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Motivational Class Climate, Motivation and Academic Success in University Students☆

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ABSTRACT

The aim of this study is to predict academic success based on the motivational class climate, mediated by the university students' motivation. The participants are 758 university students from the Dominican Republic, aged between 18 and 50 years (21.1% men and 78.9% women). A battery of instruments was administered to measure the indicated variables and a full structural equations model was applied to predict academic success. The results highlight the direct effect of student perceptions of autonomy support on their satisfaction with the educational center, and the effect of satisfying basic psychological needs, both on satisfaction with the center and on academic performance. Perceiving the support of teachers for autonomous work and feeling satisfied the basic needs for autonomy, competence and relatedness are the best predictors, among the ones tested, of academic success in university students.

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Clima motivacional en clase, motivación y éxito académico en estudiantes universitarios

Palabras clave:
Clima motivacional
Motivación autodeterminada
Necesidades psicológicas básicas
Apoyo a la autonomía
Satisfacción con la escuela

RESUMEN

El objetivo de este estudio es predecir el éxito académico a partir del clima motivacional de la clase, mediado por la motivación del estudiantado universitario. Los participantes son 758 estudiantes universitarios de República Dominicana, con edades comprendidas entre 18 y 50 años (21.1% hombres y 78.9% mujeres). Se administra una batería de instrumentos para medir las variables señaladas y se aplica un modelo de ecuaciones estructurales completo para predecir el éxito académico. De los resultados destaca el efecto directo del apoyo a la autonomía de los estudiantes sobre su satisfacción con el centro educativo, y el efecto de la satisfacción de las necesidades básicas tanto sobre la satisfacción con el centro como sobre el rendimiento académico. Percibir el apoyo del profesorado para el trabajo autónomo y sentir satisfechas las necesidades de autonomía, competencia y relación son los mejores predictores, de entre los considerados, del éxito académico en los estudiantes universitarios.

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Introduction

Students' academic success is an aspect that concerns the students themselves, families, teachers and society in general (Fenollar, Román, & Cuestas, 2007). Teachers and educational psychologists ask themselves daily which are the contextual and personal variables that influence the academic success of students (Chen, 2015). Numerous research try to give answer to this question, mainly in the contexts of primary education, secondary and baccalaureate. Conversely, research at university settings is less abundant. In addition, it is suggested that the motivations and conceptions of learning may be different in secondary education than in higher education (Oriol-Granado, Mendoza-Lira, Covarrubias-Apablaza, & Molina-López, 2017).

Academic success is a construct that is usually limited to the quantitative or qualitative expression of academic performance, that is, the grades and evaluations derived from the assessment to which students are subjected in different school subjects, considering it a relatively objective indicator and easy to measure (Gordon, 2016). With the flowering of positive psychology (Seligman & Csikszentmihalyi, 2000), cognitive and emotional aspects such as student satisfaction with the educational center and their perception of subjective well-being have also been framed within academic success (Chen, 2015; Gutiérrez, Tomás, Romero, & Barrica, 2017; Sivandini, Koohbanani, & Vahidi, 2013; Tuominen-Soini, Salmela-Aro, & Niemivirta, 2012).

In recent decades, empirical interest has grown on psychoeducational constructs considered key to understand educational outcomes (Green et al., 2012). One of these constructs is motivation (Church, Elliot, & Gable, 2001; Daniels et al., 2014; Jang, Kim, & Reeve, 2012; Matos, Lens, Vansteenkiste, & Mouratidis, 2017). The two most used motivational theories in recent decades to explain students' academic success are the Achievement Goals Theory (AGT, Ames, 1992) and the Self-Determination Theory (SDT, Deci & Ryan, 2008; Ryan & Deci, 2000, 2009). These theories are not opposed or disjunctive, rather their theoretical contributions complement each other.

In the AGT we must highlight the personal perspective (dispositional goal orientations) and the contextual perspective or motivational climates (Elliot, 2005). The first focuses on knowing how individuals adopt different types of personal goals: mastery (or learning) and performance (or comparison), which represent different points of view about their own competence. The aim of the mastery orientation is to increase personal competence, while the performance orientation is focused on demonstrating competence in relation to others. Motivational climates refer to how different contextual goal structures influence achievement in educational settings. A mastery climate means that emphasis is placed on understanding work, effort and personal improvement. According to this perspective, the student is more likely to adopt mastery goals and select challenging tasks, make attributions of success based on effort, be perceived competent and show positive attitudes toward school work. When the importance of grades and competence among students is emphasized, they are more likely to adopt performance goals and show non-adaptive learning patterns (Ames, 1992; Elliot, 2005). The importance of the motivational class climate in adopting adaptive patterns has been observed in a number of investigations (Ames, 1992; Carmichael, Muir, & Callingham, 2017; Church et al., 2001; Lau & Nie, 2008; Wolters, 2004). Students' perceptions of motivational climates are predictive of the personal goals students adopt in class (Meece, Anderman, & Anderman, 2006). The motivational class climates are generally considered to be precursors to the students' goal orientations, which are believed to have a very powerful influence on motivation and achievement (Urdan, 2004). School motivational climates can predict the students' cognitive, emotional and behavioral patterns, both directly and through personal goal orientations (Church et al., 2001; Daniels et al., 2014; Kaplan & Maehr, 2007; Wolters, 2004).

Studies like that by Lau and Nie (2008) find that both the performance climate and the personal performance orientation are related to maladaptive patterns of achievement, while mastery climate and the personal mastery orientation show positive relationships with achievement. Wolters (2004) also finds positive relationships between mastery climate and mastery goal orientation with achievement, while the relationships between performance climate and performance goal orientation with the achievement variables are less consistent. In this sense, Linnenbrink (2005) finds that students with high mastery orientation report high academic efficiency, positive affect, persistence and achievement in mathematics. On the contrary, performance orientation was only a predictor of emotional well-being and achievement monitoring. Students focused on demonstrating competence at the beginning of the study tended to score lower on the math tests than students who had shown greater mastery orientation. In general, mastery goals are positively related to positive components of well-being, while performance goals appear associated with the negative components of subjective well-being (Chen, 2015).

Maehr (2001) emphasizes the importance of motivational climate in the promotion of achievement goals, and the design of intervention programs to promote goals with educational purposes, because the goals of the students represent their reasons for participating in academic tasks and achievements. According to Linnenbrink (2005), although the contextual and personal perspectives are complementary and mutually informative, there is little research that has integrated both to study motivation in achievement contexts.

A general assumption of the SDT is that if in the interaction with the environment people regulate their behaviors voluntarily, the quality of the involvement and their well-being will be favored. On the contrary, if the environment acts in a controlling manner, this innate tendency will be frustrated and discomfort will develop (Deci & Ryan, 2008; Ryan & Deci, 2000). Therefore, it is important the satisfaction of the basic psychological needs of autonomy, competence and relatedness (Lee, Lee, & Bong, 2014; Ryan & Deci, 2000). The degree teachers support the needs of students, and specifically the need for autonomy, has an important effect on the students' motivation, showing more interest in their work, with better performance and enjoying greater well-being (Reeve, 2009). On the contrary, students with controlling teachers experience a greater sense of coercion and less school engagement, have a lower ability to self-regulate their learning, achieve lower performance and suffer from a low feeling of well-being (Jang, Reeve, & Deci, 2010; Shih, 2013).

Bearing in mind that the AGT and the SDT are complementary and relevant to academic achievement, the aim of this work is to predict the university students' academic success based on the autonomy support and the motivational class climate (mastery climate, performance climate), mediated by the students' motivations (mastery orientation, performance orientation) and the basic psychological needs satisfaction, as shown by the hypothetical model of Figure 1. We start from the following hypothesis: (1) Teachers' autonomy support positively influence the mastery goal orientation and basic psychological needs satisfaction, and negatively students' performance goal orientation; (2) Mastery class climate is positively related to mastery goal orientation and basic psychological needs satisfaction, and negatively to performance goal orientation; (3) Performance climate is positively related to

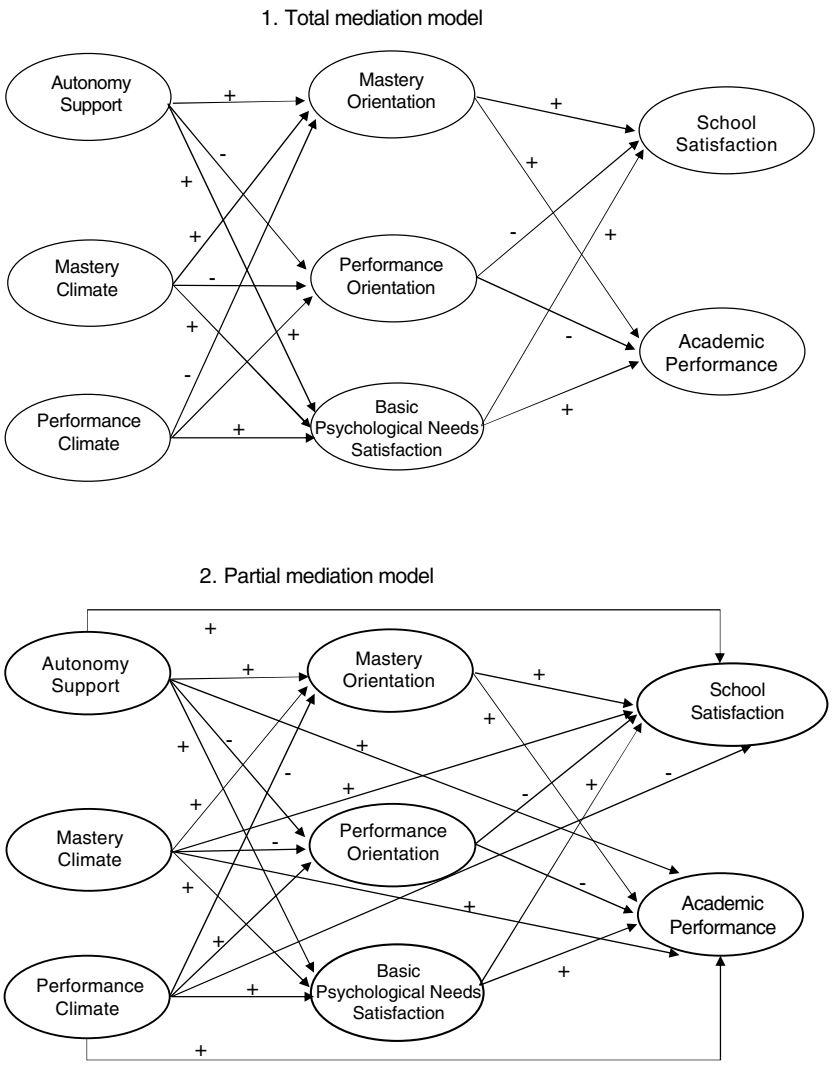

Figure 1. Initial structural models.
Note. Both the relationships of the factors with their indicators and the correlations between the factors at the same level have not been drawn for simplicity.

performance goal orientation and basic needs satisfaction, and negatively with mastery goal orientation; (4) Mastery orientation is positively related to school satisfaction and academic performance; (5) Performance orientation is negatively related to school satisfaction and academic performance; and (6) Basic psychological needs satisfaction is positively related to satisfaction with the academic center and the students' academic performance.

Method

Participants

Participants are 758 students of the Autonomous University of Santo Domingo (Dominican Republic), from various centers and academic disciplines (Educational Sciences, Social Sciences, Physical Education, Initial Education, Basic Education, Biology, Chemistry, Philosophy and Letters, Modern Languages, Orientation, Mathematics and Physics, among others), with ages between 18 and 50 years (21.1% men and 78.9% women). Of the entire sample, 34.6% have a work activity, in addition to attending classes. The selection of the participants is done by incidental or convenience sampling, making sure that the sample obtained is as representative as possible of the population to which it belongs. Although a sampling of these characteristics does not guarantee the representativeness of the study population, it does allow testing relations between variables that the literature assumes homogeneous through populations.

Instruments

For all instruments used, participants are asked to respond on a Likert scale with five anchors, from (1) *Strongly disagree*, to (5) *Strongly agree*.

Motivational climate

Class climate is measured through two instruments: the scale of autonomy support and the scale of motivational class climate.

Support for students' autonomy is measured with the version by Jang et al. (2012) of the *Learning Climate Questionnaire* (LCQ, Williams & Deci, 1996). The scale is headed by the expression "In my Faculty"... and consists of six items (e.g.: I feel that my teachers give me options and opportunities). Jang et al. (2012) report reliabilities of this scale between .89 and .93, in different

applications of a longitudinal study. When this scale was submitted to an CFA in this sample, the results show a good fit of the original model to the data $\chi^2(9) = 88.04$, $p < .001$, CFI = .98, TLI = .97, RMSEA = .10) which confirms the one-dimensional structure proposed by its authors. The reliability corresponding to the data in this sample is $\alpha = .87$ and composite reliability index (CRI) = .90.

To measure students' perception of the motivational class climate, the *Motivational Orientation and Climate Scale* (MOC) by Stornes and Bru (2011) is used. This scale is headed by the expression: In my Faculty/in my classes... It contains 15 items, grouped in four factors, two that measure the students' dispositional goal orientations (e.g.: I feel that I succeed when I work hard and I manage to succeed; I feel that I am successful when I am the best), and two others that measure the students' perception of the motivational class climate (e.g., Teachers expect us to learn new skills and new knowledge; Teachers only pays attention to successful students). The reliability of each factor obtained by Stornes and Bru was: Mastery Orientation ($\alpha = .78$), Performance Orientation ($\alpha = .88$), Mastery Climate ($\alpha = .75$), Performance Climate ($\alpha = .74$). A first CFA estimated with this sample, offers unsatisfactory fit indices: $\chi^2(84) = 676.24$, $p < .001$, CFI = .88, TLI = .85, RMSEA = .09, so we proceed to perform a second CFA, eliminating the correlations between mastery orientation with the factors of performance climate and performance orientation, which provides the following fit indices: $\chi^2(86) = 566.47$, $p < .001$, CFI = .90, TLI = .88, RMSEA = .08, more satisfactory than the previous ones. These results confirm the factor structure composed of four factors defended by their authors. The reliability obtained with these data is: Mastery Orientation ($\alpha = .71$ and CRI = .81), Performance Orientation ($\alpha = .75$ and CRC = .79); Mastery Climate ($\alpha = .69$ and CRI = .75), Performance Climate ($\alpha = .67$ and CRI = .68).

Students' motivations

They are considered formed by the personal goal orientations and by the satisfaction of basic psychological needs.

To measure the students' motivational goal orientations, the two factors (*mastery orientation* and *performance orientation*) of the *Motivational Orientation and Climate Scale* (MOC) by Stornes and Bru (2011), previously described, are used.

To measure the students' basic psychological needs satisfaction, we used the *Students' Basic Psychological Needs at School Scale*, by Tian, Han and Huebner (2014). The scale is headed by the expression: In my Faculty ... It is composed of 15 items, grouped into three factors: Autonomy (e.g.: I can decide for myself how to do things), Relatedness (e.g.: I have good friends), and Competence (e.g.: I am able to acquire new knowledge). The alphas provided by Tian, Han, and Huebner (2014) are: .85, .80 and .77, respectively. With the CFA in this sample, satisfactory fit indices are obtained: $\chi^2(87) = 393.53$, $p < .001$, CFI = .94, TLI = .93, RMSEA = .06, which confirms that the scale is formed by the three factors mentioned above. The reliability obtained with this sample is: Autonomy ($\alpha = .68$ and CRI = .74), Relatedness ($\alpha = .74$ and CRI = .80), Competence ($\alpha = .69$ and CRI = .77).

Academic success

It is measured through two indicators, satisfaction with the educational center and school grades.

To measure the students' satisfaction with their educational center, the *School Connectedness Scale by Nearchou*, Stogiannidou, and Kiosseoglou (2014) is used, with five items (e.g.: Teachers of this Faculty treat students fairly), one-dimensional, with a reliability of $\alpha = .71$. The CFA with the data from this sample provides satisfactory fit indices $\chi^2(8) = 41.58$, $p < .001$, CFI = .99, TLI = .98, RMSEA = .09), which confirms the structure of a factor proposed by Nearchou et al. (2014). Its reliability is $\alpha = .81$ and CRI = .87.

To know the academic performance students are asked to provide the grade of the four most important subjects, as well as the average of all the subjects obtained in the last evaluation (on a scale of 100, which is the one used to express the school grades in the Dominican Republic).

Procedure

First, permission is requested from the Ministry of Education of the Dominican Republic to carry out the study, and the authorities of the educational centers willing to collaborate are contacted and explained what the research consists of and are asked for permission to carry it out. Finally, the students are informed of the objective of the research and they are offered the possibility to participate freely. This study meets the requirements of the ethical code of the American Psychological Association (APA), and the explicit permission of the Ministry of Education and the participating educational institutions. Prior to the application of the instruments, we proceed to translate them into Spanish, using a back translation procedure. Then, they are reviewed by a committee of experts with knowledge of languages and cultures, given that Spanish in the Dominican Republic, and by extension the Caribbean, presents particularities, and pilot tests are carried out to check the understanding of the items. The instruments, self-administered, are applied by a member of the research team, in the classrooms of students and during normal class hours. The time invested in completing them is approximately 20 minutes.

Statistical analyses

The data is analyzed at four levels: (a) Confirmatory Factor Analysis (CFA) to check the suitability of the instruments to the sample under study; (b) analysis of the reliability of the instruments, using Cronbach's alpha and the Composite Reliability Index (CRI); (c) analysis of bivariate correlations between the variables studied, and (d) full structural equation models to predict satisfaction with the educational center and academic performance, based on the motivational class climate and the students' motivation. Confirmatory models are estimated by maximum likelihood with robust (MLR) Satorra-Bentler corrections for standard errors and fit indices (Finney & DiStefano, 2006). In order to evaluate the fit of the models, the indices usually recommended by the specialized literature are used for this type of estimation: the CFI (Comparative Fit Index) and the TLI (Tucker–Lewis Index), for which the value is usually considered .90 or superior as appropriate to accept the model (better if >.95); the RMSEA (Root Mean Square Error of Approximation), index of parsimony and amount of error, with values lower than .08 considered as satisfactory; the SRMR, as an absolute index that shares criteria with the previous one, and the chi-square test (Kaplan, 2000; Kline, 2016). Additionally, the Bayesian Information Criterion (BIC) is calculated to compare alternative models, with lower values indicating better fit. For the estimation of all structural models, the Mplus 8 statistical package is used (Muthén & Muthén, 1998–2017), and for other statistical analyses SPSS 24 is used.

The structural equation models specifications are theoretically guided. The two models initially tested to show the potential mediating effects of the students' goal orientations and their satisfaction with basic psychological needs are shown in Figure 1. The first model proposes total mediation since all the effects of teachers'

Table 1
Means, standard deviations, and bivariate correlations between the study variables

Variables	AutS	PerC	MasC	PerO	MasO	Auton	Comp	Relat	AcPerf	SchS
Aut.Sup.	1	−.07*	.31**	.07*	.22**	.48**	.52**	.59**	.10**	.69**
Perf.Cl.		1	−.15**	.46**	−.02	.01	−.03	−.07*	−.08*	−.10**
Mast.Cl.			1	.08*	.53**	.34**	.36**	.34**	.09*	.32**
Perf.Or.				1	.06	.10**	.08*	.04	−.11**	.04
Mast.Or.					1	.31**	.36**	.27**	.11**	.22**
Auton.						1	.63**	.60**	.06	.47**
Compet.							1	.65**	.19**	.48**
Related.								1	.14**	.55**
Aca.Perf.									1	.09*
Sch.Sat.										1
M	3.90	2.62	4.27	2.88	4.43	4.07	4.20	4.17	84.07	4.11
SD	0.70	0.95	0.67	1.00	0.68	0.63	0.56	0.59	5.86	0.70

Note. $^{*}p < .05$; $^{**}p < .01$; AutSup: autonomy support; PerfCl: performance climate; MastCl: mastery climate; PerfOr: performance orientation; MastOr: mastery orientation; Auton: autonomy; Compet: competence; Related: relatedness; AcaPerf: academic performance; SchSat: satisfaction with the school (academic center).

autonomy support and the class climate are indirect through the students' goal orientations and the satisfaction of basic psychological needs. In the second model, mediation is assumed to be partial. That is, additional direct effects are specified between the exogenous factors and the final outcome factors (satisfaction and performance). These models make it possible to test mediation hypotheses efficiently (MacKinnon, 2008).

The percentage of missing data is almost testimonial (<2%), but in any case the procedure for handling the missing data within the structural models treated is done through Full Information Maximum Likelihood (FIML). As for the outliers and the non-normality of the variables, they are searched at the univariate level ($z > 3$) and robust estimation methods (MLR) are applied in the structural equation models.

Results

Correlations between the variables studied

According to the results shown in Table 1, *autonomy support* is statistically significant related to all the variables studied, being these relationships positive except for *performance climate* ($r = -.07$, $p < .05$). Also noteworthy are the negative relationships between *performance climate* and the rest of the variables, while when *mastery climate* is related to the other variables, the relationships are positive. Additionally, the relationship is positive and significant between *performance climate* and *performance orientation* ($r = .46$, $p < .01$), and between *mastery climate* and *mastery orientation* ($r = .53$, $p < .01$). Regarding the satisfaction of basic psychological needs, *autonomy*, *competence* and *relatedness* are positively and significantly related to *mastery climate* and *mastery orientation*, while their relationships are of less extent or even negative with *performance climate* and *performance orientation*. *Satisfaction with the educational center* appears positive and significantly related to all the variables studied except for *performance climate* ($r = -.10$, $p < .01$) and *performance orientation* ($r = .04$, $p > .05$). This same behavior is seen in the case of *academic performance*, although with lower correlations.

Predicting university students' academic success

Firstly, the first theoretical model shown in Figure 1 is put to the test. This model tests the total mediation and it does not reasonably fit the data: $\chi^2(508) = 1370.18$, $p < .001$, CFI = .885, RMSEA = .047, confidence interval RMSEA 90% = .044–.050, SRMR = .054, BIC = 78,524.95. The second model, which includes direct effects of autonomy support and class climate on satisfaction and performance, fits slightly better, but still unsatisfactorily: $\chi^2(502) = 1268.54$, $p < .001$, CFI = .898, RMSEA = .045, confidence interval RMSEA 90% = .042–.048, SRMR = .049, BIC = 78,454.36. Thus, on this last model of best fit, the relationships that are not statistically significant are eliminated, to generate a more parsimonious model, which leads to an acceptable fit of the model to the data: $\chi^2(515) = 1188.80$, $p < .001$, CFI = .910, RMSEA = .042, confidence interval RMSEA 90% = .038–.045, SRMR = .049, BIC = 78,283.26.

As Figure 2 shows, the loadings of the indicators of autonomy support, mastery climate, mastery orientation, performance orientation, basic psychological needs satisfaction, satisfaction with the educational center and academic performance are high. However, in the performance climate, one of its three indicators has a low value (.29).

The results of this model (Figure 2) show that the direct effect of *autonomy support* and the indirect effect through *satisfaction of basic psychological needs* explain 65% of the variance of *satisfaction with the educational center*, with structural coefficients of $\beta = .57$, $p < .01$, and $\beta = .29$, $p < .01$, respectively. The students' goal orientations show no effects on the satisfaction with the center. Regarding the prediction of *academic performance*, 9% of its variance can be explained by the effects of *students' performance orientation* (with a negative sign, $\beta = -.21$, $p < .01$) and *satisfaction of basic psychological needs* ($\beta = .23$, $p < .01$).

Other important results are, for example, that *students' mastery orientation* is explained in a 64% through the perceived *mastery class climate* ($\beta = .80$, $p < .01$), that 72% of the variance of *performance orientation* is explained by *mastery climate* ($\beta = .21$, $p < .01$) and *performance climate* ($\beta = .86$, $p < .01$), and that the 59% of students' *basic psychological needs* satisfaction variance is explained by *autonomy support* ($\beta = .59$, $p < .01$) and *mastery climate* ($\beta = .31$, $p < .01$).

Discussion

The specialized literature offers evidence of the importance of motivation as a determining factor in students' academic success. It is therefore important to know how contextual factors (motivational climates) are related to students' personal factors (motivations) (Linnenbrink, 2005; Maehr, 2001). From here, the objective of this work is to predict academic success based on the motivational class climate, mediated by university students' motivation.

In view of the results, it is verified that, of all the predictor variables, the one of greatest contribution has been teachers' autonomy support, not only because of its direct effect on satisfaction with the educational center, but also for its indirect effect on school satisfaction and academic performance, acting as mediator the students' basic psychological needs satisfaction. These results are in

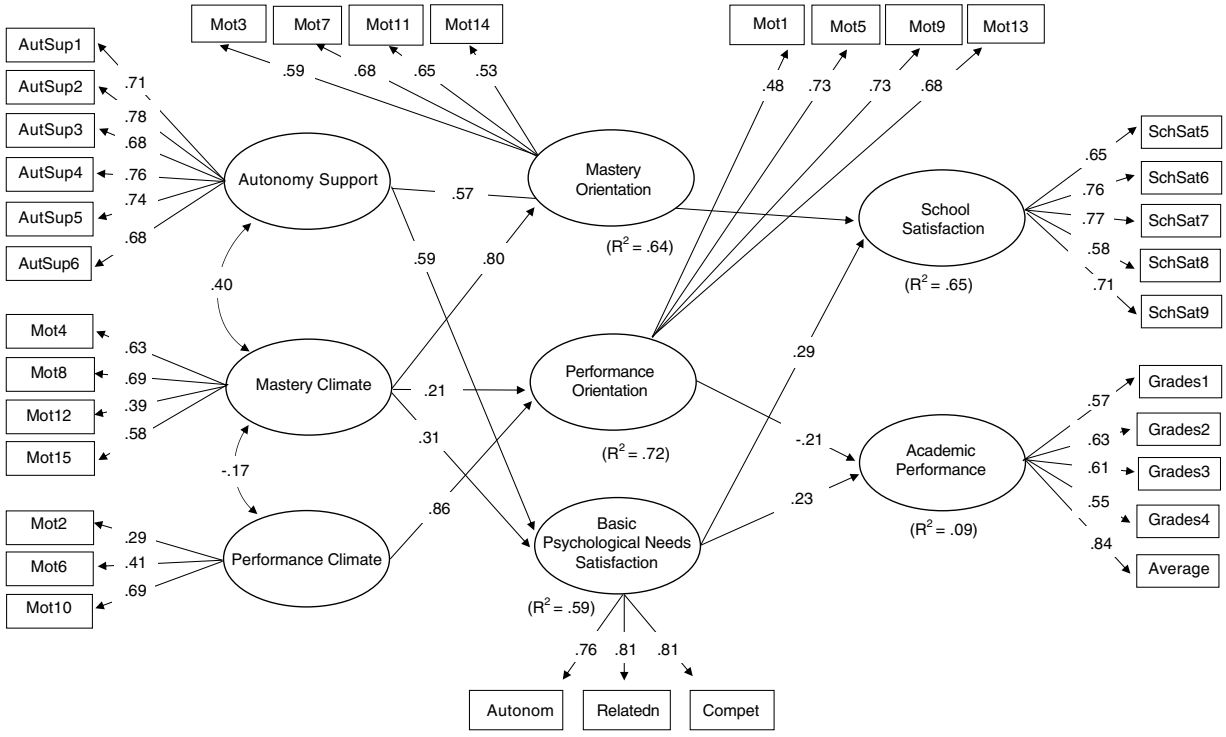

Figure 2. Standardized solution for the tested structural model.
Note. Mot: Motivation; AutSup: autonomy support; SchSat: satisfaction with school (educational center); Grades: qualifications; Average: average value of all the grades obtained in the last evaluation. All relationships shown are significant with $p < .01$.

line with those obtained by Jang et al. (2010), Niemiec and Ryan (2009) and Shih (2013) in which, under the SDT, they emphasize the importance of teachers' autonomy support to generate the students' basic psychological needs satisfaction and then favor their subjective well-being. The scarce participation of goal orientations in the prediction of students' academic success draws attention. This indicates that when goal orientations and satisfaction of basic psychological needs are placed at the same level of analysis, the former show less power than the latter, despite being both the result of classroom climate, that is, being both affected by autonomy support and mastery climate. In addition, it is verified that teachers' autonomy support has enough power, even without goal orientations, to determine students' satisfaction with the educational center, a relevant objective for positive psychology (Chen, 2015; Seligman & Csikszentmihalyi, 2000).

The second hypothesis is largely fulfilled, since mastery climate shows positive relationships with mastery orientation, performance orientation and basic psychological needs. These results agree with the principles enunciated by Ames (1992) and with the results found by Church et al. (2001), Wolters (2004), Meece et al. (2006), and Lau and Nie (2008), mainly about the relationships between mastery climate and students' goal orientations. However, contrary to expectations, the relationship between mastery climate and performance orientation is positive, which could be explained by the theoretically orthogonal nature of the goal orientations, both of which can be both high and low levels, one high and one low, or low and high, as indicated by Meece et al. (2006).

The third hypothesis has not been fulfilled since, of all the predicted relationships, only a strong relation has been found between performance climate and performance orientation, consistent with results of the previous literature (Church et al., 2001; Meece et al., 2006; Urdan, 2004).

According to the fourth and fifth hypotheses it was expected that the goal orientations, both mastery orientation and performance orientation, would be able to predict students' academic success. However, only a significant and negative relationship is found between performance orientation and academic performance, in such a way that the higher the students' performance orientation, the lower is their academic performance. These results coincide with those of Daniels et al. (2014), which do not find direct effects of goal orientation on the university students achievement, and are opposed to those obtained by Chen (2015), who finds support for an effect of personal goal orientations on students' subjective well-being (satisfaction with life and satisfaction with the school).

Finally, it was expected that the satisfaction of basic psychological needs would be a good predictor of students' academic success, which is faithfully fulfilled, since the satisfaction of basic needs is positively and significantly related to satisfaction with the educational center as it is with academic performance. These findings are consistent with the claims of Ryan and Deci (2000, 2009), and the results of the work of Niemiec and Ryan (2009), Jang et al. (2012), or Daniels et al. (2014), which include as outcomes different indicators of academic achievement, both school grades and cognitive and emotional variables, among which are satisfaction with school and subjective well-being (Sivandini et al., 2013; Tian et al., 2014).

As a conclusion, and from an applied perspective, it should be noted that, in university settings, teachers' autonomy support and basic psychological needs satisfaction are the main predictors of satisfaction with the educational center and students' academic performance. Although the effects of achievement goals orientation are lower than expected, the effects of mastery climate on goal orientations and students' basic psychological needs should be highlighted. The performance climate, on the other

hand, only relates to performance orientation and this one with the academic performance, but in the inverse sense, that is to say, to a greater performance orientation less academic performance.

In view of the results of this work and in line with the conclusions of Matos et al. (2017), in spite of the poor contribution of the goal orientations in this case, we are in favor of the search and promotion of a mastery perspective, regardless of whether the students can also perceive other achievement goals in the classroom. Undoubtedly, the SDT has highlighted the importance of teachers supporting the students' autonomy, because this favors the satisfaction of basic psychological needs, an important factor in predicting university students' academic success.

Despite its strengths, this study also presents some limitations. One of them is that the data have been obtained through convenience sampling, although the greatest possible representation of the population to which the students belong has been sought. However, the relationships studied, a priori, should be given in any type of academic population, and therefore the sampling of convenience does not prevent its putting to the test. It should also be noted that all the variables analyzed are self-reported, so the inclusion of objective variables in future research is suggested. Another limitation is that the data are cross-sectional, so strong cause-effect conclusions cannot be established. A longitudinal design could provide greater guarantee to conclusions on causality, establishing better the directionality of the relationships between the variables studied. The lack of research background in the Dominican Republic, and in the literature in general, with respect to the hypothetical model presented here, is also a limitation, which makes it difficult to contrast with the results of other studies in the same sociocultural and educational context. Finally, the verification model using structural equations is only one of the possible ones, and there may be other models capable of contributing with new explanations to the interpretation of the relationships between the variables studied.

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