



Dark Triad Traits, Moral Identity, Civic Moral Disengagement and Littering Behavior among University Students

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ABSTRACT:

Littering behavior among university students—particularly prevalent in developing countries—represents a critical environmental challenge influenced by personality traits and moral processes. With civic moral disengagement proposed as a mediator, this study examines how Dark Triad traits (Machiavellianism, psychopathy, and narcissism), along with moral identity encompassing moral self and moral integrity, are associated with littering behavior. A correlational research design was employed. A total of 403 Pakistani university students (323 females and 80 males), aged 18 to 28 years ($M = 22.41$, $SD = 2.27$), were selected using a non-randomized convenient sampling strategy. To assess the study variables, well-established measures with strong psychometric properties were translated into the indigenous language (Urdu). Pearson's product moment correlations indicated that littering behavior was positively related to civic moral disengagement and Dark Triad traits, and negatively related to moral identity. Structural equation modeling further revealed that the effects of moral integrity, Machiavellianism, and psychopathy on littering behavior were mediated by civic moral disengagement. These findings highlight the need for an intervention that strengthen moral integrity and reduce civic moral disengagement, particularly among individuals high in Machiavellianism and psychopathy, to promote environmental responsibility.

Key Words: civic moral disengagement, Dark Triad traits, moral identity, littering behavior, university students

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1. Introduction

Improper solid waste disposal, commonly referred to as littering, continues to be a significant global issue. It negatively impacts ecological sustainability (Brown, 2023; Shunwaste, 2025), public health (Shunwaste, 2025; Wikipedia, 2025), aesthetic quality (Hassan & Khalil, 2024), and state finances (Flack, 2023; Sorensen & George, 2024). Litter is typically conceptualized as waste that is carelessly discarded or scattered in areas considered socially or environmentally inappropriate (Robinson, 1976). It includes any material not properly placed in designated waste containers, regardless of size, type, or perceived triviality (Geller et al., 1980). Such items range from minor, everyday waste like cigarette butts and wrappers to more severe forms like abandoned vehicles, all of which contribute to environmental degradation and visual blight (Hansmann & Scholz, 2003). Littering arises through two primary behaviors: intentional acts where individuals knowingly dispose of waste improperly, and unintentional actions where waste is inadvertently left behind—both of which have equally damaging impacts (Sibley & Liu, 2003; Chaudhary et al., 2021). The repercussions are far-reaching, encompassing resource depletion, rising pollution (Gutti & Aji, 2012; Amer et al., 2024), environmental imbalance (Brown, 2023), threats to biodiversity (Enviroliteracy Team, 2024; Amer et al., 2024), and diminished farming due to soil degradation (Enviroliteracy Team, 2024). It also facilitates the transmission of infectious diseases like COVID-19 (Yang, 2023), and undermines the visual and aesthetic integrity of public spaces (Schultz et al., 2013). Collectively, these outcomes deteriorate community wellness (Chaudhary et al., 2020). As the most visible form of pollution (Oluyinka, 2011), litter affects over 200 million people globally (Gillespie, 2019) and is linked to 128,000 deaths annually in Pakistan (Global Alliance on Health and Pollution, 2022).

Internal cognitive processes that allow individuals to rationalize or downplay the environmental damage caused by overt actions like littering are critical in sustaining these behaviors. Civic moral disengagement refers to a set of social-cognitive strategies that individuals use to neutralize feelings of guilt or self-reproach when engaging in behaviors that violate moral or civic standards, thereby protecting their self-esteem (Bandura, 1990; Caprara et al., 2009). Individuals explain or minimize the repercussions of their actions through mechanisms such as moral justification, euphemism labeling, and diffusion of blame, enabling them to overlook the environmental harm they do (Bandura et al., 1996). For example, a person who litters may attribute environmental degradation to broader societal issues or soften their personal contribution, thus distancing themselves from the ethical implications of their actions (Bandura, 1990). This cognitive disengagement reduces internal conflict and facilitates the continuation of behaviors that would otherwise invoke moral self-regulation (Bandura, 1990). Examining how civic moral disengagement mediates between behaviors like littering and the moral processes that usually govern responsible environmental conduct provides deeper insight into the psychological mechanisms that underlie such problematic behaviors (Caprara et al., 2006).

Aquino and Reed (2002) argue that a person's moral identity, which is based on honesty, justice, and compassion, is an important psychological mechanism that encourages ethical behavior, such as acts that benefit society and the environment. A person's moral integrity, or the congruence between their moral convictions and their deeds, is strengthened when they have a strong sense of moral identity and incorporate moral principles into their self-concept (Hardy & Carlo, 2011). According to moral integrity theory, people are more inclined to follow ethical





standards, even when there is little external enforcement if they believe they are morally upright (Blasi, 1984). According to Winterich et al. (2013), people who have a strong sense of moral identity are more likely to self-regulate when it comes to littering. This emphasizes their intrinsic motivation to dispose of trash responsibly and refrain from actions that affect the community's welfare. The idea that people should act in a way that is consistent with their moral self-concept is consistent with self-consistency theory (Oyserman, 2009). Studies show that having a strong sense of moral identity makes people more invested in their communities and the environment, which in turn makes them less likely to disengage from moral issues (Morgan & Fowers, 2022).

The Dark Triad traits, characterized by malicious and hostile attribute—specifically narcissism, Machiavellianism, and psychopathy—are regarded as aversive personality traits. They are thought to weaken moral responsibility, pro-social engagement, and environmental concern (Paulhus & Williams, 2002). Individuals exhibiting higher levels of these traits often detach from moral considerations by justifying self-serving actions that overlook the welfare of the community (Jonason & Webster, 2010). Narcissistic individuals often place their gratification above environmental responsibility, as their intense sense of self-importance, constant need for admiration, and lack of empathy reduce their concern for collective well-being (Rauthmann & Kolar, 2013). Machiavellianism, marked by strategic manipulation and a minimal commitment to ethics, promotes a disregard for social norms, particularly those concerning environmental sustainability (Christie & Geis, 1970). Likewise, Psychopathy, characterized by traits such as impulsivity and a lack of empathy, correlates with an indifference to social and ecological repercussions, thereby increasing the probability of actions like littering (Hare, 2003). Addressing the dispositional barriers posed by dark personality traits is essential to develop and promote a sense of moral accountability, encouraging pro-social and pro-environmental behaviors, and ultimately reducing littering.

2. Literature Review

Littering is one of the most visible and widespread forms of environmentally irresponsible behavior (Mori et al., 2024). Understanding the psychological factors that drive such behavior is crucial for designing effective interventions. One key process is civic moral disengagement, a cognitive strategy that enables individuals to rationalize unethical actions in civic contexts (e.g., public spaces) without damaging their self-image. Caprara et al. (2006, 2009) expanded Bandura's (1999, 2002) moral disengagement theory by introducing 'civic moral disengagement,' which explains how individuals justify their moral violations while preserving a positive moral identity. Rooted in Bandura's foundational work, numerous studies have demonstrated that moral disengagement facilitates a range of harmful behaviors, including antisocial and environmentally detrimental actions (Bandura et al., 1996; Samnani et al., 2014; Detert et al., 2008).

Recent research has established a negative relationship between moral disengagement and pro-environmental behavior, with littering often used as a key indicator (Mori et al., 2024). For instance, Ibrahim et al. (2021) studied 303 Malaysian university students and found that individuals with greater environmental concern were more likely to avoid littering, emphasizing the importance of personal responsibility in reducing disengagement. Di Santo et al. (2023), using a large sample of over 2,400 Italian participants, reported that environmental concern combined with cultural tightness decreased moral disengagement and strengthened pro-environmental intentions. Similarly, Silva and Rodríguez (2022) conducted a longitudinal study with 704 Chilean





adolescents and found that lower moral disengagement was associated with higher pro-social and environmentally responsible behaviors. Together, these studies highlight a consistent pattern: across different cultural and demographic contexts, lower levels of moral disengagement are reliably linked to stronger environmental responsibility and reduced littering behavior.

Xu and Tu (2023) explored how moral identity and moral disengagement shaped the link between environmental attitudes and behavior among 326 tourists in China's Wuyishan National Park. Tourists with strong moral identity were more likely to act on their environmental beliefs, while those prone to moral disengagement were less consistent in eco-friendly behavior. These findings highlight how civic moral disengagement may justify irresponsible actions in public spaces. Further insights were offered by Wu et al. (2020), who proposed a model examining how moral obligation—a sense of duty to act ethically—fosters eco-friendly behavior while moral disengagement hinders it. Their study of tourists in a Chinese nature reserve found that moral obligation significantly predicted pro-environmental intentions, whereas disengagement had the opposite effect. Expanding on this, Wu et al. (2023) analyzed behavior across multiple settings, from tourism to daily routines, confirming that moral obligation enhances environmental responsibility, while disengagement reduces it. Their work emphasizes how consistent disengagement undermines sustainable civic behavior like proper waste disposal.

In addition to moral cognition, stable personality traits may also influence littering behavior. Shimotsukasa et al. (2019) examined the role of Dark Triad traits—narcissism, psychopathy, and Machiavellianism—in a lab study with Japanese undergraduates, finding that individuals high in narcissism and psychopathy were more likely to litter, especially in already unclean settings. This suggests a reduced regard for social and environmental norms. Similarly, Mertens et al. (2021) explored the association between Dark Triad traits and pro-environmental attitudes among German adults. Their results showed that psychopathy negatively predicted environmental concern, reinforcing the idea that dark personality traits can dampen ecological sensitivity. While moral disengagement has been widely recognized as a predictor of harmful environmental behaviors, its specific application to littering—particularly within the civic moral disengagement framework—remains underexplored. Likewise, although moral identity has been linked to general pro-environmental attitudes, its direct influence on specific behaviors like littering is still not clearly established.

This study aims to address these gaps by examining how moral identity, civic moral disengagement, and Dark Triad traits collectively predict littering behavior. In doing so, it contributes to the growing literature on the psychological and personality-based foundations of environmental misconduct. Understanding these dynamics can help inform practical strategies to reduce littering and promote responsible civic behavior.

2.1 Objectives of the Study

The following objectives were pursued by the current study:

1. To investigate the relationship between Dark Triad traits, moral identity, civic moral disengagement, and littering behavior among university students.
2. To explore how civic moral disengagement functions as a psychological mechanism bridging Dark Triad traits and moral identity with littering behavior among university students.





2.2 Hypotheses

- H1** (a): Dark Triad traits - Machiavellianism, Narcissism, and Psychopathy- will be positively associated to civic moral disengagement and littering behavior among university students.
- (b) Littering behavior and civic moral disengagement will be negatively related to dimensions of moral identity - moral self and moral integrity- among university students.
- (c) Littering behavior will be positively associated to civic moral disengagement among university students.
- H2** (a) Civic moral disengagement will mediate the association between Dark Triad traits (Machiavellianism, Narcissism, and Psychopathy) and littering behavior among university students.
- (b) Civic moral disengagement will mediate the relationship between dimensions of moral identity (i.e., moral self and moral integrity) and littering behavior among university students.

3. Method

3.1 Research Design

A correlational, cross-sectional research design was employed to examine predictors of littering behavior among university students.

3.2 Sample and Sampling Strategy

As accessing the entire population was not feasible therefore the study relied on convenient sampling, a non-randomized sampling technique, for participant recruitment as suggested by Haque (2010). Various guidelines were followed to decide to sample size. Green's (1991) recommendations indicated that 154 participants were needed for overall model fit, 117 participants for analyzing individual predictors, and minimum 200 cases to use Structural Equation Modeling (SEM). Due to the restrictions imposed during the COVID-19 pandemic, data collection—which was planned to begin in 2021—could not be conducted physically and was consequently prolonged, taking nearly two years to complete. To enhance the external validity of the online data, a total of 420 students were initially approached for participation through their teachers. Out of the 420 responses received, data from 17 participants were excluded. Seven participants failed to align with inclusion criteria, four cases were removed as result of inconsistencies in reporting information, while two participants failed to provide complete demographic information. Furthermore, four cases were identified as statistical outliers, with $Z > 3.29$, and therefore removed from the total sample. Subsequently, final sample comprised with 403 students participants (as shown in table 1), with age ranges 18 to 28 years ($M=22.41$, $SD = 2.27$), enrolled in social sciences programs at universities. From the final sample, 323 were women (80.15%) and 80 were men (19.85%), a distribution consistent with the typical gender composition of social sciences programs in the region. The majority of participants were pursuing a B.S. degree (74.06%), while smaller proportions were enrolled in M.A./M.Sc. (18.42%), M.Phil. (7.14%), and Ph.D. (0.38%) programs.



Table 1
Participants' Characteristics

Demographic characteristics of participants	<i>M</i>	<i>SD</i>	<i>N</i>	<i>%</i>
Age (Years)	22.41	2.27		
Gender				
Female			323	80.15
Male			80	19.85
University				
Public university			328	81.39
Private university			75	18.61
Residential background				
Urban			304	75.43
Rural			99	24.57
Family system				
Extended family system			154	38.21
Immediate family system			249	61.79

3.3 Measures

Four standardized tools were used to assess the study variables. All instruments were translated for this research into Urdu using standard procedures to ensure cultural and linguistic suitability. The Short Dark Triad (SD3) by Jones and Paulhus (2014) consists of 27 items was used to assess the presence of socially aversive personality traits- narcissism, Machiavellianism, and psychopathy (9 items each) on a 5-point Likert scale. The internal consistency of the translated scale was $\alpha = .85$ overall, with subscale reliabilities of $\alpha = .73$ (narcissism, Machiavellianism) and $\alpha = .74$ (psychopathy).

The Moral Identity Questionnaire (Black & Reynolds, 2016) assesses the extent to which individuals internalize and act on moral values using 20 items rated on a 5-point Likert scale. It comprises two dimensions: Moral Self, reflecting identification with moral values, and Moral Integrity, capturing the consistency between moral beliefs and actions. Internal consistency of translated version was good, with $\alpha = .87$ for the overall scale, $\alpha = .83$ for Moral Self, and $\alpha = .89$ for Moral Integrity.

The Civic Moral Disengagement Scale (Caprara et al., 2009) has 32 items, measured the cognitive strategies used to justify unethical civic behavior, such as moral justification, euphemistic labeling, and responsibility diffusion. The Urdu-translated version showed excellent reliability ($\alpha = .91$), and only the aggregate score was used for analysis.

The Littering Attitude Scale (Ojedokun, 2015) consists of 24 items assessing cognitive, emotional, and behavioral attitudes toward littering. As the scale lacks predefined subscales, the

overall score was used to represent littering tendencies, following consultation with the author of the scale. The Urdu-translated version demonstrated excellent internal consistency ($\alpha = .89$).

3.4. Procedure

The formal procedure started when permissions were taken from respective author (s) of the scales to use and translate the measures in indigenous language i.e. Urdu. The translation process adhered to the MAPI linguistic validation guidelines to ensure conceptual equivalence. Following the outbreak of COVID-19 and associated restrictions, data collection was conducted online using Google Forms. In order to eliminate practice effect, the sequence of questionnaires was varied randomly; therefore multiple versions of the assessment protocol were created with scales in unique order. Participants meeting the inclusion and exclusion criteria were recruited with the help of faculty members. The participants were explained the purpose, procedure and application of the research along with the rights of participants. When they were informed, their consent to participate in the study was taken. The researcher addressed all the queries raised by any of participants. Each version of the Google Form began with the assessment protocol followed by a demographic information section. No identifiable information was asked to ensure confidentiality of the data and statistical code was given to each form instead. Upon completion of data collection, statistical analyses including Pearson's product moment correlation and Structural Equation Modeling through Amos were conducted to test the hypotheses.

4. Results

This section primarily reports the associations between Dark Triad traits (narcissism, Machiavellianism, and psychopathy), moral identity (moral self and integrity), civic moral disengagement, and littering behavior. Pearson correlation and Structural Equation Modeling (SEM) via AMOS were employed to test the proposed mediation model.

Table 2

Descriptive and Reliability Statistics for Study Variables

Variable	K	M	SD	Range	Cronbach's α	Skewness
Short dark triad scale	27	71.73	13.32	41-127	.85	.23
Narcissism	9	24.99	5.95	9-45	.73	-.15
Machiavellianism	9	26.01	6.02	13-45	.73	.37
Psychopathy	9	22.26	6.39	9-42	.74	.39
Moral identity questionnaire	20	75.84	13.78	31-100	.87	-.37
Moral integrity	12	43.52	12.34	12-60	.89	-.30
Moral self	8	32.28	6.94	10-40	.83	-.35
Civic moral disengagement	32	94.70	24.76	36-160	.91	.14
Littering attitude scale	24	46.86	15.32	24-103	.89	.21

Data were screened following the directions by Tabachnick and Fidell (2013) and all scales were found reliable with satisfactory Cronbach's alpha coefficients ($\alpha \geq .70$). Skewness, kurtosis, and histograms confirmed normality; extreme outliers ($Z > 3.29$) were excluded. After finding the



data appropriate for parametric stats, study hypotheses were tested. Pearson’s correlations revealed that both moral self and moral integrity were negatively associated with civic moral disengagement and littering. Conversely, narcissism, Machiavellianism, and psychopathy were positively correlated with both disengagement and littering. Additionally a strong positive link was found between civic moral disengagement and littering behavior.

Table 3
Descriptive Statistics and Intercorrelations

Study variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Age	22.41	2.27	-							
2. Moral self	32.28	6.94	.03	-						
3. Moral integrity	43.52	12.34	-.05	.28***	-					
4. Narcissism	24.99	5.95	-.03	-.02	-.25***	-				
5. Machiavellianism	26.01	6.02	-.00	.01	-.46***	.26***	-			
6. Psychopathy	22.26	6.39	.03	-.22***	-.60***	.28***	.55***	-		
7. Civic moral disengagement	94.70	24.76	-.00	-.13***	-.52***	.14***	.45***	.53***	-	
8. Littering behavior	46.86	15.32	.05	-.30***	-.49***	.18***	.20***	.48***	.44***	-

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

On the next step, the SEM analysis (Figure 1) tested civic moral disengagement as a mediator between dark traits, moral identity, and littering. AMOS (Arbuckle, 2019) was used due to its advantages in handling measurement error and analyzing complex models (Byrne, 2001).

Figure 1
A Multivariate Initial Model for Mediation



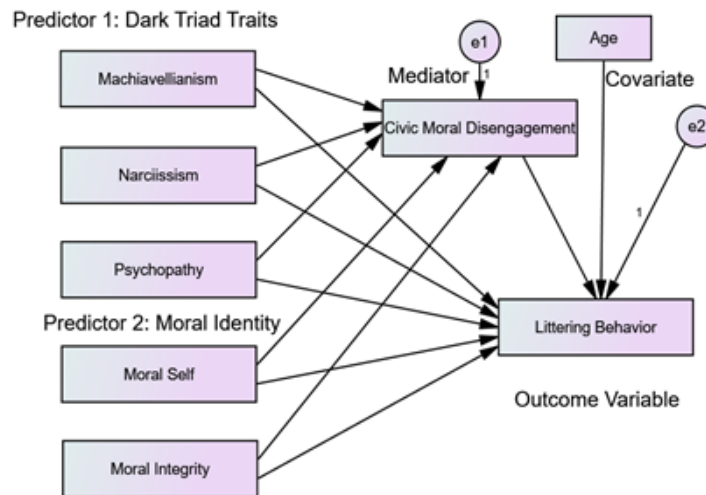


Table 4
Model Fit Comparison: Initial vs. Final Models

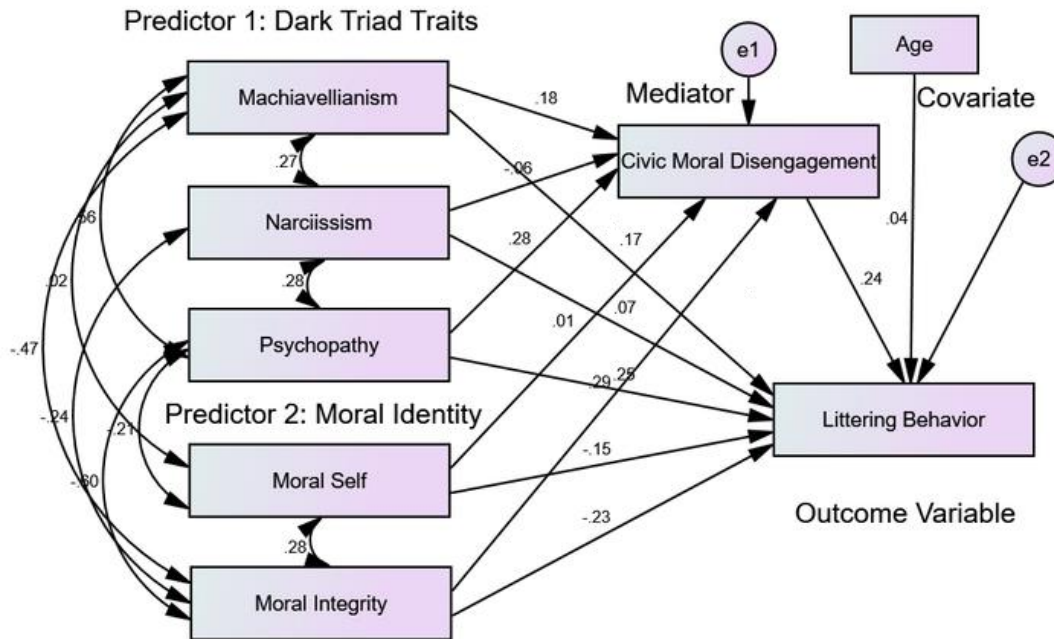
Model	χ^2			RMSEA			NFI	CFI	$\Delta \chi^2$
	Value	Df	P	Value	95% CI	P			
Initial model	600.30	16	<.001	.26	.24,.28	<.001	.45	.45	
Final model	7.06	7	.42	.004	.00,.05	.92	.99	.99	593.24

Note. RMSEA = Root mean square error of approximation; NFI = Normed fit index; CFI = Comparative fit index.

Initially, the model fit indices were poor, and several parameter estimates did not meet expected thresholds. Based on AMOS modification indices and supported by theoretical rationale, covariance were added among predictor variables. This adjustment resulted in an improved model fit (see Table 4), after which both direct and indirect paths were examined and reported.

Figure 2
Path Analysis Results from the Final Mediation Model Illustrating Standardized Weights for the Hypothesized Mediation Framework

Mediation Model



As shown in Table 5, moral integrity significantly negatively predicted civic moral disengagement, whereas Machiavellianism and psychopathy were significant positive predictors. Moral self and narcissism did not significantly predict civic moral disengagement. In predicting littering behavior, moral self and moral integrity were significant negative predictors, while Machiavellianism, psychopathy, and civic moral disengagement significantly positively predicted littering. Narcissism and age were not significant predictors of littering. Among all variables, psychopathy emerged as the strongest predictor across both outcomes.

Table 5
Predictors of Civic Moral Disengagement and Littering Behavior: Direct Effects Analysis

Predictors	Civic moral disengagement					Littering behavior				
	<i>B</i>	<i>SE</i>	95% <i>CI</i>		<i>P</i>	β	<i>SE</i>	95% <i>CI</i>		<i>P</i>
			<i>LL</i>	<i>UL</i>				<i>LL</i>	<i>UL</i>	
Moral self	.01	.03	-.06	.08	.802	-.15	.04	-.23	-.07	<.001
Moral integrity	-.28	.04	-.37	-.19	<.001	-.23	.05	-.32	-.12	<.001
Narcissism	-.06	.04	-.13	.01	.128	.07	.03	.00	.13	.128
Machiavellianism	.17	.04	.08	.26	<.001	.17	.04	.08	.24	<.001
Psychopathy	.28	.04	.19	.37	<.001	.25	.05	.14	.36	<.001

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Predictors	Civic moral disengagement					Littering behavior				
	B	SE	95% CI		P	β	SE	95% CI		P
			LL	UL				LL	UL	
Civic moral disengagement	-	-	-	-	-	.23	.04	.15	.32	<.001
Age	-	-	-	-	-	.04	.03	-.02	.11	.226

As shown in Table 6, civic moral disengagement significantly mediated the relationships between psychopathy, Machiavellianism, and moral integrity with littering behavior. Higher levels of psychopathy and Machiavellianism indirectly increased littering by elevating disengagement, while higher moral integrity indirectly reduced littering by lowering disengagement.

Table 6

Indirect Effects of Dark Triad Traits and Moral Identity on Littering Behavior through Civic Moral Disengagement

Indirect Paths	B	SE	95% CI		P
			LL	UL	
Moral self →CMD →LB	.01	.00	-.01	.02	.775
Moral integrity→CMD→LB	-.06	.01	-.10	-.04	<.001
Narcissism→CMD→LB	-.01	.01	-.03	.00	.102
Machiavellianism→CMD→LB	.04	.01	.01	.07	<.001
Psychopathy→CMD→LB	.06	.01	.04	.10	<.001

Note. CMD = Civic moral disengagement; LB= Littering behavior.

Although demographic variables were not the primary focus of this study, independent samples t-tests were conducted to examine differences in littering behavior across dichotomous variables recorded during data collection. Students from extended families ($M = 51.02$) littered more than those living with their immediate families ($M = 44.96$), $t(401) = 3.00, p = .003$. Urban students ($M = 47.39$) littered more than rural peers ($M = 43.71$), $t(401) = 2.01, p = .045$. Private university students ($M = 52.14$) also littered more than public university students ($M = 46.35$), $t(401) = -2.13, p = .034$. No significant gender differences were observed. However, it is important to note that the group sizes for several variables were highly unequal, which may have reduced the statistical power of the tests. As such, these results should be interpreted with caution and may not fully reflect stable group-level differences.

5. Discussion

This study is among the first empirical investigations to examine how Dark Triad traits, dimensions of moral identity, and civic moral disengagement relate to littering behavior. The



findings endorse that individuals who morally disengage from civic duties are more likely to justify environmentally irresponsible behaviors such as littering. Bandura's (1999) theory of moral disengagement offers a valuable framework for understanding this process, explaining how individuals alleviate guilt by detaching themselves from personal responsibility. Consistent with prior work (Bandura, 2007; Caprara et al., 2009; York, 2017), the results support the idea that moral self-regulation can be selectively suspended to allow harmful environmental behavior.

A key contribution of this research is its confirmation of the inverse link between moral identity and civic moral disengagement. Individuals who see morality as central to their self-concept were less likely to rationalize unethical civic conduct. This is consistent with theories suggesting that internalized moral beliefs guide ethical behavior across different situations (Aquino & Reed, 2002; Blasi, 2004). Recent meta-analytic findings further support the protective role of moral identity against disengagement (Ogunfowora, 2022).

These findings also resonate with recent work (Wu et al., 2020, 2023; Xu & Tu, 2023), which links moral identity and obligation with higher pro-environmental behavior and lower disengagement. Likewise, Kohlberg's (1973) theory of moral development proposes that individuals at higher levels of moral reasoning rely on internal principles, not just external cues. Social identity theory (Aquino & Reed, 2002) also highlights how moral traits embedded in one's identity promote consistency between values and behavior.

However, moral identity does not guarantee immunity from disengagement. Even morally driven individuals may disengage in ambiguous or high-pressure situations (Bandura, 2002; Moore & Gino, 2013). Factors like social norms, perceived efficacy, and cultural context can influence the strength of self-regulation. Research has shown that collectivist versus individualist orientations can shape how moral standards are internalized and expressed (Hofstede, 1980; Triandis, 1989). Still, the present findings suggest that strong moral identity enhances self-regulation and reduces reliance on disengagement strategies—ultimately leading to lower levels of littering.

Another key finding is the strong predictive role of Dark Triad traits—especially psychopathy and Machiavellianism—in civic moral disengagement and littering. Known for traits like manipulation, emotional detachment, and disregard for others, these personalities weaken moral responsibility (Paulhus & Williams, 2002). Psychopathy emerged as the strongest predictor of both disengagement and littering, consistent with prior findings linking it to impulsivity, lack of remorse, and antisocial behavior (Hare, 2003; Yildirim & Derksen, 2015; Mertens et al., 2021).

Patrick et al.'s (2009) triarchic model—emphasizing boldness, meanness, and disinhibition—explains how these traits foster civic irresponsibility by reducing moral sensitivity. Overall, the results highlight that moral disengagement is not purely cognitive but also shaped by stable personality traits





Importantly, civic moral disengagement acted as a psychological bridge between dark traits and littering. Individuals high in Machiavellianism and psychopathy were more likely to use cognitive justifications to minimize harm or shift blame—mechanisms that legitimize littering. While prior research has linked moral disengagement to unethical decision-making, this study extends those insights to civic-specific domains and environmental behavior.

These findings contribute to growing evidence that cognitive rationalizations and personality traits play an important role in shaping civic misconduct. It further highlights the need for interventions that strengthen moral identity and civic responsibility while addressing dispositional barriers to ethical environmental behavior.

5.1 Suggestions and Limitations

While this study offers important insights into the psychological predictors of littering, several limitations must be acknowledged. First, the sample was heavily skewed toward women (80.15%), limiting generalizability across genders. Future research should ensure a more balanced gender representation, as men and women may differ in moral reasoning and environmental behavior.

Second, although the Urdu translation of scales improved cultural relevance, the littering attitude scale primarily measured attitudes (cognitive, emotional, and general behavioral inclinations) rather than specific behavioral practices. Future studies should refine this instrument to better capture actual littering behavior and explore its factor structure for clearer construct validity.

Additionally, this study did not directly assess the underlying cognitive mechanisms—such as rationalizations or displacement of responsibility—that enable moral disengagement in civic contexts. Future research should investigate these processes to deepen understanding of how disengagement leads to environmental misconduct.

5.2 Implications

Framed by Bandura's (1990) Social Cognitive Theory, these findings suggest that dark traits like Machiavellianism, narcissism, and psychopathy may normalize civic disengagement through repeated behaviors and social modeling. Over time, such patterns can shift perceived norms, making irresponsible environmental behavior seem acceptable. These insights call for multi-level interventions. Value-affirmation can strengthen moral identity (Aquino & Reed, 2002), while cognitive-behavioral techniques may disrupt disengagement mechanisms (Bandura, 1999). Norm-based messaging (Cialdini, 2003) and restorative practices can further promote civic responsibility. Together, these strategies target both personality dispositions and contextual factors to encourage sustainable behavior.

5.3 Conclusion

This study advances understanding of littering behavior by showing how dark personality traits, moral disengagement, and weak moral identity interact to promote civic irresponsibility. Psychopathy and Machiavellianism, in particular, emerged as strong predictors of disengagement. Dark Triad Traits, Moral Identity, Civic Moral Disengagement and Littering Behavior among University Students





and littering, while moral integrity served as a protective factor. These findings highlight the need for interventions that not only cultivate moral identity but also target the psychological mechanisms that justify unethical environmental behavior. Taken together, the findings suggest that a dual approach—strengthening moral self-regulation while addressing harmful personality traits—may offer a more effective path toward fostering sustainable civic behavior.

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