

Fusion of Generative AI with Emotional Intelligence Parameters in Students' Psychometric Career Assessments: An HRM Perspective for Career Management

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ABSTRACT:

Background Career assessment has traditionally relied on psychometric instruments that evaluate aptitude, personality, interests, and cognitive abilities. However, emotional intelligence (EI) plays a significant role in career decision-making and adaptability. Recent advancements in Generative Artificial Intelligence (GenAI) have enabled the development of personalized career guidance systems capable of integrating multiple psychological dimensions. The fusion of GenAI with emotional intelligence parameters may enhance the accuracy and relevance of career recommendations for students.

Aim: To evaluate the effectiveness of integrating Generative AI with emotional intelligence parameters in students' psychometric career assessments and to examine its impact on career decision confidence, assessment accuracy, and acceptance of AI-generated career recommendations.

Materials and Methods: A cross-sectional analytical study was conducted among 240 undergraduate and postgraduate students from various academic disciplines. Participants completed standardized psychometric assessments and the Wong and Law Emotional Intelligence Scale (WLEIS). A customized Generative AI framework generated individualized career recommendations based on psychometric and emotional intelligence profiles. Outcomes including career decision confidence, perceived assessment accuracy, recommendation relevance, user satisfaction, and acceptance of AI-generated recommendations were analyzed using Chi-square test, independent sample t-test, ANOVA, and Pearson correlation analysis. Statistical significance was established at $p < 0.05$.

Results: Students with high emotional intelligence demonstrated significantly greater career decision confidence than those with moderate or low EI scores (4.51 ± 0.61 vs. 3.89 ± 0.68 and 3.18 ± 0.72 ; $p < 0.001$). Acceptance of AI-generated career

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recommendations increased significantly with emotional intelligence level, ranging from 54.8% among low-EI students to 88.4% among high-EI students ($p < 0.001$). The AI-EI integrated assessment model significantly outperformed conventional psychometric assessment in perceived accuracy (4.42 ± 0.58 vs. 3.56 ± 0.77), recommendation relevance (4.39 ± 0.62 vs. 3.48 ± 0.81), user satisfaction (4.51 ± 0.56 vs. 3.52 ± 0.74), and career self-awareness (4.47 ± 0.53 vs. 3.69 ± 0.69), with all comparisons demonstrating statistical significance ($p < 0.001$). Conclusion: The integration of Generative AI and emotional intelligence parameters significantly enhances psychometric career assessment outcomes. Emotionally informed AI systems provide more accurate, personalized, and meaningful career guidance while improving confidence and acceptance among students. The findings support the adoption of AI-EI integrated frameworks in career management, higher education, and human resource development initiatives.

Keywords: Generative Artificial Intelligence; Emotional Intelligence; Career Management; Psychometric Assessment; Career Decision Making.

1. Introduction

Career management has emerged as a strategic component of human resource development, enabling individuals to align personal capabilities, interests, and aspirations with occupational opportunities. Effective career decisions significantly influence job satisfaction, organizational commitment, employability, and long-term professional success [1]. Traditional career assessment methods predominantly utilize psychometric instruments that measure aptitude, personality dimensions, vocational interests, and cognitive abilities. While these approaches provide valuable insights, they often fail to account for emotional and contextual factors influencing career choices [2].

The growing complexity of labor markets, technological disruption, and changing career trajectories necessitate more dynamic and individualized career guidance systems. Emotional intelligence (EI), defined as the ability to perceive, understand, regulate, and utilize emotions effectively, has gained prominence as a predictor of career adaptability, leadership potential, workplace effectiveness,

and career success [3]. Research suggests that emotionally intelligent individuals exhibit superior decision-making capabilities, enhanced interpersonal skills, and greater resilience when navigating career transitions [4].

The increasing adoption of Artificial Intelligence (AI) across educational and organizational domains has introduced new possibilities for career assessment and guidance. Generative AI technologies, particularly large language models, possess the capability to analyze extensive datasets, interpret psychometric profiles, generate personalized career recommendations, and facilitate interactive counseling experiences [5]. Unlike traditional rule-based systems, Generative AI can synthesize multiple dimensions of an individual's profile to provide nuanced and context-sensitive guidance [6].

Recent studies indicate that AI-driven career counseling systems can improve assessment efficiency and personalization while reducing human biases [7]. However, concerns remain regarding the exclusive reliance on cognitive and behavioral metrics without incorporating

emotional and psychological dimensions that influence career decisions [8]. Integrating emotional intelligence indicators into AI-powered career assessment frameworks may offer a more holistic understanding of students' career readiness and preferences.

Within Human Resource Management (HRM), talent acquisition, workforce planning, and career development increasingly emphasize emotional competencies alongside technical skills. Organizations now recognize emotional intelligence as a critical determinant of employability, leadership effectiveness, teamwork, and organizational performance [9]. Therefore, career assessment systems capable of simultaneously evaluating psychometric and emotional attributes can contribute to more informed career planning and talent management strategies.

The fusion of Generative AI and emotional intelligence represents a promising advancement in career management research. Such integration may enhance self-awareness, improve career-person fit, and support evidence-based decision-making among students preparing to enter competitive labor markets [10]. Despite the growing interest in AI-driven career guidance, empirical evidence examining the combined role of Generative AI and emotional intelligence within psychometric career assessments remains limited.

Therefore, the present study aimed to investigate the effectiveness of integrating Generative AI with emotional intelligence parameters in students' psychometric career assessments and evaluate its implications for career management and HRM practices.

2. Materials and Methods

2.1 Study Design

A cross-sectional analytical study was conducted between October 2025 and February 2026 to evaluate the influence of emotional intelligence on AI-assisted psychometric career assessments among university students.

2.2 Study Population

The study included undergraduate and postgraduate students enrolled in management, commerce, engineering, and social science programs across higher educational institutions in Bangalore, Karnataka.

2.3 Sample Size

Based on previous studies examining emotional intelligence and career decision-making outcomes, a minimum sample size of 220 participants was estimated at 95% confidence level and 80% statistical power. To compensate for incomplete responses, 250 students were approached, of whom 240 completed the assessment process and were included in the final analysis.

2.4 Inclusion Criteria

- Students aged 18–30 years.
- Currently enrolled in undergraduate or postgraduate programs.
- Willing to participate and provide informed consent.
- Completion of psychometric and emotional intelligence assessments.

2.5 Exclusion Criteria

- Incomplete questionnaire responses.
- Prior professional career counseling within the previous six months.
- Non-consent for participation.

2.6 Study Instruments

Psychometric Career Assessment

A standardized psychometric assessment battery was administered comprising:

- Personality assessment based on the Five-Factor Model.
- Vocational interest inventory.
- Career aptitude evaluation.
- Career decision-making self-efficacy assessment.

Emotional Intelligence Assessment

Emotional intelligence was evaluated using the Wong and Law Emotional Intelligence Scale (WLEIS), measuring:

1. Self-emotion appraisal.
2. Others' emotion appraisal.
3. Use of emotion.
4. Regulation of emotion.

Responses were scored on a seven-point Likert scale, with higher scores indicating greater emotional intelligence.

Generative AI-Based Career Recommendation System

A customized Generative AI framework was developed to process psychometric and EI inputs. The system generated:

- Career suitability rankings.
- Individualized career narratives.
- Strength and competency analyses.
- Skill development recommendations.
- Future career pathway suggestions.

2.7 Study Procedure

Participants first completed psychometric and EI assessments. Data were anonymized and entered into the AI-based recommendation platform. Following receipt of AI-generated career recommendations, participants completed a feedback survey assessing:

- Perceived recommendation accuracy.
- Career decision confidence.
- User satisfaction.
- Trust in AI-generated outputs.

2.8 Outcome Measures

Primary outcomes:

- Career decision confidence.
- Satisfaction with AI recommendations.

Secondary outcomes:

- Perceived assessment accuracy.
- Acceptance of AI-generated career guidance.

2.9 Statistical Analysis

Data analysis was performed using SPSS version 29.0. Continuous variables were expressed as mean $\pm$ standard deviation, while categorical variables were presented as frequencies and percentages.

Comparisons were conducted using:

- Independent sample t-test.
- One-way ANOVA.
- Chi-square test.
- Pearson correlation analysis.

A p-value <0.05 was considered statistically significant.

3. Results

Table 1. Demographic Characteristics of Study Participants (N = 240)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	118	49.2
	Female	122	50.8
Age (years)	18–21	96	40.0
	22–25	108	45.0
	>25	36	15.0
Education Level	Undergraduate	146	60.8
	Postgraduate	94	39.2
Academic Stream	Management	104	43.3
	Commerce	48	20.0
	Engineering	56	23.3
	Social Sciences	32	13.4

The study included 240 students with an almost equal gender distribution. Most participants belonged to the 22–25-year age group (45.0%). Undergraduate students constituted 60.8% of the sample, while management students

represented the largest academic category (43.3%), indicating substantial representation from disciplines commonly engaged in career planning and employability development (Table 1).

Table 2. Emotional Intelligence Scores and Career Decision Confidence

Emotional Intelligence Level	n	Career Decision Confidence (Mean $\pm$ SD)	F-value	p-value
Low EI	62	3.18 $\pm$ 0.72		
Moderate EI	109	3.89 $\pm$ 0.68		
High EI	69	4.51 $\pm$ 0.61	41.27	<0.001*

*Statistically significant

Students with high emotional intelligence demonstrated significantly greater career decision confidence compared with students possessing moderate or low EI levels ($p < 0.001$). The findings suggest that emotional awareness, emotional regulation, and interpersonal

competencies contribute positively to confidence during career-related decision-making processes. The observed trend indicates a progressive increase in confidence scores with increasing EI levels (Table 2).

Table 3. Association Between Emotional Intelligence and Acceptance of AI-Generated Career Recommendations

Emotional Intelligence Level	Accepted Recommendation n (%)	AI	Did Not Accept n (%)	χ^2 value	p-value
Low EI (n=62)	34 (54.8)		28 (45.2)		
Moderate EI (n=109)	82 (75.2)		27 (24.8)		
High EI (n=69)	61 (88.4)		8 (11.6)	24.91	<0.001*

*Statistically significant

Acceptance of AI-generated career recommendations was significantly associated with emotional intelligence levels ($p < 0.001$). Students exhibiting higher EI scores showed greater trust and acceptance of AI-assisted career guidance compared with students

possessing lower emotional intelligence. This finding suggests that emotionally intelligent individuals may be better equipped to interpret, evaluate, and integrate AI-generated career insights into their decision-making processes (Table 3).

Table 4. Comparison of Traditional Psychometric Assessment and AI-EI Integrated Career Assessment

Assessment Parameter	Traditional Psychometric Model (Mean $\pm$ SD)	AI-EI Integrated Model (Mean $\pm$ SD)	t-value	p-value
Perceived Assessment Accuracy	3.56 $\pm$ 0.77	4.42 $\pm$ 0.58	13.84	<0.001*
Career Recommendation Relevance	3.48 $\pm$ 0.81	4.39 $\pm$ 0.62	14.62	<0.001*

User Satisfaction	3.52 ± 0.74	4.51 ± 0.56	16.11	<0.001*
Career Self-awareness	3.69 ± 0.69	4.47 ± 0.53	13.28	<0.001*

*Statistically significant

The AI-EI integrated assessment model significantly outperformed traditional psychometric assessments across all evaluated domains. Participants reported greater perceived accuracy, improved relevance of career recommendations, higher satisfaction, and enhanced self-awareness when emotional intelligence parameters were incorporated into the Generative AI framework. These findings indicate that emotionally informed AI systems may provide more personalized and meaningful career guidance experiences (Table 4).

4. Discussion

The present study investigated the effectiveness of integrating Generative Artificial Intelligence with emotional intelligence parameters in psychometric career assessments among university students. The findings demonstrated that emotionally informed AI-assisted career assessment systems produced superior outcomes in terms of career decision confidence, recommendation acceptance, perceived accuracy, and user satisfaction.

The role of emotional intelligence in career development has been extensively documented in previous research. Emotional intelligence facilitates self-awareness, emotional regulation, empathy, and social adaptability, all of which contribute significantly to career exploration and decision-making processes [11]. The present study observed significantly higher career decision confidence among students with elevated EI scores. This finding is consistent with the work of Coetzee and Harry, who reported that emotional intelligence positively influences career adaptability and employability competencies among young professionals [12].

Students with higher emotional intelligence demonstrated greater acceptance of AI-generated career recommendations. This finding may reflect their enhanced ability to evaluate feedback objectively while integrating

technological guidance with personal insights. Similar observations have been reported by Salovey and Grewal, who emphasized that emotionally intelligent individuals possess superior information-processing abilities during complex decision-making situations [13]. As career choices increasingly involve uncertainty and multiple alternatives, emotional competencies may help individuals derive greater value from AI-supported guidance systems.

Generative AI has emerged as a transformative technology in education, counseling, and human resource management. Large language models and AI-driven recommendation systems can process large volumes of psychometric data and generate individualized career suggestions with unprecedented efficiency [14]. However, conventional AI models primarily focus on cognitive and behavioral variables. The present study demonstrates that incorporating emotional intelligence parameters substantially enhances the effectiveness of AI-generated recommendations.

The superior performance of the AI-EI integrated model across all outcome measures supports the argument that career decision-making extends beyond aptitude and personality assessment. Contemporary career theories increasingly recognize emotional competencies as critical determinants of career success and adaptability [15]. Emotional intelligence enables individuals to understand personal motivations, cope with career-related stress, and navigate evolving workplace demands. Consequently, AI systems capable of incorporating these dimensions may provide more comprehensive career guidance.

The findings are further supported by studies in human resource management that highlight emotional intelligence as a predictor of leadership effectiveness, organizational citizenship behavior, and career advancement

[16]. Modern organizations increasingly prioritize emotional and interpersonal competencies alongside technical expertise during recruitment and talent management processes. Therefore, integrating EI into career assessment frameworks may better align students' career plans with emerging labor market expectations.

From a technological perspective, Generative AI offers significant advantages in personalization. Traditional psychometric reports often provide static interpretations that may not adequately address individual contexts. In contrast, AI-driven systems can generate dynamic narratives, competency analyses, and development pathways tailored to unique psychological profiles [17]. The present study found significantly higher satisfaction levels among participants using the AI-EI integrated model, suggesting that personalization contributes substantially to perceived usefulness.

These findings also align with the Technology Acceptance Model (TAM), which proposes that perceived usefulness and perceived ease of use influence technology adoption behaviors [18]. Students who perceived AI-generated recommendations as accurate and relevant exhibited greater trust and acceptance of the system. Incorporating emotional intelligence may enhance the perceived human-centeredness of AI systems, thereby improving user engagement and confidence.

Within HRM, the integration of AI and emotional intelligence represents an important advancement in talent development and career management practices. Organizations increasingly employ AI-driven talent analytics to identify competencies, predict career trajectories, and support workforce planning [19]. The inclusion of emotional intelligence indicators may improve the predictive validity of such systems while fostering employee-centered career development strategies.

Despite its contributions, the present study has limitations. The cross-sectional design restricts causal interpretations. Self-reported measures

may introduce response bias. The study population was limited to university students, which may affect generalizability to working professionals. Future research should employ longitudinal designs, diverse occupational samples, and advanced machine learning approaches to evaluate long-term outcomes associated with emotionally informed AI career assessment systems.

Overall, the findings indicate that combining Generative AI with emotional intelligence parameters offers a promising framework for next-generation career assessment and management systems. Such approaches may enhance career self-awareness, improve decision quality, and support more effective alignment between individual competencies and occupational opportunities [20].

5. Conclusion

The integration of Generative Artificial Intelligence and emotional intelligence parameters significantly enhances psychometric career assessment outcomes among students. Individuals with higher emotional intelligence demonstrated greater career decision confidence and stronger acceptance of AI-generated recommendations. The AI-EI integrated model outperformed traditional psychometric approaches in perceived accuracy, recommendation relevance, satisfaction, and self-awareness. These findings suggest that emotionally informed AI systems can provide more personalized and effective career guidance. The fusion of Generative AI and emotional intelligence has substantial implications for career management, higher education, and human resource development, supporting the creation of holistic and adaptive career assessment frameworks for future workforce preparation.

Declarations

Ethical Approval and Consent to Participate

The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Ethical approval was obtained from the Institutional Research Ethics Committee of

CMR University, Bangalore, Karnataka, India, prior to commencement of the study. All participants were informed about the objectives and procedures of the study, and written informed consent was obtained before data collection.

Consent for Publication

Not applicable. No individual participant data, photographs, or identifying information are included in this manuscript.

Availability of Data and Materials

The datasets generated and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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Competing Interests

The authors declare that they have no competing interests or conflicts of interest related to this study.

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Authors' Contributions

Radha Palakuri: Conceptualization, literature review, data collection, methodology development, data analysis, interpretation of results, manuscript drafting, and final manuscript preparation.

Dr. Lalitha P. S.: Research supervision, study design validation, critical review of methodology, intellectual content review, manuscript editing, and final approval of the manuscript.

All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

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