

Dark Tetrad Traits and Their Associations with Work Engagement and Workplace Outcomes: Evidence from University Teachers in PakistanMaria Jameel^{a*}, Tanvir Akhtar^b^a National University of Modern Languages (NUML) Islamabad, Pakistan.^b National University of Modern Languages (NUML) Rawalpindi, Pakistan**Abstract**

This study explores the associations between Dark Tetrad personality traits (narcissism, Machiavellianism, psychopathy, and sadism) and key workplace outcomes work engagement, counterproductive work behavior, and individual work performance among university teachers in Pakistan. Using a cross-sectional design, data were collected from 350 teachers across government, semi-government, and private institutions and analyzed via SPSS and SmartPLS. Results indicate that Dark Tetrad traits are positively related to counterproductive work behavior and negatively related to both work engagement and individual work performance. Work engagement was negatively associated with counterproductive behavior and positively associated with individual performance. Importantly, work engagement partially mediates these relationships: higher Dark Tetrad traits correspond to lower engagement, which in turn relates to increased counterproductive behaviors and decreased performance. These findings suggest that work engagement serves as a key mechanism through which dark personality traits influence workplace outcomes, highlighting the importance of fostering engagement to mitigate the negative effects of these traits. Given the cross-sectional design, these findings reflect associations rather than causal effects, and further research is needed to clarify underlying mechanisms.

Keywords: Dark Tetrad, Work Engagement, Counterproductive Work Behavior, Individual Work Performance, Narcissism

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1. Introduction

Work engagement has become increasingly recognized as an important influence on workplace behaviors, especially within the context of academia. It is increasingly being investigated as a mediating mechanism that buffers or .It acts as a mechanism that can either diminish or intensify the influence of specific personality aspects, including the “dark tetrad traits—narcissism, Machiavellianism, psychopathy, and sadism.”), on a variety of workplace outcomes (Furnham & Treglown, 2021). Work engagement is described as a good and rewarding state of mind characterized by three key elements: (resilience, energy), devotion (strong participation in work and demanding objectives), and absorption (complete focus and happy connection to work). (Schaufeli, W. B.; et al, 2002).

These variables have been the subject of a significant portion of research on individual factors that can result in CWBs(e.g., as noted by Sackett and DeVore, 2001; Berry et al., 2007; Kish-Gephart et al., 2010). The correlations between workplace The DT personality “traits—psychopathy, narcissism, and Machiavellianism” along with deviant behaviors, have been confirmed due to their shared dark nature (as illustrated by Cohen, 2016; LeBreton et al., 2018; Ying and Cohen, 2018). Some problems, nevertheless, lack empirical support or have never even been investigated. For example, there is still little research on the function of everyday sadism in organizations, which is the fourth element in relation to the Dark Tetrad, as noted by Paulhus (2014), Mededović and Petrović (2015), Gebben et al. (2021), and Fernández-del-Río et al. (2021b).

The dark tetrad personality traits include all three traits (psychopathy, narcissisms, Machiavellianism) of dark triad with the inclusion of sadism. (Book et al, 2016). Narcissism consists of grandiosity, superiority and seeking admiration of their work (Paulhus & Williams, 2002), Machiavellianism is characterized by manipulative behaviors, cynicism, emotional detachment, and a focus on self-interest (Christie & Geis 1970). Callousness, a lack of affinity and guilt, Impetuous and reckless behavior superficial charm, and aggressive and criminal tendencies are all characteristics of psychopathy (Raquel et al, 2024). Sadism is the enjoyment or pleasure of inflicting physical or psychological misery on others. It is defined by a predisposition to seek opportunities to harm others, and it is separate from yet related to the other dark qualities in predicting antisocial behavior (Plouffe, Saklofske, & Smith (2019). Dark personalities have destructed effects on individuals, organizations and group level and if they are on any leadership position they can be much disastrous characterized as individuals who deplete positivity and provide little support for organizational or personal development (Templer, 2018). These traits have been associated with manipulation, lack of empathy, and interpersonal exploitation, which may directly or indirectly affect work behavior and performance.

Research has shown that individuals high in Dark Tetrad traits often engage in counterproductive behaviors (Jonason et al., 2012) and perform poorly due to low “commitment and team cohesion (Furnham et al., 2013)”. Yet, the underlying mechanisms linking dark traits to these outcomes remain insufficiently understood. A potential pathway “is work engagement, which refers to a positive and rewarding psychological state at work, encompassing vigor, dedication, and absorption (Schaufeli et al., 2002)”. The current study seeks to fill this gap by exploring the mediating role of work engagement in the

relationship between Dark Tetrad traits and workplace outcomes among university faculty members.

Research shows that Dark Tetrad traits are strongly associated with unethical, disruptive, and counterproductive behaviors in the workplace (O’Boyle et al., 2012). Machiavellian individuals are strategic and manipulative, narcissists crave admiration, psychopaths show impulsivity and lack of remorse, and sadists derive pleasure from others’ pain. These characteristics can lead to toxic work environments, especially in competitive academic settings (Furnham et al., 2013).

Work engagement describes the psychological and emotional bond employees develop with their organization, a bond that can influence workplace behaviors in both positive and negative ways (Andrew & Sofian, 2012). Because of its strong association with organizational productivity, it has become a central theme in modern academic research. Christian et al. (2011), through a literature analysis, defined work engagement as a relatively enduring state of mind characterized by the simultaneous investment of personal energy into work experience or performance. An employee is considered engaged when they feel valued and involved in the organization (Taghipour & Dezfuli, 2013).

Work engagement is associated with a range of beneficial outcomes. It significantly contributes to improved job performance, productivity, and overall organizational results (Andrew & Sofian, 2012). Empirical evidence further supports these findings; for instance, Mache et al. (2014) reported that higher levels of work engagement enhance job satisfaction and quality of life, serving as an essential marker of occupational well-being for both employees and organizations. Conversely, research indicates that dark personality traits can undermine work engagement, thereby reducing its positive effects (Christian & Ellis, 2011). Employees low in engagement are less committed and more likely to engage in CWBs. Conversely, engaged employees tend to perform better and display more organizational citizenship behaviors (Bakker et al., 2008).

Earlier studies indicate that work engagement may serve as a mediating factor between personality traits and job-related outcomes (Saks, 2006). Nevertheless, limited research has explored whether this applies to dark traits. The study explores the role of work engagement as a potential pathway through which dark traits affect negative behaviors at work as well as positive performance outcomes.

Individual work performance is the most relevant and outcome measure of any organizational setting (Koopmans, et al, 2012). It was first defined as all the actions and behaviors not the results of these actions which are linked with organization’s success .(Campbell, 1990). These behaviors should be in control of the individual and individual work performance does not include the actions which are controlled by environment (Rotundo and Sackett, 2002).

Research on individual work performance has traditionally emphasized three core dimensions. The first, task performance, reflects the efficiency with which employees execute the skilled and essential duties of their roles (Campbell, 1990). Building on this, scholars later introduced contextual performance and counterproductive work behavior as additional dimensions. Contextual performance captures behaviors that strengthen the organization’s social and psychological environment, thereby supporting core job tasks (Borman & Motowidlo, 1993). In contrast, counterproductive work behavior encompasses

actions that undermine organizational well-being (Rotundo & Sackett, 2002; Viswesvaran & Ones, 2000; Koopmans et al., 2011). More recently, the framework has expanded with the inclusion of adaptive performance, highlighting employees' ability to adjust effectively to change and novel circumstances (Griffin et al., 2007). Together, these dimensions provide a comprehensive understanding of how employees contribute to, or detract from, organizational functioning.

Numerous studies reported that dark tetrad tend to increase counterproductive work behavior which is the component of individual work performance and thus it effects the performance of individual at work place (Fernandez-del-Rio et al, 2022, Wang et al, 2022, Li et al, 2020). An engaged employee invested his full potential in his work (Christian, et al, 2011). Work engagement serves a force rather than an attitude which enhances the employee's performance (Kahn, 1990; Wellins and Concelman, 2005). There are limited researches available the link of work engagement and employee performance in academic sector (Rana, et al, 2019), Khan (1990) identified that engaged employees not only put their best effort to the task but also they are emotionally connected to their work. Recent studies reveal that there is strong connection between employee engagement and performance (Li et al., 2020), (Mone & London, 2018), Anitha J, (2014).

The present study was guided by four hypotheses. Firstly, it was hypothesized that the Dark Tetrad personality traits (narcissism, Machiavellianism, psychopathy, and sadism) would be positively associated with counterproductive work behavior among university faculty members. Secondly, it was proposed that the Dark Tetrad personality traits would be negatively associated with individual work performance and work engagement. Thirdly, it was expected that work engagement would mediate the relationship between the Dark Tetrad traits and counterproductive work behavior. Finally, it was hypothesized that work engagement would mediate the relationship between the Dark Tetrad traits and individual work performance.

2. Method

2.1 Participants and Procedure

A cross-sectional survey design was employed for this study to investigate the research questions. The sample consisted of 350 university teachers (N = 350) aged between 25 and 60 years, working at universities representing three sectors: government, semi-government, and private institutions. The participants had varying levels of experience in university teaching, ranging from 1 to 20 years. A sequential purposive sampling technique was applied to recruit participants who met specific inclusion criteria: (a) current employment as a university teacher, (b) at least one year of teaching experience, and (c) willingness to participate in the study. Teachers on extended leave or with incomplete survey responses were excluded. Initially, 700 university teachers were approached via email and institutional contacts. Of these, 168 did not respond, and 132 agreed initially but were unable to complete the survey, resulting in a final sample size of 350. Demographic data collected included age, gender, marital status, university sector affiliation (government, semi-government, private), holding of any leadership position within the university, weekly working hours, flexibility in working hours, and autonomy in designing teaching methods and courses.

After obtaining necessary permissions from university administrations, potential participants were contacted via institutional email lists. The invitation letter outlined the purpose of the study,

emphasized the voluntary nature of participation, and assured participants of the confidentiality of their responses. Informed consent was obtained electronically prior to the survey. The survey was administered online, and participants were given two weeks to complete the questionnaire, with reminders sent weekly. Data collection adhered strictly to ethical standards concerning participant anonymity and the right to withdraw without penalty.

2.2 Measures

2.2.1 Dark Tetrad Traits: The Dark Tetrad traits were assessed using the Short Dark Tetrad (SD4) scale (Paulhus et al., 2021). This 28-item self-report measure evaluates four socially aversive personality traits—Machiavellianism, narcissism, psychopathy, and sadism—each represented by seven items rated on a 5-point Likert scale. Previous research has established the SD4 as a reliable instrument, with Cronbach's alpha values exceeding 0.70 for all subscales.

2.2.2 Work Engagement: Work engagement was measured using the Utrecht Work Engagement Scale (UWES-9), a shortened version of the original instrument developed by Bakker et al. (2008). The UWES-9 consists of nine items assessing three core dimensions of work engagement—vigor, dedication, and absorption—with each dimension represented by three items. Responses are rated on a 7-point frequency scale ranging from 0 (never) to 6 (always). The UWES-9 has demonstrated strong psychometric properties, with Cronbach's alpha values typically ranging between 0.70 and 0.90 across diverse samples.

2.2.3 Counterproductive Work Behavior: Counterproductive work behavior was assessed using the Counterproductive Work Behavior Checklist (CWB-C) developed by Spector et al. (2006). While the standard version of the instrument includes 45 items, the widely used short form contains 32 items that evaluate behaviors such as abuse, production deviance, sabotage, theft, and withdrawal. Items are rated on a 5-point frequency scale. The CWB-C has demonstrated strong reliability, with Cronbach's alpha values consistently exceeding 0.70.

2.2.4 Individual Work Performance: Individual work performance was measured using the Individual Work Performance Questionnaire (IWPQ) developed by Koopmans et al. (2014). This 18-item self-report instrument assesses three dimensions: task performance, contextual performance, and counterproductive work behavior. Responses are rated on a 5-point Likert scale ranging from 1 (seldom) to 5 (always). The IWPQ has demonstrated good internal consistency, with Cronbach's alpha values typically reported above 0.70.

2.3 Statistical Analysis

After the data collection, analysis was done using SPSS (26.0) and SmartPLS 4. The frequency distribution, descriptive analysis and reliability analysis were measured before hypotheses testing. While, the analysis of bivariate correlation and moderation analysis through SmartPLS were considered to test the hypotheses.

3. Results

The internal consistency was calculated through Cronbach's alpha. The results in Table 2 displayed the results of internal consistency and all the instruments were confirmed reliable and Cronbach's alpha for all scales are acceptable for reliability in current study. Dark Tetrad Scale (Cronbach's alpha = 0.849), Work Engagement Scale (Cronbach's alpha = 0.743), Counterproductive Work Behavior Scale (Cronbach's alpha = 0.703), and Individual Work Performance Scale (Cronbach's alpha = 0.738). Cortina (1993) said that above 0.70 Cronbach's alpha is acceptable for reliability, therefore all scales of present research have

internal consistency above from recommended criteria. The Table 2 represented the results of internal consistency.

Table 1

Frequency Distribution of Demographic Sheet (N=350)

Respondent's Characteristics		f	%
Gender	Male	181	51.70
	Female	169	48.30
University Sector	Government	130	37.01
	Private	113	32.30
	Semi-Government	107	30.60
Designation	Lecturer	158	45.10
	Assistant Professor	88	25.20
	Associate Professor	75	21.40
	Professor	29	8.30
Marital Status	Married	257	73.40
	Single	75	21.40
	Divorced	14	4.00
	Separated	4	1.20
Days of Work per Week	3 Days	12	3.50
	4 Days	265	75.70
	5 Days	47	13.40
	More than 5 Days	26	7.40
Duties	Duties	87	24.90
	Colleagues	48	13.70
	Subordinate	46	13.10
	Leader	51	14.60
	Students	62	17.70
Salaries/Incentives	Salaries/Incentives	56	16.00
See Progress in Future	Yes	183	52.3
	No	167	47.7
Maid at Home	Yes	294	84.00
	No	56	16.00
Organization Training Conduction	Yes	183	52.30
	No	167	47.70
Vocal on Social Media	Yes	128	36.60
	No	222	63.40
Freedom in Course Design	Yes	92	26.30
	No	258	73.70
Working Hours Flexibility	Yes	213	60.90
	No	137	39.10
Choosing the Teaching Method	Yes	245	70.00
	No	105	30.00
Equal Opportunity for Both Genders	Yes	201	57.40
	No	149	42.60

To ensure the normal distribution of data for parametric tests, the Skewness and Kurtosis were measured. The Table 2 displayed the results of normal distribution, while the skewness (-1.05 to -0.25) and kurtosis (0.62 to 2.14) values for all scales were also showed in acceptable range. According to West et al. (1995), data can be considered normally distributed if skewness values fall within the range of -7 to +7. In the present study, the skewness values for all scales were well within this criterion, indicating normal distribution. Similarly, Kline (2015) suggests that kurtosis values should lie between -3 and +3, where higher values reflect positive kurtosis and lower values indicate negative kurtosis. In line with this guideline, the kurtosis values observed in the

current study also fell within the acceptable range, further supporting the assumption of data normality.

Bivariate Correlation

The relationship among variables was measured through Pearson Product Moment Correlation Analysis and the results of Table 2 indicated that dark tetrad was significant positive association with counterproductive work behavior ($r = 0.40, p < .01$) and significant negative association with work engagement ($r = -0.35, p < .01$) and individual work performance ($r = -0.28, p < .01$). While, work engagement was significant positive relationship with individual work performance ($r = 0.36, p < .01$), and negative significant association with counterproductive work behavior ($r = -0.28, p < .01$). However, counterproductive work behavior was significant negative relationship with individual work performance ($r = -0.19, p < .01$).

Table 2

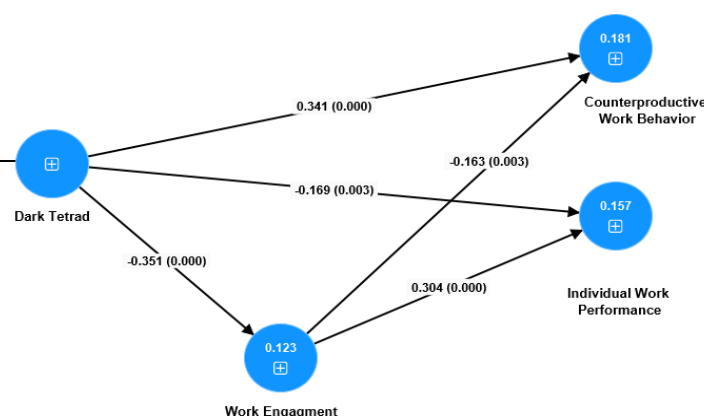
Descriptive Statistics and Correlation among Variables (N= 350)

Variables	M	SD	1	2	3	4
1.Dark Tetrad	92.42	13.46	-	-0.35**	0.40**	-0.28**
2.Work Engagement	47.29	13.91		-	-0.28**	0.36**
3.Counterproductive Work Behavior	92.06	13.62			-	-0.19**
4.Individual Work Performance	38.89	10.69				-

Structural Equation Modeling

The structural equation modeling was run using Smart PLS 4.0.9.6, validating our research assumptions through the analysis of the partial least structure model, as outlined by Ringle et al. (2015). Notably, overall model exhibited a significant substantial 12.3% variance in work engagement ($R^2 = 0.123$). While, the model exhibited a significant substantial 18.1% variance in counterproductive work behavior ($R^2 = 0.181$), and the model also exhibited significant substantial 15.7% variance in individual work performance ($R^2 = 0.157$). The table 4 represent the direct and indirect effects.

Figure 1.Structural Equation Model for Work Engagement as Mediator



Note. : Direct and indirect effects of dark tetrad through work engagement on counterproductive work behavior and individual work performance.

Table 3*Direct Effects of Dark Tetrad on Counterproductive Work Behavior, Individual Work Performance, and Work Engagement*

Causal Path	β	t	95% CI		p
			LL	UL	
Dark Tetrad → Counterproductive Work Behavior	0.341	6.134	0.228	0.441	$p < .001$
Dark Tetrad → Individual Work Performance	-0.169	2.94	-0.276	-0.049	$p = .003$
Dark Tetrad → Work Engagement	-0.351	5.870	-0.462	-0.229	$p < .001$
Work Engagement → Counterproductive Work Behavior	-0.163	2.970	-0.268	-0.053	$p = .003$
Work Engagement → Individual Work Performance	0.304	6.584	0.211	0.393	$p < .001$

Note. β = B-coefficient, t = t-statistics, CI = Confidence Interval**Mediating Effect**

After investigating the direct effects of dark tetrad on counterproductive work behavior, individual work performance, and work engagement, while direct effect of work engagement on counterproductive work

behavior and individual work performance. It was explored whether the work engagement serve as a mediator in relation of dark tetrad with counterproductive work behavior and individual work performance. Following the methodology of previous studies (Hair et al., 2017),

Table 4*Indirect Effects of Dark Tetrad on Counterproductive Work Behavior and Individual Work Performance through Work Engagement*

Causal Path	β	t	95% CI		p
			LL	UL	
Dark Tetrad → Work Engagement → Counterproductive Work Behavior	0.057	2.532	0.015	0.104	$p = .003$
Dark Tetrad → Work Engagement → Individual Work Performance	-0.107	4.269	-0.157	-0.061	$p < .001$

The results indicated that work engagement found significant partially positive mediator between relationship of dark tetrad and counterproductive work behavior ($\beta = 0.057$, $p = 0.011$). Whereas, dark tetrad has significantly direct and indirect effect on counterproductive work behavior. On the other hand, work engagement also found significant partially negative mediator between relationship of dark tetrad and individual work performance ($\beta = -0.107$, $p = 0.000$). Whereas, dark tetrad has significantly direct and indirect effect on individual work performance

4. Discussion

The present study explored whether work engagement mediates the link between the Dark Tetrad traits—narcissism, Machiavellianism, psychopathy, and sadism—and workplace outcomes, specifically counterproductive work behavior (CWB) and individual work performance (IWP), among university faculty. The results largely supported the proposed hypotheses and align with existing theoretical and empirical literature.

Consistent with hypothesis 1, the Dark Tetrad characteristics were positively related with CWB. This conclusion supports prior research showing that people with high levels of these socially aversive qualities engage in actions that impede organizational performance (O'Boyle et al., 2012). The strong positive correlation ($r = 0.40$) shows that faculty members individuals exhibiting stronger dark traits tend to engage in sabotage, withdrawal, or other harmful workplace behaviors, reflecting the manipulative and callous tendencies associated with these personality dimensions (Jonason et al., 2015). The sadistic trait strengthen these behaviors which disturb workplace culture and decrease the productivity (Buckels et al., 2013). These traits create a toxic environment no matter how charismatic their personalities at the work place.

The results revealed the negative association between dark tetrad personality trait and individual work performance, which is aligned with the literature. The people with dark tetrad tend to perform poor in their roles (Fernández-del-Río et al., 2022). Machivallenism and psychopathy weakly negatively linked with job performance while narcissism was not related (O'Boyle et al., 2012). While sadist tend to perform better where they get the chance to exert power (Paulhus, 2014). The dark tetrad negatively associated with work engagement according to the results which is according to the literature. Employees with dark tetrad possess less emotional commitment and cognitive involvement at work and low motivation at work (Fernández-del-Río et al., 2022).

The findings confirm that Dark Tetrad traits negatively influence faculty engagement and performance, while increasing harmful workplace behaviors. The partial mediation suggests that while engagement plays a key role, other mechanisms may also be involved. The counterintuitive positive mediation effect between engagement and CWB may indicate that highly driven individuals with dark traits can also channel their energy into manipulative or harmful behaviors when engagement is high but misdirected.

Hypothesis 3 proposed that work engagement would significantly mediate the relationship between the Dark Tetrad and counterproductive work behavior. The results yielded mixed evidence. Specifically, the findings indicated that work engagement positively mediated the association between the Dark Tetrad traits and counterproductive work behavior while correlation showed negative link between work engagement and dark tetrad. The distinction between correlation and mediation analysis is explained using the mediation analysis theory (Baron & Kenny, 1986), indicates the correlation indicates the direct association however mediation examines the indirect which can change the magnitude of the variable. (Christi & Murwani,

2020) highlighted that correlations exhibit bivariate relationship and mediation model express complex indirect relationships that may oppose or contradict the correlational result. study conducted by (Li et al., 2020), found that dark tetrad predicts counterproductive work behavior whereas psychological contract breach and engagement served as a mediator. There is a consistent positive relation has been found between dark personality trait and counterproductive work behavior while work engagement serve as mediator and moderator in this relation (O'Boyle et al., 2012); (Miao et al., 2023); (Bingül & Göncü-Köse, 2024). A research conducted by Chen et al, 2020 discovered the work engagement lead to emotional exhaustion with the people having neurotic personality and emotional instability in the relation with counterproductive work behavior thus indicating the positive mediator role of work engagement in the relation of dark personality and counterproductive work behavior. Work engagement is linked with negative workplace outcomes knowledge hiding and unethical behavior which are negatively associated with organizational productivity. (Wang, 2019). Whereas inclusion of sadism as dark tetrad in the relation of counterproductive work behavior is direct and work engagement serves no mediator relation as it has lack of positive emotional state.

The findings of the present study provided partial support for Hypothesis 4, indicating that work engagement acted as a partial mediator between the Dark Tetrad traits and individual work performance. Previous research has similarly examined the relationship between the Dark Triad, work engagement, and performance, emphasizing the mediating role of work engagement in enhancing job outcomes (Alves & Lourenço, 2023). Furthermore, work engagement has been shown to amplify the positive aspects of personality traits while buffering against the detrimental effects of dark traits on performance (Furnham et al., 2023).

Limitations and Implication of the Study

This study highlights the complex interplay between dark personality traits, work engagement, and workplace behaviors in academia. Future studies should focus on other sectors and employees of different organizations. The data was gathered solely on the self-report measure, future studies should focus on other sources as well. Organizational culture and other environmental variables should take into account. The study Institutions must recognize the presence and impact of dark traits and invest in engagement-based interventions to mitigate their adverse effects.

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