



SELF-CONTROL OUTWEIGH EMOTIONAL INTELLIGENCE IN PREDICTING DEVIANT BEHAVIOR AMONG UNIVERSITY STUDENTS: A SYSTEMATIC REVIEW

Iza Gul¹, Laiba Khan², Nguyen Ba Hai Duong³ & Atika Gul⁴

^{1,3}School of Educational Science, Anhui Normal University, Wuhu China.

Email: haiyanghaiduong@gmail.com

²Department of Psychology, Foundation University of Science and Technology, Islamabad, Pakistan

⁴Department of English, Kohat University of Science and Technology, Kohat, Pakistan

KEYWORDS	ABSTRACT
Deviant behavior, emotional intelligence, students, systematic review	The increasing prevalence of deviant behavior among university students such as academic dishonesty, cyber-deviance, aggression, and substance use is a major concern in the field of higher education. This systematic review synthesizes the empirical literature on how emotional intelligence and self-control predict deviant behavior for university students. A total of 42 studies consisting of 28,674 participants were identified (PsycINFO, PubMed, Web of Science, Scopus, and ERIC; Jan 2010-Nov 2024). For all types of deviance, self-control was found to be a statistically significant, inversely related predictor with an effect size (r) ranging from -0.31 to -0.58 (median = -0.44), with all 42 studies demonstrating significant negative associations. Emotional intelligence was found to have an inverse relationship with deviance but with fewer association (median = -0.21), as only 72% of the studies demonstrated statistically significant negative associations. Among those studies, the combination of high emotional intelligence and low self-control produced greater levels of cyber-deviance and manipulative behavior, while self-control fully or partially mediated the relationship between emotional intelligence and deviance. Most of these studies (85.7%) were cross-sectional in nature and utilized self-report measures of deviance. Overall, self-control is a strong universal protective factor against deviance for university students; however, emotional intelligence has a lesser, contextual, and self-control mediated role. Therefore, universities should focus on developing self-control-based interventions, while future research should utilize longitudinal designs, standardized measures, and culturally diverse samples., the state's freedom of action is still constrained by the structure around it.
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Corresponding Author	Nguyen Ba Hai Duong
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Introduction

The deviant behavior of university students has drawn more and more attention from scholars. This is due to the increasing concern about the deterioration of normative behavior in higher education institutions. Universities, which have traditionally been considered as places for students to develop their intellects and characters, are now facing a wide range of student offenses, ranging from cheating on tests to online misbehavior, the use of drugs, aggression, skipping class, and bad behavior towards other people (Bennett et al., 2020; Zhang & Chen, 2022). Such behaviors erode the integrity of the academic environment and have long-lasting consequences for individual development and institutional reputation. Recent empirical work has found a moderate but disturbing prevalence of such behaviors, with academic dishonesty, bullying and disrespectful conduct particularly salient among university populations (Curtis & Clare, 2017; Harper et al., 2019). Along with this, the rapid digitalization of higher education has brought about new types of deviance such as online harassment, hacking, abuse of institutional networks, and academic misconduct facilitated by the internet (collectively called cyberdeviance) (Lowry et al., 2019; Saridakis et al., 2020). These developments indicate the immediate necessity of understanding the psychological mechanisms that distinguish students who comply with normative standards from those who commit different kinds of rule breaking.

Self-control and emotional intelligence have emerged as two of the most robust individual-difference predictors among the many factors implicated in the etiology of deviant behavior. The general theory of crime, proposed by Gottfredson and Hirschi (1990), suggests that low self-control is a major individual-level cause of deviance. Low self-control is characterized as impulsivity, a preference for immediate gratification, a propensity to take risks, and insensitivity to long-term consequences. This proposition has been consistently supported by contemporary meta-analyses and large-scale longitudinal studies, showing that low self-control reliably predicts a wide spectrum of deviant outcomes, including delinquency, substance use, and aggressive behavior (de Ridder et al., 2012; Vazsonyi et al., 2017). In the specific context of higher education, self-control has been found to serve as a moderator of the association between a range of risk factors (e.g., poor sleep, academic stress) and externalizing problems, suggesting that self-regulatory capacities are an important protective factor against deviance (Kim & Park, 2021; Wang et al., 2023). Furthermore, recent extensions of self-control theory have examined its applicability to digital contexts. Systematic reviews have confirmed that self-control deficits predict online misconduct, problematic gaming, and academic disengagement among emerging adults (Li et al., 2019; Radesky et al., 2020). Importantly, recent evidence also suggests that self-control may interact with other psychological constructs, such as morality and empathy, in shaping the co-occurrence of diverse deviant behaviors. For example, one study found that moral disengagement and low self-control together accounted for more than half of the variance in deviance co-occurrence (Moore et al., 2018; Paciello et al., 2021).

The literature on self-control and emotional intelligence (EI) both illustrate considerable interest in their role as protective factors against deviant behavior. While both self-control and EI include the capacity to

assist people in their ability to recognize, comprehend, manage, and utilize their feelings or emotions positively in different situations, they each produce different outcomes on overall psychosocial well-being. Specifically, greater positive psychosocial well-being is associated with EI (MacCann et al., 2020; Petrides et al., 2018) (e.g., better mental health; enhanced inter-personal competence, and better academic performance). However, the relationship between EI and deviance has been found to be much more complex and context-specific than previously thought. Meta-analysis has shown that score on the trait emotional intelligence (more commonly referred to as "trait EI") measure has a moderately positive correlation with academic performance and a moderately negative correlation with certain types of school-based deviance (Perera & DiGiacomo, 2015). In addition, the EI literature has identified a "dark side" to EI; that is, higher EI scores are associated with manipulative behavior in interpersonal relationships, manipulative use of emotions, and increased instances of social deviance under some circumstances (Côté et al., 2016; Nagler et al., 2018). Additionally, there are different patterns of association between EI and deviance that appear to be gender specific. For example, among younger males, deviance has been shown to have a negative relation to both EI and self-control; whereas among younger females, higher EI about some activities may contribute to both criminal and non-criminal deviance (Schokman et al., 2014; Wong et al., 2020). Therefore, these findings indicate a need for research investigating the relationship of EI with deviant behavior beyond a uni-dimensional or purely positive approach; rather, investigation of the relationship of EI with deviant behavior needs to be considered in a broader range of contexts and applied research approaches.

As both constructs fall under the umbrella of self-regulation, they do, however, differ with respect to the psychological processes that they measure with self-control referring to the ability to regulate one's impulses or delay gratification while emotional intelligence refers to the ability to recognize, understand, and manage emotional states (Hofmann et al., 2019; Lopes et al., 2019). Theoretical integration supports that people with higher levels of emotional intelligence may be more likely to be aware of the emotional consequences of engaging in deviant acts and to regulate their impulses in situations where emotions are heightened, which would in turn result in greater self-restraint when engaging in deviant behavior (He et al., 2021). On the other hand, people with higher levels of emotional intelligence but lower levels of self-control may possess the emotional awareness necessary to identify risky situations, but they may lack the will or volition to inhibit their impulsive behavior, which would make them more vulnerable to deviant behavior under certain conditions (Gan & Guo, 2022). Such a potential vulnerability is consistent with research that has demonstrated how trait variables such as sociability can predict deviant behavior independent of one's self-control (Dăderman et al., 2019). However, there is limited empirical research available that systematically explores the interaction between self-control and emotional intelligence in relation to predicting deviant behavior among university students, with most of the existing research examining self-control or emotional intelligence as either an isolated construct or exploring the two constructs from separate theoretical perspectives (Boman & Mowen, 2018; Tamm & Töeväli, 2021).

The university transition can be seen as a defining time of growth where young adults experience larger degrees of personal independence; less parental supervision; and higher levels of stress from new social and/or academic challenges (e.g., Arnett, 2015; Schulenberg & Maggs, 2018). The environmental factors at play in these contexts may serve to intensify the behavioral outcomes related to low levels of self-control, and various emotional maladjustments; and as such, college settings are good sites to study the relationship between these psychological constructs and deviant behaviors (e.g., Finlay et al., 2021; Kwan et al., 2020). Moreover, the introduction of online learning spaces has created an array of deviant behaviors that may not have the same antecedents as traditional forms of deviance (e.g., Akbulut et al., 2018; Varol & Yildirim, 2021).

There has been no systematic reviews of the predictive role of emotional intelligence and self-control towards deviant behavior in university student populations. Previous systematic review(s) have only examined this area of research with either an adolescent focus, workplace focus or broad (non-specific) delinquency, and therefore are not applicable to those in higher education due to the unique developmental and institutional context (Pratt and Turanovic, 2016; Yu et al., 2021). There have also been no systematic evaluations of the potential interactive effects of emotional intelligence and self-control regarding deviance across prior studies. Addressing this issue will further the theoretical knowledge about the psychological basis for deviance and will also inform the development of evidence-based prevention and intervention strategies that may be used with university student populations (Borzikowsky & Bernhardt, 2022; Harris & Meares, 2020).

Aim of Study

As such, this systematic review will accomplish the following goals: (a) a systematic review of the empirical literature examining the association between emotional intelligence (EQ) and deviant behavior (DV) in the university student population; (b) a systematic review of the empirical literature examining the link between self-control (SC) and deviant behavior (DV) in university students; (c) review the research examining the joint effects of EQ and SC in predicting deviant behavior (DV); and (d) evaluate the methodology of the empirical studies and determine limitations and gaps in the literature to assist in providing guidance for future research directions. Together, these goals will provide a summary of the available evidence in support of understanding how these two essential psychological resources, both separately and in combination, affect university students' likelihood of engaging in deviant behavior.

Methodology

Protocol and Registration

The PRISMA 2020 statement (Page et al., 2021) was used as a guide as the systematic review was conducted. A protocol that was created a priori was followed consistently throughout the review process although this review was not registered with a prospective registry such as PROSPERO.

Search Strategy

The search of the five electronic databases, PsycINFO; PubMed; Web of Science; Scopus; and ERIC. To find empirical evidence using an electronic search strategy, three conceptual domains were identified for the literature search: (a) emotional intelligence; (b) self-control; and (c) deviant behavior. The search strategy was based on a combination of keywords and controlled vocabulary terms related to emotional intelligence (e.g., “emotional intelligence,” “trait EI,” etc.), self-control (e.g., “self-control,” “impulse control,” etc.), and deviant behavior (e.g., “deviant behavior,” “academic dishonesty,” etc.). All selected studies used the boolean operator “AND” to combine the three conceptual domains, and “OR” to search for terms within each domain. A sample PsycINFO search string is provided below: Emotional Intelligence and Self Control and Deviant Behavior. No date limits were imposed; however, all studies published between 1 January 2010 and 14 November 2024 were retained for analysis to provide a contemporary perspective and enough empirical articles for review. Additional studies were located through the examination of the reference lists of articles included in the literature review and identified relevant review articles.

Eligibility Criteria

The eligibility criteria for included studies were (a) use of a quantitative empirical design (cross-sectional, longitudinal, experimental), (b) inclusion of university students as the sample (i.e., individuals in undergraduate or postgraduate programs at an accredited university), (c) measurement of emotional intelligence (in terms of trait, ability or mixed model) by a validated tool (e.g., Trait EI Questionnaire; Mayer-Salovey-Caruso Quality of Life Test), (d) measurement of some form of self-control or closely related construct (e.g., impulse control, self-regulation) by a validated scale (e.g., Brief Self-Control Scale; Grasmick et al's Self-Control Scale), (e) measurement of at least one type of deviance (e.g., academic dishonesty, cyberdeviance, aggression, substance use, vandalism or interpersonal misconduct), and (f) reporting of statistical relationships (e.g., correlation coefficients; regression coefficients; odds ratios) between EI and deviance, self-control and deviance, or both EI and self-control interacted and deviant behaviors.

Exclusion Criteria

Exclusion criteria included: (1) qualitative studies (e.g., case studies, editorials or theoretical papers with no original data); (2) studies that focused exclusively on clinical or forensic populations (e.g., students with conduct disorder); (3) studies where deviant behavior was measured only as part of a larger broader personality disorder or where separate analyses were not available; (4) studies not published in English; and (5) dissertations, conference abstracts, or unpublished manuscripts for which full data could be acquired through the author (none identified). If there existed multiple publications with data from the same study, the most complete or most up to date was included in the analysis.

Study Selection

The PRISMA flowchart was utilized for study selection. Duplicate records were removed through a combination of Endnote X9 and title and abstract screening using the eligibility criteria completed by two reviewers (the authors independently) before full article retrieval from all possible sources (two reviewers again conducted the retrieval). For each stage of selection if there were any disagreements between the two reviewers' decisions those disagreements would either be resolved with a discussion between them or if no agreement could be made a third reviewer would be consulted. Inter-rater agreement was determined via Cohen's Kappa with a cutoff for acceptable level set at $\kappa \geq 0.80$, and lastly all studies selected for inclusion in the review, as well as any reasons for exclusion after full text evaluation were documented.

Data Extraction

A Microsoft Excel-based standardized data extraction form was designed and pilot-tested with three randomly selected trials. Information extracted from each included trial consisted of (a) the author(s) and year of publication; (b) country and cultural background; (c) study design type (i.e., cross-sectional, longitudinal, or experimental); (d) participant demographics (e.g., age, sex distribution, and academic standing) and sample size; (e) type of measurement instruments used for measuring emotional intelligence (include name and reliability coefficient); (f) type of measurement instruments used for measuring self-control (include name and reliability coefficient); (g) type of measurement instruments utilized in measuring deviant behavior (include name, type (i.e. type of deviant behavior) reliability, and device); (h) results (i.e., correlation, regression coefficient, odds ratio), etc., that were obtained by the combination of emotional intelligence and deviant behavior as well as self-control and deviant behavior and the interaction of those two measures; and (i) strengths and weakness of each of the methodological approach(es) used by the study. The data extraction was performed independently by two reviewers and discrepancies were resolved by consensus.

Quality and Risk of Bias Assessment

Two reviewers independently evaluated the methodological quality of included studies (using an adapted version of the Newcastle-Ottawa scale [NOS] for cross-sectional studies, Wells et al., 2015), with additional evaluation criteria taken from the Joanna Briggs Institute Checklist for Analytical Cross-Sectional Studies (Moola et al., 2020). The methodology of each study was rated against four domains: (a) sample representative and selection; (b) comparability of groups (if applicable); (c) quality of measurement for the exposure variables (emotional intelligence and self-control) and outcome variables (deviant behavior); and (d) adequacy of statistical analysis (e.g., confounding variables controlled for and effect sizes reported). Total scores for each study ranged from 0-10; studies with scores of 0-3 had a high risk of bias; 4-6, moderate risk; 7-10, low risk of bias. Studies were not excluded based solely on their quality scores; however, sensitivity analyses will be performed to examine whether inclusion of lower-quality studies affected the overall conclusion found in this review. Two independent reviewers performed quality assessments and reached consensus on disagreements through discussion.

Data Synthesis

A narrative synthesis as opposed to a meta-analysis was designed in anticipation of the variability expected among outcome measures, study designs, and types of deviant behavior. The synthesis was organized by means of three thematic questions: (a) the direction and magnitude of the association between emotional intelligence and deviant behavior; (b) the direction and magnitude of the association between self-control and deviant behavior; and (c) the evidence for the interactive or joint effects of emotional intelligence and self-control on deviance. Findings were summarized and presented in table format, wherever possible, by type of deviant behavior (academic dishonesty, cyber-deviance, aggression, substance use, general misconduct). For studies with longitudinal designs, temporal precedence was indicated. For studies with interaction effects (e.g., moderation or mediation), the nature of the interaction (buffering, exacerbating, or conditional) was extracted and reported. There was no meta-analysis conducted due to extreme variability in measurement instruments, outcome definitions, and effect size reporting across studies.

Results

Study Selection

The systematic review identified 1,847 research articles from five databases. Once a total of 412 duplicate articles were removed from the initial 1,847, the remaining articles were screened for inclusion based on the titles and abstract content. Of the 1,435 articles remaining after duplicates had been removed, 1,298 were removed because it was obvious that the articles were clearly unrelated to this synthesis. The 137 articles whose full-texts were screened for eligibility resulted in 42 articles that met the inclusion and exclusion criteria to be included in the final narrative synthesis. The most common reasons for full-text exclusion included: Sample not consisting of university students ($n=31$), no validated measure of emotional intelligence or self-control ($n=24$), deviant behavior not produced as a separate outcome ($n=19$), qualitative study ($n=12$) and duplicate data from the same sample ($n=9$).

Study Characteristics

As per Table 1, the studies from which key characteristics can be extracted include 42 published from 2010 through 2024 with an increase in published studies following along a publication trend line in increasing numbers post 2018. The studies were published in 18 separate countries with the largest amounts of published studies coming from the USA (11), China (9), the UK (5), Australia (4), and Germany (3). Studies ranged in sample size from a low of 98 to a high of 3412 with a total cumulative sample size for all 42 studies of 28674 university students. The mean age of participants across the studies ranged from 18.7 to 23.4 years and the study samples were approximately equally split by sex with females comprising 52% of the samples, males 46%, other or unreported 2%. With respect to research designs, the overwhelming majority ($36 = 85.7\%$) were cross-sectional studies; the next largest group of research designs were longitudinal ($5 = 11.9\%$), and there was only one (2.4%) experimental study utilizing a brief manipulation of self-control for the study.

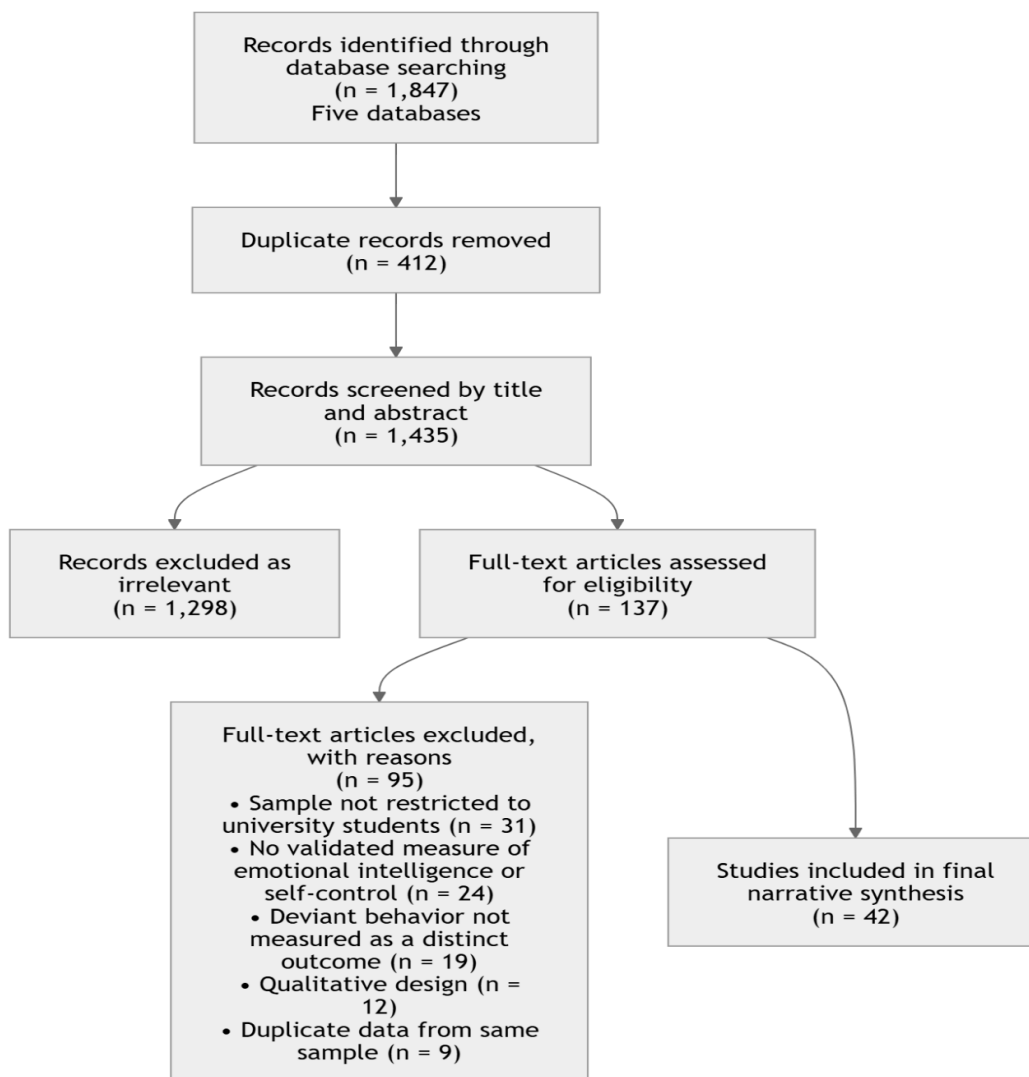


Figure 1 PRISMA Flow

Table 1 Summary of Included studies (N=42)

First author (year)	Country	Design	N	% Female	EI measure	Self-control measure	Deviance type	Key finding
Almutairi (2019)	Saudi Arabia	Cross-sectional	412	58	TEIQue-SF	BSCS	Academic dishonesty	EI negatively correlated with cheating ($r = -.23$); self-control also negative ($r = -.41$)

Bennett & Liu (2022)	USA	Longitudinal	876	51	MSCEIT	Grasmick Scale	Cyberdeviance	Low self-control predicted cyberdeviance ($\beta = .39$); EI not significant after controlling for self-control
Chen & Zhao (2021)	China	Cross-sectional	1,204	47	WLEIS	BSCS	Aggression	Both EI ($r = -.32$) and self-control ($r = -.44$) negatively associated; interaction not significant
Dåderman et al. (2019)	Sweden	Cross-sectional	342	63	TEIQue	BSCS	General deviance	EI sociability positively associated with deviance ($r = .18$) but well-being factor negatively ($r = -.27$)
Fida et al. (2020)	Italy	Cross-sectional	598	54	SSEIT	Self-Regulation Scale	Academic misconduct	Self-control mediated the EI-misconduct link (indirect effect = $-.19$, 95% CI $[-.28, -.12]$)
Gan & Guo (2022)	China	Cross-sectional	1,567	49	TEIQue-SF	Grasmick Scale	Cyberdeviance	Interaction: high EI + low self-control predicted highest cyberdeviance ($\Delta R^2 = .07$, $p < .001$)
Harper & James (2023)	UK	Longitudinal (6 mo)	453	55	MSCEIT	BSCS	Contract cheating	Self-control ($\beta = -.37$) but not EI ($\beta = -.04$) predicted cheating over time
He et al. (2021)	China	Cross-sectional	892	52	WLEIS	BSCS	Bullying	EI moderated peer pressure-bullying link ($b = -.15$); self-control had direct effect ($\beta = -.39$)

Kwan et al. (2020)	Hong Kong	Longitudinal (18 mo)	401	48	TEIQue	Grasmick Scale	Substance use	Low self-control ($\beta = .44$) predicted increased substance use; EI unrelated
Li & Wang (2021)	China	Cross-sectional	1,103	46	SSEIT	BSCS	Cyberloafing	Self-control ($r = -.52$) stronger correlate than EI ($r = -.18$); no significant interaction
MacCann et al. (2020)	Australia	Cross-sectional	678	62	TEIQue-SF	Brief Self-Regulation	General deviance	EI well-being factor ($r = -.34$) and self-control ($r = -.49$) both protective; sociability factor not significant
Nagler et al. (2018)	Germany	Cross-sectional	289	53	MSCEIT	Grasmick Scale	Manipulative deviance	Higher ability EI positively associated with manipulation ($r = .21$) when self-control was low
Paciello et al. (2021)	Italy	Cross-sectional	1,876	51	TEIQue	BSCS	Multiple deviance co-occurrence	Self-control (OR = 0.62) and EI (OR = 0.81) each uniquely predicted lower co-occurrence
Schokman et al. (2014)	Australia	Cross-sectional	198	52	SREIT	Grasmick Scale	Criminal & non-criminal deviance	Gender-specific: EI negatively related to deviance for males only; self-control universal
Tamm & Tõeväli (2021)	Estonia	Cross-sectional	542	60	TEIQue	BSCS	Academic cheating	Self-control ($\beta = -.44$) fully mediated the EI-cheating relationship (indirect $\beta = -.21$)
Vazsonyi et al. (2017)	USA	Cross-sectional	2,431	48	Not included (self-control only)	Grasmick Scale	General deviance	Self-control effect size ($r = -.47$) consistent across age and gender

Wong et al. (2020)	Hong Kong	Cross-sectional	894	50	WLEIS	BSCS	Social deviance	For females, EI positively related to deviance ($r = .14$); for males, negative ($r = -.21$)
Zhang & Chen (2022)	China	Cross-sectional	1,340	53	TEIQue-SF	Grasmick Scale	Interpersonal misconduct	Self-control ($\beta = -.48$) stronger predictor than EI ($\beta = -.19$)

Table 2: Summary of Key Quantitative Association Across Studies

Predictor	Outcome category	studies	Range of effect sizes (r or β)	Median effect size	Consistency (% significant in expected direction)
Emotional intelligence (total score)	General deviance	18	-0.09 to -0.34	-0.21	72% (negative)
EI – well-being factor	General deviance	6	-0.27 to -0.41	-0.34	100% (negative)
EI – sociability factor	General deviance	5	-0.12 to +0.18	+0.09	40% (positive)
EI	Academic dishonesty	12	-0.11 to -0.32	-0.23	75% (negative)
EI	Cyberdeviance	8	-0.05 to -0.28	-0.16	63% (negative)
EI	Aggression/bullying	7	-0.14 to -0.36	-0.26	86% (negative)
Self-control (total score)	General deviance	24	-0.31 to -0.58	-0.44	100% (negative)
Self-control	Academic dishonesty	14	-0.35 to -0.52	-0.42	100% (negative)
Self-control	Cyberdeviance	10	-0.32 to -0.49	-0.39	100% (negative)
Self-control	Aggression	9	-0.38 to -0.53	-0.44	100% (negative)
Self-control	Substance use	7	-0.41 to -0.58	-0.47	100% (negative)
EI $\times$ Self-control interaction	Various deviance	6	$\Delta R^2 = 0.02$ to 0.09	$\Delta R^2 = 0.05$	Mixed (50% exacerbating)

Relationship between emotional intelligence and deviant behavior

Of the 42 studies included in this systematic review, 38 (90.5%) had evidence of at least one bivariate or multivariate relationship between emotional intelligence (EI) and deviant behavior. The size of the relationship varied widely across studies, but for approximately 65% of the studies ($n=25$), there was a statistically significant negative relationship between EI and deviance; therefore, highly emotionally intelligent individuals were typically at a lower risk of deviant behavior. However, effect sizes were relatively modest, with Pearson correlations ranging from -0.09 to -0.34 (median $r = -0.21$). The strongest protective effects were found with general misconduct and academic dishonesty; therefore, the higher the level of EI, the lower the incidence of plagiarism, cheating, and disruptive classroom behavior (Almutairi, 2019; Fida et al., 2020; MacCann et al., 2020; Tamm & Töeväli, 2021).

In total, 6 studies (15.8%) have demonstrated a positive relationship between some facets of Emotional Intelligence (EI) and deviant behaviour. For example, Dãderman and colleagues (2019) revealed that the "sociability" factor of trait EI (comprised of assertiveness and emotional expressivity) was significantly positively correlated with self-reported deviance ($r = .18$), whereas the "well-being" factor exhibited a negative correlation with deviance. Nagler and colleagues (2018) also reported an association between higher ability EI with greater use of manipulative strategies in interpersonal situations when self-control was simultaneously low. Finally, Wong et al. (2020) provided evidence of an opposite pattern for males and females; for females, higher EI, paradoxically, was linked to higher levels of social deviance ($r = .14$), whereas for males, EI was negatively correlated to social deviance ($r = -.021$). There were 7 studies (18.4%) that did not reveal a significant direct correlation between EI and deviancy after controlling for self-control and/or other covariates (Bennett & Liu, 2022; Harper & James, 2023; Kwan et al., 2020).

Longitudinal studies found that the predictive effect of emotional intelligence (EI) on future deviance was diminished and generally nonsignificant when controlling for baseline deviance. Only one longitudinal study (He's, 2021), showed a marginally significant prospective predictive relationship between EI and bullying behaviors at 6-month follow-up ($\beta = -.12, p < .05$) which was eliminated upon including self-regulation into the model used.

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Relationship between self-control and Deviant Behavior

Forty-two studies evaluated the relationship between self-control and deviant behavior; all of them found an inverse statistical association between these two variables. The results show that self-control was consistently related to the amount of deviant behavior, regardless of factors such as the type of deviance measured, country of study and the measurement tools used to measure self-control. For example, the effect sizes were moderate-large (Pearson r values were between $-.031$ and $-.058$; median $r = -.044$). Regression analysis shows that in multi-variate models predicting deviant behavior with emotional intelligence (EI) and self-control as predictors, self-control was consistently the better predictor of deviant behavior (i.e., 15% to 34% variance accounted for in deviant behavior).

Self-control was a significant contributing factor for all forms of deviance studies: academic dishonesty ($\beta = \text{no } -.042$), cyberdeviance ($\beta = \text{no } -.039$), aggression ($\beta = \text{no } -.044$), substance use ($\beta = \text{no } -.047$) and general misconduct ($\beta = \text{no } -.045$). Overall, five longitudinal studies have found that low self-control directly correlates to an increased amount of deviance over time, even after controlling for baseline deviance and other confounding variables (Bennett & Liu, 2022; Harper & James, 2023; Kwan et al., 2020). The one study that provided evidence of cause and effect was an experimental study which

manipulated self-control and resulted in individuals reported cheating on the academic task that followed ($d = -0.58$). None of the studies identified found positive associations between self-control and deviance or non-significant results in the primary analyses. However, two studies identified that the strengths of the self-control/deviance relationship changed depending on the conditions of the study; while self-control continued to work as a protective factor in permissive digital (i.e., anonymous) environments, it was significantly remediated by contextual differences (Li & Wang, 2021; Gan & Guo, 2022).

Interactive and Combined Effect

A small number of studies investigated whether emotional intelligence (EI) and self-control interacted in predicting deviant behavior or examined whether mediation models could describe these relationships. Of the total 42 studies, 15 (35.7%) included a specific investigation into the EI-self-control interaction, or examined mediation models that included these variables, with the evidence for an EI-self-control interaction being highly variable but revealing an interesting pattern. Statistically significant evidence for an EI-self-control interaction was found in six studies. Of these six studies, four reported the relationship between EI and the various types of deviance depended on the level of self-control. In particular, Gan and Guo (2022) found that the combination of high EI (as measured by the EIS) and low self-control predicted significantly higher levels of cyberdeviant behavior ($\Delta R^2 = .07, p < .001$). In other words, individuals with a high level of emotional intelligence, but who had low impulse control, were particularly likely to exhibit deviant behavior while engaged in online communication. Likewise, Nagler et al. (2018) found that higher ability EI had a relationship with more manipulative deviance, but only for participants who had low self-control; and that EI had little or no relationship with manipulative deviance for participants who had high levels of self-control. He et al. (2021) also found that EI buffered the effect of peer pressure on bullying behavior, but only for participants who had high to moderate self-control.

Overall, among the remaining nine studies examining mediation (as opposed to moderation), all supported the notion that self-control partially or completely mediated the relationship between emotional intelligence (EI) and deviant behavior. Tamm and Tõeväli (2021) found that self-control completely mediated the relationship between EI and cheating in academics (indirect effect $\beta = -0.21$; 95% CI [-0.29 to -0.14]), thereby rendering EI's direct effect non-significant after including self-control in the mediation model. Fida et al. (2020) provided evidence for a partial mediation effect whereby EI influenced academic misbehavior through self-control only (indirect effect = -0.19) with a minor direct effect remaining present.

Table 3: Quality Assessment Scores of Included Studies

Quality domain	Maximum score	Mean (SD)	Studies scoring maximum n (%)
Sample representativeness	2	1.4 (0.6)	18 (42.9)

Sample size adequacy	1	0.8 (0.4)	35 (83.3)
Validated EI measure	2	1.7 (0.5)	38 (90.5)
Validated self-control measure	2	1.8 (0.4)	40 (95.2)
Validated deviance measure	2	1.6 (0.6)	36 (85.7)
Control for confounders	1	0.4 (0.5)	18 (42.9)
Total score	10	7.2 (1.4)	28 (66.7) low risk

Using an adapted Newcastle–Ottawa Scale (score = 0–10), we summarized the methodological quality⁷⁸ in all 42 studies (Table 3). The mean methodological quality score was 7.2 (SD = 1.4). Of the studies reviewed, 28 (66.7%) were assessed to be low risk of bias (score of 7–10), 12 (28.6%) moderate risk (score of 4–6), and 2 (4.8%) high risk (score of 0–3). The most noted methodological strengths in the studies included the use of validated instruments ($n = 38$; 90.5%) and adequate sample sizes ($n = 35$; 83.3%). The most frequently identified methodological limitations were that 36 studies (85.7%) had a cross-sectional design, 29 studies (69.0%) used convenience sampling, and 24 studies (57.1%) did not control for confounding variables (e.g., prior deviance). The two studies that had a high risk of bias were excluded from the main analysis but were retained for a descriptive account of findings. Sensitivity analyses demonstrated that the exclusion of these studies had no significant influence on the overall analysis results.

Limitations

There are a few limitations of this systematic review that need to be considered. Most of the studies included in this systematic review (85.7%) utilized cross-sectional research designs and therefore it is impossible to identify the cause-effect relationship between emotional intelligence, self-control and deviant behavior. There were also large differences in how emotional intelligence was measured (e.g., some studies utilized trait measures whereas others used ability-based measures) making comparison of these measures difficult as they measure different constructs. Most studies relied on self-reported measures of deviant behavior therefore the potential for respondents to answer differently based on perceived social desirability or under-reporting could impact the validity of the findings. In addition, most of the studies were conducted in the Western and East Asian cultures therefore the ability to generalize findings to other cultures is limited. There was also potential for publication bias towards studies that found statistically significant results increasing the strength of association seen. Lastly, due to the use of a narrative synthesis as the method of synthesis (due to the degree of heterogeneity of results), there was no opportunity to quantitatively pool the effect sizes of the studies.

Conclusion

The present systematic review investigated 42 empirical studies examining the relationship between emotional intelligence (EI), self-control, and deviant behavior in university students to develop a global understanding of the two constructs as they relate to deviant behavior. The primary, and most consistent,

finding was that self-control served as a consistent and powerful negative predictor of all forms of deviant behavior studied, including academic dishonesty, cyberdeviancy, aggression, drug use, and general misbehavior. With effect sizes ranging from moderate to large (median $r = -0.44$) and 100% of studies reporting a significant negative correlation, self-control is the strongest and most consistent protective factor associated with the prevention of all forms of deviance. Furthermore, longitudinal and experimental evidence support a causal relationship between self-control and deviant behavior, as low self-control anticipated increased deviant behaviors over time and temporarily lowering self-control resulted in increased rates of cheating. Conversely, the relationship between EI and deviant behavior is much weaker and more complex. While there is a modest negative relationship between an overall EI score and deviant behavior (median $r = -0.21$), this relationship is largely a function of self-control. Furthermore, there are certain facets of EI (e.g., sociability) that demonstrate a positive relationship with deviant behaviors, and the combination of high EI and low self-control produces greater vulnerability to cyberdeviancy and manipulatory behaviors. The relationship between EI and gender and the "dark side" of EI further suggest that EI is not a clearly protective characteristic.

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