

Research Paper

## The Relationship Between Big Five Personality Traits and Disgust Sensitivity among Young Adults in India

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### ABSTRACT

Disgust Sensitivity is believed to influence moral, social, and political cognition, with growing interest in its relationship with personality traits. While previous studies have primarily focused on Western populations, research in non-Western contexts, particularly India, remains limited. This study aimed to examine the correlation between Big Five personality traits and Disgust Sensitivity among Indian adults, contributing to a broader exploration of psychological determinants of voting behavior. A sample of 221 Indian nationals aged 18 to 26 years completed the NEO Five-Factor Inventory (NEO-FFI) and the Disgust Scale–Revised (DS-R). Data were analyzed using Kendall’s Tau-b correlation in R to account for tied ranks. Results revealed a statistically significant positive correlation between Neuroticism and Disgust Sensitivity ( $\tau = 0.1184$ ,  $p < .05$ ). However, Conscientiousness showed no significant correlation ( $\tau = 0.0058$ ), and Agreeableness ( $\tau = -0.0363$ ) and Extraversion ( $\tau = -0.0734$ ) exhibited small negative trends. Openness ( $\tau = 0.0486$ ) was unrelated to Disgust Sensitivity. These findings suggest that Neuroticism plays a key role in Disgust Sensitivity within an Indian context, challenging the assumption that Conscientiousness is relevant. The study highlights the importance of considering personality traits in understanding social attitudes and political behavior, particularly in culturally diverse populations.

**Keywords:** *Neuroticism, Disgust Sensitivity, personality traits, emotional reactivity, disease avoidance*

Over the past two decades, there has been growing interest in how disease-avoidance mechanisms influence psychological functioning and human behavior (Schaller & Park, 2011; Thornhill & Fincher, 2014). Disgust Sensitivity, a key trait in this domain, is understood as an evolved psychological mechanism that aids in avoiding pathogen threats by generating aversive emotional reactions to cues associated with contamination (Tybur, Lieberman, & Griskevicius, 2009). This trait has been consistently linked to various social and psychological outcomes, including intergroup attitudes, moral reasoning, and even political ideology (Olatunji et al., 2010; Terrizzi, Shook, & Ventis, 2010; Inbar, Pizarro, & Bloom, 2009).

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A growing body of research has begun to explore how Disgust Sensitivity relates to broader personality traits, particularly those described by the Big Five model: Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (McCrae & Costa, 1999). The theoretical basis for this inquiry lies in the assumption that individual differences in personality may reflect stable dispositional tendencies toward disease-relevant behaviors. For instance, traits such as Conscientiousness and Neuroticism may encourage cautiousness and avoidance, potentially aligning with greater disease sensitivity, while traits like Extraversion and Openness, which involve novelty-seeking and social engagement, might increase exposure risk and thus correlate negatively with Disgust Sensitivity (Duncan et al., 2009; Tybur & de Vries, 2013).

However, findings across studies have been mixed. While Neuroticism has shown a relatively consistent positive correlation with Disgust Sensitivity (Olatunji et al., 2010), results for other traits remain inconsistent or inconclusive (Druschel & Sherman, 1999; Duncan et al., 2009; Tybur et al., 2009). Some studies report negative associations between Openness or Extraversion and Disgust Sensitivity, while others find no significant relationships at all. Similarly, Agreeableness and Conscientiousness have yielded variable results across samples and methodologies.

### *The purpose of the present study*

This study aims to contribute to this line of research by empirically examining the relationship between Big-5 personality traits and Disgust Sensitivity within an Indian sample. While the theoretical foundation acknowledges evolved disease-avoidance tendencies, the emphasis is on identifying consistent personality correlates of Disgust Sensitivity. By clarifying these associations, the study seeks to enhance our understanding of individual differences in pathogen avoidance and their broader psychological relevance.

## REVIEW OF LITERATURE

Understanding how personality traits influence emotional responses has been a growing area of psychological research. Within this context, the construct of **disgust sensitivity**—the propensity to experience disgust across various domains—has garnered considerable attention, particularly in relation to the **Big Five personality traits**. Disgust, an emotion often associated with contamination and moral judgment, is increasingly seen as a key variable in predicting social and ideological behaviors. This review explores the associations between disgust sensitivity and the Big Five traits, drawing from existing literature while identifying gaps that justify further empirical investigation.

One of the foundational measures of disgust sensitivity was developed by **Haidt, McCauley, and Rozin (1994)**, who proposed that disgust is not a monolithic emotion but rather emerges in response to stimuli across several domains—such as food, hygiene, sex, and morality. This multidimensionality was later refined by **Olatunji et al. (2007)**, who used factor analysis to improve the psychometric properties of the Disgust Scale and validated its use in diverse populations. Their work made it possible to study disgust sensitivity in relation to broader personality constructs like the Big Five.

The Big Five traits—**Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism**—have been widely validated across cultures as core dimensions of personality (McCrae & Costa, 1997; Tellegen & Waller, 2008). However, relatively few studies have systematically examined how these traits correlate with disgust sensitivity. Of the limited

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research available, **Inbar, Pizarro, and Bloom (2009)** found that individuals higher in **Neuroticism** were more likely to report elevated disgust sensitivity, particularly in the domains of pathogen and moral disgust. This association may be grounded in the role of neurotic individuals' heightened reactivity to aversive stimuli.

On the other hand, **Openness** has shown an inverse or inconsistent relationship with disgust sensitivity. People high in openness tend to seek novelty and are less bound by conventional norms, which may buffer them from certain types of disgust, particularly those grounded in cultural taboos (Inbar et al., 2009). However, this association has not been consistently replicated, suggesting a need for more nuanced studies that account for sub-facets of openness and specific disgust domains.

**Agreeableness and Conscientiousness** are hypothesized to be related to moral disgust, given their roles in social cohesion and rule adherence. However, findings remain inconclusive. For instance, while **Pizarro and Salovey (2002)** argue that moral emotions like disgust play a role in maintaining social norms, they do not directly link these emotions to specific personality traits. Similarly, **Crawford and Godfrey (2012)** emphasize disgust's central role in moral judgment formation but do not integrate personality frameworks, pointing to a theoretical gap.

In terms of **Extraversion**, the literature suggests a weak or negative correlation with disgust sensitivity, especially in the context of pathogen avoidance. Extraverts may be less likely to experience social disgust due to their greater social engagement and risk tolerance (Schaller & Duncan, 2007). However, more empirical work is required to validate this assumption, as the directionality of this relationship is not well established.

Further insight into the emotional mechanisms underlying these associations is offered by **Dunsmoor and Paz (2015)**, who highlight the role of emotional learning in fear and disgust responses. Their neurobiological model supports the idea that dispositional traits could influence emotional conditioning, providing a potential explanatory mechanism for personality-disgust correlations.

Despite the theoretical richness, few studies directly explore **how each Big Five trait differentially predicts domain-specific disgust sensitivity**, nor have they accounted for potential moderating variables such as gender, culture, or ideological orientation. For example, **Bastian and Haslam (2006)** link emotional essentialism to prejudice, a process potentially moderated by disgust, yet do not consider personality traits. Similarly, **Rozin, Haidt, and McCauley (2000)** and **Schaller and Duncan (2007)** provide evolutionary accounts of disgust but lack integration with personality theories.

In summary, while some initial correlations between disgust sensitivity and the Big Five traits—particularly Neuroticism and Openness—have been documented, the literature remains sparse and fragmented. Most existing studies do not adopt a comprehensive multivariate approach or explore underlying mechanisms. Future research should employ correlational designs with validated multi-domain disgust measures and consider personality sub-facets to clarify these associations.

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## METHOD

### Sample

A total of 221 participants from the University of Lucknow, India, participated in the study. The sample consisted of young adults aged 18 to 26 years. The demographic breakdown revealed that 65.3% of the participants were females, while 56.6% identified as Muslim, 37.6% as Hindu, and the remaining 5.9% as other religious minorities. Regarding educational background, 40.3% were undergraduate students, 30.8% were postgraduate students, and 26.2% were senior secondary students. Annual family income ranged from ₹0–3 Lakhs for 40.3% of participants to ₹10+ Lakhs for 13.1%. Table 1 presents a summary of the demographic characteristics of the sample.

*Table 1 Demographic Characteristics of the Sample (N = 221)*

Demographic Variable	Category	Frequency (%)
Gender	Female	65.3
	Male	34.7
Religion	Muslim	56.6
	Hindu	37.6
	Other Religious Minorities	5.9
Age	18	17.0
	21	15.4
	22	17.0
Education	Senior Secondary	26.2
	Undergraduate	40.3
	Postgraduate	30.8

### Instruments

- **Big Five Inventory (NEO-FFI):** The Big Five personality traits were measured using the NEO Five-Factor Inventory (NEO-FFI), a widely used tool designed to assess the five core personality dimensions: Openness, Extraversion, Agreeableness, Conscientiousness, and Neuroticism. The NEO-FFI comprises 60 items, with 12 items per personality trait. Each item was rated on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Coefficient alphas (e.g., alpha from .70 to .80) and test-retest reliabilities (e.g.,  $r$  from .75 to .90) across scale scores have been considered satisfactory (e.g., Benet-Martinez & John, 1998; Worrell & Cross, 2004) in cross-cultural samples using multiple translations of the measure.
- **Disgust Sensitivity:** Disgust Sensitivity was assessed using the Disgust Scale-Revised (DS-R) by Haidt et al. (1994), which evaluates the degree to which individuals experience disgust in response to a variety of situations. The scale consists of items related to physical, moral, and sexual disgust. Participants rated their responses on a 5-point Likert scale, where 1 = Not Disgusting and 5 = Extremely Disgusting. Previous studies have reported good reliability for the DS-R, with acceptable internal consistency. Cronbach's alpha is typically reported around 0.84 whereas test-retest reliability correlations range from 0.79-0.84 (Olatunji et al., 2007).

### Design

The study employed a correlational, cross-sectional design to examine the associations between Big Five personality traits and Disgust Sensitivity. Data were collected through

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standardized self-report questionnaires administered in a single session. No experimental manipulation was involved, and all variables were measured simultaneously to identify the strength and direction of relationships among constructs.

The study was conducted in a single session, which lasted approximately 30 minutes. Participants were informed that the purpose of the study was to understand personality traits and general attitudes, without disclosing the true focus on Disgust Sensitivity to minimize potential order effects. This single-blind procedure was employed to reduce bias in the data collection process. At the end of the session, participants were fully debriefed and informed of the true nature of the study. The participants completed the surveys in a controlled environment, and their responses were automatically recorded.

Ethical guidelines were followed, ensuring that participation was voluntary, anonymous, and confidential.

Data were analyzed using **R 4.3.2** software. The primary analyses focused on examining the relationships between Disgust Sensitivity and the Big Five personality traits using **Kendall's Tau** correlation, given its robustness in handling non-normally distributed data and avoiding the effects of tied ranks. The correlations were considered significant if the p-value was less than 0.05. The internal consistency of the NEO-FFI and DS-R scales was evaluated using Cronbach's alpha, as reported in previous studies.

### RESULTS

The relationship between the Big Five personality traits and Disgust Sensitivity was examined using Kendall's Tau-b correlations in R version 4.3.2 (Table 2). Among the five traits, **Neuroticism** showed a statistically significant positive correlation with Disgust Sensitivity,  $\tau = 0.118$ ,  $p = .011$ , indicating that participants with higher levels of Neuroticism also reported greater sensitivity to disgust.

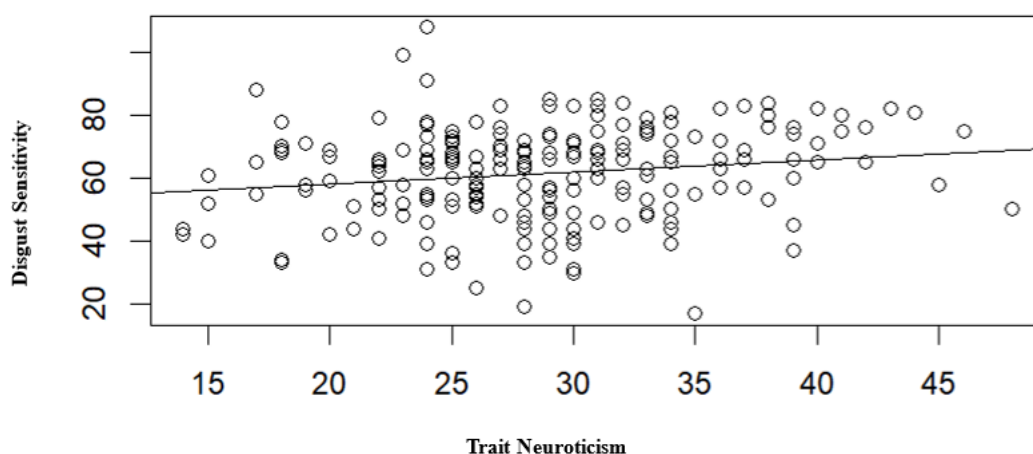
*Table 2 Kendall's Tau-b Correlations Between Big Five Personality Traits and Disgust Sensitivity*

Trait	Kendall's $\tau$	p-value
Neuroticism	0.118	.011
Extraversion	-0.073	.118
Agreeableness	-0.036	.438
Openness	0.049	.302
Conscientiousness	0.006	.902

*Note.* N = 221. Correlations were computed using Kendall's Tau-b.

In contrast, **Extraversion** demonstrated a negative correlation with Disgust Sensitivity ( $\tau = -0.073$ ), though this association did not reach statistical significance ( $p = .118$ ). Similarly, **Agreeableness** was negatively correlated ( $\tau = -0.036$ ), but this correlation was also not significant ( $p = .438$ ). **Openness to Experience** showed a weak positive correlation with Disgust Sensitivity ( $\tau = 0.049$ ,  $p = .302$ ), while **Conscientiousness** was nearly uncorrelated ( $\tau = 0.006$ ,  $p = .902$ ). Thus, aside from Neuroticism, none of the Big Five traits demonstrated a significant relationship with Disgust Sensitivity in this sample.

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**Figure 1** Scatterplot showing positive correlation between Disgust Sensitivity and Trait Neuroticism.

### DISCUSSION

The present study investigated the relationship between Big Five personality traits and Disgust Sensitivity among young adults in India. Neuroticism emerged as the only trait significantly correlated with Disgust Sensitivity, consistent with prior findings suggesting that individuals high in Neuroticism may be more emotionally reactive to aversive stimuli, including disgust-eliciting situations. The modest strength of this association supports the understanding that disgust, as a protective emotion, may be more pronounced in individuals prone to anxiety and emotional instability. This is particularly meaningful in the Indian socio-cultural context, where concerns related to hygiene, contamination, and moral purity may intersect with dispositional sensitivity to disgust.

Although Extraversion and Agreeableness showed weak negative trends, and Openness showed a slight positive correlation, none reached statistical significance. The absence of a significant relationship between Conscientiousness and Disgust Sensitivity also aligns with previous studies suggesting that this trait may pertain more to self-regulation than to emotional reactivity.

These findings offer partial support for the hypothesized personality-disgust link and underscore the need to explore additional moderating or mediating variables, such as gender, health anxiety, or cultural norms. It is possible that the relationship between personality and Disgust Sensitivity is more nuanced or context-dependent than previously understood.

Despite the strengths of the study, including a relatively large and diverse sample, several limitations must be acknowledged. First, the reliance on self-report measures may have introduced biases such as social desirability or inaccurate self-assessment—especially in a socio-cultural setting where emotional expressiveness may be stigmatized. Second, the gender data were incomplete due to the optional nature of the demographic question, restricting the ability to explore gender-based differences. Third, the cross-sectional design limits causal interpretations, and the correlational analyses do not account for complex interactions among psychological traits. Finally, the sample consisted largely of students, which may limit the generalizability of the findings to the broader population.

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Future research would benefit from employing longitudinal or experimental designs to examine how personality traits and Disgust Sensitivity evolve over time. Incorporating objective behavioral or physiological measures—such as facial expression coding or skin conductance—could enrich our understanding of disgust responses. Additionally, investigating the role of cultural beliefs, moral values, or religiosity as potential moderators may offer deeper insights, particularly within non-Western populations. Replication with a more demographically representative sample is also recommended to enhance the external validity of the findings.

### CONCLUSION

This study examined the relationship between Big Five personality traits and Disgust Sensitivity among young adults in India. Neuroticism was found to have a significant positive correlation with Disgust Sensitivity, suggesting that individuals with higher emotional reactivity are more likely to experience disgust. While no significant associations were found for other personality traits, the findings underscore the importance of Neuroticism in understanding Disgust Sensitivity. Despite the study's limitations, including its cross-sectional design and reliance on self-report measures, it contributes valuable insights into the role of personality in emotional responses. Future research should focus on longitudinal designs, objective measures, and broader cultural contexts to further clarify these relationships.

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### **Conflict of Interest**

The author(s) declared no conflict of interest.

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