dimensions underlying the FMC-Q contribute to such support in a very significant degree. It can be said that parental messages define *communication styles* that contribute to configure an FMC positively oriented to learning as long as they stress learning more than grades, and self-improvement more than competition. *Structure* can also contribute to an FMC oriented to learning as long as it is perceived not as controlling but as a kind of help aimed at favouring competence and autonomy. Nevertheless, gender acts as a moderator of the positive value that children attribute to this factor: Boys value structure more than girls do. The role of *help* with academic tasks is especially clear, though gender again moderates how it is evaluated: boys value help more than girls do, but girls value one of its components—parents' patience—more than boys do. As for the value attributed to *relationship with teacher*, it contributes also to defining the FMC, and gender does not act as a moderator variable.

Third, correlation and regression analyses carried out to obtain information on predictive validity of the FMC-Q have shown that—to a very significant degree—the more the students perceive that FMC is learning oriented, the more they declare that parents are responsible of the degree of improvement they experience in interest, effort, perceived ability, success expectancies, resilience and satisfaction. This fact supports the motivational interpretation of parental practices included in the questionnaire. The same occurs with achievement, though here, the relation, albeit significant, is very much lower. This result was expected, as achievement depends on many factors, not only on motivation.

Fourth, the components of FMC do not have the same weigh in predicting the attribution of perceived improvement in motivational variables to parents, a fact also found by Jaynes (2007) in relation to achievement. Structure and help/modelling have greater weight than messages and relation with teachers. Although our data are correlational, this fact is compatible with the idea that these variables have great causal influence on children's motivation, a hypothesis that should be experimentally tested.

Fifth, some of the motivational variables whose perceived change is attributed to parents' educational practices contribute to increasing the prediction of *satisfaction* and *achievement*. Again, although our data are correlational, this fact is compatible with the idea that the effect of interventions aimed at improving FMC on satisfaction and achievement could be amplified as long as they modify specific motivational variables such as, for example, success expectancies.

This study has also some limitations that, however, open lines for future work. FMC includes parental interaction patterns that influence students' motivation and achievement, and that are supposed to be dependent on parental affect, value of school, perception of their children's competency and expectancies on achievement. Nevertheless, this assumption has not been tested.

Table 5

Regression analyses. Criteria: Change attributed to parents' work in different variables related to motivation. Satisfaction with parents' work and with school achievement. Predictors: Family motivational climate components<sup>1</sup>

Criterion variable	Predictors standardized regression coefficients				
	R	Messages	Structure	Help	Relations with teacher
Perceived change in resilience	.597***	.200***	.307***	.251***	.049
Perceived change in ability	.680***	.173***	.304***	.368***	.058
Perceived change in effort	.634***	.144***	.410***	.169***	.123***
Perceived change in interest	.629***	.202***	.319***	.206***	.147***
Perceived change in success expectancies	.646***	.141***	.305***	.328***	.086*
Satisfaction	.616***	.098*	.204***	.449***	.006
School achievement (mean grade)	.242***	.089	.060	.141**	.035

<sup>1</sup>\*\*\*  $p < .001$ ; \*\*  $p < .01$ ; \*  $p < .05$

Moreover, the FMC-Q includes a small sample of kinds of parental practices that configure the FMC but they are probably not the only ones. For example, when helping children with their homework, parents can show the usefulness of what they are studying; when children experience negative emotions, parents can show “unconditional acceptance”; parents can also help their children to think strategically, to plan and self-regulate their effort and to learn from errors, etc. (Alonso-Tapia, 2005). So, it remains to be explored which parental practices with motivational effects should be added.

It remains also to be explored whether the FMC-Q can predict other events related to achievement, such as academic dropout, disruptive behaviour, etc.

Finally, the FMC is not the only factor that influences motivation and achievement. Thus, their interactions with other factors, such as, for example, children’s personal characteristics or classroom motivational climate, should be studied. In any case, its present validity suggests that the FMC-Q can be useful for assessment and program evaluation.

Table 6  
Cuestionario de Clima Motivacional de la Familia

Esta prueba contiene una serie de afirmaciones que se refieren a cómo percibes la forma en que tus padres, o la persona que hace las veces de tal —aunque en las afirmaciones aparezca el término “padres”— te apoya en tu trabajo escolar. Tu tarea consiste en indicar, pensando en la persona que has señalado, el grado en que estás de acuerdo con cada afirmación utilizando la escala siguiente:

A. Totalmente en desacuerdo	B. Bastante en desacuerdo	C. Indiferente	D. Bastante de acuerdo	E. Totalmente de acuerdo
1. Cuando llevo a casa exámenes, en lo que más se fijan mis padres es en la nota				
2. Aunque mis padres no tienen tiempo para ayudarme, si necesito ayuda lo sacan de donde sea				
3. Si no he estudiado o no he hecho los deberes, mis padres no insisten mucho en que estudie o los haga				
4. A mis padres les gusta ir a lugares en que pueden aprender, como museos, exposiciones, etc.				
5. No veo que mis padres valoren mucho a mis profesores				
6. Si tengo algo mal en un examen, mis padres me dicen que trate de ver por qué, en lugar de fijarse en la nota				
7. Si no sé hacer algo, no pido ayuda a mis padres porque no tienen tiempo para ayudarme				
8. En mi casa mis padres están pendientes de si hago los deberes o estudio				
9. Mis padres van poco a museos, exposiciones o sitios en que se puede aprender				
10. Mis padres suelen valorar bien las opiniones de los profesores				
11. Mis padres van a las reuniones con los profesores siempre que pueden				
12. Mis padres me dicen con frecuencia que tengo que sacar mejores notas que los demás				
13. Suelo pedir ayuda casi siempre a mis padres porque (al menos uno) tienen paciencia para enseñarme				
14. En mi casa da igual si he hecho los deberes o no: puedo ver la tele, jugar o hacer lo que quiera				
15. Mis padres son personas que leen libros a menudo				
16. A menos que los profesores insistan mucho, mis padres casi nunca van hablar con ellos				
17. Cuando se trata de los estudios mis padres nunca me comparan con los demás				
18. Prefiero no pedir ayuda a mis padres pues ninguno tiene paciencia para ayudarme				
19. Mis padres no me dejan ver la tele, entrar a Internet, jugar o salir hasta que no he terminado de estudiar				
20. No suelo ver a mis padres leer libros, y quizá por eso tampoco leo demasiado				
21. Para mis padres es importante colaborar con el colegio en las actividades educativas cuando se puede				
22. Si tengo dificultades con alguna tarea, mis padres no me la hacen: me ayudan a que yo la resuelva				
23. En casa tan pronto me dicen que estudie como me dejan hacer lo que quiera, no hay regla fija				
24. En mi casa procuran que no se me moleste cuando estoy estudiando				
25. Mis padres casi nunca van a las reuniones o actividades que realiza el colegio				
26. Cuando no sé hacer alguna tarea escolar, mi padre o mi madre a menudo me la hacen				
27. En mi casa las normas están claras: sé que tengo que hacer los deberes antes de hacer otras cosas				
28. En casa, cuando estudio, no se preocupan de si hacen ruido, hablan fuerte o la tele molesta				

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