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**CONTRASTING SCHOOL DROPOUT:
THE PROTECTIVE ROLE OF PERCEIVED TEACHER JUSTICE**

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CRedit Author statement

VG: Conceptualization, investigation, methodology, formal analysis, writing original draft

LM: conceptualization, methodology, writing original draft, supervision

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Abstract

Background: School dropout is a serious issue with high individual and societal costs. Although numerous risk factors have been studied, those related to the proximal learning environment have mostly been neglected.

Aim: In this study we tested whether a feature of the learning environment, i.e., students' perception of being treated fairly by teachers, could be associated with lower intentions to drop out.

Sample: 547 9th grade students (56% male, 94% born in Italy, $M_{age} = 13.92$).

Method: Participants answered a questionnaire on teacher justice and intentions to drop out at the beginning (T1), middle (T2) and end (T3) of the school year.

Results: A latent growth model indicated that intentions to dropout increased over time and perceptions of teacher justice had a negative association with the increase both at T2 and T3, even after controlling for gender, nationality, motivation, and perceived learning difficulty.

Conclusion: These findings suggest that teacher justice can play a relevant protective role against early school leaving.

Keywords: teacher justice, school dropout, latent growth curve model, secondary school

Contrasting School Dropout: The Protective Role of Perceived Teacher Justice

School dropout is unanimously recognized as a serious concern for its high individual and societal costs (Dupéré et al., 2018; Rumberger & Rotermund, 2012). It is not surprising, then, that preventing and countering this phenomenon is among the highest priorities in the political agendas of many Western Countries. In the last decades, the institutional and educational debates on this issue have driven a number of scholars to delve deeper into the dropout phenomenon and to investigate its main causes (De Witte et al., 2013; Gubbels et al., 2019). Consistently with Bronfenbrenner's (1994) ecological framework, numerous risk factors, both distal (e.g., employment opportunities) and proximal (e.g., family conditions), leading to the decision to leave school prematurely have been recognized and documented. However, "a large part of the literature is still focused on factors not related to the school" (De Witte et al., 2013, p. 17). In fact, factors related to the proximal learning environment (Dupéré et al., 2015), and in particular to the positive or negative experiences that students have in their classrooms and with their teachers, have mostly been neglected, in terms of both empirical research and interventions (De Witte et al., 2013; Wilson & Tanner-Smith, 2013).

In this study, we investigated whether one of these proximal aspects, namely, the perception of being treated fairly by teachers, is a factor that can protect secondary school students from the intention to drop out of school.

1.1 School Dropout

In Europe, the phenomenon of school dropout is typically measured by referring to the rate of *Early School Leavers* (ESL), that is, young people aged 18 to 24 who have completed, at most, lower secondary education and are not engaged in further education or training (De Witte et al., 2013; Estêvão & Álvares, 2014). In the Strategic Framework for European Cooperation in Education and Training (ET 2020), the European Union had set the goal, actually achieved (Eurostat, 2022), of reducing at a maximum rate of 10% the average percentage of ESL by 2020. Beyond a general optimism due to the fact that in the last decade the phenomenon of ESL has

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significantly decreased, it should be noted that there are still considerable differences among countries and students coming from different backgrounds. Italy, for instance, with its 13.1% of young people out of any educational and training pathway (Eurostat, 2022), is the fourth European Country in terms of incidence of ESL – after Malta (16.7%), Spain (16%) and Romania (15.6%) – and remains well below the highest European standards. Furthermore, most of the literature is consistent in indicating that the risk of dropping out of school is particularly high for marginalised students in conditions of poverty (Dupéré et al., 2015; Sabates et al., 2010), students coming from low-income families with low levels of education (e.g., Sacco & Le Rose, 2022), attending vocational schools (e.g., Schmid & Haukedal, 2022), or of foreign origin (e.g., Archambault et al., 2017). However, the issue is still controversial, as there are a few studies (e.g., Samuel & Burger, 2020) showing that immigrant status and parents' ISEI (Socio-Economic Index of Occupational Status) were not significantly associated with this phenomenon.

Countering the phenomenon of premature school leaving is crucial for preventing enormous costs for both individuals and society (Dupéré et al., 2018). At an individual level, there is evidence that dropouts struggle to enter the labour market, generally get the least well-paid jobs, and are more at risk of long-term unemployment (De Witte et al., 2013; Rumberger & Rotermund, 2012). Furthermore, even when controlling for the effects of several socio-demographic variables such as gender, ethnicity, family income, and employment status, dropouts are at greater risk for substance use, deviant behaviours, and mental health problems up to suicide, compared to high school graduates (Maynard et al., 2015; Pettit & Western, 2004). These individual disadvantages are inevitably intertwined with high economic and social costs. Because of their poor career prospects, dropouts contribute less to the economy, as they spend little and pay less taxes, and make greater use of public assistance in terms of unemployment benefits and public health care services (Rumberger, 2011; Rumberger & Rotermund, 2012). Moreover, the phenomenon of ESL is in open contrast with the aim of equipping future citizens with key competencies needed to successfully integrate in society. In countries where the rate of ESL is still particularly high, as in Italy, young

people on average do not possess the basic skill levels comparable to those of other European nations, and the consequences enter into the labour market making it weak and uncompetitive (Colombo, 2015). All these considerations point to school failure as a root contributor to a society afflicted by inequalities and to citizens underequipped to deal with the increasing complexity of the contemporary world. Given the negative outcomes associated with an early abandonment of educational paths (e.g., Maynard et al., 2015), literature has copiously investigated the phenomenon of school dropout with the aim to better understand its nature and identify its main predictors.

1.2 Risks Factors for School Dropout

Bronfenbrenner's (1994) ecological model constitutes a broad theoretical framework able to account for the many reasons leading to school dropout (Fortin et al., 2013; Wood et al., 2017). In this model, subjective experiences are conceived as a process resulting from the multiple interactions occurring over time between the individual and other systems, both proximal, such as the family and the classroom, and distal, such as the larger social environment or educational policies. In the light of this model, school dropout can be considered as an event influenced by the individual, on the one hand, and the social, cultural, and political conditions and circumstances, on the other (Wood et al., 2017).

By and large, the empirical literature (Archambault et al., 2017; Dupéré et al., 2015; Gubbels et al., 2019; Rumberger, 2011) is consistent with Bronfenbrenner's ecological model in highlighting that the decision to drop out of school hardly ever depends on a single factor, as in most cases it is the final outcome, or a symptom (Rumberger & Rotermund, 2012), of a cumulative process involving a long chain of events and influences acting at various levels and in multiple spheres of someone's life. In a literature review on school dropout examining documents from the 1980s and onwards, De Witte and colleagues (2013) focused on the phenomenon of ESL in the context of secondary education and came to classify four interconnected macro-groups of predicting factors: *student-related* (e.g., academic achievement, grade retention, socio-demographic factors such as gender and immigration status), *family-related* (e.g., socio-economic status and structure,

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parental support and involvement), *school-related* (e.g., school type, teacher-students ratio, teaching quality, relational climate), and *community-related* (e.g., neighbourhood characteristics, employment opportunities). In a more recent meta-analytic review focused on risk factors for school absenteeism and dropout in primary and secondary schools, Gubbels, van der Put and Assink (2019) identified similar classes of predictors. More specifically, the authors categorized forty-two mutually exclusive risk factors for school dropout, the majority of which were associated with individual student characteristics (e.g., IQ, learning difficulties, low academic achievement, grade retention, psychiatric symptoms), while the others concerned family background (e.g., low family SES), school context (e.g., negative school climate, poor student-teacher relationships) and interactions with peers (e.g., involvement with deviant peers). By calculating the correlation coefficient (r) as common effect size for each identified risk dimension, Gubbels and colleagues (2019) reached the important conclusion that after three factors belonging to the students' individual domain – i.e., grade retention, learning difficulties, and low academic achievement – a poor student-teacher relationship was the most significant risk factor for school dropout.

Beyond the identified multiple reasons for dropout, only very few studies adopted a developmental lens to investigate how young people arrive to this point, that is, the development over time of secondary students' intentions to leave school prematurely. In a 4-year longitudinal investigation, Samuel and Burger (2020) examined to what extent changes in dropout intentions and actual dropout rates were predicted, among others, by negative life events. They found that negative life experiences were significantly related to an increase in dropout intentions and likelihood, while the linear effect of time was found to be not significant, perhaps because the period taken into consideration was very long (four years). A year-long longitudinal study (Tvedt et al., 2021) showed a negative association between change in intentions to dropout and change in perceived emotional support from teachers. Contrary to Samuel and Burger's study, these authors also found a main effect of time, with students' intentions to withdraw from school increasing over time during a school year.

Overall, the literature on school dropout is consistent in describing this phenomenon as a complex negative life event whose causes can be traced in multiple proximal and distal aspects of a person's life. However, two points in particular deserve further investigation. The first comes from the meta-analysis by Gubbels and colleagues (2019), showing that within the complex picture of school dropout, a poor student-teacher relationship was among the most significant risk factors. This finding has important practical implications because, differently from other factors related to early school leaving that are somehow 'intractable' (De Witte et al., 2013), the issue of how to foster a positive teacher-student relationship can be addressed within professional training development programs for teachers. The second point regards the development of dropout intentions over time, an issue that is mostly overlooked in the literature (Samuel & Burger, 2020; Tvedt et al., 2021). To provide further evidence on these two points, in this study we adopted a longitudinal perspective to analyze a specific aspect of student-teacher relationship, i.e, students' perceptions of teacher justice (Chory-Assad, 2002; Resh, & Sabbagh, 2016), which to our knowledge has never been studied in association with dropout. The choice of this dimension of teacher-student relationship was first motivated by its crucial role in defining the quality of teaching practices and students' experiences in school, as teacher justice has long been valued as one of the most important characteristics of being a 'good teacher' (Taylor, 1962). Moreover, the perception of receiving a fair interpersonal treatment is a central concern in adolescence (Chory-Assad et al., 2014), a time when the issues of equity and just treatment are conceived as particularly delicate (Resh & Sabbagh, 2016). Finally, in the school context, where assessment procedures are vitals, the feeling of being treated fairly by teachers highly contributes to the students' subjective experience of wellbeing (Kamble & Dalbert, 2012; Mameli et al., 2018).

1.3 Students' Perceptions of Teacher Justice

The issue of justice is important all throughout the course of an individual's life, from childhood to adulthood, but becomes particularly crucial in adolescence (Wray-Lake & Syvertsen, 2011), when a more sophisticated, abstract, and mature concept of fairness emerges (Nucci, 2001).

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In this transitional period, individuals are subject to increases in social-cognitive and moral skills (Bondü & Elsner, 2015; Chaparro et al., 2013; Kohlberg, 1976) that lead them to reflect on and place increasing value on several moral principles, including fairness (Smetana & Villalobos, 2009). In adolescence, the issue of justice applies in particular to the school context (Donat et al., 2016; Mameli et al., 2020; Resh & Sabbagh, 2016), where adolescents are confronted with the formal authority of teachers, who have the power to decide procedures, distribute resources, and evaluate results (Molinari et al., 2013).

Teacher justice refers to the students' subjective perception of being treated fairly and respectfully by their teachers (they-to-me approach; Peter & Dalbert, 2010) in the course of everyday interactions. Recently, teacher justice was conceptualized as a basic psychological need for students (Molinari & Mameli, 2018), along with the needs for autonomy, competence, and relatedness (Ryan & Deci, 2000). Several studies showed that learners' perceptions of teacher justice play an important role in positively or negatively affecting students' school experience. In the context of secondary education, for instance, perceived teacher justice was found to be positively associated with student subjective wellbeing and psychological health (Dalbert & Stoeber, 2006; Mameli et al., 2018), academic achievement (Dalbert & Stoeber, 2006; Peter et al., 2012), and responsibility for learning (Grazia et al., 2021; Mameli et al., 2019), and negatively related to school distress (Peter et al., 2013). More importantly for the purposes of this study, some authors have found that students' perceptions of teacher justice are negatively associated with school absenteeism, which is widely recognized as one of the most important precursors of school dropout (Gubbels et al., 2019; Kearney, 2008). In a cross-sectional investigation involving more than 1,600 secondary school students, Donat, Gallschutz and Dalbert (2018) examined the relation between students' personal belief in a just world – i.e., the belief that, in our world, each person gets what s/he deserves and deserves what s/he gets (Lerner, 1980) – and their unjustified school absenteeism. The authors found that the more students believed in a just world, the less they reported frequent absences from school, and their experience of teacher justice partly mediated this

relation. Despite this evidence, no study as far as we know has directly investigated whether teacher justice can work as a protective factor against dropout.

1.4 Aims of the Present Study

The general purpose of this study was to examine the development over time of intentions to dropout by also considering the effects of students' perceptions of teacher justice. In line with the stage-environment fit theory principles (Eccles et al., 1993), suggesting that learning environment inability to meet student's developmental needs is associated with increased risk and malaise, we advanced two specific research questions. The first research question (RQ1) was to longitudinally test the average trajectory of dropout intentions, measured three times over a school year, in secondary school students. Based on previous findings (Tvedt et al., 2021), our hypothesis (H1) was that intentions to dropout would increase over time. The second research question (RQ2) was to analyze the effects of students' perceptions of teacher justice on such a trajectory. Due to the relevance of justice issues in this developmental stage (Chory-Assad et al., 2014; Wray-Lake & Syvertsen, 2011) and based on the existing literature on teacher justice discussed above, our hypothesis (H2) was that better perceptions of teacher justice at each time be negatively associated to students' intentions to dropout, even after controlling for relevant individual variables, included in the model to account for the complexity of the dropout phenomenon.

Based on theoretical considerations and previous findings in school dropout literature (Archambault et al., 2017; Dupéré et al., 2015; Gubbels et al., 2019; Rumberger, 2011), we controlled for gender, birthplace, motivation to learn, autonomy in school choice, and level of self-perceived learning difficulty. These socio-demographic and individual variables are critical for the specific study setting (see the paragraph Study Setting for more information) and are generally recognized as relevant in educational and school failure research. As far as gender and birthplace were concerned, there is mixed evidence on their associations with school dropout. With respect to gender, some studies found that males are more likely to drop out than females (De Witte et al., 2013), while others found no significant differences (Cataldi et al., 2009). The literature findings

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are controversial also with respect to nationality (De Witte et al., 2013). In some studies, first-generation and second-generation immigrant students were found to be at greater risk of dropout as compared to native high-school students (Archambault et al., 2017), but other authors (e.g., DesJardins et al., 2006; Samuel & Burger, 2020) instead reported that nationality was not particularly significant after accounting for other variables, such as family background or self-efficacy. Given these mixed results, we made no predictions about the association of student gender and birthplace with intentions to dropout.

In line with Self-Determination theory's emphasis on autonomous and self-determined choices (Ryan & Deci, 2000), literature findings are more consistent concerning the role played by motivation, and autonomy in school choice. As far as motivation is concerned, several studies have shown that intrinsic or autonomous motivation was negatively related to the intention to drop out of school, while a positive association exists between the latter and extrinsic or controlled motivation (Alivernini & Lucidi, 2011; Bargmann et al., 2022; Jeno et al., 2018). With respect to school choice, students who autonomously decided which school to attend were found to have more chances to complete their upper-secondary education (Mendoza Cazarez, 2019). Finally, there is evidence that self-perceived learning difficulty (Korhonen et al., 2014) is one of the factors with the greatest predictive power with respect to the risk of dropping out of school (De Witte et al., 2013; Gubbels et al., 2019). This is consistent with Bandura's theory of self-efficacy (1997), according to which individuals' belief in their capability influences, for better or for worse, the types of activities they engage in, and the amount of effort they make to achieve certain results. Based on these findings and theoretical considerations, we expected to find a negative effect of motivation and autonomous school choice on intentions to dropout, and a positive effect of self-perceived learning difficulty on the same outcome dimension.

2. Method

The data for the present study are part of a larger longitudinal research investigating several relational and emotional processes accompanying students at different stages of their first year of

high school. Previous published studies related to the project examined teacher autonomy support and student agency in relation to personal responsibility (Authors, 2021a), student profiles of agency, anger, and enjoyment (Authors, 2021b), the reciprocal longitudinal effects between justice, student engagement, agency, and anger (Authors, 2021c), and the different trajectories of boredom over the course of the school year (Authors, 2021d).

2.1 Participants and Procedures

The sample consisted of 547 students (56% male, 94% born in Italy, $M_{age} = 13.92$, $SD_{age} = .59$) attending the first year (9th grade) in three secondary schools (one high school, one technical and one vocational school, see the paragraph Study Setting for more information) of two medium-sized cities located in Northern Italy, whose principals agreed to participate in this longitudinal research project. Data were collected during regular classroom lessons through an online platform (Qualtrics). The data collection took place in three waves, that is, at the beginning (T1), middle (T2), and end (T3) of the school year 2018-2019. At each time, a researcher was present to personally illustrate the study goals to the students, to clarify that participation was on a voluntary basis and that their responses would be treated confidentially, and to answer any questions or queries. Only one student did not agree to participate in the study. Informed consent from students' guardians was also collected before the first wave of data collection (with about 2.2% of the families denying consent).

To collect students' perceptions of teacher justice and self-perceived learning difficulty, participants were asked to answer these two sections of the questionnaire by focusing on their experience in a specific subject and with that specific teacher. Students were randomly assigned to one subject/teacher (literacy, math or English as second language), and the subject/teacher remained the same for the three waves (T1, T2, and T3).

The study protocol followed the ethical guidelines for the protection of human participants set out by the Italian National Psychological Association and received formal approval from the Bioethics Committee of the University of (*blinded for review*; protocol number: 0017375).

2.2 Study Setting

The rationale for some of the study variables is related to some features of the Italian school system. A brief description of the study setting may help to understand why we controlled for the degree of autonomy in the school choice, studied intentions to dropout and not actual dropout, and involved a population of 9th grade students.

In Italy, at the end of middle school students aged between 13 and 14 are required to choose the secondary educational path, lasting five years. Basically, there are three secondary school paths. High schools offer a broad and general cultural education, with curricula either humanistic or scientific, and are usually chosen by students who intend to attend higher education (Molinari et al., 2013); technical schools are more oriented to preparing their students for the job market but still offer a cultural base allowing for university education after school; vocational schools offer an applied, practical, and job-oriented curriculum, specifically oriented to productive sectors and favoring a direct employment in the labor market. Although parents and teachers support students in this decision-making process, a recent Italian study (Valente et al., 2020) found that the more students are relatively autonomous in deciding what type of school to attend, the more they will positively engage in school.

The reason why we assessed intentions to dropout is because in Italy education is compulsory until the age of sixteen. Consequently, if a student is not satisfied with his/her current school, s/he does not have the option of definitely withdrawing from school, but possibly of changing the type of school s/he is attending, usually falling into a lower school path, with fewer opportunities to follow higher education paths or to pursue high-level professions (Contini & Scagni, 2013). The first year of secondary education, corresponding to 9th grade, has proved to be the most critical in terms of these sorts of school failures. The latest data published by the Italian Ministry of Education (2021) documented that 5.1% of 9th grade students dropped out of the school they were attending, while this percentage was significantly lower in subsequent years (< 3.5% in 10th, 11th, 12th, and 13th grades). Thus, we involved 9th grade students in our study.

Finally, we add that in the Italian school system, classrooms are composed by about 20 to 25 students who attend the same lessons in the same room, provided by several subject teachers. As perceptions of teacher justice can vary depending on the relationship that every single student has with each teacher, we asked students to fill in the questionnaire with reference to a specific subject teacher, randomly assigned. In this way we overcame the risk to obtain generic answers related to teachers in general, which would lead to unspecific data, contrary to our aim of focusing on the student's experience of the learning context. In total, 31 classrooms were involved in the study, with students in each classroom referring to different subject teachers. This methodological choice allowed us to obtain context-specific data and to compose a picture accounting for a variety of teacher-student relationships.

2.3 Measures

The participants completed a questionnaire including single-items and multi-item scales. Four time-invariant variables, i.e., gender (boy or girl), birthplace (Italy or a foreign country), Autonomy in school choice and Motivation to learn at the beginning of school were measured once, at the first wave of data collection (T1). Two time-varying variables, i.e., self-perceived learning difficulty and perceived teacher justice, as well as the outcome variable (Intentions to dropout), were measured at T1, T2, and T3.

Autonomy in school choice was assessed with a single item (“To what extent did you feel independent in choosing secondary school?”). For this item, students answered on a 7-point Likert scale from 1 (Not at all independent) to 7 (Completely independent).

Motivation to learn was measured by means of the Italian validated version (Alivernini & Lucidi, 2008) of the Academic Motivation Scale (AMS; Vallerand et al., 1992). Starting from the introductory sentence “Why do you go to high school?”, the AMS is made up of five 4-item subscales of which four were employed in this study: Amotivation (e.g., “I really feel that I am wasting my time in school”; $\alpha = .84$), External regulation (e.g., “In order to get a better job later on”; $\alpha = .84$), Identified regulation (e.g., “Because I think that a high-school education will help me

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better prepare for the career I have chosen” ; $a = .75$) and Intrinsic regulation (e.g., “Because I experience pleasure and satisfaction when learning new things” ; $a = .89$). Participants answered each item on a 7-point Likert scale from 1 (Not at all) to 7 (Absolutely yes). To reduce the number of variables considered for the present study, we calculated for our analyses the Relative Autonomy Index (RAI; Alivernini & Lucidi, 2008; Vallerand & Ratelle, 2002), a sum of weighted scores integrating information from the four motivational dimensions of AMS mentioned above into a single global score. More specifically, the sum of the items belonging to the Intrinsic regulation, Identified regulation, External regulation and Amotivation subscales was multiplied by a weight of +2, +1, -1 and -2, respectively (for a more detailed description of the RAI, see Vallerand & Ratelle, 2002). Finally, the scores previously obtained were added together to obtain a single motivation index.

Self-perceived learning difficulty was assessed with a single item, i.e., “How difficult is *subject* for you?”, where the term ‘subject’ was replaced in the questionnaire with ‘literacy’, ‘math’, or ‘English’, depending on the subject randomly assigned to the participants (see Section on Participants and procedures). Students answered on a 7-point Likert scale ranging from 1 (Not at all difficult) to 7 (Very difficult). The choice to investigate the self-perceived learning difficulty instead of actual difficulties was based on two factors. First, due to privacy issues and internal regulations, schools were not allowed to share students’ personal information (e.g., indicating students’ levels of learning, or their learning problems). Second, the literature provided evidence that self-perceived learning difficulty is a reliable indicator of academic adjustment, as it predicts school achievement (Hakkarainen et al., 2013) and it is positively associated with actual difficulties and school dropout (Korhonen et al., 2014). As the students in our sample were attending the first year of secondary school and given that it was plausible to expect that students’ perceptions of school difficulties would change as subject knowledge increased and programs became more complex, this variable was measured at all three waves of data collection.

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Teacher justice was assessed with the Italian form (Authors, 2016) of the Teacher Justice Scale (Dalbert & Stoeber, 2006), which evaluates the extent to which students perceive that the treatment they receive from one specific teacher is fair. Given that the qualities of interpersonal relationships experienced by an individual are not general but are sensitive to specific situational and interactive factors (Mameli et al., 2021; Pöysä et al., 2018), we asked participants to refer to a specific subject and thus to a specific teacher. The scale is comprised of 6 items (e.g., “I feel my teacher generally treats me fairly”) and showed a good reliability across the three waves of data collection (*as* of .77, .80, and .84, respectively for T1, T2 and T3).

Intention to dropout was measured with a 3-item scale (Authors, 2021), already used in the Italian context with secondary school students, focused on the learner’s intention to leave or change school. The choice to assess the *intention* was based on the specific setting where the study was conducted (see the description of the study setting provided above), which does not allow students under the age of 16 to drop out of school. The items for this scale are: “I often consider dropping out of school”, “I doubt that this is the right school for me”, and “I think I might decide to change school”. Participants answered each item on a 7-point Likert scale ranging from 1 (Not at all) to 7 (Absolutely yes). Cronbach’s alphas for this scale were .77, .82, and .85, respectively for T1, T2 and T3.

2.4 Data Analysis

To achieve our first aim, we assessed the trajectory of students’ intentions to dropout over the three waves of data collection. We used the Mplus 8 software (Muthén & Muthén, 2009) to estimate a latent growth curve model, which allowed us to test whether the students’ intentions to dropout significantly increased or decreased from T1 to T3. This model also allowed us to test whether there was a significant variation among individuals both in the starting values and in the trajectory of change over time. Then, our hypothesized predictors of students’ intentions to dropout were added to the latent growth model (see Figure 1 for a visual representation of the complete model tested). To test our hypothesis that perceived teacher justice would be negatively associated

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with dropout, students' perceptions of teacher justice at T1, T2, and T3 were entered as time-varying covariates, which allowed us to test their associations with students' intentions to dropout over time. As for the control variables, gender, birthplace, motivation to learn and autonomy in school choice (measured at the beginning of the school year) were entered as time-invariant covariates, while self-perceived learning difficulty (measures at T1, T2, and T3) was entered as a time varying covariate, to account for its change over time. In the model, we included correlations among covariates at the same time and across times for perceived teacher justice and self-perceived learning difficulty, to account for time and variable-related consistencies (for clarity of representation, and since these effects were included only for model specification purposes, they are not included in the figure).

To evaluate the goodness of fit of each model, the following indices and cut-off criteria were considered (Hu & Bentler, 1999): comparative fit index (CFI), standardized root-mean-square residual (SRMR), and root-mean-square error of approximation (RMSEA), which can indicate acceptable (CFI > 0.90, SRMR < 0.10, RMSEA < 0.08) or excellent fit (CFI and TLI > 0.95, SRMR < 0.08, RMSEA < 0.06). We used the maximum-likelihood with robust standard errors estimator (MLR) to compute the models and the full information likelihood method (FIML) to deal with missing data (7.3% at T1, 2.6% at T2, and 3.6% at T3). To account for the clustering of participants in classrooms, we used the "Type = Complex" analysis, provided by the Mplus software, together with the "cluster" command to obtain corrected standard errors estimates, reducing the possibility of Type 1 errors (McNeish et al., 2016).

3. Results

Means and correlations among the study variables are reported in Table 1. The latent growth curve model estimated to assess the trajectory of students' intentions to dropout over the course of the school year reported excellent fit to our data (Hu & Bentler, 1999): $MLR\chi^2(1) = 1.43, p = .232$, RMSEA = .028, CFI = .999, SRMR = .011. The model indicated a mean latent intercept (i.e., the mean level of students' intention to dropout at T1) of $B(SE) = 2.06 (.06)$ and a mean latent slope of

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($B(SE) = .21 (.03), p = .000$). The positive sign of the mean latent slope, together with a p value lower than .05, indicated that students' intention to dropout increased significantly over the school year (from T1 to T2 and T3). The latent intercept and slope were not significantly correlated ($r = .08; p = .649$), suggesting that initial levels were not related to the steepness of increase in the students' intention to dropout. Both the latent intercept and slope reported a significant variance among individuals (respectively $B(SE) = .84 (.16), p = .000$ and $B(SE) = .20 (.07), p = .006$).

After including our time-invariant and time-varying covariates in the latent growth curve model, the model again reported excellent fit to the data ($MLR\chi^2(48) = 89.49, p = .000, RMSEA = .040, CFI = .974, SRMR = .072$). Regarding the time-invariant covariates, gender was not significant for either the latent intercept ($B(SE) = .01 (.09), p = .961$) and slope ($B(SE) = -.07 (.05), p = .197$). Birthplace was significantly associated only with the latent intercept ($B(SE) = .45 (.17), p = .008$), indicating that students of foreign origins had on average a higher intention to dropout at the beginning of the school year, but did not differ from students born in Italy regarding its increase. Motivation to learn had a small significant effect on the latent intercept ($B(SE) = -.02 (.00), p = .000$) and an even smaller effect on the latent slope ($B(SE) = .003 (.00), p = .048$), revealing that students' initial level of motivation was slightly related to their intention to dropout at T1, and even less to its increase over time. Autonomy in school choice was significantly related to the latent intercept ($B(SE) = -.13 (.04), p = .027$) but not to the latent slope ($B(SE) = -.02 (.03), p = .543$), again indicating that this variable was associated with students' intention to dropout at the beginning of the school year, but not with its change over time.

As for the time-varying covariates, students' perceptions of teacher justice were not significant at T1 ($B(SE) = -.03 (.04), p = .449$), but reported a significant negative effect on the corresponding levels of intention to dropout both at T2 ($B(SE) = -.09 (.03), p = .000$) and at T3 ($B(SE) = -.16 (.04), p = .000$). The negative sign of the effect indicates that higher perceptions of teacher justice were associated with a lowering in the steepness of increase of students' intentions to dropout. Self-perceived learning difficulty, included as a control variable, reported a significant

positive effect on students' intentions to dropout both at T2 ($B(SE) = .11 (.02), p = .000$) and at T3 ($B(SE) = .15 (.04), p = .000$), while no significant effect was found at T1.

4. Discussion

With this study we aimed to test whether an important feature of the relational school environment, namely the perceived degree of teacher justice, contribute to preventing school dropout, even after accounting for the role of the considered individual control variables. The results supported our prediction that students' perceptions of fairness in the interactions with teachers negatively associated with their intentions to dropout from school. This finding opens relevant reflections both for research and practice, which will be discussed in greater detail below.

4.1 Students' Intention to Dropout Over Time

The first research question (RQ1) of this study was to analyze the change over time in students' intentions to dropout, measured three times during the first year of secondary school. As expected in our first hypothesis (H1) based on previous research (Tvedt et al., 2021), our latent growth analysis indicated that on average students' intentions to dropout from their school increased over time. This finding, while not surprising, is noteworthy. Although it was foreseeable that for some students such intentions would increase, as every year a certain percentage of students actually abandons school by the end of the year, the fact that intentions to dropout increased on average suggests that even students who do not end up by dropping out still cultivate some intentions in this regard. Beyond this average trajectory, however, the significant variance among the participants in our study both in the initial levels of intentions to dropout and in their change over time confirmed that a variety of factors affect school dropout (De Witte et al., 2013) and supported the importance of including multiple variables to study dropout as a complex phenomenon.

Beyond these predictable findings, our analytic approach, based on latent growth rather than instantaneous measures, allowed us to highlight that initial levels of intentions to dropout were not significantly related to the slope of its increase. This result offers an original insight on school

dropout as it indicates that there is no direct correlation between how students begin the school year and how their path evolves during the same year. Among the many factors that may intervene, for better or for worse, over the course of the school year to steer the school path of a student (De Witte et al., 2013; Dupéré et al., 2015), we were able to identify the protective role of a specific variable characterizing the learning environment, i.e., perceived teacher justice, as we discuss in the following paragraph.

4.2 Predicting Students' Intention to Dropout

To answer our second research question (RQ2), i.e., testing the role of perceived teacher justice in preventing students' intentions to dropout from school, we included this variable in our latent growth model as a time-varying predictor, along with several control variables. Our results were mostly consistent with previous studies, providing further evidence where the literature results were inconsistent. Like Cataldi et al. (2009), we found that gender had no effect on either intercept (i.e., the initial level) or slope (i.e., the change over time) in the latent growth of students' intentions to dropout. As for birthplace, we found that students born outside of Italy had higher initial intentions to dropout but were not significantly different from their peers born in Italy with respect to the change in their intentions to drop out over time. This finding offers new insights into the mixed results concerning the effects of nationality on school dropout (Archambault et al., 2017; DesJardins et al., 2006). In particular, it raises the point that the risk factor of being students of foreign nationality affects their "starting point" but it does not contribute to the increase in their intention to drop out over a school year. This may be an interesting direction of inquiry for further studies aiming at better understanding this association and possible paths of intervention.

Motivation to learn at the beginning of the school year had a negative association with initial intentions to dropout, consistently with previous literature (Alivernini & Lucidi, 2011; Bargmann et al., 2022; Jenő et al., 2018). However, the effect of this variable on the slope was very small, indicating that motivation does not have a great impact on the dropout evolution and does not work as a lasting protective factor. Similarly, autonomy in school choice was related with lower levels of

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intentions to dropout at the beginning of the school year, but not with their increase over time. This confirms previous results (Mendoza Cazarez, 2019), by providing evidence that the feeling of autonomy in the school's choice represents an advantage for school completion, but our longitudinal assessment also suggests that it does not protect students from a worsening in their outlook on school success. Lastly and as we had expected, perceived learning difficulty, which we included in our model as a time-varying covariate, was positively associated with students' intentions to drop out of school at each time of data collection. This finding was not surprising based on previous literature (De Witte et al., 2013; Gubbels et al., 2019; Korhonen et al., 2014) and on the consideration that this is certainly a relevant indicator of chances in completing school.

Having considered the effects of all these individual variables in our model, the central result of our work confirmed that, as expected (H2), perceived teacher justice played a crucial role in the trajectory of students' intentions to drop out of school over time. More specifically, while at T1 students' perception of being treated fairly by their teachers and their intentions to drop out were not significantly related, a small yet significant negative association was found at T2, and this negative association grew stronger at T3. This suggests that at the school beginning other factors (among them, the several individual variables we discussed) held the stronger sway on students' thoughts to abandon school, but as the school year passes by, while the other variables become less or not at all significant, perceptions of teacher justice progressively acquire an important protective role. This finding, which recalls those of an extensive literature indicating the positive impact of students' perceptions of fairness in their learning environment on their school success (Dalbert & Stoeber, 2006; Peter et al., 2012) and wellbeing (Molinari & Mameli, 2018), deserves to be considered in educational research aiming at preventing early school leaving. While individual variables are mostly beyond the control of schools and educators' interventions, our findings suggest that there are still concrete and feasible ways to prevent school dropout by intervening on the relational environment. In a prevention perspective, these findings are even more relevant if we consider that students' perceptions of teacher justice were investigated in a context-specific way.

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Although a large literature has documented that relationships have the power to make a difference in students' educational experiences, experts who aim to detect concrete strategies to prevent school dropout should overcome general considerations and instead pay attention to which relationships (e.g., with which teachers) and which aspects of relationships (e.g., justice) actually matter.

4.3 Limitations

There are some limitations to this study which should be taken into consideration when interpreting its findings. First and foremost, we collected data on students' intentions to drop out of school rather than on their actual dropout rates. This choice was instrumental in studying the evolution of their outlook and perceptions over the course of a year, which was the focus of this research. Moreover, this was the only feasible choice given the fact that, in Italy, school is compulsory up to the age of 16. Thus, assessing intentions to dropout in the future or changing schools for lower tracks was a necessary compromise. A related limitation in our findings is that the data collection was done along one school year, while future research could pursue this line of inquiry by also testing the role of students' perceptions of teacher justice in the successive grades. Moreover, the present research is based on self-report questionnaires, which were consistent with our purpose of capturing students' perceptions of the learning environment and their progressive change; however, this type of instrument comes with the known limitation of not considering potential biases in students' subjective perspective. Despite this limit, we believe that the insights emerging from this study provide a contribution which can open the way for further studies addressing this limitation by including different methodologies (such as teacher interviews and observation). Furthermore, as we included the individual control variables as time-invariant covariates in our model, we could not explore their association with the time-varying predictors, and especially perceived teacher justice. This association could be a relevant direction of inquiry for future studies exploring whether the effects of perceived justice can vary as a function of individual background. Finally, while we aimed to include several sources of variance in our model, the residual variance in both intercept and slope suggests that there are also other factors that are at play

in this process. As widely acknowledged in the literature, school dropout is a complex phenomenon that requires inclusive models to put the pieces together and provide a complete picture. Future research may enrich our insights into the role of teacher justice by analyzing its associations with variables related, for example, to family background or peer influence.

5. Conclusion

Notwithstanding the limitations set forth above, the present study offers material for school interventions and educational policies and contributes to a literature advance in two main directions. First, it confirms and enriches the picture concerning the intertwining of multiple reasons for which students may intend to dropout. When students start secondary school, their intentions to abandon school are higher if they were not autonomous in the choice of the school path, have foreign origins, are low motivated or perceive to have learning difficulties. Where possible, schools are called to account for these factors, and to implement actions or interventions aimed at reducing their impact during the first months of secondary school, in order to favor a school starting as equalitarian as possible.

The second direction of literature advance concerns the adoption of a longitudinal and context-specific methodological approach, which was mostly overlooked in previous research. Through its developmental lens, our study showed that the associations between intentions to drop out and the considered variables change as the school year passes by, with some factors losing and others gaining relevance. Overall, our findings highlighted the protective factor of feeling treated with fairness by teachers, a factor whose importance increases over time, when the relationship between students and teachers presumably becomes more intense, for better or for worse. This result casts new light on the crucial role of perceived teacher justice, which provides valuable knowledge in the international literature on school dropout and school failure, but it also informs the schools at the local level, opening new research and intervention paths into the protective factors to be searched for *within* the learning environment. Future research in this direction could eventually move toward the far-reaching aim of informing actions against school failure targeting

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the relational core of the learning environment, which are still rare within the landscape of existing programs (Wilson et al., 2011).

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Running head: TEACHER JUSTICE AND DROPOUT

Table 1.

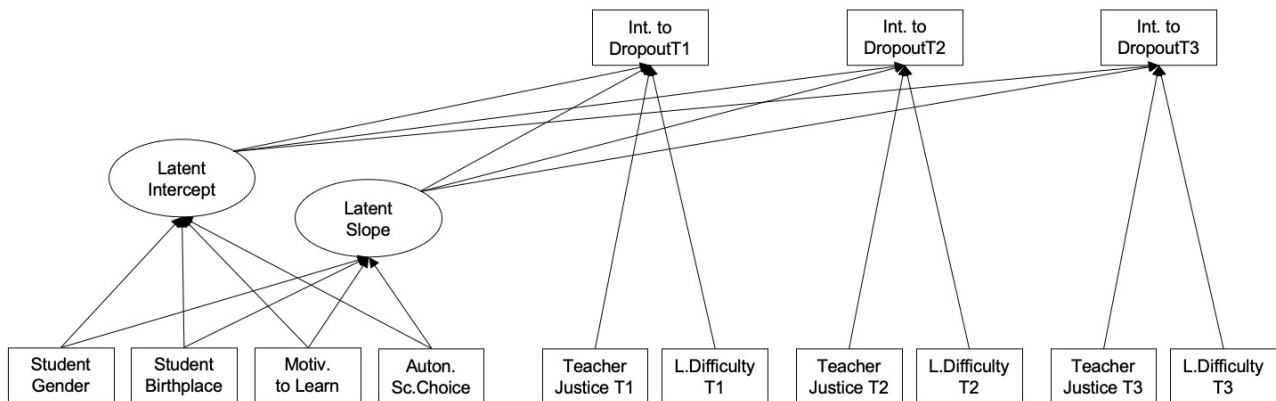
Means and correlations among the study variables.

<i>Variables</i>	1	2	3	4	5	6	7	8	9	10	11
1 Autonomy in school choice	-	.30**	-.23**	-.24**	-.20**	.10*	.05	.10*	-.07	-.05	-.06
2 Motivation to learn		-	-.37**	-.27	-.26**	-.26**	.16**	.25**	-.16**	-.12**	-.12*
3 Int. to dropout T1			-	.56**	.51**	-.13**	-.10*	-.11**	.13**	.10*	.09*
4 Int. to dropout T2				-	.65**	-.12**	-.19**	-.15**	.13**	.22**	.17**
5 Int. to dropout T3					-	-.13**	-.20**	-.25**	.15**	.20**	.23**
6 Teacher justice T1						-	.51**	.44**	-.14**	-.15**	-.09*
7 Teacher justice T2							-	.57**	-.11*	-.22**	-.17**
8 Teacher justice T3								-	-.09*	-.15**	-.20**
9 Learning difficulty T1									-	.64**	.60**
10 Learning difficulty T2										-	.74**
11 Learning difficulty T3											-
M	6.11	24.93	2.09	2.24	2.51	5.44	5.29	4.95	3.47	3.37	3.51
SD	1.18	20.15	1.19	1.34	1.55	1.18	1.31	1.44	1.71	1.77	1.77
Skewness	-1.81	-.54	1.49	1.40	1.23	-.93	-.84	-.51	.53	.52	.44
Kurtosis	4.08	.00	2.18	1.44	.71	.62	.18	-.56	-.55	-.71	-.80

Note. * $p < .05$, ** $p < .01$. The mean values for Motivation to learn were computed with the Relative Autonomy Index (see the Measures section), in our sample the range for this variable is min = - 53, max = + 68; for all other variables the range is min = 1, max = 7.

Figure 1.

The estimated latent growth curve model with time-invariant and time-varying predictors.



Note. Correlations among covariates were included in the model but not displayed for clarity of representation.