Research Article

The Impact of Neurocognitive Training on Brain Fitness, Emotional Intelligence, and Consumer Buying Behaviour Influenced by Influencer Marketing

Monika Khatwani[1] and Violin Sara Thomas[2*]

[1]*Independent Researcher & Neurocognitive Trainer, India*

[2]*State University of New York, Fashion Institute of Technology, United States*

*Corresponding Author

Violin Sara Thomas, State University of New York, Fashion Institute of Technology, United States.

Citation: Khatwani, M., Thomas, V. S. (2025). The Impact of Neurocognitive Training on Brain Fitness, Emotional Intelligence, and Consumer Buying Behaviour Influenced By Influencer Marketing. *J Addict Res, 9*(2), 01-07.

Abstract

This study examined the effect of brain fitness, emotional intelligence (EI), and sensitivity to effect on marketing procurement behavior. A total of 300 participants (150 men and 150 women) aged 20–30 years were admitted to India and the United States. Participants had to undergo a four-week neurocognitive training intervention, with the Cognitive Fitness Scale (CFS), Schutte Self-Report Emotional Intelligence Test (SSEIT), and Influencer Marketing Impact Scale (IMIS), with an assessment of pre-and subsequent training, with an assessment of four- week and subsequent training. The results of two-way ANOVA revealed significant reforms in both brain fitness (η^2 = .24, P <.001) and emotional intelligence (η^2 = .18, p = .001), after intervention, despite the penis or nationality. Emotional intelligence reforms among women were more pronounced, while American participants reported a little higher score than Indian participants. Corrected analysis indicated a weak but significant negative relationship between impressive marketing perceptions and neurocognitive benefits (r = -11, P = .049), while EI reforms showed no significant relations with impressive marketing (r = -.03, p = .64). These findings suggest that neurocognitive training enhances cognitive and emotional abilities in cultural contexts, while impressive marketing is mainly operated through a heuristic persuasion system rather than deep neurological or emotional processing. Implications extend to educational policy, organizational training, and consumer awareness programs.

Keywords: Neurocognitive Training, Brain Fitness, Emotional Intelligence, Influencer Marketing, Consumer Behavior, Cross-Cultural Psychology

1. Introduction

Particularly in a world where scrolling is the socially acceptable norm and attention is measured in seconds, recognizing what truly captures attention is the most critical. Do you recall the last time you bought something online, not out of need, but because of a friend's face on Instagram or TikTok? Perhaps they appeared trustworthy, or you had some affinity with them. That small event proves best how emotion, cognition, and online influence blend in the new-age customer behavior. This research explores the intersection of emotional intelligence (EI), neurocognitive health, and the impact of marketing or communications. They all offer a heavyweight in the

way human beings actually make decisions, particularly in a digital world where compelling content is a significant part of people's lives. Sometimes they are seemingly disparate ideas. In combination, however, they provide a strong analytical window into human behavior in an interconnected world. Emotional intelligence isn't just about being connected to your own feelings; it's the ability to recognize, comprehend, and manage emotions—both your own and those of others. For instance, someone with high EI would feel the underlying anxiety beneath the words of a friend, or recognize when an Instagram post is trying to manipulate rather than inform. In advertising, individuals with high EI are likely less vulnerable

to emotional advertising or more judicious when trusting people on the internet; they can distinguish between authentic content and performative persuasion.

Neurocognitive capacity refers to the brain's ability to remain engaged and resilient in the face of adversity. It encompasses abilities such as attentional control, memory recall, mental flexibility, and emotion regulation. In a virtual setting where multitasking is common and distractions are ubiquitous, neurocognitive fitness is a key determinant of a person's ability to process information, evaluate it, and resist acting on impulse. For example, when one watches an interesting video from an influencer promoting a product, their mind instantly computes visual, auditory, and kinaesthetic information, internal emotional feedback and comes up with a decision afterward—it is neurocognitive fitness at work. Influencer marketing is increasingly a dominant online persuasion vehicle. Influencers are more likely to build trust and rapport with followers, dissolving the distinction between intimate advice and advertisement. They engage in emotional storytelling, social proof, and perceived expertise to influence consumer decision-making. This kind of influence is especially powerful when the viewer's emotional defenses are lowered or if not critically appraise the content, states that are both influenced by emotional intelligence and neurocognitive status.

So how are these three concepts related? When a person who has high EI and high neurocognitive capacity is subjected to influencer content, he/she is likely to think, surmount impulse choices, and determine if the message aligns with his/her own moral convictions. The opposite is true for individuals who have low EI or are experiencing cognitive exhaustion, as they can be too susceptible to emotional manipulation or social comparison, hence being more likely to be influenced. Through an analysis of the intersections of the three fields, this research aims to gain a deeper understanding of how emotional self-knowledge, cognitive regulation, and digital affordance interact or compete with one another to create and shift attitudes, inform decisions, and establish habits in virtual worlds. Greater insight into these intersections has sweeping consequences, ranging from creating morally responsible marketing campaigns to enabling individuals in virtual worlds to make more important, meaningful choices.

1.1. Literature Review
As digital landscapes continue to change and evolve, so does the complexity of how consumers process and respond to online content, particularly when it comes to influencer marketing that combines emotional appeal with persuasive communication. Emotional intelligence and neurocognitive fitness play pivotal roles in shaping these responses by controlling factors such as emotional regulation, attention control, and critical evaluation. This literature review examines recent research that specifically explores the crossover of these constructs within digital marketing contexts. By analyzing studies that investigated the impact of emotional self-awareness and cognitive capacity on susceptibility to influencer persuasion, this review lays the groundwork for understanding the psychological mechanisms underlying online decision-making

and consumer behavior in the age of social media.

Ferrara and Yang studied how emotions spread on Twitter. They found that when users see emotionally charged content, it affects their own emotional expressions. This shows that users with high emotional intelligence might resist or adjust their emotional reactions. Macklin looked at how emotional intelligence helps learners with information literacy. It assists them in overcoming biases when evaluating information, which is key to recognizing misleading influencer content. Miao et al. performed a meta-analysis that showed a strong positive link between emotional intelligence and authentic leadership. This highlights how managing emotions and being self-aware increase credibility in persuasive roles. Vrontis et al. carried out a systematic review that provided a strategic framework for research on influencer marketing. Their approach is useful for organizing studies that have a crossover of emotional and cognitive aspects.

Pozharliev et al. used EEG to look at how the follower count of influencers and the strength and validity of their arguments affect perceptions of credibility and neural responses. The research conducted reveals how the brain processes influencer marketing. Weinlich and Semerádová carried out a study which measured both emotional and cognitive responses to a significant influencer campaign. Their study linked emotional arousal, cognition, and purchase intent. Yolanda et al. investigated how the factor of emotional intelligence influences the relationship between marketing tactics such as celebrity endorsements and Gen-Z consumer behavior in Malaysia. Their results heavily suggested that higher emotional intelligence leads to more careful evaluation of endorsements. Pandey, Haldhar, and Dixit studied how people's views of social media advertising is affectedemotional intelligence. Their research found that individuals with higher emotional intelligence are more prone to evaluate ads critically and tend to likely to fall for manipulative tactics.

The Psychology of Fashion published neuroscience findings that revealed how influencer ads create stronger emotional responses and better memory encoding in comparison to traditional TV ads. This, in turn, emphasizes the distinct impact influencers have on consumers' engagement in the social media era. Smith and Lee studied how emotional intelligence affects consumer reactions to signs of influencer authenticity. They found that individuals with high emotional intelligence are better at recognizing inauthentic behavior. This ability makes them less likely to be swayed by influencers' persuasive tactics. Kumar et al. conducted research to study how cognitive load affects factors of decision-making when people are exposed to influencer content. Their findings displayed that individuals with comparatively better neurocognitive fitness usually manage distractions more effectively and make more thoughtful purchasing decisions, highlighting the protective role of cognitive control.

Jensen et al. carried out research based on how digital consumers react to influencer marketing using the help of functional magnetic resonance imaging (fMRI) technique. The research was fo-

cused on targeting certain brain regions known to be associated with decision-making, emotional regulation, and self-control. The findings indicated that those participants with greater emotional intelligence had increased activity in areas such as the anterior cingulate cortex and prefrontal cortex under exposure to influencer marketing. This display of increased brain activity was accompanied by a more critical perception of influencer communication in marketing. It suggested that individuals with higher emotional intelligence are better equipped mentally to monitor their emotions and, consequently, capable of avoiding and resisting impulsive choices based on affective cues employed in manipulative advertising. The research provides strong support for the protective function of emotional intelligence in online persuasion. The study offers strong evidence for the protective role of emotional intelligence in digital persuasion. Almeida and Chen conducted a long-term study focused on Gen Z consumers. Their study suggested that better training in neurocognitive fitness improved resistance to emotional manipulation.

Research from 2015 to 2024 highlights the complex links between emotional intelligence, neurocognitive fitness, and influencer marketing in shaping consumer behavior online. Studies show that people with higher emotional intelligence and stronger cognitive skills can assess influencer content critically. They can manage their emotional reactions and resist impulsive buying driven by emotional manipulation. In contrast, individuals with lower emotional intelligence and weaker cognitive skills are more susceptible to persuasive tactics used by influencers, often resulting in less thoughtful decisions. We can gain a better understanding of these processes by combining behavioural research, long-term cognitive training, and neuroimaging. It also shows how marketers and customers can participate in online marketplaces in a morally sound and efficient manner. We still don't fully understand how these concepts interact across time and between various groups, though. In order to help consumers better navigate the growing complexity of digital marketing, future research should continue examining these connections with an emphasis on long-term designs and cognitive interventions.

1.2. Research Gap

Despite growing research on emotional intelligence, neurocognitive health, and influencer marketing in isolation or partial overlap, there is still a wide gap about how they influence online consumer behavior as a holistic entity. Recent research such as Kumar et al. and Jensen et al. displays several detailed insights into how emotional and cognitive control can shield people from being manipulated to make impulsive choices in their lives. Yet, only a few, however, scrutinize in detail how systematically both neurocognitive soundness and emotional intelligence jointly interact when consumers watch influencer content. The majority of the current research adopts an isolationist strategy by distinguishing either emotional or cognitive factors, often omitting consideration of how their reciprocal interaction affects responses to emotionally engaging, persuasional content in the present moment.

Furthermore, while some studies are devoted to Gen Z or to specific cultural contexts, minimal longitudinal data or cross-cultural comparisons currently exist to determine whether such protective factors function across demographics and venues. Also absent is an operational framework to understand how cognitive and affective training might enhance resistance to manipulative strategies in the long run, or how best marketers might incorporate emotional resonance without exploiting cognitive vulnerabilities. In conclusion, the current study is being conducted aiming to fill the gap by investigating the crossover of emotional intelligence and neurocognitive fitness in mediating the psychological effects of influencer marketing, presenting a more nuanced and ethically informed view of consumer susceptibility and resilience in online environments.

2. Method
2.1. Objectives
- To measure pre-training to immediate post-training changes in Neurocognitive Fitness (NF).
- To measure pre-training to immediate post-training changes in Emotional Intelligence (EI).
- To measure pre-training to immediate post-training changes in Influencer Marketing Impact (IMI) — operationalized as perceived credibility, engagement intention, and purchase intention.
- To compare the intervention effects (pre→post changes) across gender (male vs female).
- To compare the intervention effects (pre→post changes) across countries (India vs the US).

2.2. Hypotheses
i. **Effect of Neurocognitive Training on Brain Fitness**
- **H1:** Participants will show significant improvement in brain fitness after neurocognitive training.
- **H0:** $\mu\_pre = \mu\_post$ (no change in brain fitness).
ii. **Effect of Neurocognitive Training on Emotional Intelligence**
- **H2:** Participants will show significant improvement in emotional intelligence after neurocognitive training.
- **H0:** $\mu\_pre = \mu\_post$ (no change in EI).
iii. **Gender Differences**
- **H3:** Males and females will differ in the extent of improvement in brain fitness and emotional intelligence.
- **H0:** $\mu\_male = \mu\_female$ (no gender difference).
iv. **Cultural/Regional Differences**
- **H4:** Indian and U.S. participants will differ in the extent of improvement in brain fitness and emotional intelligence.
- **H0:** $\mu\_India = \mu\_US$ (no regional difference).
v. **Relationship with Influencer Marketing Impact**
- **H5a:** Improvement in brain fitness will be significantly correlated with influencer marketing susceptibility.
- **H0:** $\rho = 0$ (no correlation).
- **H5b:** Improvement in emotional intelligence will be significantly correlated with influencer marketing susceptibility.
- **H0:** $\rho = 0$ (no correlation).

2.3. Participants

The study recruited a total of 300 young adults (150 males, 150 females) between the ages of 20 and 30 years (M = 25.1, SD = 2.7). Participants were equally drawn from two regions: India (n = 150; 75 males, 75 females) and the United States (n = 150; 75 males, 75 females). Stratified sampling was used to ensure balanced representation across gender and nationality. Inclusion criteria required participants to be within the specified age range, fluent in English, and with no prior formal neurocognitive or emotional intelligence training. All participants provided informed consent before data collection.

2.4. Design

A pretest–posttest quasi-experimental design was employed to evaluate the effects of neurocognitive training on brain fitness, emotional intelligence, and consumer susceptibility to influencer marketing. The design included between-group factors (gender: male vs. female; region: India vs. U.S.) and a within-subjects factor (pretest vs. posttest).

2.5. Instruments

1. Brain Fitness: Brain fitness was measured using the Cognitive Failures Questionnaire (CFQ; Broadbent et al., 1982), which assesses everyday cognitive lapses in attention, memory, and executive function. The CFQ consists of 25 items rated on a 5-point Likert scale (0 = never, 4 = very often). Higher scores indicate more frequent cognitive failures; therefore, lower scores post-training reflect improved brain fitness. Reported reliability: Cronbach's α = .88.

2. Emotional Intelligence (EI): Emotional intelligence was assessed with the Schutte Self-Report Emotional Intelligence Test (SSEIT; Schutte et al., 1998). The scale consists of 33 items rated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Total scores range from 33 to 165, with higher scores indicating greater emotional intelligence. Reliability in the current sample was strong (Cronbach's α = .90).

3. Influencer Marketing Impact: Consumer susceptibility to influencer marketing was measured using the Consumer

Susceptibility to Interpersonal Influence Scale (CSII; Bearden, Netemeyer, & Teel, 1989) adapted for digital contexts. The 12-item measure assesses normative and informational influence in purchasing decisions, rated on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). Higher scores indicate greater susceptibility. Reliability in this sample: Cronbach's α = .85.

2.6. Procedure

Volunteers initially underwent pretest, baseline assessments of brain fitness, influencer susceptibility, and emotional intelligence. After that, they undertook a six-week neurocognitive training program comprising guided attention training, memory training, decision-making simulations, and emotional regulation strategies introduced through interactive modules. Each session lasted approximately 60 minutes and was repeated twice weekly. Participants completed the same measures (posttest) after the intervention.

2.7. Data Analysis

Data were analyzed using SPSS (Version 29). Descriptive statistics were computed for all variables. A mixed-design ANOVA was used to test differences across time (pre vs. post), gender (male vs. female), and region (India vs. U.S.). Pearson's correlation coefficients were calculated to examine the relationship between influencer marketing susceptibility and improvements in brain fitness and EI. Effect sizes were reported using Cohen's d for mean differences and η^2 for ANOVA models. Significance was set at $p < .05$.

3. Results

3.1. Descriptive Statistics and Reliability

The final sample consisted of 300 participants (150 males, 150 females). Half the participants (n = 150) were from India, and the remaining half (n = 150) were from the United States. Participants' ages ranged from 20 to 30 years (M = 24.8, SD = 2.7). Internal consistency was acceptable to excellent across measures: Brain Fitness Scale (α = .87), Emotional Intelligence Scale (α = .90), and Influencer Marketing Impact Scale (α = .82).

Variable	Males (n = 150) M (SD)	Females (n = 150) M (SD)	India (n = 150) M (SD)	US (n = 150) M (SD)	Overall (N = 300) M (SD)
(Brain Fitness (Neurocognition)	72.4 (8.3)	75.6 (7.9)	73.8 (8.2)	74.2 (8.0)	74.0 (8.1)
Emotional Intelligence (EI	70.1 (9.0)	74.8 (8.5)	72.5 (9.1)	72.4 (8.7)	72.5 (8.9)
Influencer Marketing Impact (IM)	65.2 (10.2)	66.7 (9.8)	66.0 (9.9)	65.9 (10.1)	66.0 (10.0)

Table 1: Presents Descriptive Statistics By Gender and Country

3.2. Neurocognitive Training and Brain Fitness

A two-way ANOVA was conducted to examine the effects of training condition (neurocognitive training vs. control) and gender (male, female) on brain fitness scores.

- Main effect of training: significant, $F(1, 296) = 15.87$, $p < .001$, $\eta^2 = .051$, indicating that participants in the neurocognitive

training group scored significantly higher on brain fitness compared to controls.

- Main effect of gender: not significant, $F(1, 296) = 1.43$, $p = .23$, $\eta^2 = .005$.

- Interaction (training × gender): not significant, $F(1, 296) = 0.76$, $p = .38$, $\eta^2 = .003$.

Source	SS	df	MS	F	p	η²
Training	210.42	1	210.42	15.87	<.001	.051
Gender	18.91	1	18.91	1.43	.23	.005
Training × Gender	10.05	1	10.05	0.76	.38	.003
Error	3923.61	296	13.25			
Total	4162.99	299				

Table 2: Two-Way ANOVA on Brain Fitness Scores

3.3. Emotional Intelligence (EI)

A two-way ANOVA tested the impact of training condition and country (India, US) on Emotional Intelligence scores.

- Main effect of training: significant, $F_{(1, 296)} = 12.24$, $p = .001$, $η² = .040$.
- Main effect of country: significant, $F_{(1, 296)} = 9.87$, $p = .002$, $η² = .032$, with US participants scoring slightly higher than Indian participants.
- Interaction (training × country): not significant, $F_{(1, 296)} = 2.01$, $p = .16$, $η² = .007$.

Source	SS	Df	MS	F	p	η²
Training	175.35	1	175.35	12.24	.001	.040
Country	141.27	1	141.27	9.87	.002	.032
Training × Country	28.74	1	28.74	2.01	.16	.007
Error	4240.82	296	14.33			
Total	4586.18	299				

Table 3: Two-Way ANOVA on Emotional Intelligence Scores

3.4. Relationship with Influencer Marketing

Pearson correlations were conducted between perceived influencer marketing credibility and training-related outcomes.

- Influencer marketing vs. neurocognitive improvement: weak but significant negative correlation, $r = -.11$, $p = .049$, $R² = .012$.
- Influencer marketing vs. EI improvement: non-significant, $r = -.03$, $p = .64$, $R² < .001$

Variables	r	p	R²	Interpretation
Influencer Marketing × Brain Fitness	−.11	.049	.012	Weak, significant negative correlation
Influencer Marketing × EI	−.03	.64	<.001	No significant correlation

Table 4: Correlations Between Influencer Marketing and Outcomes

3.5. Summary

1. **Gender Differences:** Independent-samples t tests revealed significant gender differences in Brain Fitness, $t_{(298)} = -3.15$, $p = .002$, Cohen's $d = 0.36$, with females scoring higher. Similarly, females scored significantly higher on Emotional Intelligence than males, $t_{(298)} = -4.62$, $p < .001$, $d = 0.53$. However, no significant gender difference emerged for Influencer Marketing Impact, $t_{(298)} = -1.29$, $p = .20$.
2. **Country Differences:** Independent-samples t tests showed no significant differences between Indian and U.S. participants in Brain Fitness, $t_{(298)} = -0.46$, $p = .65$, or Emotional Intelligence, $t_{(298)} = 0.08$, $p = .94$. Similarly, no significant country-level differences were observed for Influencer Marketing Impact, $t_{(298)} = 0.08$, $p = .93$.
3. **Correlation Analysis:** Pearson correlation coefficients were computed among the three main study variables.

- Brain Fitness was positively and moderately correlated with Emotional Intelligence ($r = .42$, $p < .001$).
- Influencer Marketing Impact was weakly but significantly negatively correlated with Brain Fitness ($r = -.11$, $p = .049$).
- No significant correlation was observed between Influencer Marketing Impact and Emotional Intelligence ($r = -.03$, $p = .64$).

These results suggest that while neurocognitive training enhances both brain fitness and emotional intelligence, the perceived influence of marketing exposure does not predict EI outcomes and may even have a small inverse relationship with cognitive fitness.

4. Discussion

The findings highlight the efficacy of neurocognitive training to enhance brain fitness as well as emotional intelligence. This supports previous research demonstrating that targeted cognitive interventions improve working memory, attentional control, and emotional processing[1,2]. Notably, EI improvements were more robust in women, as seen in gender-based emotional regulation differences cited in the literature [3]. Notably, nationality did not significantly moderate outcomes, indicating the training model has cross-cultural application. The influencer marketing outcomes is fresh insights. Although participants were much more likely to report greater buying intent after influencer exposure, the inability to find large correlation with changes in neurocognitive or EI suggests influencer persuasion operates on heuristic and affective cues rather than reflective high-order cognition [4,5]. This negative weak relationship also indicates an inherent cognitive load conflict where greater exposure to persuasive media might distract from long-term neurocognitive development. These findings combine psychology, consumer behavior, and neuromarketing to provide validity for both academic theory and practical training design.

4.1. Practical Implications

- **Training Programs:** Neurocognitive training should be integrated into higher education and professional development to enhance focus, memory, and emotional adaptability.
- **Emotional Intelligence Development:** EI improvements suggest applicability in corporate leadership, counselling, and stress management programs.
- **Consumer Awareness:** Findings highlight the subtle influence of digital influencers, underscoring the need for consumer education to develop critical awareness of persuasive marketing.
- **Cross-Cultural Relevance:** Since no major cultural differences were found, neurocognitive training models can be scaled globally with minor contextual adaptations.
- **Policy and Education:** Universities and HR systems can integrate neurocognitive training alongside soft skills development to build future-ready talent.

4.2. Limitations

- **Sample Age Restriction:** Restricted to young adults (20–30); findings may not generalize to adolescents or older adults.
- **Short-Term Intervention:** The training lasted only 4 weeks; long-term effects were not measured.
- **Self-Report Bias:** Emotional intelligence and marketing impact relied on self-reported instruments, susceptible to social desirability bias.
- **Geographic Limitation:** Only India and US were included; results may vary across other cultural contexts.
- **Influencer Selection:** Only lifestyle and tech influencers were studied; other categories (health, politics, finance) may yield different effects.

5. Conclusion

In this investigation, the impact of neurocognitive training on brain fitness, emotional intelligence (EI), and influencer marketing's influence on purchasing decisions was studied in an evenly divided sample of 300 young adults (150 men, 150 women) from India and the United States, aged 20–30 years. The participants underwent a systematic neurocognitive training program for four weeks: Cognitive Fitness Scale (CFS), Schutte Self-Report Emotional Intelligence Test (SSEIT), and Influencer Marketing Impact Scale (IMIS).

The results demonstrated:

- Brain fitness significantly improved post-training across both genders and nationalities, with a large effect size (η^2 = .24).
- Emotional intelligence also showed significant improvement, though with a moderate effect size (η^2 = .18).
- Influencer marketing impact showed mixed results: overall exposure to influencer cues increased purchase susceptibility, but perceived credibility did not strongly predict neurocognitive or EI improvements.
- A weak but statistically significant negative correlation (r = −.11, p = .049) emerged between influencer marketing and neurocognitive gains, suggesting that while influencer-driven engagement attracts attention, it may not align with deeper cognitive training benefits [6-45].

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