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Emotional Intelligence as a Predictor of Gaming Genre Preference among Adolescents: A Pilot Study

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Abstract: The current pilot study investigated emotional intelligence (EI) as a predictor of preference for more immersive versus interactive gaming genres in an adolescent convenience sample (N=100, age range 11–17 years). Emotional intelligence (EI) was measured by the Emotional Intelligence Inventory – Multi-Measure (EII-MM) Scale developed by Mangal in 2004. Participants were divided into the Immersive genre referrer (IM; n = 50; role-playing, simulation) and Interactive genre referrer (IN; n = 50; sports, racing). Results indicated that Interactive gamers (M = 120.42, SD = 26.12) reported numerically and significantly higher EI scores than Immersive gamers (M = 107.28, SD = 26.12). The difference in means between groups is statistically significant per Mann-Whitney U analysis (U = 1618.00, p = 0.011, r = 0.295, d = 0.500). Binary logistic regressions revealed further significant predictive value for EI on genre preference (B = 0.019, OR = 1.019, p= 0. 016, Nagelkerke R^2 = 0.079, AUC = 0.647). These preliminary results demonstrate a modest but directionally consistent relationship between EI and gaming genre preference that should be replicated in adequately powered studies.

Keywords: Emotional Intelligence; Adolescents; EII-MM Scale; Immersive gaming; Interactive gaming; Game genre

Introduction

The advent and growth of digital gaming has made it as one of the most common leisure activities among modern youths. The psychological affordance of gaming environments is highly disseminated across various genres such as immersive genres, like role-playing games (RPGs) and simulation titles emphasize solitary narrative engagement, whereas interactive genres, like simulations and racing games reinforce competitive arousal and real-time social coordination (Meriläinen et al 2023). Even with this meaningful variation, the psychological traits that make individuals inclined to certain types of gaming remain poorly characterized. One such traits viz. Emotional intelligence, broadly defined as the ability to perceive, understand, regulate, and utilize emotions in an efficient manner has been identified a theoretically valid predictor of behavioral choices relevant for social ecology (Salovey & Mayer 1990, Piccerillo & Digennaro). High EI is positively associated with social competence, adaptive coping, and negatively linked with avoidant coping (Ciarrochi et al, 2000). Lower EI individuals may preferentially select environments that present less demands for regulatory activity a prediction consistent with emotion-regulation models of media and digital environment selection. Emotional intelligence has consistently been connected with adaptive regulation of digital behavior. Moreover, higher rates of problematic gaming and greater reliance on digital environments as emotional coping mechanisms are all predicted by lower EI (Kuss & Griffiths 2012, Gisbert-Perez et al 2024). However, when we take a step back and examine the findings this could present as an adaptive worry strategy where those with lower affective regulatory capacity choose digital environments that decrease demands on them interpersonally, in accordance with emotion regulation approaches to media choice (Zillmann 1988). Higher EI predicts more adaptive social functioning and resilience under competitive pressure characteristics which may import socially challenging (Ciarrochi et al, 2000). Knowing the genre-specific psychological properties of games, we can assume that due to their immersive nature and deep narrative engagement, they are accessible to those who have lower affective regulatory resources (Hussain &

Griffiths 2009). Interactive genres require quickly adjusting to emotional nuances, coping with cutting risk of losing a competitive game. Whereas in immersive games, controlled environment is mainly required. In the case of multiplayer the gaming environments relies often on real-time social synchronization. This association between individual-difference predictors of genre preference has received little systematic attention. A few personality research tentatively suggests that agreeableness and introversion predict a preference for solitary (as opposed to competitive) genres (Chory &Goodboy, 2011). Emotional Intelligence which has an established connection with both personality and social competence, and should be regarded as a theoretically-predicted variable (Petrides & Furnham, 2001). Such considerations point towards an explanatory role that EI might play in the choices of gaming genre made by individuals. Individuals with lower EI, by contrast, may seek out immersive games that allow players to maintain maximum control in a low-stigma and socially undemanding environment a point not lost on those who design these types of video games while individuals show higher levels of EI score might turn away from IMGs and prefer the internal competitions interactive genres offer to their consumers. While there are studies showing associations between EI and problematic gaming behavior, the research so far has been untested in terms of its ideation as a predictor of genre preference which is an everyday behavioral decision made more proximal to gaming (Kuss & Griffiths 2012). The current study aims to fill this gap. Two hypotheses were proposed for filling this gap: (H1) The Interactive gaming genres would lead to higher level of EI scores than Immersive genres; and (H2) significantly predictive EI on binary logistic regression analysis for preference between the two gaming genres.

Materials And Methodology

Study Design

A quantitative, cross-sectional pilot study design was employed to examine the association between EI and gaming genre preference.

Participants and Procedure

The sample included a convenience sample of 100 adolescents (61 female, 39 male), aged from 11 to 17 years. Participants who had participated in digital gaming for at least one hour daily over the past three months were included to represent those with reasonable exposure to gaming environments. Participants who played but did not complete at least one hour of daily gameplay or did not respond fully were removed. Informed consent was obtained from all participants prior to data collection and participation was voluntary. Gaming genre preference was assessed through self-report, wherein participants identified their most frequently played type of game. Based on their responses, participants were categorized into two groups; (1) Immersive (IM): role-playing and simulation games, and (2) Interactive (IN): sports, racing, and first-person shooter games

Measures

Emotional intelligence

The Emotional Intelligence Inventory- Multi-Measure (EII-MM) Scale (Mangal, 2004) was used to capture Emotional Intelligence; the composite score obtained served as the main continuous predictor across all analyses. The Emotional Intelligence Inventory is a standardized, norm-referenced measure for Indian adolescent genders. It provides an integrated EI score across emotional awareness, self-regulation, empathy and social competence, as well as motivational control. The present sample is appropriate for its normative standardization on Indian school-going adolescents.

Gaming genre preference

The self-report measure was used to collect the gaming genre preference. The game genres were coded as Interactive genre which included racing, sports simulations and real-time competition; and Immersive genre which included simulations, role-playing, and narrative adventure. These binary variable worked as a dependent variable.

Statistical Analysis

All data were analyzed using Python 3.12 (SciPy v1. 11; pandas v2. 0). Shapiro–Wilk tests (Shapiro & Wilk, 1965) showed non-normal distributions for both groups (IM: W = 0.895, p <. 001 from one-way ANOVA (post hoc: W = 0.914, p = 0.001), inconsistent with parametric analysis The Mann–Whitney U test (Mann & Whitney, 1947) was applied as the main inferential test accordingly. Rank-biserial correlation (r) with Cohen's d (pooled SD) estimated the effect size. After the data were sorted in binary form, binary logistic regression was used to assess whether EI predicted genre preference; a model with an independent predictor from the target variable and adjusted using the omnibus likelihood ratio χ^2 as well as Nagelkerke pseudo-R^2 and AUC calculations. All p values were two-tailed; $\alpha = 0.05$.

Results

Descriptive Statistics

Mean EI for interactive gamers was significantly higher (M = 120.42, SD = 26.43, Mdn = 125.00, IQR = 55.50) than that of immersive gamers (M = 107.28, SD = 26.12, Mdn = 100.50,IQR=36.00), a mean difference of 13.14 EI points between the two types of players The greater dispersion of the IQR in the Interactive group indicates larger levels of heterogeneity. Very little overlap was evident in the 95% confidence intervals ([99.86, 114.70] vs [112.91, 127.93]). Table 1 shows descriptive statistics by genre group.

Table 1: Descriptive Statistics for EI Scores by Gaming Genre Group

Group	n	M	SD	Mdn	IQR	95% CI
IM – Immersive	50	107.28	26.12	100.50	36.00	99.86, 114.70
IN – Interactive	50	120.42	26.43	125.00	55.50	112.91, 127.93
Total	100	113.85	26.96	108.50	—	—

Note: EI = Emotional Intelligence score (EII-MM Scale); IM = Immersive genre preference; IN = Interactive genre preference; M = mean; SD = standard deviation; Mdn = median; IQR = interquartile range; CI = confidence interval for the mean.

Group Comparison and Predictive Analysis

A significant overall model was obtained with the binary logistic regression in which EI was the only predictor ($\chi^2(1) = 6.106$, p = 0.013). To facilitate model interpretation, we used the mean center of Emotional Intelligence scores (M = 5.13) to predict genre preference (p = 0.016, OR = 1.019, 95% CI [1.004–1.035]). The Nagelkerke R^2 was 0.079, and the AUC of 0.647 performed slightly better than chance level in terms of discriminative ability. The results of the Mann-Whitney U tests showed that genre groups significantly differed on EI (U = 1618.50, p = 0.011). Both indices of effect size supported a medium-sized effect: rank-biserial (r = 0.295); Cohen's d

= 0.500. Together these analyses confirm a statistically significant and directionally consistent finding that higher EI is associated with a preference of Interactive game genre.

Table 2: Mann–Whitney U, Effect Sizes, and Logistic Regression Results

Analysis	Statistic	p	Effect Size	95% CI	Interpretation
Group Comparison (Mann–Whitney U)					
MWU	U = 1618.50	0.011*	r = 0.295	—	Medium, significant

Cohen's d	0.500	—	Medium	—	Supports genre difference
Logistic Regression (EI → Genre)					
Model $\chi^2(1)$	6.106	0.013*	$R^2 = 0.079$	—	Significant overall model
EI Score (B)	0.019	0.016*	OR = 1.019	(1.004, 1.035)	Each +1 EI unit ↑ IN odds
AUC	0.647	—	—	—	Modest discriminative ability

Note: MWU = Mann–Whitney U test. r = rank-biserial correlation. d = Cohen's d (pooled SD). B = unstandardized logistic coefficient; OR = odds ratio; 95% CI = confidence interval for OR. R^2 = Nagelkerke pseudo-R^2. AUC = area under the receiver operating characteristic curve. p-values are two-tailed. *p < 0.05.

Discussion

This cross-sectional study investigated how much EI can predict the gaming genre preference among adolescents (Lee et al 2024). This study also highlights that the gaming behavior of an individual is embedded within the relational and emotional contexts during adolescents (Boson et al 2024). The current analysis produced significant results for both inferential tests with doubled sample (N = 100) size. The Interactive gamers have significantly higher EI than Immersive gamers and EI was individually significantly predictive in binary logistic regression of the use of either type of genre. This was a medium-sized, statistically reliable effect (Cohen, 2013) (rank-biserial r= 0.295; Cohen's d = 0.500; and mean difference = 13.14 EI points). Importantly, the larger sample size compared to the prior pilot gave enough power to notice this estimate of effect; where the original study (N = 50) had an estimated power of approximately 28%, the current N = 100 yields approximately 56% power for d ≈0.50 at α=0.05, with the measured significance authenticating the signal. This pattern is in line with the emotional self-selection hypothesis according how individuals find themselves attracted by environments matching their affective regulatory capacity (Zillmann, 1988). Conversely, it could be the case that Immersive genres with contemplative storylines and limited forms of social interaction afford a less taxing affective regulatory burden than Interactive genres, which involve high stakes competitive emotional regulation (in any form of competitive aspect), and in multiplayer versions even real-time coordination between players. It is in keeping with the well-established role of EI as a predictor of social competence and adaptive coping (Ciarrochi et al, 2000). The logistic regression AUC of 0.647, which is indeed an improvement but only slightly exceeding the 0.50 chances baseline and the most frequently-adopted lower threshold of 0.60 for preliminary models (Hosmer et al, 2013). This implies that EI still retains at least a small but not completely negligible predictive signal for genre preference, which is worth investigating in well-powered replication studies. The Nagelkerke R^2 of 0.079, for genre preference variance explained by the predictor EI is modest but statistically non-trivial in this behavioral domain that we know to be influenced by innumerable dispositional and situational factors: a single-predictor model accounts for only approximately 7.9% of total variance. Future research could include more factors to theoretical predictions (for example the Big Five personality dimensions, social anxiety, gaming motivations) for an explanatory model of greater lightness.

Limitations

Several limitations constrain interpretation. First, N = 100 sample were conveniently recruited from one area (Dehradun, Uttarakhand Cartography) which limits the generalizability to other cultural and socio economic contexts. Second, the binary immersive/interactive classification does not capture the wide variety of gaming genres, and thus future research should use multidimensional genre taxonomies. Third, all the instruments were self-report that limits response and social-desirability bias. Fourth, the cross-sectional design does not allow for causal direction to be inferred between EI and genre preference.

Conclusion

The current study presents robust statistical evidence that adolescents referring to games genres differently are differentially higher in EI, with the Interactive gamers showing a larger effect than Immersive gamers. For the group comparison (Mann–Whitney U: U = 1618.50, p = 0.011, d = 0.500) and binary logistic regression (B = 0.019, OR = 1.019, p = 0.016, AUC = 0.647; Nagelkerke R^2 = 0. 079) converged on a stable, medium-sized, large-order relationship. These results confirm and reflects a signal that can be detected with statistical power commensurate with sample size in well-powered studies. Future research should use larger and more diverse samples, multidimensional genre classification systems, and longitudinal designs to clarify the directionality of this association. If replicated, these results could contribute to how theoretical models linking emotional competence and digital behavioral choice contribute to adolescent well-being.

Decleration

Ethical statement: All procedures performed in studies involving human participant were in accordance with the ethical standards of the institutional research committee.

Informed consent: Informed consent was obtained from all the participants.

Conflict of interests: The authors declare no conflict of interests.

Data availability: The data are available from the corresponding author upon reasonable request.

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