The role of comprehensive education in anti-doping policy legitimacy and support among clean athletes

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Highlights

• Athletes receiving comprehensive ADE are more supportive of anti-doping policies than athletes who haven’t received ADE.

• Anti-doping education can increase the legitimacy of authorities implementing anti-doping policies.

• Perceptions of legitimacy have both direct and indirect effects, through social cognitive variables, on intentions to support anti-doping policies.

• The effect of legitimacy perceptions on intentions to support anti-doping policies is invariant across the countries, but mean differences exist.

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Abstract

Objectives: Anti-doping policies represent a group of regulations and procedures that are applied by anti-doping organizations in order to safeguard sports against doping. Evidence implies that, for anti-doping policies to be effective, they need to be endorsed by athletes. Still, there is scarce evidence on the process through which athletes decide to endorse and support anti-doping policies and the role of anti-doping education. The main objective of the study was to empirically examine a behavioural model of active anti-doping policy support.

Methods: A self-reported survey with measures of perceived anti-doping legitimacy, social support via expected obedience, perceived trustworthiness and social cognitive variables associated with anti-doping policy support (attitudes, social norms, descriptive norms, perceived behavioural control, regret, and intention) was completed by 1328 competitive athletes in 6 countries (Germany, Greece, Italy, Russia, Serbia, UK).

Results: Athletes who live in countries with comprehensive (emphasis on individual development and competency with a focus on sport and personal integrity) anti-doping education (ADE) and had received ADE are more supportive of anti-doping policies than athletes from countries with basic education provision anti-doping education (information type education). Furthermore, athletes who received ADE reported significantly higher levels of perceived legitimacy, trustworthiness, and obedience. The results of the SEM revealed that perceptions of legitimacy had both direct and indirect effects on intentions to support anti-doping policies. The effect of perceptions of legitimacy was mediated by social cognitive variables, which demonstrated strong direct effects on intentions. Importantly, the

model was invariant across the countries, although mean differences in several constructs emerged.

Conclusions: Anti-doping milieu and education impact athletes' willingness to support anti-doping policies. Interventions targeting legitimacy beliefs and social cognitive variables can be effective in promoting anti-doping policy support in competitive athletes. These interventions should expand beyond anti-doping policy legitimacy and target the specific beliefs (e.g., norms) that are pertinent to policy support in different countries.

Keywords: anti-doping; policy support; attitudes; doping, legitimacy, clean sport

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The use of prohibited performance enhancement drugs (PEDs) and other methods to enhance performance is colloquially known as "doping". Doping use is against the spirit of sports (World Anti-Doping Agency Code, 2021) and may pose a significant risk for irreversible health consequences to users (Angell et al., 2012; Birzniece, 2015). Publicized doping scandals create distrust towards sport governance and public dismay (Alm, 2013; Solberg et al., 2010) and research has shown that competitive elite athletes feel pressured and uncomfortable believing that their competitors may have an (unfair) competitive advantage by engaging in doping practices (Bloodworth & McNamee, 2010; Petróczi et al., 2021).

Anti-doping policies represent a group of regulations, monitoring and control procedures, and legal sanctions that are applied by WADA and national anti-doping organizations and other sport governing bodies to safeguard sports against doping. To be enacted effectively and make a sustainable positive impact on promoting clean sports, anti-doping policies must reflect the concerns of and be endorsed by their very targets, that is athletes (Efverström et al., 2016; Houlihan, 2004). In this line, the existing anti-doping system may be seen as legitimate and endorsed by athletes, if they perceive it as proper, fair and appropriate (Tyler, 2006; Van der Toorn et al., 2011). Existing evidence has shown that athletes are, in general, positive towards specific anti-doping regulations, such as the doping controls, whereabouts and the anti-doping system overall (Woolway et al., 2020). However, athletes have concerns about how anti-doping regulations are implemented, and have questioned their effectiveness (Woolway et al., 2020). Furthermore, Efverström et al. (2016) concluded that the perceived legitimacy of anti-doping policies plays an important role in shaping athletes' endorsement and support of those policies.

Past evidence showed that intervening on people's perceptions of legitimacy can improve their compliance with the organization. For instance, Mazerole et al. (2013) in a systematic review suggested that interventions aiming at increasing the legitimacy of police improved citizen's satisfaction, confidence, compliance and cooperation. In this line, Peyton et al. (2015) demonstrated that personal contact with police officers increased positive attitudes towards police legitimacy and cooperation. However, sport appears to be a different case. Athletes' views on anti-doping rules and regulations suggest that compliance with the anti-doping rules is driven by duty and a sense of obligations (Qvarfordt et al., 2021), and positive perception about anti-doping mainly affects how they feel about the sacrifices and infringements on privacy, accepting anti-doping preventive and control measures as necessary means to clean sport, which they cherish (Henning & Dimeo, 2018; Shelley et al., 2021; Petróczi et al., 2021). Therefore, positive legitimacy perception of anti-doping benefits but not vital for Code compliance, but it is fundamental for active support for anti-doping policies.

In the context of doping, Henning and Dimeo (2018) and Woolway et al. (2020) recommended education on legitimacy of anti-doping organizations in order to increase athletes' perceptions of legitimacy. However, so far there is limited evidence on the effect of education on perceptions of legitimacy and actual support of anti-doping policies. Comprising a large sample of elite young athletes participating in four Youth Olympic events, Blank and colleagues (2021) showed a positive effect of any kind of education, compared to no education, on anti-doping legitimacy perception. Within the education context, the impact of comprehensive education was more pronounced than the impact of information only type education. The observed lack of impact on procedural legitimacy could be influenced by the relative competitive inexperience of the participating young athletes at

international level, indicating that education alone may not be the only influential factor in legitimacy perception.

Comparative reviews of anti-doping programmes (Gatterer et al., 2020; Pöppel, 2021; Sipavičiūtė et al., 2020; Woolf, 2020) highlight the fundamental differences in anti-doping education, namely whether doping is considered a (an elite) sport specific issue, or a broader societal problem, and consequently whether the primary focus of anti-doping education is limited to Code compliance, or focuses on individual development and competency. The latter approach places doping into the broader context of integrity of sport as well as personal integrity (Gardiner et al., 2017). Criticism of the impact of education programmes on athletes' knowledge about doping and anti-doping rule compliance (Woolf, 2020) linked to misalignment between the education goals, approaches and evaluation can expand beyond knowledge, or health (Sipavičiūtė et al., 2020). Arguably, it is not only that doping is a complex issue which makes it difficult to 'educate about' (Hoberman, 2013) but it also must be placed in a broader societal context for having any credibility and ecological validity (Petróczi et al., 2017).

Prior to the implementation of the WADA International Standard for Education (ISE) in 2021, the approach, the content and the methods for anti-doping education were entirely within the discretion of the organisations providing anti-doping education. Characteristics of the educational approach of a country (or sport) to anti-doping is also an important environmental factor for the athletes because it signals the local anti-doping milieu. A plethora of research argues persuasively for the importance of cultural adaptation of intervention and preventive measures to address a wide variety of public health issues, including health promotion and drug prevention (e.g., Burlew et al, 2013; Oyserman & Lee, 2008; Steinka-Fry et al., 2017; Uskul & Oyserman, 2010). Accepting that cultural characteristics influence the way people think and behave, the theory of societal tightness-

looseness (Gelfand et al., 2011) posits that countries can be characterized by the degree of the tightness vs. looseness. At the extreme end of this continuum, tight cultures feature clear norms and rules according to which people must behave, whereas loose societies have less appetite for rigid structures or rules, allowing more freedom for people to make decisions, and tolerate deviance from the societal norms better. Tightness-looseness is reflected in many spheres of the society, including the education (e.g., Kim, 2015; Kim & Spencer-Oatey, 2021; Klassen et al., 2018).

Juxtaposing cultural characteristics onto education systems, we can assume that in tight societies, education is teacher-centred, structured, didactic and demands strict obedience, whereas education in loose societies tend to be learner-centred, interactive, participatory and creative. Whilst education in both types of culture can be expectations-driven, in loose societies a great deal of responsibility is placed upon the learners to decide to what degree they wish to meet which expectations. This permits individuals to follow their own preferences and relying on self-regulation to a large extent. Conversely, one might also argue that countries with tight norms emphasize rules and adopt a direct approach to anti-doping education by telling what people can and cannot do, expecting obedience. In contrast, countries with less tight norms invest in and implement comprehensive anti-doping education programmes because – intuitively - they take the position that a good education programme should influence behaviour via understanding, acceptance, adoption and voluntary conformity, not merely informing athletes about the rules to ensure at least a minimum level of knowledge. Countries with a moderate tightness profile may combine rule-based information provision with some degree of person-focused approaches. Conversely, it is then reasonable to assume that the same cultural characteristics, in combination with personal experiences with anti-doping and anti-doping education, also exerts influence on the degree by athletes are prepared and willing to actively support anti-doping policies Although the

new ISE dictates the mandatory elements of anti-doping education moving forward, there is still plenty of room for the anti-doping organisations to decide how to provide anti-doping education and what to include in each mandatory component of values-based education, awareness, information provision, and anti-doping education.

The Present Study

"Every authority system tries to cultivate a belief in its legitimacy" (Zelditch & Walker, 2003, p. 217). In anti-doping, a recent synthesis of the literature on anti-doping legitimacy revealed that athletes indeed perceived anti-doping policies as proper and just (Woolway et al., 2020) but their views diverged about its justness and appropriateness. Based on these findings, Woolway et al. (2020) suggested that discrepancies between the perceived legitimacy of anti-doping rules (normative legitimacy) and their implementation (a.k.a. procedural legitimacy) may be associated with lower support athletes receive from the anti-doping system. This evidence corroborates a large body of research in other domains of policy support, which has shown that effective and sustainable policies are those that are perceived to be relevant, just, fair, and legitimate by the very people that they target (Tyler, 2006; Van der Toorn et al., 2011). So far, however, limited research has looked into the psychological process that links athletes' perceptions of legitimacy with willingness and/or intentions to endorse anti-doping policies (Efverstrom et al., 2016). The main objective of the present study was to address this gap. To this end, three relevant theoretical frameworks (i.e., Tyler's procedural justice model of compliance, Mayer's integrative model of organizational trust, and Fishbein's integrative model of behavioral prediction) have been incorporated into a single model to explain athletes' endorsement of anti-doping policies. The first theoretical framework is based on Tyler and colleagues' work on the association between perceived policy legitimacy and policy support, and contents that people feel morally obligated and intrinsically motivated to respect rules and policies as long as they perceive them as

legitimate (Tyler, 2001, 2006; Tyler & Huo, 2002; Van der Toorn et al., 2011). According to Tyler's model (2006) an authority is considered as legitimate when its actions are perceived as proper (i.e., having the right to establish rules and regulations and representing the right values), just (i.e., implementing fairly and equally rules and regulations to all involved parties), and appropriate (i.e., setting robust and effective rules and regulations). It is important to note that according to the model the endorsement and support of an authority is strongly related with the belief that it is fair and applies rules and regulations in a respectful manner and without discrimination, rather than their actual fairness (Tyler, 2001, 2006). This implies that perceptions of legitimacy of anti-doping authorities can influence athletes' decision to support and implement their policies (USADA, 2017). Secondly, another important aspect that can influence perceptions of legitimacy involves the trustworthiness of the organization (Mayer et al., 1995). Trustworthiness refers to perceptions of the ability, benevolence and integrity of the organization and the trust that it can carry out effectively its tasks (Colquitt et al., 2007). In their meta-analysis, Colquitt and colleagues demonstrated that perceptions of trustworthiness form trust to the organization which, in turn, results in positive citizenship behaviours. In the context of doping, Overbye (2016) demonstrated that athletes' perceptions of trust about anti-doping policies in some occasions can influence their trust to the anti-doping system. Dreiskämper et al. (2016a) adapted the model of organizational trust by Mayer et al. (1995) to the context of doping in sport, showing that a lack of trust into the responsible organizations can increase the perceived risk of athletes to compete in unfair and not legitimate working circumstances (i.e., a lack of legitimacy). Colquitt and Rodell (2011) in their review of the literature acknowledged that perceptions of legitimacy set the context through which people make decisions. Legitimacy establishes a feeling of obligations to abide by the rules; but people are more willing to obey the authority if they perceive that the imposed regulations and policies are made on the grounds of legitimacy and are characterised

by justice and trust (Tyler, 2006; Tyler & Huo, 2002). This might also be the case with respect to supporting anti-doping policies. For instance, Overbye (2016) suggested that athletes trusting anti-doping policies would support the doping control system.

To understand the decision-making process towards supporting anti-doping policies, we utilised the Integrative Model of behavioural prediction (e.g., Fishbein, 2009; Fishbein & Cappella, 2006). This model posits that distal psychological characteristics may influence intentions and actions, but their effect on intentions is mediated by attitudes, social norms, and perceived behaviour control. Volitional behaviours are the function of concomitant behavioural intentions. Intentions to act, in turn, are shaped by people's attitudes (i.e., positive or negative evaluations of a given target behaviour), perceived social norms (e.g., perceived approval of and typicality of a given behaviour among referent others), perceived behavioural control (PBC), which reflects the perception that one is capable of successfully enacting the behaviour in question and anticipated emotions (e.g., anticipated regret; Lazuras et al., 2017). Previous theorizing has suggested that more distal or domain-general variables describing beliefs for engaging in a specific behaviour may capture important contextual influences on intention formation over and above the effect of attitudes, subjective norms and PBC (Fishbein, 2009; Fishbein & Cappella, 2006; Westaby, 2003, Westaby et al., 2010). This assertion has been empirically confirmed with respect to doping behaviour (Barkoukis et al., 2011, 2013; Lazuras et al., 2015; Ntoumanis et al., 2017). In the context of our study legitimacy, trustworthiness and obedience serve as the distal variables that influence intentions to support anti-doping policies. According to Tyler (2006) perceptions of legitimacy and trustworthiness formulate perceptions of obedience to the organization. In turn, according to the integrative model of behavioural prediction it is expected that perceptions of obedience will influence intentions to support anti-doping policies through the

effect of proximal to intentions variables, such as attitudes, norms, efficacy beliefs and anticipated emotion (see Figure 1; Fishbein, 2009).

All named theoretical assumptions on doping behavior (i.e., perception of legitimacy, perception on trustworthiness and behavioral prediction) are directly linked to the knowledge, attitudes, views and norms athletes have on anti-doping. Therefore, in order to investigate these factors, it seems to be crucial to integrate information of anti-doping education of the athletes, too. Current research on anti-doping education shows that between countries a relatively clear distinction can be made between those offering comprehensive anti-doping education (ADE) and those who do not (Gatterer et al., 2020). Under the term comprehensive education, we followed Gatterer et al. (2021) which included anti-doping education programmes that go beyond information provision to ensure Code compliance and offer at least two elements of the following four prolonged values-based education: affective focused approach (targeting values and self-worth, seeing changes in a positive light), social skills training (encourage assertiveness and utilize verbal/nonverbal assertiveness skills to make or refuse requests, and resisting to peer pressure), multi-component life skills training (interaction of social skills, personal skills and knowledge, decision making skills based on careful consideration of the consequences of each alternative solution before making decisions) or ethics- and values-based education focusing on doping being against the rules, fair play, honesty and integrity, and values and principles of sport. As comprehensive education is said to lead onto a more reflected view on anti-doping and to increase knowledge on regulations and procedures, it can be argued that the factors mentioned above should differ between athletes from countries with and without a comprehensive ADE and between athletes who received ADE and those who did not.

The aim of the present study was to examine the effectiveness of the hypothesised model in predicting anti-doping policy support intentions. The extant literature has indicated

that education can influence people's perceptions of legitimacy and improve their compliance with the organization (Mazerole et al., 2013; Peyton et al., 2015). The objectives of the present study, therefore were to test (1) a behavioural model for predicting active support for anti-doping, (2) the role of legitimacy-related social cognition in athletes' willingness to actively support anti-doping, and (3) the impact of anti-doping milieu via the dominant approach to anti-doping education, and the impact of ADE on anti-doping policy support in the participating countries. To this end, we used multigroup analysis to examine the measurement invariance of our integrative behavioural model between countries with different levels of ADE (i.e., education via basic information provision vs. comprehensive anti-doping education) and between athletes having and having not received anti-doping education. Although we expect that mean differences may exist across the countries, we hypothesised that the model will be invariant between country blocks and between athletes receiving or not ADE. According to our integrative behavioural model (see Figure 1) it was expected that anti-doping policy support intentions would be directly associated with relevant social cognitive variables, such as attitudes, social norms, PBC, anticipated regret, and positive perceptions of anti-doping policy legitimacy and trustworthiness. In addition we hypothesized that perceived anti-doping policy legitimacy and trustworthiness will predict social support (expressed as expected obedience by all athletes) towards supporting anti-doping policies. It was also expected that the association between anti-doping policy support intentions and perceptions of obedience in anti-doping policies would be mediated by the said social cognitive variables (i.e., attitudes, social norms, PBC, and anticipated regret).

Method

Participants and Procedure

Overall, 1328 competitive athletes (*M*=22.77 years, *SD*=3.50) from Greece (n= 212; *M*=21.41 years, *SD*=4.47), UK (n=82; *M*=25.72 years, *SD*=7.74), Italy (n=330; *M*=21.04

years, *SD*=4.81), Germany (n=89; *M*=21.87 years, *SD*=5.14), Serbia (n=338; *M*=23.68 years; *SD*=5.30) and Russia (n=277; *M*=24.11 years; *SD*=3.50) participated in the cross-sectional study between January and April 2018. Sixty percent of the participants had received anti-doping education (34.6% in Greece, 32.1% in UK, 45.1% in Italy, 95.3% in Germany, 97.3% in Serbia and 47.3% in Russia) and 48.2% had been tested (39.9% in Greece, 10.4% in UK, 20.7% in Italy, 74.7% in Germany, 66.1% in Serbia and 66.4% in Russia). A two-stage cluster sampling approach was used in order to facilitate athlete recruitment and avoid low response rates. The first stage involved the selection of sports to be included in the study. The second stage involved the random selection of either teams (for athletes in team sports) or coaches (for athletes in individual sports). Eligible participants should participate in systematic training (3-5 times per/week) and in national competitions. They completed anonymous and structured questionnaires targeting beliefs and views about anti-doping policies. A definition of anti-doping policies was provided at the beginning of each questionnaire. The questionnaire was developed in English and was subsequently translated in each participating country by bilingual and/or anti-doping experts who were proficient in English. Data from each country were collected via web-based survey platform, except from Greece where participants completed paper and pencil surveys. In each country, trained researchers recruited teams and/or individual sport athletes for participation to the study. In line with the Research Ethics Guidelines of the British Psychological Society, all athletes were duly informed about the aims and purposes of the study, the anonymity and confidentiality of their responses, the voluntary participation in the study, and their participation rights (e.g., right to withdraw at any point without prior notice and without any ensuing penalties for doing so) prior to consenting to participate. The study design received ethics approval from the Research Committee of the Aristotle University of Thessaloniki.

Measures

Demographic characteristics including age, gender, sport, and level of sport were recorded. The survey comprised multiple social cognitive measures worded to address the general issue of support to anti-doping policies. The legitimacy-related measures (i.e., perceptions of legitimacy, perceptions of trustworthiness and social support for anti-doping via expected obedience) have been developed by Dreiskämper et al. (2016b), Petroczi (2021) and Petroczi and Bachman (2017, 2020) and have shown adequate psychometric characteristics. The measures of intentions towards policy support and their proximal predictors (i.e., attitudes, norms, PBC and anticipated regret) were modified from previous studies on doping (Lazuras et al., 2015).

Perceptions of Anti-Doping Legitimacy: Perceived legitimacy of anti-doping policies was measured by three items pertaining to the normative and procedural legitimacy (effectiveness and the fairness) of existing anti-doping rules and procedures (e.g., "*The current anti-doping rules are completely justified because they protect clean sport*"; Petroczi, 2021; Petroczi & Bachman, 2017, 2020; Woolway et al., 2020).

Perceptions of Trustworthiness of the organisations with responsibility for Anti-Doping: nine items measured athletes' perception of capability, integrity and benevolence of anti-doping organizations (e.g., "*All anti-doping organisations are very capable of performing their job*"; Dreiskämper et al., 2016b).

Support for anti-doping policies was expressed through *expected (normative) obedience*, that is, athletes' views about the moral obligation of unquestionably abide to the existing anti-doping rules and policies. This variable was measured by five items (e.g., "*It is the athlete's duty to obey, even if he/she personally disagrees with how the anti-doping rules are implemented*").

Participants rated the three set of items reported above using a 5-point Likert scale ranging from 1 ("strongly disagree") to 5 (strongly agree"). Higher scale scores, computed by

averaging item scores, denoted, respectively, athletes' higher perceptions of legitimacy, trustworthiness of, and expected obedience by athletes to anti-doping policies. All three sets of items showed very good reliabilities (Cronbach's Alpha=.72 and Composite Reliability=.84; Cronbach's Alpha= .87 and Composite Reliability=.90; Cronbach's Alpha=.85 and Composite Reliability=.90 for perceptions of legitimacy, trustworthiness, and expected obedience, respectively).

Attitudes towards supporting anti-doping policies in the next three months were measured by the mean score of athletes' responses on eight pairs of contrasting adjectives (e.g., worthwhile/worthless, honest/dishonest, reasonable/unreasonable) that followed the stem question '*To me, supporting anti-doping policies in the next 3 months would be …*'. Responses were anchored on a 7-point response scale with higher scores denoting more positive attitudes towards anti-doping policy support. The set of attitude items showed an excellent level of internal consistency reliability (Cronbach's Alpha= .95 and Composite Reliability=.96)

Subjective social norms were measured by the mean score of athletes' responses to three items (e.g., "*Most people who are important to me would want me to support anti-doping policies in the next 3 months*") on a 7-point response scale ranging from strongly disagree to strongly agree. Higher scores indicated more positive social norms towards anti-doping policy support. The three items included in this scale showed good internal consistency reliability (Cronbach's Alpha= .87 and Composite Reliability=.92).

Descriptive social norms were measured by the mean score of athletes' responses to three items which asked them to estimate -at their competitive level, in their own country and globally- the percentage of athletes who would support anti-doping policies (e.g., "*Out of 100%, how many elite athletes in your country do you think support anti-doping policies?*"). Higher scores indicated greater perceived prevalence of athletes' support to anti-doping

policies. The items referring to descriptive social norms showed very good internal reliability (Cronbach's Alpha= .92 and Composite Reliability=.95).

Perceived behavioural control (PBC) was measured by the mean score of athletes' responses to three items, which showed very good internal reliability (Cronbach's Alpha= .90 and Composite Reliability=.94). Items asked participants to evaluate the degree of personal control with respect to supporting anti-doping policies in the future (e.g., "*How much control do you have over supporting anti-doping policies in the next 3 months*"). Items' responses were rated on a 7-point rating scale ranging from strongly disagree to strongly agree, and higher scores indicated stronger PBC.

Anticipated regret was measured with respect to the possibility of *not* supporting anti-doping policies in the future, and athletes' responses to four items (e.g., "*If I don't support anti-doping policies, I will regret it*") were rated on 7-point rating scale ranging from "definitely not" to "definitely yes". The set of items measuring anticipated regret showed an excellent level of internal reliability (Cronbach's Alpha= .94 and Composite Reliability=.95). Items' scores were averaged to create a scale score, for which higher scores indicated athletes' stronger anticipated regret.

Behavioural intentions to support anti-doping policies in the next three months were measured by the mean score of athletes' responses to three items (e.g., "*I intend to support anti-doping policies in the next 3 months*"), which participants rated on a 7-point Likert scale (Cronbach's Alpha= .91 and Composite Reliability=.95). Items' scores were then averaged to create a scale score for which higher scale scores indicated athletes' stronger intentions to support anti-doping policies in the future.

Finally, athletes indicated whether they personally participated in anti-doping education programs using a Yes/No dichotomous response scale.

Data analysis

Data analyses were mainly guided by the comparison of two country groups, in which countries were classified depending upon the presence of verifiable anti-doping education programs offered to athletes according to the evaluation by Gatterer et al. (2020). We opted for this approach instead of making comparisons at the level of single countries because we hypothesised that the primary outcome, namely, athletes' active support of anti-doping policy, although it is first and foremost influenced by athletes' personal experiences with anti-doping in their home countries, share commonalities across borders among those with similar degree of tightness-looseness, and approach to anti-doping education, and differs from those with distinctively different cultural characteristics and different approach to anti-doping The detailed self-assessment questionnaire used in Gatterer et al. (2020) served as the empirical basis of the grouping. Data of the visual analogue scale (VAS) assessment were obtained from the authors. In the study by Gatterer et al. (2020), the VAS was used to rate how well the required content for each anti-doping activity was implemented for adult athletes and emerging young athletes, separately. The VAS scores showed a clear difference between two blocks of countries, namely, a first block including Germany and UK (total n=171) and a second block of countries including Italy, Greece, Serbia, and Russia (total n=1157). Countries in the first block were characterised by comprehensive anti-doping education programs that went beyond information provision, and incorporated elements of values-based education, social-and life-skills training and personal development as a competitive athlete. Countries in the second block were instead characterized by AD programs focusing primarily on awareness raising activities and offering information provision with support to ensure code compliance. These two blocks also matched for their position on the cultural tightness scale (Uz, 2015) with the UK and Germany showing a

greater degree of tightness (scores of 89.2 and 82.9, respectively) compared to the other four countries (Russia: 57.2; Greece: 58.3, Serbia: 61.8 and Italy: 67.8)[1].

The two country blocks were primarily compared by performing structural equation modelling (SEM) analyses designed to test the validity of the guiding integrated model. In particular, the SEM analyses firstly tested whether there was invariance in the measurements or instruments used in the study and, subsequently, whether there was invariance across the two country blocks in the processes (i.e., latent paths) outlined in the guiding model. In order to have additional information about the utility of dividing countries into blocks, we also examined via SEM analyses the measurement invariance and model path invariance across those athletes who responded to the Yes/No question about personal participation to AD education programs (n = 1302) and who either personally attended anti-doping education programs (n=781) or did not (n=521).

Technically, at a preliminary level, analyses focused on the descriptive characteristics for all of the key variables computed by using SPSS version 26 for each country block (IBM, 2020). A great part of the SEM analyses was carried out with MPLUS software, version 7 (Muthén & Muthén, 2012). In these multi-group analyses, the robust-maximum likelihood (MLMV) estimation method provided the estimates of model parameters, and a variety of indices measuring the degree of fit between input data and model-based estimates provided a measure of the models' statistical adequacy. More specifically, in line with existing literature, models' fit was evaluated with respect to CFI (Comparative Fit Index) values close to 0.95 (Hu & Bentler, 1999), a RMSEA (Root Mean Square Error of Approximation) and a SRMR (Standardised Root Mean Squared Residuals) value below .08 (Marsh et al., 2004), and the ratio between models' chi-square and degrees of freedom below or equal to 3 (Kline, 1998).

[1] The scores range between 0 (most tight, Morocco) to 119.2 (least tight, Belgium), with the UK being the 4th least tight culture (Uz, 2015, Table 1).

The multi-group SEM analyses first focused on the measurement characteristics of the model of effects guiding the present research. In particular, the focus was on the hypothesis of measurement *invariance* across the two country blocks, that is, the general hypothesis that athletes of both blocks assigned the same meaning to questionnaires' items. In line with existing literature (e.g., Putnick & Bornstein, 2016), the SEM analyses implemented Confirmatory Factor Analysis and sequentially tested multi-group *configural* invariance (i.e., model M1, invariance in the number of factors and loading patterns), *metric* invariance (i.e., model M2, invariance in items' factor loadings), *scalar* invariance (i.e., model M3, invariance of the item intercepts), and *residual* invariance (i.e., model M4, invariance in items' error estimates or uniqueness).

The multi-group SEM analyses then focused on the general hypothesis that the relations and effects put forward by the guiding model would hold among athletes in both country blocks (i.e., the hypothesis of *invariance* in structural relations). In particular, two multi-group SEM analyses respectively tested invariance in the covariances among the model's latent variables (model M6) and in structural paths linking the latent variables (model M7). For both SEM analyses, a change in CFI of $\Delta \leq 0.01$ (Cheung & Rensvold, 2002) was considered an indication that model fit did not statistically worsen (i.e., that there was invariance in the model relations).

With respect the SEM, we run a power analysis to detect model misspecification in terms of RMSEA (MacCallum et al., 1996) through a post-hoc analysis. The analysis was carried out using the "semPower" package v. 1.0.0 (Moshagen & Erdfelder, 2016) within RStudio environment v. 1.4.1717 (Rstudio Team, 2021). The power level was considerate adequate if ≥ 0.80 (Cohen, 1992).

Finally, a series of MANOVAs separately examined a) the averaged levels of athletes' perceptions of legitimacy, trustworthiness, and obedience, and b) the averaged levels

of athletes' social cognitive beliefs toward anti-doping policies (i.e., attitudes, social norms, descriptive norms, perceived behavioural control, regret and intentions). For each of the two sets of dependent variables, two MANOVAs respectively examined whether there were scale mean differences across the two blocks of countries and across athletes who either personally participated in AD education programs or did not.

Results

Descriptive statistics of items used to measure key variables across countries

Table 1 shows the descriptive statistics of each measurement's item responses in each country block. Overall, item scores showed the characteristics of a normality distribution, as also indicated by skewness levels at around the value of |1|. The analysis of correlation revealed moderate associations among the study's variables (Table 4 of the supplementary material). With respect the power analysis, the results showed that the observed power to detect model misspecification in terms of the RMSEA was considerate as adequate (≥0.99) with our sample of 1328 participants.

Measurement invariance across country blocks

Table 2 shows the results of a series of SEM multi-group confirmatory factor analyses in which the measurements' item characteristics were first simultaneously tested in the two blocks (M0a and M0b), and distinct model constraints were then gradually added in consecutive runs to test the extent of measurement invariance across the two country groups (i.e., factor loadings invariance, intercepts invariance, and residual invariance).

As reported in Table 2, the baseline model reached marginally satisfactory fit indices when it was tested for the block including data from UK and Germany (block 1: CFI=.89; RMSEA=.04; SRMR=.08). Indices were instead quite satisfactory when the baseline model was tested for the block including Italy, Greece, Russia, and Serbia (block 2: CFI=.92;

RMSEA=.04; SRMR=.05). When the baseline multigroup model was tested simultaneously in the two blocks, the results held quite well (i.e., CFI=.92; RMSEA=.04; SRMR=.06).

When the baseline multigroup model (M1) was compared with more restricted models gradually testing for measurement invariance, model comparisons did not worsen the models' fit indices, thus supporting the hypothesis that athletes from countries in both blocks interpreted and gave a similar meaning to the items comprising the key measurements of the study. The details of these model comparisons are reported in Table 2. Table 1 shows not only items' descriptive characteristics, but also the standardized estimates of items' factor loadings that were yielded by the model comparisons of measurement invariance. Overall, all items were statistically significant and were higher than .50.

The invariance of the model's latent relations across country blocks

Table 2 also shows the models' statistics yielded by the multigroup analyses testing country block invariance in the structural *latent* relations (see Step 2 in table 2). The starting point of these SEM analyses was the measurement invariance model (i.e., model 5 in Table 2: CFI=.90; RMSEA=.04; SRMR=.10). It is important to note that this model 5 was the most rigorous test of measurement invariance, as it included equality constraints across country blocks for not only factor loadings, but also intercepts and measurement errors. It is thus not surprising that some of the fit indices (e.g., SRMR) slightly worsened as compared to less rigorous measurement invariance models.

There was country block invariance for both the latent variables' covariances (Model 6) and the paths of predictive latent relations in the guiding model (Model 7). Table 3 shows the estimated covariances among the latent variables of the model, whereas Figure 1 shows the estimates of the latent relations depicted in the guiding model.

As to the specific relations, athletes' perceived trustworthiness in anti-doping policies significantly predicted (β=.46; p=.009) athletes' perceived obedience to anti-doping rules by

other athletes. There was no such statistical predictive effect by athletes' perceived legitimacy (β=.10; *p*=.57). Athletes' perceived obedience by other athletes, in turn, was significantly and directly associated with attitudes (β=.45; *p*<.001), social norms (β=.48; *p*<.001), perceived behavioural control (β=.31; *p*<.001), descriptive norms (β=.34; *p*<.001), and anticipated regret (β=.37; *p*<.001) towards anti-doping policies. Furthermore, perceived obedience was indirectly and significantly associated with athletes' prospective intentions to actively support to anti-doping policies (β=.40; *p*<.001). Finally, the results showed that intentions to support anti-doping policies were positively associated with higher scores in social cognitive beliefs towards anti-doping policies, namely, attitudes (β=.09; *p*=.001), social norms (β=.42; *p*=.001), perceived behavioural control (β=.33; *p*<.001), descriptive norms (β=.09; *p*<.001), and anticipated regret (β=.06; *p*=.010).

Mean group differences across country blocks

The findings of group invariance both for the measurements and the latent relations put forward by the guiding model permitted to test for mean group differences across country blocks in the observed data. In doing so, it was plausible to assume that any mean difference across country blocks would not be due to "method" or observational biases.

The results of the first MANOVA showed a statistically significant multivariate block effect on the three variables that were at the outset of the guiding model, namely, legitimacy, trustworthiness, and obedience (Wilks' Lambda $_{(3, 1324)}$ = .992, p=.019; η^2_p=.008). However, this significant multivariate effect did not correspond to statistically significant univariate effect for the three variables (see Table 4 for details).

A second MANOVA was instead performed to analyse country block mean differences in the set of social-cognitive variables (e.g., attitudes, social norms). Again, there was a multivariate country block effect (Wilks' Lambda $_{(6, 1310)}$ =.810, p<.001; η^2_p=.190). This multivariate effect corresponded to several statistically significant univariate effects. In

particular, except for attitudes about supporting anti-doping policies, there were significant univariate effects for all the social-cognitive variables (see Table 4 for details). Athletes from either UK or Germany (country block 1) reported, on average, significantly higher scores on descriptive norms than did athletes from Greece, Italy, Serbia, or Russia (country block 2). That is, UK or German athletes on average perceived relatively greater support of anti-doping policies among athletes from their own countries. This pattern was reversed for the other social cognitive variables, that is, UK or German athletes on average held relatively weaker subjective norms, anticipated regret and intentions with respect to anti-doping policies than did athletes from either Greece, Italy, Serbia or Russia.

Measurement and path invariance across athletes who received AD education and athletes who did not

The results of the multigroup analysis substantially supported the invariance of the instruments (i.e., measurement invariance). That is, it can be presumed that both athletes receiving and not receiving anti-doping education interpreted and gave a similar meaning to the items comprising the key measurements of the study similar (see Table 1 of the supplementary material). Measurement invariance was a necessary condition for subsequently testing invariance in the hypothesized predictive relations diagrammed in the guiding model and in the covariances among the latent variables. Table 1 of the supplementary material summarized the results of these analyses which, overall, confirmed both types of invariances across the two groups of athletes. Table 2 of the supplementary material summarized the estimated covariances among the latent variables of the model, whereas shows the estimates of the latent relations depicted in the guiding model that are invariant across the two groups of athletes.

Mean group differences across athletes who received AD education and athletes who did not.

As in the case of the MANOVA run for the country blocks, the results of a MANOVA showed a significant multivariate effect across athletes who either participated or not in AD education programs for the three variables included at the outset of the guiding model (i.e., legitimacy, trustworthiness, and obedience (Wilks' Lambda $_{(3, 1324)}$ = .951, p<.000; η^2_p=.049. As reported in Table 3 of the supplementary material, this multivariate effect did correspond to univariate effects for the three variables, and these univariate effects confirmed a significant main effect of anti-doping education. Compared to their counterparts, athletes who individually experienced AD educationon average reported higher levels of legitimacy, trustworthiness, and obedience.

There also was a multivariate group effect across athletes who either individually participated or not in AD education programs for mean differences in the set of social-cognitive variables (Wilks' Lambda $_{(6, 1310)}$ =.862, p<.001; η^2_p=.138). As in the MANOVA analysis concerning country blocks, there also were statistically significant univariate effects for all the variables, indicating that athletes who received individual anti-doping education, as compared to their counterparts, endorsed on average stronger attitudes, higher levels of subjective and descriptive norms, and stronger perceived behavioural control toward AD support, as well greater regret if they were not supporting AD policies.

Taken together, the findings concerning comparisons of athletes who participated in AD education programs or did not, with respect to measurement and latent invariance or to mean group differences, provide indirect and strong support to our choice of classification of countries to two different blocks, as well as to the general notion of the importance and role of AD education.

Discussion

The present study is among of the first of its kind in exploring the perceptions of legitimacy and trustworthiness of anti-doping policies, specifically how those perceptions are

associated with intentions to support anti-doping policies in a large sample of competitive elite athletes from six countries. To this goal, we integrated three theoretical frameworks, two deriving from policy-support research and identified the role of perceived policy legitimacy (Tyler, 2006; Tyler & Huo, 2002) and perceived trustworthiness of organizations (Mayer et al., 1995) as an explanatory factor for policy support and another framework deriving from social cognitive theories of intention-formation and behavioural prediction (i.e., Fishbein, 2009; Fishbein & Ajzen, 2011).

With respect to the aim of the study, our hypotheses were tested in two country blocks including countries with distinct cultural characteristics and anti-doping education systems. Our results supported this choice as the measurement and model invariance was supported and significant differences were found between country blocks. These results demonstrated that comprehensive anti-doping education is positively associated with perceptions of legitimacy beliefs and highlight the important role comprehensive education can play in forming athletes beliefs about the anti-doping system. Furthermore our results indicated that athletes who had received anti-doping education revealed a more positive pattern of responses about supporting anti-doping policies social cognition as compared to those who did not. These findings highlight the important role anti-doping education programmes can play in the prevention of doping. More specifically, the present study's findings provide preliminary evidence that authorities implementing anti-doping policies anti-doping education can increase their legitimacy. Furthermore, this evidence corroborates previous research suggesting that knowledge about doping and anti-doping education can result in more adaptive responses against doping-related cognition and behavior (Ntoumanis et al., 2014). Still, a more targeted, value-based, education (Murofushi et al., 2018; Petróczi et al. 2017) would assist in the development of positive beliefs about the legitimacy and

trustworthiness of anti-doping authorities. This, in turn, would further increase the effectiveness of their educational programs.

Furthermore, our findings suggest that the perceptions of anti-doping policy legitimacy are consistently associated with policy support across countries as predicted be relevant theory (e.g., Tyler, 2006; Van der Toorn et al., 2011). In addition, they provide preliminary evidence on the generalizability of the effect of the dominant anti-doping education approaches implemented in different countries on the support of anti-doping policies. In practical terms, these findings suggest that campaigns and interventions aiming to improve anti-doping policy support among athletes should not just focus on improving perceptions of anti-doping policy legitimacy, but to also target the more specific beliefs that are pertinent to policy support and, apparently, these may vary between countries.

With respect to the proposed model, the results of the statistical analyses provide support to our hypotheses. In particular, all proximal to intentions social cognitive variables of the study were significantly associated with stronger intentions to support anti-doping policies in all countries. These findings are in line with theoretical predictions (Ajzen, 2012; Fishbein, 2009) and suggest that anti-doping policy support-specific social cognitive variables are systematically associated with intentions towards this behaviour across countries.

The effects of perceptions of anti-doping policy legitimacy and trustworthiness on anti-doping policy support intentions were mediated by social cognitive variables, thus, supporting our hypothesis. These findings are in line with the theoretical predictions underlying our model (e.g., Fishbein, 2009; Tyler, 2006). Taken together, these results clearly suggested that athletes who have stronger trust in anti-doping organizations are those who tend to expect greater obedience to these policies by other athletes. This normative obedience in turn at least partially contributes to these athletes' more positive and supporting views

about anti-doping policies, both in terms of personal attitudes, perceived behavioural control and social approval from significant others, as well as in terms of stronger emotional regret, should they in the future miss the opportunity of actively supporting anti-doping policies. These findings support the integrative model of behavioural prediction in the context of supporting anti-doping policies and highlight the importance of both distal (i.e., perceptions of legitimacy and trustworthiness) and proximal (i.e., attitudes, norms, PBC and regret) social cognitive variables in determining athletes' support of anti-doping policies.

In light of our findings, it is recommended that campaigns and interventions to promote support of anti-doping policies aiming to protect clean sport might benefit from targeting both perceptions of legitimacy and trustworthiness, as well as social cognitive variables. Interventions targeting social cognitive variables have been found effective in different contexts (Ajzen, 2006; Hackman, & Knowlden, 2014; Steinmetz et al., 2016), including doping (Barkoukis et al., 2016; Jalilian et al., 2011; Lucidi et al., 2017). Similarly, interventions aiming to increase perceptions of legitimacy have been developed (Mazerole et al., 2013). However, there are no such interventions targeting perceptions of legitimacy and/or decision-making variables related to support of anti-doping policies. In this respect, organisations with responsibility for anti-doping might benefit from focusing on developing awareness raising campaigns and interventions by increasing the engagement of the athletes in the testing procedures, being transparent (e.g., NADOs audits being public) and fair in anti-doping procedures (e.g., frequency of doping controls), disclosing appropriate information about testing (e.g., budget allocated to testing) to increase athletes' and ASP's perceptions of the legitimacy of the anti-doping system (Henning & Dimeo, 2018). Importantly, it seems important to place emphasis on procedural legitimacy of the anti-doping procedures (i.e, how they are implemented, do they produce fair outcomes, are they successful for keeping sport clean) and trustworthy behaviour (such as transparency or

reliability) by the responsible organizations as previous evidence has suggested that athletes accept the need for an anti-doping system (Woolway et al., 2020).

The study is not free of limitations. Firstly, the study is based on cross-sectional data and causal inferences cannot be derived or can only be quite limited. Furthermore, the complexity of the guiding model and the many variables that are part of it did not allow to test alternative models via the structural equation modelling procedure (e.g., altering or reversing the directions of the causal paths in the model). In the end, these technical reasons impose caution in the conclusions that can be drawn. The use of longitudinal data and/or experimental designs in the future would provide stronger information on the cause-and-effect associations among perceptions of legitimacy, trustworthiness, anti-doping related social cognition, and support of anti-doping policies. Secondly, in our study we did not aim to test for cultural differences; however, the study of more diverse samples and countries with different cultural backgrounds would provide more information about the generalisability of the decision-making process towards supporting clean sport (Woolway et al., 2021). Lastly, the classification of the countries in the blocks largely relied on the Gatterer et al. (2020) study which might pose concerns about the confounding effect of sampling or other methodological issues of that previous study and the potential effect of the time difference between the data collection of that previous study and that of our study. The matching of the blocks for their position on the cultural tightness scale (Uz, 2015) confirmed our classification. Nevertheless, future studies should take these considerations into account. Notwithstanding these limitations, this is the first study to investigate a process model linking perceptions of legitimacy with intentions to support anti-doping policies.

Cultural characteristics (tight vs. loose societies), albeit mainly an added conceptual layer than empirical outcome from this study, offer intriguing avenues for future research. Based on the extensive literature on cultural characteristics based on norms (and opposed to

considering values only), it is likely that anti-doping education strategies should take cultural differences into account. The present study involved athletes from European countries, yet a characteristic difference exists in the degree of tightness-looseness among them. Should the observed pattern between tightness-looseness of a country and its dominant approach to anti-doping hold in a larger sample across several countries and continents, it can have significant impact on the implementation of the ISE.

Conclusions

The findings of the study clearly demonstrated that perceptions of legitimacy and trustworthiness influence intentions towards support of anti-doping policies. This effect was invariant across European countries with different anti-doping education programmes and describes the pathway through which perceptions of legitimacy and trustworthiness can influence intentions to support anti-doping policies for clean sport. An important finding of the present study is the important role anti-doping milieu and anti-doping education plays in promoting active support of anti-doping policies for clean sport. Interventions targeting legitimacy beliefs and social cognitive variables should also take cultural characteristics into account and target the more specific beliefs that are pertinent to policy support in different countries.

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References

Ajzen, I. (2006). Behavioral interventions based on the theory of planned behavior. Available at https://people.umass.edu/aizen/pdf/tpb.intervention.pdf

Ajzen, I. (2012). The theory of planned behavior. In P. A. M. Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (Vol. 1, pp. 438–459). London, United Kingdom: SAGE.

Alm, J. (2013). *Action for good governance in international sports organisations*. Play the Game/Danish Institute for Sports Studies. Retrieved by https://www.playthegame.org/vidensbank/downloads/action-for-good-governance-in-international-sports-organisations-final-report/38a18089-001b-4b8e-8ace-ac0500d654db

Angell, M. P., Chester, N., Green, D., Somauroo, J., Whyte, G., & George, K. (2012). Anabolic steroids and cardiovascular risk. *Sports Medicine, 42*(2), 119-134.

Barkoukis, V., Kartali, K., Lazuras, L., & Tsorbatzoudis, H. (2016). Evaluation of an anti-doping intervention for adolescents: Findings from a school-based study. *Sport Management Review, 19*(1), 23-34.

Barkoukis, V., Lazuras, L., Tsorbatzoudis, H., & Rodafinos, A. (2011). Motivational and sportspersonship profiles of elite athletes in relation to doping behavior. *Psychology of Sport and Exercise, 12*(3), 205-212.

Barkoukis, V., Lazuras, L., Tsorbatzoudis, H., & Rodafinos, A. (2013). Motivational and social cognitive predictors of doping intentions in elite sports: An integrated approach. *Scandinavian Journal of Medicine & Science in Sports, 23*(5), e330-e340.

Blank, C., Gatterer, K., Overbye, M., Schobersberger, W., Streicher, B., Petróczi, A. (2021). GRADE IT – A Literacy-based Assessment tool for Generating Research-based

Assessment Data to Evidence the ImpacT of anti-doping education via athletes' capability to make the right decision, OSF. osf.io/vjtrz

Bloodworth, A., & McNamee, M. (2010). Clean Olympians? Doping and anti-doping: The views of talented young British athletes. *International Journal of Drug Policy*, *21*(4), 276-282.

Birzniece, V. (2015). Doping in sport: effects, harm and misconceptions. *Internal Medicine Journal*, *45*(3), 239-248.

Burlew, A. K., Copeland, V. C., Ahuama-Jonas, C., & Calsyn, D. A. (2013). Does cultural adaptation have a role in substance abuse treatment?. *Social Work in Public Health*, *28*(3-4), 440-460.

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling. A Multidisciplinary Journal, 9*, 233–255. doi: 10.1207/S15328007SEM0902

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155.

Colquitt, J. A., & Rodell, J. B. (2011). Justice, trust, and trustworthiness: A longitudinal analysis integrating three theoretical perspectives. *Academy of Management Journal, 54*(6), 1183-1206.

Colquitt, J. A., Scott, B. A., & LePine, J. A. (2007). Trust, trustworthiness, and trust propensity: a meta-analytic test of their unique relationships with risk taking and job performance. *Journal of Applied Psychology*, *92*(4), 909-927.

Dreiskämper, D., Pöppel, K. & Strauß, B. (2016a). Vertrauen ist gut... Entwicklung und Validierung eines Inventars zur Messung von Vertrauenswürdigkeit im Sport. *Zeitschrift für Sportpsychologie*, *23*, 1-16.

Dreiskämper, D., Pöppel, K., Westmattelmann, D., Schewe, G., & Strauss, B. (2016b). Trust processes in sport in the context of doping. In B. Blöbaum (Ed). *Trust and communication in a digitized world* (pp. 125-141). Springer, Cham.

Efverström, A., Ahmadi, N., Hoff, D., & Bäckström, Å. (2016). Anti-doping and legitimacy: an international survey of elite athletes' perceptions. *International Journal of Sport Policy and Politics*, *8*(3), 491-514.

Fishbein, M. (2009). An integrative model for behavioral prediction and its application to health promotion. In R. J. DiClemente, R. A. Crosby, & M. C. Kegler (Eds.), *Emerging theories in health promotion practice and research* (pp. 215-234). San Francisco, CA, US: Jossey-Bass.

Fishbein, M., & Ajzen, I. (2011). *Predicting and changing behavior: The reasoned action approach*. Psychology Press.

Fishbein, M., & Cappella, J. N. (2006). The role of theory in developing effective health communications. *Journal of Communication, 56*(suppl. 1), S1-S17.

Gardiner, S., Parry, J., & Robinson, S. (2017). Integrity and the corruption debate in sport: where is the integrity?. *European Sport Management Quarterly*, *17*(1), 6-23.

Gatterer, K., Gumpenberger, M., Overbye, M., Streicher, B., Schobersberger, W., & Blank, C. (2020). An evaluation of prevention initiatives by 53 national anti-doping organizations: achievements and limitations. *Journal of Sport and Health Science*, *9*(3), 228-239.

Gatterer, K., Streicher, B., Petróczi, A., Overbye, M., Schobersberger, W., Gumpenberger, M., ... & Blank, C. (2021). The status quo before the International Standard for Education: Elite adolescent athletes' perceptions of anti-doping education. *Performance Enhancement & Health*, *9*(3-4), 100200.

Gelfand, M. J., Raver, J. L., Nishii, L., Leslie, L. M., Lun, J., Lim, B. C., ... & Yamaguchi, S. (2011). Differences between tight and loose cultures: A 33-nation study. S*cience*, *332*(6033), 1100-1104.

Hackman, C. L., & Knowlden, A. P. (2014). Theory of reasoned action and theory of planned behavior-based dietary interventions in adolescents and young adults: a systematic review. *Adolescent Health, Medicine and Therapeutics*, *5*, 101-114.

Henning, A. D., & Dimeo, P. (2018). Perceptions of legitimacy, attitudes and buy-in among athlete groups: a cross-national qualitative investigation providing practical solutions. Report compiled for the World Anti-Doping Agency Social Science Research Scheme, Montreal; Canada.

Hoberman, J. (2013). How much do we (really) know about anti-doping education. *Performance Enhancement & Health*, *2*(4), 137-143.

Houlihan, B. (2004). Civil rights, doping control and the world anti-doping code. *Sport in Society*, *7*(3), 420-437.

Hu, L.T., & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling. A Multidisciplinary Journal, 6*, 1-55.

Jalilian, F., Allahverdipour, H., Moeini, B., & Moghimbeigi, A. (2011). Effectiveness of anabolic steroid preventative intervention among gym users: Applying theory of planned behavior. *Health Promotion Perspectives*, *1*(1), 32-40.

Kim, Y. Y. (2015). Finding a “home” beyond culture: The emergence of intercultural personhood in the globalizing world. *International Journal of Intercultural Relations*, *46*, 3-12.

Kim, K. H., & Spencer-Oatey, H. (2021). Metapragmatic comments on relating across cultures: Korean students' uncertainties over relating to UK academics. *Pragmatic*s, *31*(2), 198-224.

Klassen, R. M., Durksen, T. L., Al Hashmi, W., Kim, L. E., Longden, K., Metsäpelto, R. L., ... & Györi, J. G. (2018). National context and teacher characteristics: Exploring the critical non-cognitive attributes of novice teachers in four countries. *Teaching and Teacher Education*, *72*, 64-74.

Kline, R. B. (1998). *Principles and practice of structural equation modeling*. New York, NY: Guilford Press.

Lazuras, L., Barkoukis, V., Mallia, L., Lucidi, F., & Brand, R. (2017). More than a feeling: The role of anticipated regret in predicting doping intentions in adolescent athletes. *Psychology of Sport and Exercise*, *30*, 196-204.

Lazuras, L., Barkoukis, V., & Tsorbatzoudis, H. (2015). Toward an integrative model of doping use: an empirical study with adolescent athletes. *Journal of Sport and Exercise Psychology*, *37*(1), 37-50.

Lucidi, F., Mallia, L., Alivernini, F., Chirico, A., Manganelli, S., Galli, F., ... & Zelli, A. (2017). The effectiveness of a new school-based media literacy intervention on adolescents' doping attitudes and supplements use. *Frontiers in Psychology*, *8*, 749.

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1*(2), 130.

Marsh, H. W., Hau, K.-T., & Wen, Z. (2004). Structural equation modeling: a modeling latent growth curves with incomplete data using different types of structural equation modeling and multilevel software. *Structural Equation Modeling. A Multidisciplinary Journal, 11*, 452–483. doi: 10.1207/s15328007sem1103

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review*, *20*(3), 709-734.

Mazerolle, L., Antrobus, E., Bennett, S., & Tyler, T. R. (2013). Shaping citizen perceptions of police legitimacy: A randomized field trial of procedural justice. *Criminology,51*(1), 33-63.

Moshagen, M., & Erdfelder, E. (2016). A new strategy for testing structural equation models. *Structural Equation Modeling: A Multidisciplinary Journal*, *23*(1), 54-60.

Muthen, L. K, & Muthen, B. O. (2012). *Mplus User's Guide*. Muthen & Muthen: Los Angeles, CA.

Murofushi, Y., Kawata, Y., Kamimura, A., Hirosawa, M., & Shibata, N. (2018). Impact of anti-doping education and doping control experience on anti-doping knowledge in Japanese university athletes: a cross-sectional study. *Substance Abuse Treatment, Prevention, and Policy*, *13*(1), 1-15.

Ntoumanis, N., Barkoukis, V., Gucciardi, D. F., & Chan, D. K. C. (2017). Linking coach interpersonal style with athlete doping intentions and doping use: a prospective study. *Journal of Sport and Exercise Psychology*, *39*(3), 188-198.

Ntoumanis, N., Ng, J. Y., Barkoukis, V., & Backhouse, S. (2014). Personal and psychosocial predictors of doping use in physical activity settings: a meta-analysis. *Sports Medicine*, *44*(11), 1603-1624.

Overbye, M. (2016). Doping control in sport: An investigation of how elite athletes perceive and trust the functioning of the doping testing system in their sport. *Sport Management Review*, *19*(1), 6-22.

Oyserman, D., & Lee, S. W. (2008). Does culture influence what and how we think? Effects of priming individualism and collectivism. *Psychological Bulletin*, *134*(2), 311.

Petroczi. A., & Bachman. Z. (2017). WADA Outreach Centre Evaluation: 2016 Summer Olympic Games, Rio de Janeiro [confidential report submitted to WADA in February 2017], Montreal; Canada.

Petroczi. A., & Bachman. Z. (2020). WADA Outreach Centre Evaluation: 2020 Winter Youth Olympic Games, Lausanne [confidential report submitted to WADA in April 2020], Montreal; Canada.

Petróczi, A., Heyes, A., Thrower, S., Martinelli, L., Backhouse, S.H., Boardley, I.D., the RESPECT Consortium. (2021). Understanding and building clean(er) sport together: Community based participatory research with elite athletes and anti-doping organisations from five European countries. *Psychology of Sport & Exercise*, https://doi.org/10.1016/j.psychsport.2021.101932

Petróczi, A., Norman, P., & Brueckner, S. (2017). Can we better integrate the role of anti-doping in sports and society? A psychological approach to contemporary value-based prevention. In O. Rabin & Y. Pitsiladis (Eds).Acute topics in anti-doping (Vol. 62, pp. 160-176). Basel: Karger Publishers.

Peyton, K., Sierra-Arévalo, M., & Rand, D. G. (2019). A field experiment on community policing and police legitimacy. *Proceedings of the National Academy of Sciences*, *116*(40), 19894-19898.

Pöppel, K. (2021). Efficient Ways to Combat Doping in a Sports Education Context!? A Systematic Review on Doping Prevention Measures Focusing on Young Age Groups. *Frontiers in Sports and Active Living*, *3*.

Putnick, D. L., & Bornstein, M. H. (2016). Measurement invariance conventions and reporting: The state of the art and future directions for psychological research. *Developmental Review*, *41*, 71-90. doi: 10.1016/j.dr.2016.06.004

Qvarfordt, A., Ahmadi, N., Bäckström, Å., & Hoff, D. (2021). Limitations and duties: elite athletes' perceptions of compliance with anti-doping rules. *Sport in Society*, *24*(4), 551-570.

Shelley, J., Thrower, S. N., & Petróczi, A. (2021). Racing clean in a tainted world: A qualitative exploration of the experiences and views of clean British elite distance runners on doping and anti-doping. *Frontiers in Psychology*, *12*.

Sipavičiūtė, B., Šukys, S., & Dumčienė, A. (2020). Doping Prevention in Sport: Overview of Anti-Doping Education Programmes. *Baltic Journal of Sport and Health Sciences*, *2*(117).

Solberg, H. A., Hanstad, D. V., & Thøring, T. A. (2010). Doping in elite sport-do the fans care? Public opinion on the consequences of doping scandals. *International Journal of Sports Marketing and Sponsorship*, *11*(3), 2-16.

Steinka-Fry, K. T., Tanner-Smith, E. E., Dakof, G. A., & Henderson, C. (2017). Culturally sensitive substance use treatment for racial/ethnic minority youth: A meta-analytic review. *Journal of Substance Abuse Treatment*, *75*, 22-37.

Steinmetz, H., Knappstein, M., Ajzen, I., Schmidt, P., & Kabst, R. (2016). How effective are behavior change interventions based on the theory of planned behavior? *Zeitschrift für Psychologie*, *224*, 216-233.

Tyler, T. R. (2001). Public trust and confidence in legal authorities: What do majority and minority group members want from the law and legal institutions? *Behavioral Sciences & the Law*, *19*(2), 215-235.

Tyler, T. R. (2006). Psychological perspectives on legitimacy and legitimation. *Annual Review of Psychology*,*57*, 375-400.

Tyler, T. R., & Huo, Y. (2002). *Trust in the law: Encouraging public cooperation with the police and courts through*. New York: Russell Sage Foundation.

United States Anti-Doping Agency. (2017). Athlete Perceptions Survey. Retrieved from https://www.usada.org/athlete-perceptions-survey/.

Uskul, A. K., & Oyserman, D. (2010). When message-frame fits salient cultural-frame, messages feel more persuasive. *Psychology and Health*, *25*(3), 321-337.

Uz, I. (2015). The index of cultural tightness and looseness among 68 countries. *Journal of Cross-Cultural Psychology*, *46*(3), 319-335.

Van der Toorn, J., Tyler, T. R., & Jost, J. T. (2011). More than fair: Outcome dependence, system justification, and the perceived legitimacy of authority figures. *Journal of Experimental Social Psychology*, *47*(1), 127-138.

Westaby, J. D. (2003, August). The ingtegrative reason model and employee turnover: New links in behavioural intention modelling. In *Academy of Management Proceedings* (Vol. 2003, No. 1, pp. G1-G6). Briarcliff Manor, NY: Academy of Management.

Westaby, J. D., Probst, T. M., & Lee, B. C. (2010). Leadership decision-making: A behavioral reasoning theory analysis. *The Leadership Quarterly*, *21*(3), 481-495.

Woolf, J. J. R. (2020). An examination of anti-doping education initiatives from an educational perspective: Insights and recommendations for improved educational design. *Performance Enhancement & Health*, 100178.

Woolway, T., Elbe, A. M., Barkoukis, V., Bingham, K., Bochaver, K., Bondarev, D., ... & Petróczi, A. (2021). One does not fit all: European study shows significant differences in value-priorities in clean sport. *Frontiers in Sports and Active Living*, *3*, 99.

Woolway, T., Lazuras, L., Barkoukis, V., & Petróczi, A. (2020). “Doing what is right and doing it right”: a mapping review of athletes' perception of anti-doping legitimacy. *International Journal of Drug Policy*, *84*, 102865.

World Anti-Doping Agency (2021). *The World Anti-Doping Code*. Retrieved from https://www.wada-ama.org/sites/default/files/resources/files/2021_wada_code.pdf

Zelditch, M., & Walker, H. A. (2003). The legitimacy of regimes. In S. R. Thye & J. Skvoretz (Eds). *Power and status: Advances in group processes* (Vol 20, pp. 217-249). Greenwich, CT: JAI Press.

Table 1. *Items Descriptive statistics and factor loadings of Multigroup Confirmative Factor Analysis*

	Mean (SD)		Internal Consistency reliability (Cronbach's Alpha)		Skewness		Standardized Factor Loadings	
Construct /Item	**Block 1**	**Block 2**	**Block 1**	**Block 2**	**Block 1**	**Block 2**	**Block 1**	**Block 2**
Legitimacy			.71	.72				
LEG1 (proper)	3.96 (1.00)	3.91 (.91)			-1.12	-.95	.596	.596
LEG2 (appropriate)	3.06 (1.20)	3.17 (1.12)			-.19	-.19	.761	.761
LEG3 (Just)	2.75 (1.38)	2.99 (1.17)			.12	-.10	.707	.707
Trustworthiness			.89	.86				
TRUST1 (ability)	3.20 (1.06)	3.45 (.97)			-.42	-.46	.604	.604
TRUST2 (benevolence)	3.51 (1.04)	3.61 (.95)			-.40	-.60	.667	.667
TRUST3 (integrity)	3.39 (1.12)	3.20 (1.07)			-.38	-.25	.728	.728
TRUST 4(ability)	3.01 (1.09)	3.00 (1.12)			.03	-.03	.698	.698
TRUST5 (benevolence)	3.98 (.93))	4.06 (.86))			-.87	-.97	.533	.533
TRUST6 (integrity)	3.45 (1.02)	3.33 (1.00)			-.49	-.38	.681	.681

TRUST7 (ability)	3.17 (.93)	3.38 (.91)			-.14	-.30	.624	.624
TRUST8 (benevolence)	3.03 (1.05)	3.52 (.92))			.03	-.32	.650	.650
TRUST9 (integrity)	3.65 (.98)	3.71 (.86)			-.71	-.71	.631	.631
Obedience			.86	.88				
OBED1	4.29 (.83)	4.16 (.89)			-1.58	-1.25	.694	.694
OBED2	3.76 (.82)	4.13 (.85)			-.17	-.99	.719	.719
OBED3	4.29 (.68)	4.02 (.88)			-1.00	-.97	.817	.817
OBED4	4.21 (.77)	3.97 (.90)			-1.01	-1.00	.797	.797
OBED5	3.90 (.97)	3.70 (1.00)			-.84	-.67	.636	.636
Attitudes			.91	.95				
ATT1	3.15 (1.66)	2.63 (1.76)			.56	.83	.783	.783
ATT2	2.88 (1.30)	2.58 (1.59)			.02	.72	.787	.787
ATT3	2.74 (1.62)	2.59 (1.55)			.76	.72	.782	.782
ATT4	2.17 (1.37)	2.24 (1.46)			1.20	1.09	.850	.850
ATT5	2.26 (1.22)	2.32 (1.49)			.83	1.03	.876	.876
ATT6	2.33 (1.33)	2.20 (1.44)			.69	1.15	.894	.894
ATT7	2.19 (1.30)	2.20 (1.46)			.89	1.17	.877	.877

ATT8	2.24 (1.32)	2.10 (1.49)			.92	1.36	.886	.886
Subjective Norms			.86	.87				
SN1	4.63 (2.00)	5.15 (1.67)			-.47	-.65	.822	.822
SN2	5.37 (1.62)	5.54 (1.55)			-.97	-.99	.854	.854
SN3	5.39 (1.60)	5.69 (1.50)			-.93	-1.15	.818	.818
Descriptive Norms			.87	.92				
DN1	73.77 (29.55)	60.69 (31.87)			-1.20	-.35	.806	.806
DN2	73.89 (25.79)	55.65 (31.79)			-1.31	-.09	.968	.968
DN3	64.71 (25.18)	48.67 (31.53)			-.69	.07	.906	.906
Perceived Behaviour Control			.90	.89				
PBC1	3.08 (1.88)	4.62 (1.83)			.68	-.39	.877	.877
PBC2	4.11 (1.77)	5.30 (1.65)			.07	-.74	.797	.797
PNC3	3.43 (1.83)	4.81 (1.80)			.52	-.43	.926	.926
Regret			.96	.93				
REGR1	2.97 (2.20)	4.64 (1.83)			.71	-.33	.859	.859
REGR2	3.09 (2.31)	4.45 (1.98)			.62	-.31	.926	.926
REGR3	2.73 (2.04)	4.19 (1.91)			.95	-.13	.909	.909

REGR4	2.77 (2.13)	4.10 (2.00)			.86	-.03	.875	.875
Intention			.93	.91				
INT1	4.37 (1.85)	5.25 (1.69)			-.14	-.75	.844	.844
INT2	4.46 (1.78)	4.92 (1.83)			-.31	-.50	.918	.918
INT3	4.52 (1.85)	4.93 (1.85)			-.30	-.54	.900	.900

Table 2. *Multigroup analyses*

	Model Tested	DF	χ^2	SRMS	RMSEA (C.I.)	CFI	Δ CFI	Δ RMSEA
Step 1 (Measurement Invariance)	M0a- Baseline Model Block 1	733	900.92	.08	.04 (.03-.04)	.89		
	M0b-Baseline model Block 2	733	1899.52	.05	.04 (.04-.04)	.92		
	M1- Configural Invariance (Baseline Model)	1466	2627.439	.06	.04 (.03-.04)	.92		
	M2- Metric Invariance (i.e. FL invariance)*	1507	2688.306	.07	.04 (.03-.04)	.92	.00	.00

	M3- Scalar Invariance (i.e. FL + INT invariance)*	1548	2890.490	.08	.04 (.03-.04)	.91	.01	.00
	M4- Residual Invariance (i.e. FL+INT+ Uniq invariance)*	1589	2941.210	.08	.04 (.03-.04)	.91	.01	.00
Step 2 (Relations invariance)	M5- Measurement Invariance with free model paths and covariances	1613	3084.28	.10	.04 (.04-.04)	.90		
	M6- Model covariances Invariance **	1624	3119.38	.10	.04 (.04-.04)	.90	.01	.00
	M7- Model covariances and paths invariance **	1637	3153.12	.12	.04 (.04-.04)	.90	.01	.00

Notes: In order to establish the invariance: Δ CFI <=.01 and Δ RMSEA<=.015; FL= item factor loadings; INT= item intercepts; Uniq= item uniquenesses (i.e. errors).

*the Δ index comparisons are made with respect to the baseline model (M1).

**the Δ index comparisons are made with respect to M5.

Table 3. Estimates of the covariances among key latent variables of the model

Key latent variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1. Legitimacy	-						
2. Trustworthiness	.96**						
3. Attitudes	-	-	-				
4. Subjective Norms	-	-	.43**	-			
5. Descriptive Norms	-	-	.32**	.25**	-		
6. PBC	-	-	.20**	.52**	.13**	-	
7. Regret	-	-	.23**	.42**	.24**	.55**	-

Table 4. *Key variables mean across countries' blocks.*

Construct	Mean (SD)		F (*p* value)	Partial Eta Squared
	Block 1	**Block 2**		
Legitimacy	3.26 (.96)	3.35 (.86	1.92 (p=.166)	.001
Trustworthiness	3.38 (.74)	3.47 (.67)	2.75 (p=.097)	.002
Obedience	4.09 (.59)	4.00 (.73)	2.57 (p=.109)	.002
Attitudes	5.50 (1.10)	5.64 (1.33)	1.81 (p=.179)	.001
Subjective Norms	5.13 (1.30)	5.46 (1.40)	7.91 (p=.005)	.006
Descriptive Norms	70.79 (23.91)	55.01 (29.50)	44.54 (p<.001)	.033
PBC	3.54 (1.67)	4.91 (1.60)	108.48 (p<.001)	.076
Regret	2.89 (2.04)	4.35 (1.76)	97.93 (p<.001)	.069
Intention	4.45 (1.71)	5.04 (1.65)	18.95 (p<.001)	.014

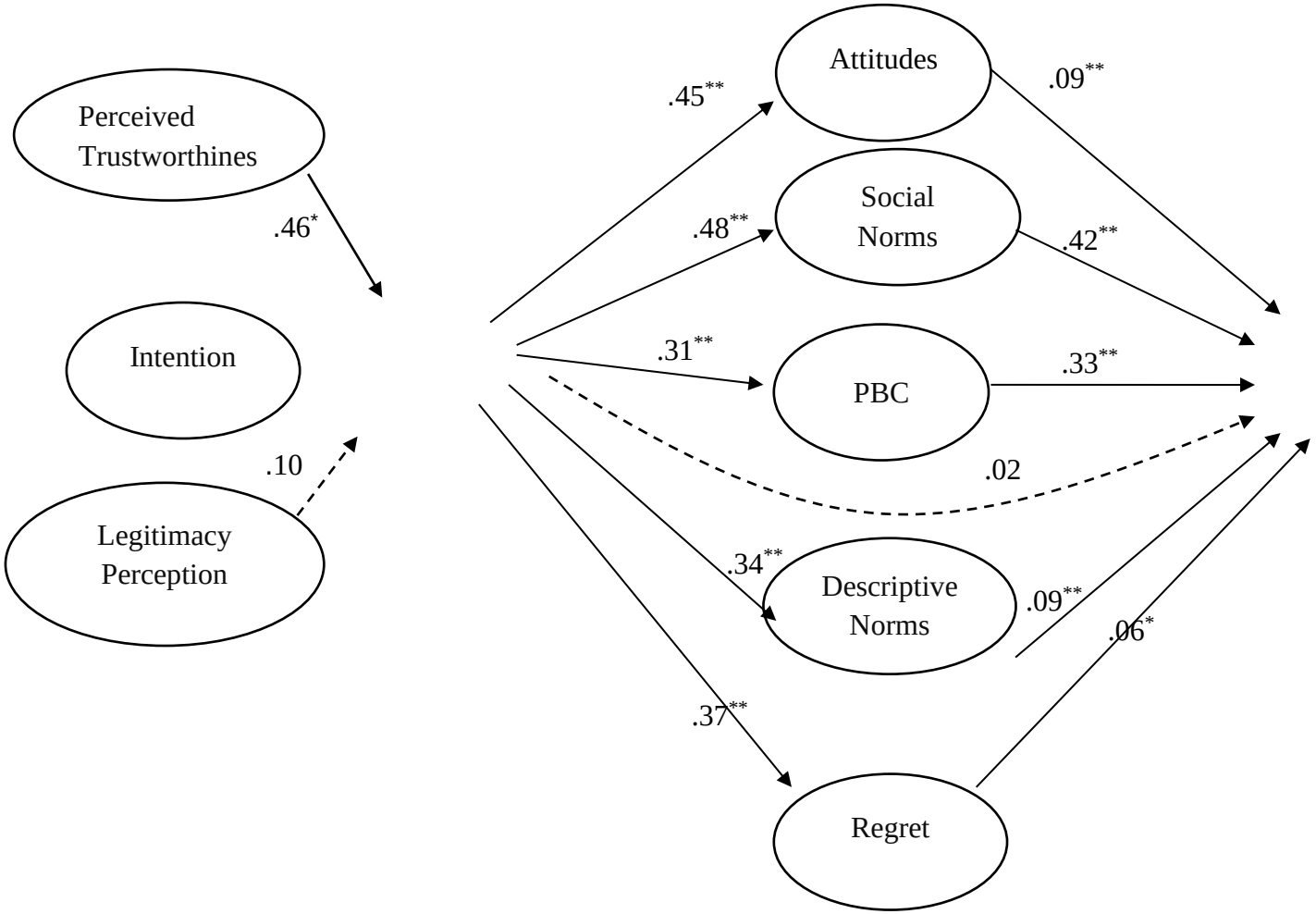


Figure 1. Path model linking perceptions of legitimacy to intentions to support clean sport

SUPPLEMENTARY MATERIAL

Supplementary Table 1. Multigroup analyses for past anti-doping education (Yes Vs No)

	Model Tested	DF	χ^2	SRMS	RMSEA (C.I.)	CFI	Δ CFI	Δ RMSEA
Step 1 (Measurement Invariance)	M0a- Baseline Model- YES Education Sample	733	1353.964	.06	.03(.03-.04)	.93		
	M0b-Baseline model- NO Education Sample	733	1194.150	.06	.04 (.03-.04)	.92		
	M1- Configural Invariance (Baseline Model)	1466	2551.427	.06	.03 (.03-.04)	.93		
	M2- Metric Invariance (i.e. FL invariance) *	1507	2631.842	.07	.03 (.03-.04)	.93	.00	.00
	M3- Scalar Invariance (i.e. FL + INT invariance) *	1548	2795.914	.08	.04 (.03-.04)	.92	.01	.01
	M4- Residual Invariance (i.e. FL+INT+ Uniq invariance) *	1589	2881.553	.08	.04 (.03-.04)	.91	.02	.01
	M4b-Partial§ Residual Invariance (i.e. FL+INT+ Uniq invariance) *	1588	2881.553	.08	.04 (.03-.04)	.92	.01	.01
Step 2 (Relations invariance)	M5- Measurement Invariance with free model paths and covariances	1612	2986.796	.09	.04 (.04-.04)	.91		
	M6- Model covariances Invariance **	1624	2999.373	.09	.04 (.04-.04)	.91	.01	.00
	M7- Model covariances and paths invariance **	1637	3025.880	.10	.04 (.04-.04)	.91	.00	.00

Notes: In order to establish the invariance: Δ CFI <=.01 and Δ RMSEA<=.015; FL= item factor loadings; INT= item intercepts; Uniq= item uniquenesses (i.e. errors).

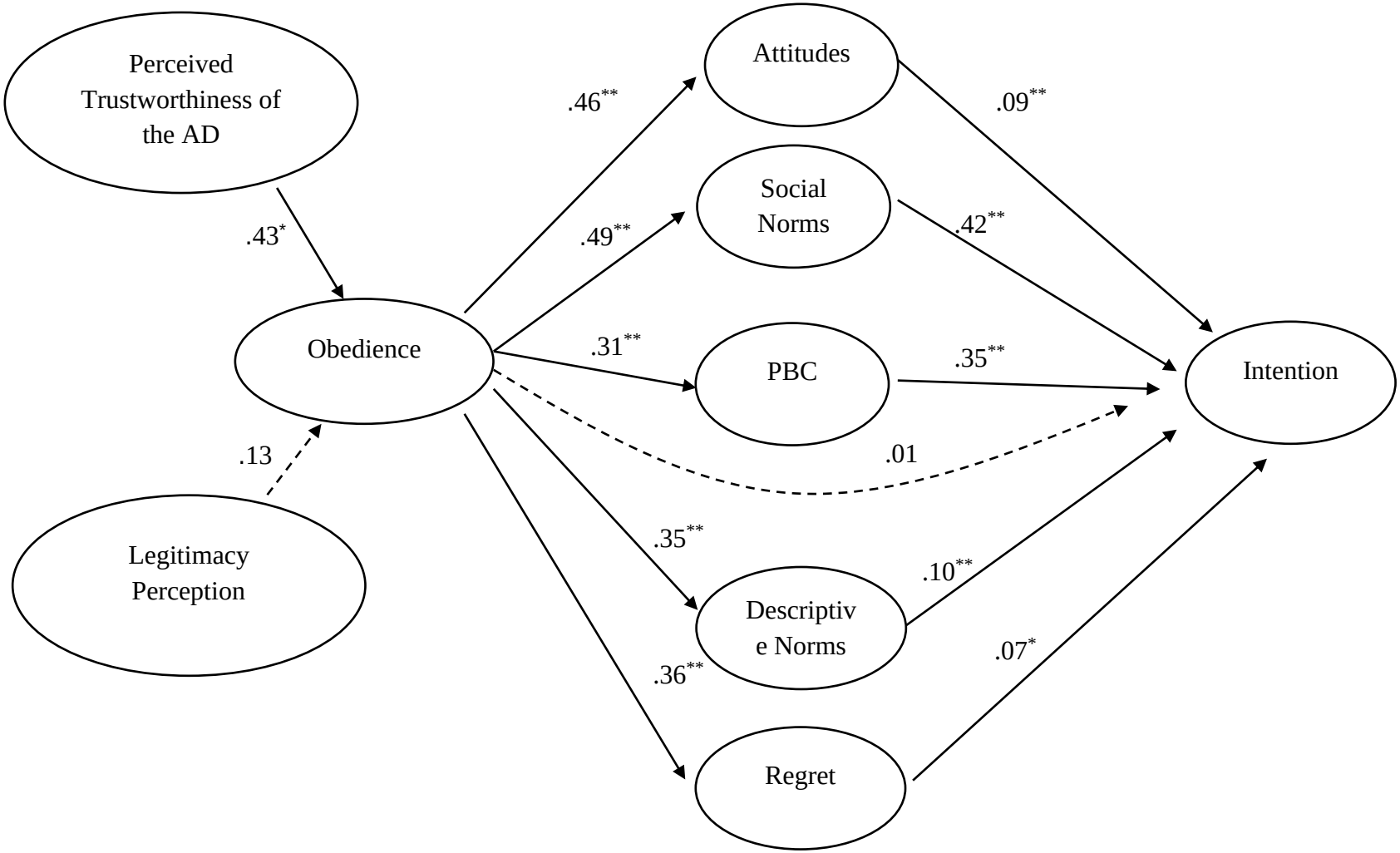
*the Δ index comparisons are made with respect to the baseline model (M1).

**the Δ index comparisons are made with respect to M5.

§According to the modification indices the residual variance of the item 2 of the attitudes scale was freely estimated across the two samples.

Supplementary Table 2. Estimates of the covariances among key latent variables of the model across athletes who received anti-doping education and those who did not.

Key latent variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1. Legitimacy	-						
2. Trustworthiness	.95**						
3. Attitudes	-	-	-				
4. Subjective Norms	-	-	.44**	-			
5. Descriptive Norms	-	-	.32**	.24**	-		
6. PBC	-	-	.21**	.51**	.13**	-	
7. Regret	-	-	.23**	.41**	.24**	.55**	-


Perceived Trustworthiness of the AD
Attitudes
Social Norms
Obedience
PBC
Intention
Legitimacy Perception
Descriptiv e Norms
Regret
.46**
.09**
.43*
.49**
.42**
.31**
.35**
.13
.01
.35**
.10**
.36**
.07*

Supplementary Figure 1. Model paths estimates across athletes in countries with robust anti-doping education systems and those in other countries.

Supplementary Table 3. Key variables means across athletes who received anti-doping education and those who did not.

	Mean (SD)		F (*p* value)	Partial Eta Squared
Construct	YES	NO		
Legitimacy	3.47 (.88)	3.15 (.82)	43.51 (p<.001)	.032
Trustworthiness	3.58 (.87)	3.28 (.60)	64.16 (p<.001)	.047
Obedience	4.09 (.66)	3.90 (.77)	22.28 (p<.001)	.017
Attitudes	5.82 (1.27)	5.34 (1.28)	43.42 (p<.001)	.032
Subjective Norms	5.59 (1.42)	5.15 (1.38)	29.62 (p<.001)	.022
Descriptive Norms	74.73 (27.91)	45.31 (27.64)	151.77(p<.001)	.105
Perceived Behaviour Control	5.00 (1.64)	4.32 (1.61)	54.04 (p<.001)	.040
Regret	4.36 (1.94)	3.86 (1.94)	22.20(p<.001)	.017
Intention	5.30 (1.63)	4.44 (1.59)	88.88 (p<.001)	.064

Supplementary Table 4. Correlations among the key variables of the study

Key variables	1	2	3	4	5	6	7	8
1. Legitimacy	-							
2. Trustworthiness	.76**	-						
3.Obedience	.41**	.45**	-					
4. Attitudes	.36**	.32**	.40**	-				
5. Subjective Norms	.34**	.36**	.40**	.52**	-			
6. Descriptive Norms	.45**	.40**	.29**	.43**	.36**	-		
7. PBC	.29**	.36**	.27**	.33**	.55**	.25**	-	
8. Regret	.33**	.38**	.32**	.37**	.48**	.36**	*.57***	-
9. Intention	.35**	.37**	.37**	.50**	.68**	.39**	.63**	.52**