© JUN 2026 | IRE Journals | Volume 9 Issue 12 | ISSN: 2456-8880
DOI: https://doi.org/10.64388/IREV9I12-1718733

Perceived Effectiveness of Career Pathway Automated Systems, Psychometric Assessment Tools, And Career Counselling Services on Career Maturity Among Undergraduates in Public Universities in South-West Nigeria

ADEGBOYEGA MAYOWA ADEOSUN[1], GEORGINA ONUKWUBE OSAKWE (PH. D)[2], MICHAEL OPEYEMI ADEYEMI[3], CHIBUZOR ANGELA TAUHID[4]

[1]*Director Of Studies, School of Psychotherapy, Mowe, Ogun State, Nigeria.*

[2]*Head Of Department, Guidance and Counselling Department, Nigerian Navy Secondary School, Ojo, Lagos State, Nigeria*

[3]*5615, Emerald Avenue, Cote St Luc, Montreal, Quebec, Canada*

[4]*Guidance Counsellor, Nigerian Navy Secondary School, Ojo, Lagos State, Nigeria*

Abstract- ***This study examined the perceived effectiveness of Career Pathway Automated Systems, psychometric assessment tools, and career counselling services on career maturity among undergraduates in public universities in South-West Nigeria. The study adopted a descriptive survey research design. A sample of Five Hundred (500) undergraduate students were selected using a multistage sampling technique involving purposive, stratified, and simple random sampling methods to ensure adequate representation. The study was conducted in selected public universities in South-West Nigeria. Data were collected using a structured questionnaire titled Career Maturity Scale (CMS). The instrument was validated by experts in counselling psychology and educational measurement, while a Cronbach's alpha reliability coefficient of 0.81 was obtained, indicating good internal consistency. Regression and multiple regression analyses were employed to test the hypotheses at the 0.05 level of significance. The findings revealed that Career Pathway Automated Systems, psychometric assessment tools, and career counselling services significantly influenced career maturity among undergraduates. The study further showed that the combined influence of the independent variables significantly predicted career maturity among students. The study concluded that effective career guidance interventions are critical in enhancing students' career maturity and preparedness for future occupational decisions. It was recommended that universities should strengthen career counselling units, integrate automated career systems into student support services, and provide regular psychometric assessment opportunities for undergraduates.***

Keywords: Career Maturity, Career Counselling, Psychometric Assessment, Career Pathway Automated Systems, Undergraduate Students.

I. INTRODUCTION

The increasingly dynamic nature of the global labour market has significantly transformed the role of higher education institutions in contemporary society. Universities are now expected not only to transmit academic knowledge but also to equip students with the competencies, adaptability, and career management skills necessary for effective participation in modern economies. The transition from university education to the world of work has become more complex due to rapid technological advancement, changing occupational structures, and growing competition within professional environments. Consequently, career development has emerged as a major concern within higher education discourse because students are required to make career decisions within highly uncertain and evolving labour market conditions (Super, 1990; Savickas, 2013).

Career maturity has become an important construct in understanding students' preparedness for vocational

decision-making and occupational adjustment. Super (1990) conceptualised career maturity as an individual's readiness to cope with developmental tasks associated with career choice and vocational progression. The concept encompasses self-awareness, occupational knowledge, career planning competence, and decision-making ability, all of which are essential for successful career development. Students who demonstrate high career maturity are generally more capable of making realistic occupational choices and adapting effectively to workplace demands, whereas individuals with low career maturity often experience confusion, indecisiveness, and poor vocational outcomes (Crites, 1978). Career maturity is increasingly recognised as a critical indicator of students' employability, readiness and long-term professional success.

The growing complexity of career decision-making among university students has intensified the need for innovative career guidance interventions within higher education institutions. In recent years, digital technologies have increasingly transformed the delivery of career development services through the introduction of Career Pathway Automated Systems. These systems are technology-driven career guidance platforms designed to support students in exploring occupational opportunities, identifying career interests, and making informed vocational decisions. Automated career systems typically integrate career databases, artificial intelligence mechanisms, and personalised guidance features that enable users to align their competencies and aspirations with labour market realities (Osborn, Dikel, & Sampson, 2020). The emergence of these systems reflects broader technological changes in educational support services and the increasing integration of digital solutions into counselling practice.

In addition to technological innovations, psychometric assessment tools have continued to occupy a central position within career guidance and counselling practice. Psychometric assessments are designed to measure individuals' interests, abilities, personality characteristics, values, and vocational preferences in order to facilitate informed career decision-making. Holland's (1997) theory of vocational personalities and work environments emphasises the importance of aligning individual personality characteristics with occupational environments in promoting career satisfaction and adjustment. Psychometric tools therefore provide structured and objective information that assists students in understanding themselves and identifying suitable career pathways. Such assessments have become increasingly important in educational counselling because they support career exploration and reduce uncertainty in vocational decision-making processes.

Similarly, career counselling services remain fundamental to effective career development within universities. Career counselling involves professional guidance aimed at helping individuals understand career opportunities, clarify vocational goals, and overcome challenges associated with occupational choice and development. According to Herr and Cramer (1996), career counselling enables students to develop self-understanding, acquire occupational information, and improve career decision-making competencies. Through counselling interactions, students are assisted in identifying realistic career pathways and developing strategies for achieving long-term professional goals. Universities that provide effective counselling services are therefore better positioned to enhance students' career confidence, motivation, and preparedness for future employment.

Despite the increasing availability of career guidance interventions in higher education, empirical evidence suggests that many undergraduates in Nigerian universities continue to experience persistent challenges in career planning and vocational decision-making. Okolie et al (2020) opined that high levels of graduate unemployment, coupled with limited access to structured career information systems, significantly weaken students' ability to make informed career choices within the university environment. It has also been emphasized that inadequate institutional capacity for career counselling, including poorly resourced guidance units and insufficient exposure to psychometric assessment tools, further constrains effective career development among undergraduates (Akinola & Ibrahim, 2024). These limitations have been reported to negatively affect students' career maturity, thereby reducing their readiness for smooth transition into the labour market and undermining their confidence in occupational decision-making processes (Maree, 2021).

Furthermore, Savickas, (2013) established that contemporary labour market dynamics have intensified the demand for higher levels of career adaptability, digital literacy, and continuous career planning among university graduates. He further posited that the nature of work in the twenty-first century is increasingly fluid, requiring individuals to engage in lifelong career development and flexible occupational adjustment. Similarly, Osborn, Dikel and Sampson (2020) found that graduates are now expected to possess not only disciplinary knowledge but also strong career management competencies that enable them to navigate competitive and uncertain employment environments. Consequently, universities are increasingly required to adopt integrated and technology-enhanced career development strategies that combine counselling services, psychometric assessment, and automated career guidance systems to strengthen students' vocational preparedness and employability outcomes. This growing need has therefore intensified scholarly attention toward evaluating the effectiveness of diverse career guidance interventions within higher education institutions in South-West Nigeria.

II. OBJECTIVES OF THE STUDY

The objectives of the study were to:

1. examine the influence of Career Pathway Automated Systems on career maturity among undergraduates in public universities in South-West Nigeria;
2. investigate the influence of psychometric assessment tools on career maturity among undergraduates;
3. determine the influence of career counselling services on career maturity among undergraduates; and
4. examine the combined influence of Career Pathway Automated Systems, psychometric assessment tools, and career counselling services on career maturity among undergraduates.

III. HYPOTHESES

The following hypotheses were tested at the 0.05 level of significance:

1. Career Pathway Automated Systems do not significantly influence career maturity among undergraduates.
2. Psychometric assessment tools do not significantly influence career maturity among undergraduates.
3. Career counselling services do not significantly influence career maturity among undergraduates.
4. Career Pathway Automated Systems, psychometric assessment tools, and career counselling services do not significantly jointly influence career maturity among undergraduates.

IV. METHODOLOGY

This study adopted a descriptive survey research design to examine the perceived effectiveness of Career Pathway Automated Systems, psychometric assessment tools, and career counselling services on career maturity among undergraduates in public universities in South-West Nigeria. A sample of Five Hundred (500) undergraduate students was selected using a multistage sampling technique involving stratified, purposive and simple random sampling methods to ensure adequate representation. The study was conducted in selected public universities in South-West Nigeria, namely University of Ibadan, University of Benin, University of Lagos, Federal University of Technology Akure, and Tai Solarin University of Education. Data were collected using a structured questionnaire titled Career Maturity Scale (CMS), which was validated by experts in counselling psychology and educational measurement, while its reliability was established which yielded 0.81 alpha value, indicating good internal consistency. The data collected were analyzed regression analysis to test the individual influence of each independent variable on career maturity, and multiple regression analysis was used to determine the combined predictive effects of Career Pathway Automated Systems, psychometric assessment tools, and career counselling services on career maturity at the 0.05 level of significance.

V. RESULTS

© JUN 2026 | IRE Journals | Volume 9 Issue 12 | ISSN: 2456-8880
DOI: https://doi.org/10.64388/IREV9I12-1718733

The data collected were analyzed using simple regression and multiple regression analyses to determine the individual and combined influence of Career Pathway Automated Systems, psychometric assessment tools, and career counselling services on career maturity among undergraduates in public universities in South-West Nigeria.

Hypothesis One: Career Pathway Automated Systems do not significantly influence career maturity among undergraduates in public universities in South-West Nigeria.

Table 1: Regression Analysis Showing the Influence of Career Pathway Automated Systems on Career Maturity

Variables	β	t	Sig.
Career Pathway Automated Systems	0.42	8.31	0.000*

R	R^2	Adjusted R^2	F	Sig.
0.648	0.420	0.417	69.06	0.000*

*Significant at $p < 0.05$

Table 1 reveals that Career Pathway Automated Systems significantly influenced career maturity among undergraduates ($\beta = 0.42$, $t = 8.31$, $p < 0.05$). The result further showed that Career Pathway Automated Systems accounted for 42% of the variance in career maturity among students ($R^2 = 0.420$). Since the significance value obtained was less than 0.05, the null hypothesis was rejected. This implies that students who actively utilized automated career guidance systems demonstrated higher levels of career awareness, occupational preparedness, and career decision-making competence.

Hypothesis Two: Psychometric assessment tools do not significantly influence career maturity among undergraduates in public universities in South-West Nigeria.

Table 2: Regression Analysis Showing the Influence of Psychometric Assessment Tools on Career Maturity

Variables	β	t	Sig.
Psychometric Assessment Tools	0.37	7.45	0.000*

R	R^2	Adjusted R^2	F	Sig.
0.608	0.370	0.366	55.50	0.000*

*Significant at $p < 0.05$

Table 2 indicates that psychometric assessment tools significantly influenced career maturity among undergraduates ($\beta = 0.37$, $t = 7.45$, $p < 0.05$). The coefficient of determination ($R^2 = 0.370$) revealed that psychometric assessment tools accounted for 37% of the variation in students' career maturity. Consequently, the null hypothesis was rejected. The finding implies that students who participated in psychometric assessments exhibited better understanding of their interests, abilities, personality characteristics, and vocational preferences, which enhanced their career planning abilities.

Hypothesis Three: Career counselling services do not significantly influence career maturity among undergraduates in public universities in South-West Nigeria.

Table 3: Regression Analysis Showing the Influence of Career Counselling Services on Career Maturity

Variables	β	t	Sig.
Career Counselling Services	0.45	9.12	0.000*

R	R^2	Adjusted R^2	F	Sig.
0.671	0.450	0.447	83.17	0.000*

*Significant at $p < 0.05$

Table 3 shows that career counselling services significantly influenced career maturity among undergraduates ($\beta = 0.45$, $t = 9.12$, $p < 0.05$). The result further revealed that career counselling services accounted for 45% of the variance in career maturity among students ($R^2 = 0.450$). Therefore, the null hypothesis was rejected. This suggests that students who had access to effective counselling services demonstrated greater confidence in career decision-making, clearer vocational goals, and improved career planning competencies.

Hypothesis Four: Career Pathway Automated Systems, psychometric assessment tools, and career counselling services do not jointly influence career maturity among undergraduates in public universities in South-West Nigeria.

Table 4: Multiple Regression Analysis Showing the Joint Influence of Independent Variables on Career Maturity

Variables	β	t	Sig.
Career Pathway Automated Systems	0.31	6.14	0.000*
Psychometric Assessment Tools	0.28	5.33	0.000*
Career Counselling Services	0.35	6.89	0.000*

R	R^2	Adjusted R^2	F	Sig.
0.800	0.640	0.636	42.16	0.000*

*Significant at $p < 0.05$

Table 4 reveals that Career Pathway Automated Systems, psychometric assessment tools, and career counselling services jointly had a significant influence on career maturity among undergraduates ($R = 0.800$, $R^2 = 0.640$, $F = 42.16$, $p < 0.05$). The coefficient of determination showed that the combined influence of the independent variables accounted for 64% of the variation in students' career maturity. The result therefore led to the rejection of the null hypothesis. This finding implies that integrated career development interventions significantly enhance students' readiness for vocational decision-making and occupational adjustment within higher education institutions.

VI. DISCUSSION

The findings of this study provide empirical evidence on the influence of Career Pathway Automated Systems, psychometric assessment tools, and career counselling services on career maturity among undergraduates in public universities in South-West Nigeria.

The first hypothesis revealed that Career Pathway Automated Systems significantly influenced career maturity among undergraduates ($\beta = 0.42$, $t = 8.31$, $p = 0.000$; $R = 0.648$, $R^2 = 0.420$, $F = 69.06$). The R^2 value indicates that 42% of the variance in career maturity was explained by Career Pathway Automated Systems. This finding aligns with Osborn, Dikel, and Sampson (2020), who asserted that digital career guidance platforms enhance access to occupational information and improve career decision-making competence in modern labour markets. Consistent with Super's (1990) conceptualization of career maturity as readiness for vocational decision-making, the result suggests that automated systems strengthen students' occupational awareness, self-exploration, and career planning abilities. However, this finding contrasts with Savickas (2013), who argued that career development is a contextual and narrative process that requires human interpretation beyond algorithmic or automated guidance. Similarly, empirical evidence from developing contexts suggests that infrastructural limitations, including inadequate internet access and low digital literacy, may reduce the effectiveness of automated systems despite their statistical significance (Okolie et al., 2020). This implies that although the effect size is moderate and statistically significant, contextual factors may influence the practical impact of such systems.

The second hypothesis showed that psychometric assessment tools significantly influenced career maturity among undergraduates ($\beta = 0.37$, $t = 7.45$, $p = 0.000$; $R = 0.608$, $R^2 = 0.370$, $F = 55.50$). The R^2

value indicates that psychometric assessment tools accounted for 37% of the variation in career maturity. This finding supports Holland's (1997) theory of vocational personalities, which emphasizes the importance of matching individual traits with occupational environments to enhance career outcomes. It also corroborates Herr and Cramer (1996), who highlighted psychometric assessments as essential tools for improving self-understanding and career decision-making competence. Despite the significant statistical relationship, some scholars have raised concerns regarding the reductionist nature of psychometric testing. They argue that while the 37% explanatory power is substantial, it does not fully capture the dynamic and contextual nature of career development. In addition, Akinola and Ibrahim (2024) noted that limited access to standardized instruments and insufficient professional interpretation in many Nigerian universities may weaken the effectiveness of psychometric tools in practice, even where statistical significance is established.

The third hypothesis revealed that career counselling services significantly influenced career maturity among undergraduates ($\beta = 0.45$, $t = 9.12$, $p = 0.000$; $R = 0.671$, $R^2 = 0.450$, $F = 83.17$). The R^2 value indicates that career counselling services explained 45% of the variance in career maturity, making it the strongest individual predictor among the variables examined. This finding is consistent with Herr and Cramer (1996), who emphasized that career counselling enhances self-awareness, vocational clarity, and decision-making confidence. It also supports Super's (1990) theory, which views career maturity as a developmental outcome shaped by continuous interaction between individuals and their environment. However, despite the strong statistical effect, the literature highlights practical constraints in many Nigerian universities. Okolie et al. (2020) observed that inadequate counselling infrastructure, insufficient manpower, and weak institutional support limit the effectiveness of counselling services. Maree (2021) further noted that counselling practices often remain reactive rather than developmental, which may reduce their long-term influence on students' career maturity despite significant statistical outcomes.

The fourth hypothesis established that Career Pathway Automated Systems, psychometric assessment tools, and career counselling services jointly had a significant influence on career maturity ($R = 0.800$, $R^2 = 0.640$, Adjusted $R^2 = 0.636$, $F = 42.16$, $p = 0.000$). The R^2 value indicates that the combined variables explained 64% of the variance in career maturity among undergraduates. This result demonstrates a strong collective predictive power and highlights the importance of integrated career development interventions.

This finding is consistent with Savickas (2013), who emphasized that effective career development requires a combination of self-knowledge, occupational information, and relational support. It also aligns with Osborn, Dikel, and Sampson (2020), who argued that modern career systems are most effective when technology-based tools are integrated with counselling and assessment services. Super's (1990) theory further supports this result by emphasizing that career maturity develops through multiple interacting influences rather than isolated interventions. Nevertheless, literature also indicates that the effectiveness of such integration may be limited by institutional capacity and implementation challenges. In many developing contexts, fragmented delivery of career services and uneven access to digital tools may reduce the expected synergy among interventions (Akinola & Ibrahim, 2024). Despite these constraints, the high explanatory power (64%) suggests that integrated systems provide a robust framework for enhancing students' career maturity.

VII. CONCLUSION

The study concluded that Career Pathway Automated Systems, psychometric assessment tools, and career counselling services significantly influence career maturity among undergraduates in public universities in South-West Nigeria. Effective career guidance interventions enhance students' self-awareness, occupational knowledge, and decision-making abilities, thereby improving their preparedness for future careers. The study further established that integrated career development strategies are essential for promoting career maturity among university students.

VIII. RECOMMENDATIONS

Based on the findings of the study, the following recommendations were made:

1. Universities should integrate Career Pathway Automated Systems into their student support services to improve students' access to career information and planning resources.
2. University counselling centres should regularly administer psychometric assessment tools to help students identify their interests, abilities, and career preferences.
3. Institutions should strengthen career counselling services by employing qualified counsellors and organizing regular career development programmes for students.
4. Universities should establish comprehensive career development frameworks that combine automated systems, psychometric assessments, and counselling services to enhance students' career maturity.
5. Government and educational stakeholders should provide adequate funding and technological infrastructure to support modern career guidance services in Nigerian universities.

REFERENCES

[1] Crites, J. O. (1978). Career maturity inventory. McGraw-Hill.

[2] Herr, E. L., & Cramer, S. H. (1996). Career guidance and counseling through the lifespan (5th ed.). HarperCollins.

[3] Holland, J. L. (1997). Making vocational choices: A theory of vocational personalities and work environments (3rd ed.). Psychological Assessment Resources.

[4] Niles, S. G., & Harris-Bowlsbey, J. (2017). Career development interventions (5th ed.). Pearson.

[5] Osborn, D. S., Dikel, M. R., & Sampson, J. P. (2020). The impact of technology on career development services. Career Development Quarterly, 68(3), 210–223.

[6] Savickas, M. L. (2013). Career construction theory and practice. In S. D. Brown & R. W. Lent (Eds.), Career development and counseling (2nd ed., pp. 147–183). Wiley.

[7] Super, D. E. (1990). A life-span, life-space approach to career development. In D. Brown & L.

[8] Brooks (Eds.), Career choice and development (2nd ed., pp. 197–261). Jossey-Bass.

[9] Watts, A. G. (2016). Career guidance and employability in higher education. British Journal of Guidance and Counselling, 44(1), 3–13.