# Social Climate and Responsibility as predictors of antisocial and prosocial behaviors and violence. A study towards the Self-determination theory.

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Abstract: The Self-determination theory and The Vallerand's Hierarchical Model has been studied with different types of social factors that can bring different consequences. The purpose of this work was if responsibility and social climate could predict the social and prosocial behaviors and violence. For this, 429 students (M = 11.46, SD = 1.92) participated in this study answering a questionnaire with five variables: school climate, responsibility, motivation, satisfaction of psychological needs, prosocial and antisocial behaviors and violence. The main results saw that the most part of variables were correlated positive and directly except with antisocial behaviors and violence. On the other hand, prediction model (X2 = 584.145 (98); RMSEA = 0.104 [90% CI = 0.096, 0.112]; TLI = 0.849; CFI = 0.894) showed that responsibility and school climate can predict psychological basic needs and these needs, can improve the autonomous motivation and finally have positive consequences improving prosocial behaviors and reducing antisocial behaviors and violence. In conclusion, school climate and responsibility can improve positive consequences to the classroom, specifically, prosocial behaviors and reducing violence and antisocial behaviors.

**Keywords:** psychological basic needs, autonomous motivation, education, school, teenagers, children.

## 1. Introduction

The processes of character formation and social skills development are a field of knowledge which is being continuously increased by many pieces of research developed from different disciplines, from psychology to pedagogy, including, for instance, sociology and educative community in general [1]. In this way, several recent research [2-4] have already stated that a low level of social skills in young people and adolescents may be the trigger for violent episodes in school contexts. Similarly, Cunha et al. [5] reported the association between school violence prevalence (which internationally is raising according to Rocha et al. [6]) and the creation of a negative school climate that, according to Carbonero et al. [7] is characterised by low levels of motivation, which are linked with a higher level of dissatisfaction of basic psychological needs [8]. In prevention of a negative school climate development, Lenz et al. [9] remarked the importance of psychological well-being, academic achievements and a good school coexistence.

In school contexts, one of the pedagogical models that is attaching best consequences with regard to values development is Personal and Social Responsibility Model (TPSR), which was designed by Donald Hellison [10]. This model divides the personality formation in four areas, which are; on one hand, engagement/effort and autonomy as elements of personal responsibility and, on the other hand, respect for the others and help/leadership as elements of social responsibility. In addition to this framework there is a fifth area, which aims the extrapolation of what have been learned out of the school, that

is, to the rest of quotidian life settings. These four areas can be classified as social skills [11]. The bibliographic review carried out by Sánchez-Alcaraz et al. [12] in the main international databases, points out that the most common effects reported after TPSR implemention are: improvements in sportmanship, self-control, the level of commitment with activities and interpersonal relationships.

With regard to basic psychological needs (BPN) analysis, it is remarkable that, in this research, they are framed under the theoretical construct proposed by Self-determination theory of Deci and Ryan [13-14], which defends that they are made up by autonomy, competence and social relatedness. On its part, also inside the Self-determination theory [14], motivation is understood as a continuum which comprises from demotivation to intrinsic motivation. In this sense, several studies have confirmed that higher levels of basic psychological needs satisfaction are found in those participants with a self-determined motivation [15-17] and it places to positive consequences at the cognitive, affective and behavioral levels (consequent variables). It has been shown that students who have greater satisfaction with BPN develop a more self-determined motivation [18]. Regarding this theory, Merino-Barrero et al. [19], responsibility could be a social aspect that influenced in the BPN and in self-determination motivation, with good consequences in the physical activity intention, sportiness and a healthy life style. The motivational processes developed by students act as determining elements in the behaviors developed during classes [20].

The sequence established by Vallerand's Hierarchical Model [21] has been studied by several authors with different types of social factors and consequences [22-23]. However, no study has analyzed the model taking into account responsibility as a social factor and the prosocial-antisocial behaviors and violence as a consequence of this theoretical construct. Only the study by Menéndez and Fernández-Río [16] took into account responsibility as a social factor and the goal of friendship-approach as a consequence, obtaining results that reflect the capacity of responsibility to predict the satisfaction of BPN, intrinsic motivation and the goal of friendship-approach. Different works in this line [16,24,25], highlight the importance of analyzing the social domains in order to have a better view on the motivation of adolescent students.

Despite the fact that among scientific literature there is an increasing amount of works that analyse these variables separately or even linking them with other third variables, up to date, to the best of our knowledge, this is the first research that aims to determine, not only if there is a correlation between all of them but also, their prediction capability of the responsibility and social climate to the BPN, the autonomous motivation and prosocial-antisocial behaviors and violence.

## 2. Materials and Methods

### *2.1. Participants*

A total of 429 students from primary and secondary school from three different schools, with similar socio-demographic characteristics participated in this study (227 men, 52.9% and 202 women 47.1%) with an average age of 11.46 (SD = 1.92). According to age, 294 were from primary school (68.5%) and 135 from secondary school (31.5%).

### *2.2. Instruments*

Sociodemographic variables were answered (gender and age) to the students and a multiple questionnaire with these scales:

(1) Personal and Social Responsibility Questionnaire (PSRQ): to measure personal and social responsibility levels. It was adapted to the school context by Li et al. [26], and for Spanish by Escartí et al. [27] and validated in a 9 to 15 years old sample. This scale consists of 14 items, seven to assess social responsibility (e.g., "I help others") and seven

for personal responsibility (e.g., "I set goals"). The answers were provided on a Likert-type scale ranging from 1 (totally disagree) to 6 (totally agree). Reliability in the pre-test was 0.82 for social responsibility and 0.82 for personal responsibility.

(2) Questionnaire to assess social school climate (CECSCE): to evaluate the climate perceived by the students in regard to their class, teacher and school. It was designed by Trianes et al. [28] and validated in a 12–14 years old sample. The questionnaire consists of two subscales called "Center climate" (e.g., "Students are really willing to learn"), made up of eight items, and "Teaching climate" (e.g., "Teachers of this school are friendly to students"), composed of six items. A five-point Likert-type scale was used, ranging from 1 (totally disagree) to 5 (totally agree). The internal consistency analysis yielded a value of 0.85 for center climate and 0.69 for teaching climate. The value of the school climate (general scale value) was 0.81.

(3) Psychological Need Satisfaction in Exercise (PNSE): to measure the satisfaction of the need of social competence, autonomy and relatedness. The scale adapted for Spanish and to the education context by Moreno et al. [29] and validated in a 12–16 years old sample. This scale consists of 18 items, six to evaluate each need: competence (e.g., "I am confident to perform the most challenging tasks"), autonomy (e.g., "I believe I can make decisions during my classes") and relatedness with others (e.g., "I feel attached to my class mates because they accept me as I am"). These were preceded by the sentence "During my class…" and the answers were provided on a Likert-type scale ranging from 1 (False) to 6 (True). Reliability in the pre-test was 0.70 for autonomy, 0.76 for competence and 0.71 for relatedness. Moreover, the psychological mediator index (PMI) was applied to evaluate the three variables jointly, yielding an internal consistency of 0.84.

(4) Motivation toward Education Scale (in French, EME): to measure motivation from the most self-determined types to the most external causes and amotivation. The Spanish version of the Échelle de Motivation en Éducation [30] validated by Nuñez et al. [31] was used. The questionnaire passed a reliability test in order to check the understanding of the student sample in the same way as the others. The questionnaire consists of seven subscales but in this study we used the denominated "autonomous motivation" like recommended Sánchez-Oliva et al. [32] composed for 4 scales called intrinsic motivation to knowledge (e.g., "because I feel pleasure and satisfaction when I learn new things"), to accomplishment (e.g., "for the pleasure I feel when I improve my academic performance") and to experience sensations (e.g., "because reading about topics I find interesting stimulates me") and identified regulation (e.g., "because it will allow me to access to the job market in my preferred field"). The instrument is composed of 28 items preceded by the sentence "I go to school/high school because …", with a seven-point Likert-type scale, from 1 (totally disagree) to 7 (totally agree) and distributed into seven subscales, five of them containing four items and two of them containing three items. The reliability values were of 0.78 (intrinsic motivation to know), 0.80 (intrinsic motivation to accomplishment), 0.74 (intrinsic motivation to experience), 0.70 (identified) and 0.79 (autonomous motivation).

(5) Scholar Violence Questionnaire (CUVE): From Álvarez et al. [33]. It is divided in turn into a version for secondary school with 8 subscales and one for primary with 7 subscales. Adapted to Spanish and to the context of primary and secondary school by Álvarez et al. [34]. In the case of secondary school, the subscale of "violence through information and communication technologies is included (e.g. "students publish on the internet offensive photos or videos of colleagues) and it was deleted in this study to check the same scales of primary and secondary students. The other subscales that make up the questionnaire are verbal violence towards students (e.g. "students speak badly about each other"), verbal violence towards teachers (e.g. "students speak with bad manners to teachers"), direct physical violence between students (e.g., "students engage in fights on school grounds"), indirect physical violence by students (e.g., "student students steal things from

teachers"), social exclusion (e.g., " certain students are discriminated against by their classmates"), disruption in the classroom (e.g. " there are students who neither work nor let others work "), teacher violence towards students (e.g. "teachers do not listen to their students"). The total internal consistency of the questionnaire that was the variable that it was used was 0.93 for primary and 0.91 for secondary students. The responses are collected in a Likert-type scale whose scoring range ranges from 1 (totally disagree) to 5 (totally agree).

(6) Teenager Inventory of Social Skills (TISS): From Inderbitzen and Foster [35]. To evaluate prosocial and antisocial behaviors. Adapted to Spanish by Inglés et al. [36]. The questionnaire is made up of two subscales called; prosocial values including positive social behavior such as cooperation, community participation, altruism, and the ability to express feelings (e.g. "I offer help to my classmates to do their homework"); antisocial values such as aggression, low self-esteem, social anxiety, presumption and insolence (e.g. "I forget to return things that others have lent me") with a five-point Likert-type scale, from 1 (it does not describe anything to me) to 6 (it fully describes me ). The internal consistency values were 0.89 for the prosocial values scale and 0.87 for the antisocial values scale

*2.3. Procedures*

Before completing the questionnaire, the main research contact with the different centers. After that, the participants were given an information sheet and were asked to sign an informed consent form. The students answered a questionnaire in a session in a quiet environment during 35 min. First, students watched a power point presentation about how to complete the questionnaires, after that the teacher read the questions in order to ensure of their understanding. The teacher and one of the researchers stood all time with them solving possible doubts. The participants were requested to provide truthful answers. Participants were informed of the purpose of the research and were told that it was voluntary and confidential.

This study previously received the approval of the Ethics Committee of the University of Murcia (1685/2017). All participants were treated in agreement with the ethical guidelines with respect to consent, confidentiality and anonymity of the answers. In addition, an informed consent was made for the parents and the directors of the schools.

*2.4. Statistical Analysis*

Means, standard deviation and bivariate correlations were analyzed for all variables under analysis. A two-step maximum likelihood (ML) approach suggested by Kline [37] in AMOS 23.0 (SPSS Inc., Chicago, IL, USA) was performed. Firstly, confirmatory factor analysis (CFA) was performed to analyze the psychometric properties of the purposed model. Composite reliability via Raykov [38] formula was performed to assess the internal consistency, taking 0.70 as the cut-off value [39], while the average variance extracted (AVE) was estimated to the analyzed convergent validity [39].

Discriminant validity was established when the correlation coefficients were lower than the AVE for each construct exceeding the squared correlations between that construct and any other construct [40]. Secondly, a structural equation model (SEM) was performed to test proposed relationships among different constructs. For CFA and SEM, the following absolute and incremental indices were used for analysis: Comparative Fit Index (CFI), Normalized Fit Index (NFI) and Root Mean Square Error of Approximation (RMSEA) with its Confidence Interval (CI: 90%). For these indices, scores of CFI and NFI > 0.90 SRMR and RMSEA < 0.08 were considered as acceptable, following several recommendations [39,41,42].

## 3. Results

*3.1. Descriptive result*

Descriptive values are in table 1. The asymmetry and kurtosis values were for all variables < 3 and < 10 respectively and the value of $\alpha$ was > 0.70 except Teacher climate but it was very close ($\alpha$ = 0.69).

**Table 1.** Descriptive values.

| Variables | M | SD | Range | $\alpha$ | Asymmetry | Kurtosis |
|---|---|---|---|---|---|---|
| Intrinsic Motivation to knowledge | 5.06 | 1.63 | 1-7 | 0.78 | -.839 | -.222 |
| Intrinsic Motivation to accomplishment | 5.59 | 1.26 | 1-7 | 0.80 | -1.082 | 1.001 |
| Intrinsic Motivation to experience | 4.91 | 1.36 | 1-7 | 0.74 | -.565 | -.296 |
| Identified Regulation | 5.63 | 1.16 | 1-7 | 0.70 | -1.105 | 1.372 |
| Autonomy | 3.50 | .86 | 1-5 | 0.70 | -.374 | -.237 |
| Competence | 3.95 | .79 | 1-5 | 0.76 | -1.035 | 1.193 |
| Relatedness | 4.27 | .72 | 1-5 | 0.71 | -1.358 | 1.779 |
| Center climate | 4.03 | .74 | 1-5 | 0.85 | -.778 | -.021 |
| Teacher climate | 4.20 | .67 | 1-5 | 0.69 | -1.070 | 1.356 |
| Prosocial behavior | 4.11 | .71 | 1-5 | 0.89 | -.358 | -.094 |
| Antisocial behavior | 2.28 | .80 | 1-5 | 0.87 | 1.270 | 1.634 |
| Social Responsibility | 5.26 | .75 | 1-6 | 0.86 | -1.991 | 5.728 |
| Personal Responsibility | 5.19 | .84 | 1-6 | 0.82 | -1.908 | 4.823 |
| Violence | 2.01 | .73 | 1-5 | 0.95 | .776 | -.187 |

Note: M = Mean; SD = Standard Deviation; * p < 0.005; ** p < 0.001

*3.2. Measurement model*

Table 2 shows the bivariate correlations among variables. The most part of variables had a significative correlation between them. For instance, responsibility and school climate is positively and significantly associated with, PMI, autonomous motivation and prosocial behaviors, and negatively and significantly associated with antisocial behaviors and violence. Finally, all constructs present adjusted values of composite reliability, all greater than 0.70 [39].

The test of the measurement model included responsibility, school climate, PMI, autonomous motivation, prosocial behaviors, antisocial behaviors and violence. Results show a good fit to the data (X2 = 393.405 (98); RMSEA = 0.084 [90% CI = 0.075, 0.093]; TLI = 0.908; CFI = 0.928). Additionally, the measurement model revealed no problems of convergent and discriminant validity, since the average variance extracted (AVE) following the recommendations by Hair et al. [39] and Fornell and Larcker [40] and the square correlations among all constructs were less than the AVE of each factor [40].

Table 2. Correlations between variables

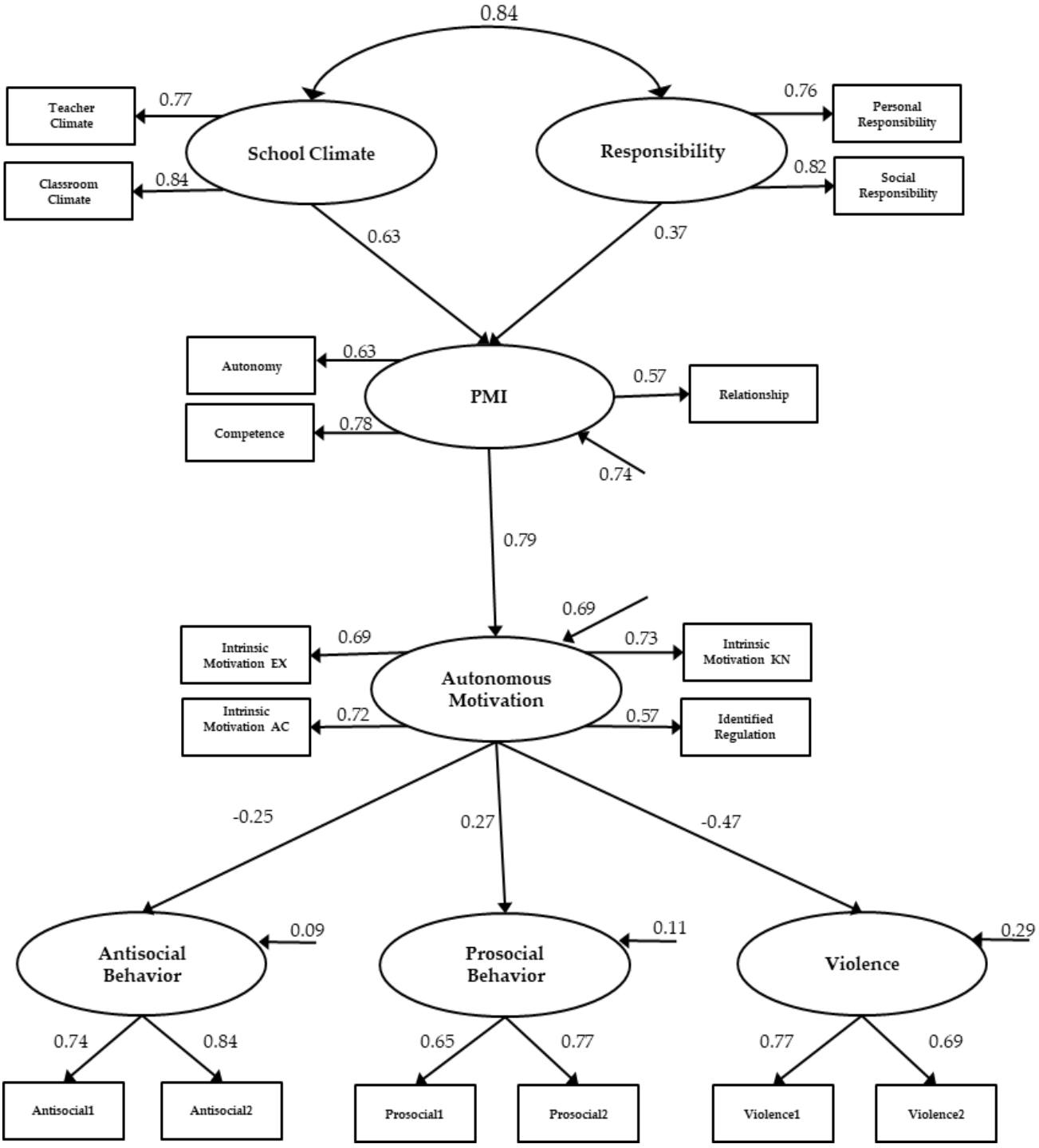
| Variables | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
|---|---|---|---|---|---|---|---|
| Responsibility (1) | 1 | .629** | .648** | .494** | .321** | -.232** | -.261** |
| School Climate (2) | | 1 | .673** | .489** | .148** | -.232** | -.476** |
| PMI (3) | | | 1 | .582** | .228** | -0.030 | -.229** |
| Autonomous motivation (4) | | | | 1 | .266** | -0.065 | -.238** |
| Prosocial behavior (5) | | | | | 1 | .107* | .107* |
| Antisocial behavior (6) | | | | | | 1 | .513** |
| Violence (7) | | | | | | | 1 |
| CR | 0.771 | 0. 785 | 0.751 | 0.804 | 0.811 | 0.880 | 0.952 |

Note: PMI = Psychological mediator index; CR = Composite reliability; * p < 0.05; ** p < 0.01

*3.3. Structural model*

The structural model (figure 1) demonstrates a good fit to the data (X2 = 584.145 (98); RMSEA = 0.104 [90% CI = 0.096, 0.112]; TLI = 0.849; CFI = 0.894). All regression

weights show statistical differences in $p < .001$. The standardized direct effect (Figure 1), significant associations were observed among all constructs. Specifically, a positive correlation between school climate and responsibility ($\beta = 0.84$), and direct association between responsibility and PMI ($\beta = 0.37$) and school climate with PMI ($\beta = 0.63$) and between PMI with autonomous motivation ($\beta = 0.79$). Regarding the final prediction, PMI was significative and positive association with prosocial behaviors ($\beta = 0.27$) and negative with antisocial behaviors ($\beta = -0.25$) and violence ($\beta = -0.47$).



## 4. Discussion

The main objective of this study was to analyze the predictive capacity of responsibility and the social climate on BPN, autonomous motivation, prosocial-antisocial behaviors and violence. The results of the structural model reflect that the regression shows statistical differences among all the constructs. Specifically, positive and significant correlations are observed between school climate and responsibility, as well as direct associations between responsibility and PMI, school climate with PMI, and between PMI and autonomous motivation. Likewise, the results of the analysis of bivariate correlations show that responsibility and school climate are positively and significantly associated with PMI, autonomous motivation and prosocial behaviors, while they are negatively and significantly associated with antisocial behaviors and violence.

Therefore, the results obtained practically confirm the hypothesis raised. As it has been previously indicated, although in scientific literature there is a growing amount of works that analyze these variables separately or even link them to other third variables, there are not yet, at least under our knowledge, that have analyzed the correlation between all the variables under study. Only one work [43] reflects results very similar to those of the present study, finding a positive and significant association of responsibility with the school social climate, basic psychological needs (autonomy, competence and relationship), PMI, self-determination index and prosocial behavior, as well as a negative association of responsibility with demotivation, antisocial behavior and violence.

On the other hand, although there are no researches that have analyzed the capacity of prediction of responsibility and social climate on the rest of variables, in which prosocial-antisocial behaviors and violence are located as a final consequence of Vallerand's Hierarchical Model [21], it was found a study [16], in which they studied the same sequence with the same social factor, but with different consequences. In this study [16], they analyzed a theoretical model under the Self-determination theory in which it was taken into account responsibility as a social factor and the goal of friendship-approach as a consequence in Vallerand's Hierarchical Model [21]. The results revealed that responsibility, BPN and intrinsic motivation significantly predicted the goal of friendship-approach. The bivariate correlations carried out also showed the significant and positive correlations of the variables. Thus, the results are related to those obtained in the present study, where responsibility, BPN and motivation were positively and significantly correlated.

Other studies in this line studied the same sequence, but with different factors and consequences [22,23,44]. Specifically, in the research of Moreno-Murcia et al. [23] they analyzed the predictive capacity of social goals, BPN and intrinsic motivation on effort. As in the present study, significant correlations were found between the variables of responsibility, BPN and intrinsic motivation, which could be an appropriate sequence to predict the consequences under investigation. Following Vallerand's Hierarchical Model, it can be said that responsibility is a social factor to be taken into account due not only to the capacity to predict BPN and the most self-determined motivation, but also because of the high correlation existing between all these variables. Furthermore, it is observed that this theoretical sequence is capable of predicting different final consequences such as effort [23], the approximation-friendship goal [16] and the prosocial-antisocial behaviors and violence, analyzed in the present study.

From a practical and pedagogical point of view, Menéndez and Fernández-Río [16] suggest the importance of teachers applying methodologies, in the educational context, aimed at fostering the development of these variables through the use of pedagogical models such as cooperative learning [45], sports education [46] or teaching personal and social responsibility (TPSR) [47]. The latter has been applied in different educational

contexts as extracurricular activities [48], in the school environment in the area of physical education [49] and the rest of the curricular subjects [43], demonstrating the effectiveness of its implementation to improve responsibility, autonomy, motivation and the school social climate [43,50,51]. In this way, the use of pedagogical approaches in the educational context can allow the necessary conditions to be reached to promote responsibility, BPN and self-determined motivation of students in the classroom [16], creating a school social climate that favors the development of prosocial behaviors of students, while decreasing antisocial and violent behaviors. In fact, the study by Courel-Ibáñez et al. [52] conclude that improved development of personal and social responsibility in adolescents will contribute significantly to a reduction in violent behavior.

Thus, the TPSR is positioned as an appropriate pedagogical model to promote education in values, reduce school violence [53-55] and promote student autonomy [56], since new teaching approaches focused on student interests allow for greater satisfaction of BPN and greater intrinsic motivation values, resulting in better social behaviors among students. In the present study, it is observed how both variables positively and significantly predicted students' prosocial behaviors. Valero-Valenzuela et al. [56] conclude that the use of teaching models that promote the support of autonomy, through the assignment of responsibilities, produce multiple benefits among which the satisfaction of students' BPN, primarily that of autonomy, stands out. This need shows a negative correlation with variables to be eradicated in the educational context such as violent or disruptive behaviors [43,57].

The present study also presents a series of limitations that should be considering for future research. Only three centers with similar socioeconomic characteristics participated in the research. Therefore, new research should be carried out in centers of diverse socioeconomic origin in order to obtain more valid results. The kind of sampling has been intentional due to accessibility. Future works that address this issue should be carried out using sampling with greater methodological validity, such as random sampling. Finally, the type of methodological design, of a transversal and correlational nature, prevents any type of explanation of a causal nature. Longitudinal studies and experimental and/or quasi-experimental designs should be carried out to check the sequence proposed in this study.

## 5. Conclusions

This study reflects the importance of developing school climate and responsibility in the educational context for its ability to promote and predict the satisfaction of BPN, autonomous motivation and prosocial behaviors of students. The results of this research show the need to promote these types of variables from the teachers' instruction, in educational centers through the use of methodological approaches oriented to the students' motivational processes, as in this case could be the pedagogical models and in a more concrete way the TPSR.

On the other hand, the increase in prosocial behaviors and the reduction of antisocial behaviors and violence were consequences of a more autonomous motivation. The inclusion of prosocial-antisocial behaviors and violence as variables within Vallerand's Hierarchical Model is a novel element of this research that can help other researchers to analyze motivation in the educational field from a social point of view.

For this reason, the improvement of the school climate and responsibility could help centers to increase prosocial behaviors and decrease anti-social behaviors and violence. In addition, the positive and significant connection of these variables could be considered a reference point, in the theoretical framework of motivation, to analyze social factors.

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JF.J-P.; resources, A.G-M.; data curation, A.V-V.; writing—original draft preparation, D.M-S.; writing—review and editing, JF.J-P.; visualization, A.G-M.; supervision, A.V-V.

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