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Original Research Article

Vocational Attitude Maturity and Digital Employability Readiness among Open and Distance University Students in India

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Abstract: As contemporary economies increasingly transition toward digitally mediated work ecosystems, employability has evolved beyond conventional career preparedness to include technological adaptability, virtual collaboration, and digital competency integration. The present study examined vocational attitude maturity and digital employability readiness among open and distance university students. A descriptive survey method with a quantitative research approach was adopted for the study. Data were collected from 273 respondents through purposive sampling using two researcher-constructed scales: the Vocational Attitude Maturity Scale and the Digital Employability Readiness Scale. Statistical analysis was conducted using IBM SPSS Statistics Version 26 and IBM SPSS Amos through descriptive statistics, Cronbach's Alpha, Spearman's Rank Correlation, Mann-Whitney U Test, Kruskal-Wallis H Test, Exploratory Factor Analysis, and Confirmatory Factor Analysis. The findings revealed moderate levels of vocational attitude maturity and digital employability readiness among respondents. Reliability analysis established acceptable internal consistency for the Vocational Attitude Maturity Scale (α = .742) and the Digital Employability Readiness Scale (α = .704). The study further identified a weak negative but statistically significant relationship between vocational attitude maturity and digital employability readiness ($\rho = -0.123$, $p < .05$). Non-parametric analyses indicated no statistically significant differences across selected demographic variables. Exploratory and confirmatory factor analyses confirmed satisfactory construct validity and multidimensional factor structures for both scales. The study concludes that vocational maturity alone may not sufficiently prepare learners for digitally evolving labour markets unless integrated with digital literacy, technological adaptability, and virtual workplace competencies. The findings highlight the need for competency-oriented and digitally integrated employability frameworks within open and distance higher education systems.

Keywords: Vocational Attitude Maturity; Digital Employability Readiness; Open and Distance Learning; Digital Competency; Virtual Workplace Preparedness.

1. INTRODUCTION

The twenty-first century knowledge economy has fundamentally transformed the nature of employability, shifting the focus from conventional academic qualifications toward digitally integrated professional competencies. Rapid technological advancement, platform-based work environments, artificial intelligence, and virtual collaboration systems have redefined workforce expectations across global labour markets. In this changing educational and occupational landscape, higher education institutions are increasingly expected to prepare learners not only with disciplinary knowledge but also with vocational maturity and digital employability competencies essential for sustainable career development. Within this context, Open and Distance Learning (ODL) systems have emerged as significant educational frameworks capable of democratizing access to higher education while simultaneously supporting flexible, technology-mediated learning experiences. Vocational attitude

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maturity refers to an individual's preparedness to make realistic career decisions, engage in career planning, and develop competencies necessary for professional growth. Similarly, digital employability readiness encompasses learners' preparedness to function effectively within technology-driven workplaces through digital literacy, technological adaptability, online communication, and virtual workplace competencies. In the context of rapidly transforming labour markets, these competencies have become increasingly essential for sustainable employability and career development.

Although previous studies have separately examined employability skills and vocational development, limited empirical attention has been directed toward understanding the relationship between vocational attitude maturity and digital employability readiness among open and distance university students. Moreover, the multidimensional structure of these constructs within digitally mediated educational environments remains insufficiently explored. Therefore, the present study attempts to examine the levels, relationship, demographic variations, and construct validity associated with vocational attitude maturity and digital employability readiness among open and distance university students using non-parametric statistical procedures, exploratory factor analysis, and confirmatory factor analysis. The findings of the study are expected to contribute to the growing discourse on employability-oriented higher education by providing empirical insights relevant to educational policymakers, curriculum developers, open and distance universities, and digital learning practitioners. The study further seeks to support the development of competency-oriented educational frameworks capable of strengthening workforce readiness within digitally evolving economies.

2. REVIEW OF RELATED LITERATURE

The emergence of digitally networked economies has fundamentally reshaped the meaning of career preparedness and employability in contemporary higher education. Traditional career preparedness models based primarily on academic qualifications and vocational orientation are increasingly insufficient within technology-driven labour markets characterised by automation, artificial intelligence, remote work systems, and digitally mediated professional interaction. Recent educational discourse emphasises that employability now depends upon the integration of vocational maturity, digital adaptability, technological competence, virtual collaboration, and lifelong learning capacities (Falloon, 2020; Dwivedi *et al*., 2021; Succi & Canovi, 2020). Consequently, higher education institutions, particularly Open and Distance Learning (ODL) systems, are under increasing pressure to prepare learners for digitally evolving workforce environments. Recent empirical studies have highlighted the growing significance of vocational attitude maturity in career adaptability and employability development. Hirschi (2018) observed that vocational maturity positively influences career planning behaviour, occupational decision-making, and employability confidence among university students. Similarly, Tolentino *et al*., (2019) reported that career adaptability competencies significantly contribute to professional resilience and workforce transition capabilities. Guan *et al*., (2020) further emphasized that vocational maturity supports long-term employability sustainability by strengthening self-regulation and career management competencies. These studies collectively indicate that vocational preparedness remains an important determinant of employability within contemporary labour markets.

Parallel to vocational development research, recent literature strongly emphasizes the importance of digital employability readiness within higher education contexts. Falloon (2020) conceptualized digital literacy as a multidimensional competency involving technological problem-solving, online communication, information evaluation, and digital collaboration. Similarly, van Laar *et al*., (2020) identified technological adaptability and digital information management as essential employability skills required in twenty-first century workplaces. Studies by Tang *et al*., (2021), Zhao *et al.,* (2022), and Lin and Roan (2022) additionally demonstrated that digital competencies significantly influence workforce participation, professional productivity, and virtual workplace adaptability among university graduates. The post-pandemic expansion of digitally mediated learning environments has further accelerated academic interest in Open and Distance Learning systems. Zawacki-Richter (2021) argued that digital distance learning environments substantially transformed learner engagement, technological interaction, and virtual communication practices within higher education. Likewise, Delcker and Ifenthaler (2022) reported that digitally supported learning systems positively influence students' technological adaptability, collaborative learning behaviour, and employability-oriented skill development. Frontiers in Education Digital Distance Learning Study Studies conducted by Bond *et al*., (2021), Mishra *et al*., (2020), and Rapanta *et al*., (2020) further revealed that online learning ecosystems increasingly require students to develop virtual communication competencies, technological flexibility, and self-directed learning capacities.

Contemporary labour market studies additionally indicate that employability development increasingly depends upon interdisciplinary digital competencies and adaptive technological behaviour. Dwivedi *et al*., (2021) emphasised that digital transformation and artificial intelligence have substantially restructured global workforce expectations. Similarly, Grech and Camilleri (2020) argued that higher education institutions must integrate digital skill frameworks, technological adaptability, and virtual collaboration competencies within employability-

oriented curricula. Recent policy-oriented reports further support this perspective by emphasising the need for future-ready educational systems capable of preparing digitally competent graduates for evolving labour markets. OECD Future-Ready Vocational Education Report Despite the growing body of literature concerning vocational maturity, digital competence, and employability development, several important research gaps remain evident. First, most previous studies have examined vocational maturity and digital employability as separate constructs, with limited empirical attention directed toward understanding their interrelationship within Open and Distance Learning environments. Second, comparatively fewer studies have investigated digital employability readiness specifically among open and distance university students, despite the increasing technological dependence of ODL systems. Third, limited empirical evidence exists regarding the multidimensional construct validity of vocational attitude maturity and digital employability readiness scales using both Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Finally, existing literature within the Indian and South Asian higher education context remains comparatively limited in addressing digitally mediated employability preparedness among ODL learners.

Therefore, the present study was undertaken to address these empirical and conceptual gaps by examining vocational attitude maturity and digital employability readiness among open and distance university students through non-parametric statistical analysis, exploratory factor analysis, and confirmatory factor analysis. The study is expected to contribute theoretically by extending contemporary employability discourse within digitally transforming educational systems and practically by providing policy-relevant insights for curriculum development, employability training, digital competency enhancement, and workforce-oriented higher education planning.

2.1 Research Objectives

2.1.1 To examine the level of vocational attitude maturity among open and distance university students.
2.1.2 To assess the level of digital employability readiness among open and distance university students.
2.1. 3. To examine the relationship between vocational attitude maturity and digital employability readiness among open and distance university students.
2.1.4 To determine whether vocational attitude maturity and digital employability readiness differ significantly across selected demographic variables among open and distance university students.
2.1.5 To validate the factor structure and construct validity of the Vocational Attitude Maturity Scale.
2.1.6 To validate the factor structure and construct validity of the Digital Employability Readiness Scale.

2.2 Research Hypothesis

2.2.1 $H0_1$: There is no significant level of vocational attitude maturity among open and distance university students.
2.2.2 $H0_2$: There is no significant level of digital employability readiness among open and distance university students.
2.2.3 $H0_3$: There is no significant relationship between vocational attitude maturity and digital employability readiness among open and distance university students.
2.2.4 $H0_4$: There is no significant difference in vocational attitude maturity and digital employability readiness across selected demographic variables among open and distance university students.
2.2.5 $H0_5$: The Vocational Attitude Maturity Scale does not exhibit significant construct validity and factor structure.
2.2.6 $H0_6$: The Digital Employability Readiness Scale does not exhibit significant construct validity and factor structure.

3. METHODOLOGY OF THE STUDY

Method	The method used in the present study is a descriptive survey method and quantitative in nature
Sample	The sample of the study comprised 273 open and distance university students drawn from different programme levels and academic streams.
Sampling Technique	Purposive sampling technique was used for data collection among open and distance university students possessing exposure to digitally mediated learning environments.
Tool Used	Two researcher-constructed scales were used as the primary tools for data collection: (i) Vocational Attitude Maturity Scale and (ii) Digital Employability Readiness Scale. Both scales were measured using a five-point Likert scale ranging from Strongly Disagree to Strongly Agree.
Reliability of the Tool	The reliability of the Vocational Attitude Maturity Scale was established through Cronbach's Alpha method, and the reliability coefficient was found to be 0.742. Similarly, the Digital Employability Readiness Scale yielded a Cronbach's Alpha coefficient of 0.704, indicating acceptable internal consistency reliability for both instruments.
Statistical Techniques Used	Data were analysed using IBM SPSS Statistics Version 26 and IBM SPSS Amos. Statistical techniques such as frequency, percentage, mean, standard deviation, Cronbach's Alpha, Kolmogorov-Smirnov test, Shapiro-Wilk test, Spearman's rank-order correlation, Mann-Whitney U test, Kruskal-Wallis H test, Exploratory Factor Analysis, and Confirmatory Factor Analysis were employed for data analysis.
Ethical Considerations	Ethical standards were strictly maintained throughout the study. Informed consent was obtained from participants, and confidentiality of responses was ensured. Participation was voluntary, and data were used solely for academic purposes.

4. RESULTS AND DISCUSSION

Table 1: Demographic Profile of the Respondents

Variable	Category	Frequency	Percentage
Gender	Male	175	64.1
	Female	98	35.9
Age Group	Below 20 years	54	19.8
	21–25 years	167	61.2
	26–30 years	52	19.0
Programme Level	Undergraduate	42	15.4
	Postgraduate	148	54.2
	Diploma/Certificate	83	30.4
Stream of Study	Arts/Humanities	141	51.6
	Commerce/Management	35	12.8
	Science	97	35.5
Year of Study	First Year	80	29.3
	Second Year	151	55.3
	Third Year	42	15.4
Area of Residence	Rural	43	15.8
	Urban	142	52.0
	Semi-Urban	88	32.2
Family Income	Below ₹10,000	23	8.4
	₹10,001–₹20,000	137	50.2
	₹20,001–₹30,000	101	37.0
	Above ₹30,000	12	4.4
Access to Digital Devices	Smartphone only	129	47.3
	Laptop/Desktop only	96	35.2
	Both Smartphone & Laptop/Desktop	48	17.6
Internet Accessibility	Poor	11	4.0
	Average	103	37.7
	Good	121	44.3
	Excellent	38	13.9
Prior Digital Skill Training	Yes	185	67.8
	No	88	32.2

Table 1 presents the demographic characteristics of the respondents participating in the study. The findings revealed that the majority of respondents were male students (64.1%), whereas female students constituted 35.9% of the total sample. In terms of age distribution, most participants belonged to the 21–25 years age group (61.2%), indicating that the study primarily represented young adult learners enrolled in open and distance education programmes. Regarding programme level, postgraduate students accounted for the highest proportion (54.2%), followed by diploma/certificate learners (30.4%). With respect to academic stream, Arts and Humanities students formed the largest category (51.6%), while Commerce/Management students represented the lowest proportion (12.8%). The analysis further indicated that a majority of respondents resided in urban areas (52.0%), whereas only 15.8% belonged to rural locations. In relation to family income, half of the respondents (50.2%) reported monthly family income between ₹10,001 and ₹20,000. Concerning digital access, 47.3% of respondents relied exclusively on smartphones for digital engagement, while only 17.6% possessed access to both smartphones and laptops/desktops. Furthermore, 44.3% reported good internet accessibility, and 67.8% had previously received digital skill training. Overall, the demographic findings suggest that the respondents largely represented digitally exposed young adult learners pursuing higher education through open and distance learning systems.

4.1 To examine the level of vocational attitude maturity among open and distance university students.

$H0_1$: There is no significant level of vocational attitude maturity among open and distance university students.

Table 2: Reliability Statistics of Vocational Attitude Maturity Scale

Scale/Dimension	Cronbach's Alpha	No. of Items	Interpretation
Vocational Attitude Maturity	.742	5	Acceptable

Table 2 shows the reliability analysis of the Vocational Attitude Maturity Scale. The obtained Cronbach's Alpha coefficient was 0.742 across five dimensions, indicating acceptable internal consistency reliability. Since the alpha value exceeded the recommended threshold value of 0.70, the scale was considered sufficiently reliable for measuring vocational attitude maturity among open and distance university students. The result confirmed that the items included within the scale consistently measured the intended construct.

Table 3: Descriptive Statistics of Vocational Attitude Maturity Dimensions

Item Statistics			
	Mean	***Std. Deviation***	***N***
Career Planning	8.4812	3.33105	266
Career Decision-Making	9.5226	3.06678	266
Career Responsibility	9.7932	3.13328	266
Vocational Awareness	9.9023	3.45399	266
Self-Preparation	10.3158	3.12475	266

Table 3 presents the descriptive statistics of the dimensions associated with vocational attitude maturity. Among the dimensions, Self-Preparation recorded the highest mean score (M = 10.3158, SD = 3.12475), indicating that respondents demonstrated relatively strong readiness toward self-improvement and competency enhancement for future employment opportunities.

Vocational Awareness also reflected a comparatively higher mean score (M = 9.9023, SD = 3.45399), suggesting moderate awareness regarding professional opportunities and occupational expectations. Career Responsibility (M = 9.7932, SD = 3.13328) and Career Decision-Making (M = 9.5226, SD = 3.06678) similarly demonstrated moderate levels of vocational maturity among respondents.

Conversely, Career Planning obtained the lowest mean score (M = 8.4812, SD = 3.33105), indicating comparatively lower levels of structured career planning behaviour among open and distance learners. The standard deviation values across dimensions suggested moderate variability in respondent perceptions.

Table 4: Descriptive Statistics of Vocational Attitude Maturity

Descriptives				
			Statistic	Std. Error
Overall Vocational Attitude Maturity	Mean		48.0150	.69395
	95% Confidence Interval for Mean	Lower Bound	46.6487	
		Upper Bound	49.3814	
	5% Trimmed Mean		48.2490	
	Median		48.0000	
	Variance		128.098	
	Std. Deviation		11.31803	
	Minimum		19.00	
	Maximum		72.00	
	Range		53.00	
	Interquartile Range		15.00	
	Skewness		-.290	.149
	Kurtosis		-.306	.298

Table 4 presents the descriptive statistics of Overall Vocational Attitude Maturity among open and distance university students. The mean score of vocational attitude maturity was found to be 48.0150 (SD = 11.31803), indicating a moderate level of vocational maturity among the respondents. The median score (48.0000) was closely aligned with the mean value, suggesting relative symmetry in score distribution. The obtained variance value of 128.098 reflected moderate dispersion among respondent scores. The scale scores ranged from a minimum value of 19 to a maximum value of 72, producing a range of 53 points. Furthermore, the skewness value (-0.290) indicated slight negative skewness, whereas the kurtosis value (-0.306) suggested a moderately platykurtic distribution. Although the distribution demonstrated approximate symmetry, the significant normality statistics justified the use of non-parametric analytical procedures.

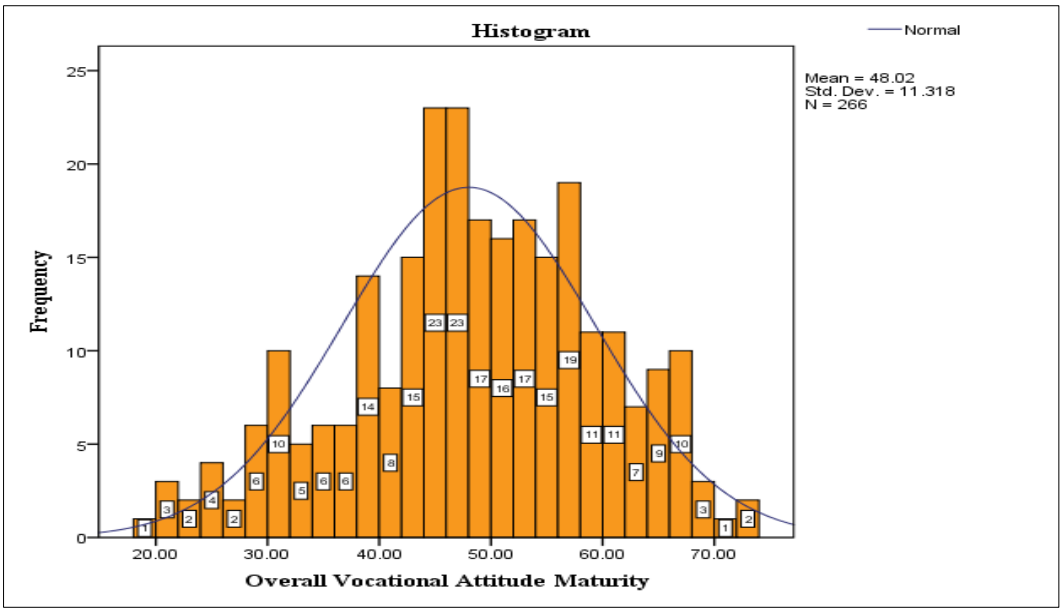

Figure 1: Histogram of Vocational Attitude Maturity

Figure 1 illustrates the histogram distribution of Vocational Attitude Maturity scores among respondents. The graphical representation demonstrated a relatively balanced distribution pattern with slight concentration toward higher score ranges. The distribution exhibited mild negative skewness, indicating that a larger proportion of respondents reported moderate to higher levels of vocational maturity. The absence of severe outliers and the relatively symmetrical spread of responses further indicated moderate consistency in respondent perceptions regarding vocational orientation and career preparedness.

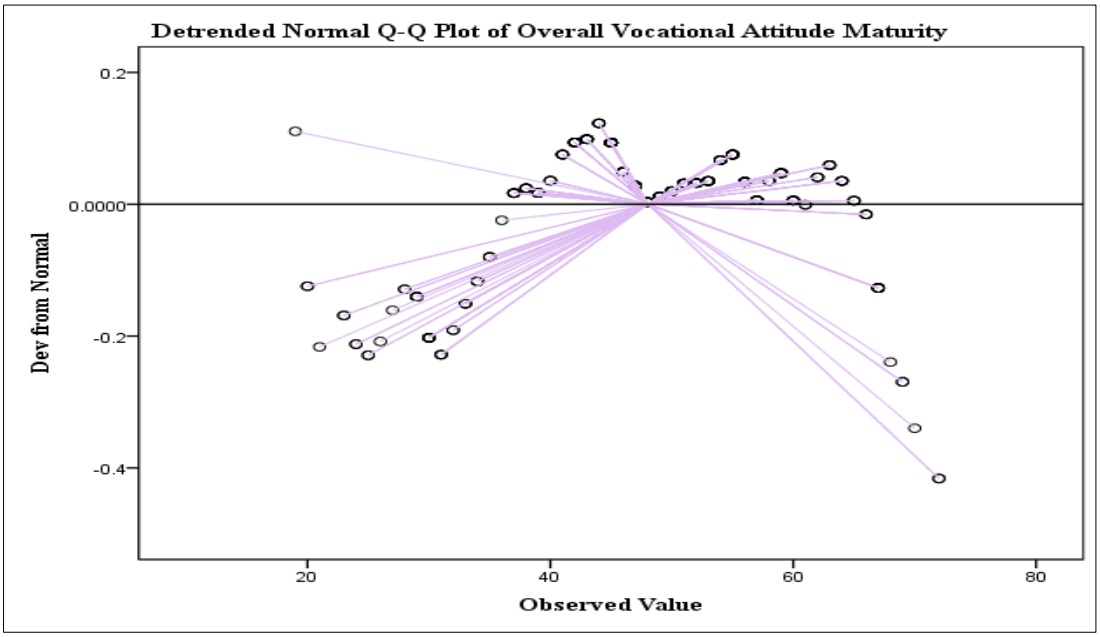

Figure 2: Normal Q-Q Plot of Vocational Attitude Maturity

Figure 2 presents the Normal Q-Q Plot of Vocational Attitude Maturity scores. The plotted observations generally followed the diagonal reference line, although minor deviations were observed at the distribution tails. These deviations indicated moderate departure from strict normality assumptions. The graphical findings supported the results obtained from the Kolmogorov-Smirnov and Shapiro-Wilk tests, thereby confirming the suitability of non-parametric statistical techniques for subsequent inferential analyses.

4.2 To assess the level of digital employability readiness among open and distance university students.

$H0_2$: There is no significant level of digital employability readiness among open and distance university students.

Table 5: Reliability Statistics of Digital Employability Readiness Scale

Scale	Cronbach's Alpha	Number of Dimensions	Interpretation
Digital Employability Readiness	.704	5	Acceptable

Table 5 presents the reliability statistics of the Digital Employability Readiness Scale. The scale yielded a Cronbach's Alpha coefficient of 0.704 across five dimensions, indicating acceptable internal consistency and satisfactory reliability. The result confirmed that the scale adequately measured students' preparedness for digitally mediated employability contexts and online professional environments.

Table 6: Descriptive Statistics of Digital Employability Readiness Dimensions

Item Statistics			
	Mean	***Std. Deviation***	***N***
Digital Literacy	8.1612	3.29712	273
Online Communication	9.3150	3.17672	273
Technological Adaptability	9.5275	3.19699	273
Information Management	9.7216	3.55774	273
Virtual Workplace Readiness	13.5275	3.92487	273

Table 6 presents the descriptive statistics associated with the dimensions of digital employability readiness. Among the identified dimensions, Virtual Workplace Readiness demonstrated the highest mean score (M = 13.5275, SD = 3.92487), indicating that respondents perceived themselves as comparatively prepared for virtual and remote work environments.

Information Management recorded a mean score of 9.7216 (SD = 3.55774), suggesting moderate ability among students to organize and manage digital information effectively. Technological Adaptability (M = 9.5275, SD = 3.19699) and Online Communication (M = 9.3150, SD = 3.17672) similarly reflected moderate preparedness toward digitally enabled professional interaction.

Digital Literacy reported the lowest mean score (M = 8.1612, SD = 3.29712), indicating comparatively lower confidence among respondents regarding operational digital competencies and technology utilization skills.

Table 7: Descriptive Statistics of Digital Employability Readiness

Descriptives				
			Statistic	**Std. Error**
Overall Digital Employability Readiness	Mean		50.1805	.71741
	95% Confidence Interval for Mean	Lower Bound	48.7679	
		Upper Bound	51.5930	
	5% Trimmed Mean		50.3772	
	Median		51.0000	
	Variance		136.903	
	Std. Deviation		11.70056	
	Minimum		20.00	
	Maximum		77.00	
	Range		57.00	
	Interquartile Range		16.00	
	Skewness		-.295	.149
	Kurtosis		-.415	.298

Table 7 presents the descriptive statistics of Overall Digital Employability Readiness among open and distance university students. The mean score of Digital Employability Readiness was 50.1805 (SD = 11.70056), indicating moderate levels of perceived digital employability preparedness among respondents. The median score (51.0000) closely approximated the mean value, suggesting a relatively balanced score distribution. The variance value of 136.903 reflected moderate variability in respondent perceptions. Scores ranged from a minimum of 20 to a maximum of 77, resulting in a total range of 57 points. The skewness value (-0.295) revealed slight negative skewness, while the kurtosis value (-0.415) indicated a moderately platykurtic distribution pattern. Although the distribution appeared relatively symmetrical, the statistically significant normality tests confirmed deviation from normality.

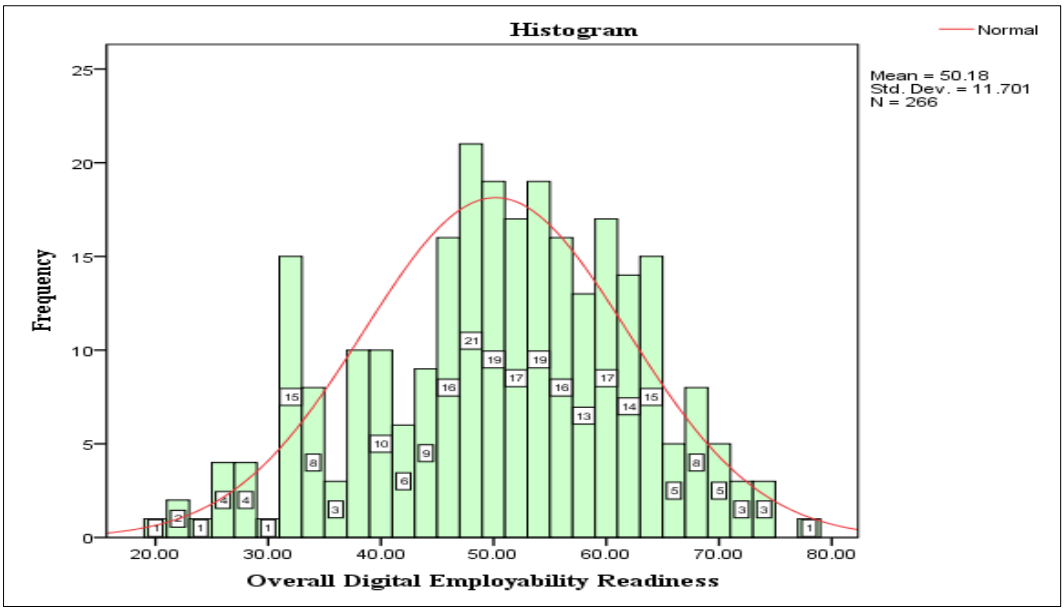

Figure 3: Histogram of Digital Employability Readiness

Figure 3 illustrates the histogram distribution of Digital Employability Readiness scores among respondents. The histogram demonstrated moderate clustering around the central score ranges with slight negative skewness toward higher digital readiness levels. The distribution pattern suggested that most respondents perceived themselves as moderately prepared for digitally mediated academic and professional environments. The graphical spread also indicated reasonable consistency in digital employability perceptions across participants.

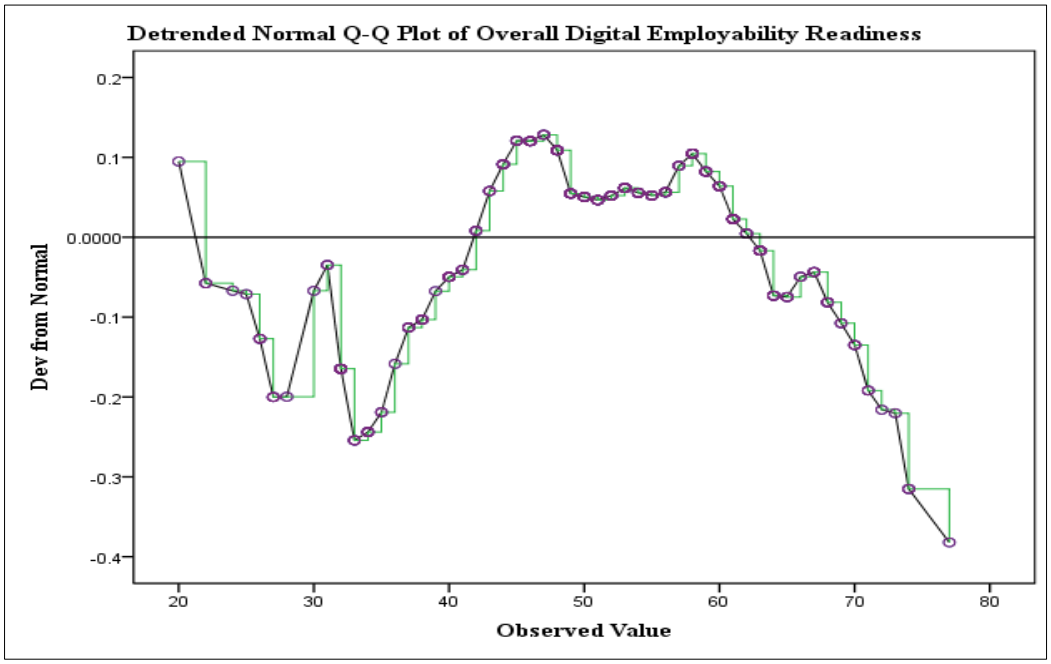

Figure 4: Normal Q-Q Plot of Digital Employability Readiness

Figure 4 presents the Normal Q-Q Plot of Digital Employability Readiness scores. The plotted observations approximately followed the diagonal reference line; however, minor deviations were visible at the lower and upper tails of the distribution. These deviations suggested moderate non-normality in score distribution, thereby supporting the findings obtained through statistical normality tests and validating the application of non-parametric inferential statistical methods in the study.

Table 8: Tests of Normality for Major Study Variables

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Overall Digital Employability Readiness	.076	266	.001	.984	266	.005
Overall Vocational Attitude Maturity	.072	266	.002	.986	266	.010
a. Lilliefors Significance Correction						

Table 8 presents the results of the normality assessment conducted using the Kolmogorov–Smirnov and Shapiro-Wilk tests for the two major study variables, namely Vocational Attitude Maturity and Digital Employability Readiness. The findings indicated statistically significant values for both variables ($p < .05$), suggesting deviation from normal distribution. Specifically, Vocational Attitude Maturity reported a Kolmogorov–Smirnov significance value of 0.002 and a Shapiro–Wilk significance value of 0.010. Similarly, Digital Employability Readiness yielded significance values of 0.001 and 0.005 respectively. Since all obtained significance values were lower than the prescribed alpha level of 0.05, the assumption of normality was violated. Therefore, the study employed non-parametric statistical procedures including Spearman Rank Correlation, Mann–Whitney U Test, and Kruskal-Wallis H Test for further inferential analysis.

4.3 To examine the relationship between vocational attitude maturity and digital employability readiness among open and distance university students.

$H0_3$: There is no significant relationship between vocational attitude maturity and digital employability readiness among open and distance university students.

Table 9: Spearman Rank Correlation between Vocational Attitude Maturity and Digital Employability Readiness

Variables	Spearman's rho	Sig.	Interpretation
Vocational Attitude Maturity × Digital Employability Readiness	-0.123	0.046	Weak Negative Significant Relationship

Table 9 presents the Spearman Rank Correlation analysis conducted to examine the relationship between Vocational Attitude Maturity and Digital Employability Readiness among open and distance university students. The analysis revealed a weak negative but statistically significant relationship between the two variables ($\rho = -0.123$, $p = 0.046$). Although the correlation coefficient indicated a relatively weak association, the obtained significance value was lower than the prescribed alpha level of 0.05, thereby confirming the statistical significance of the relationship. The negative direction of the relationship suggested that increases in vocational attitude maturity were associated with slight decreases in digital employability readiness among respondents. The finding implies that vocational maturity alone may not necessarily translate into higher digital employability preparedness within open and distance learning environments. This may indicate that traditional vocational orientation and digital employability competencies operate as relatively independent dimensions among learners in digitally mediated educational systems.

4.4 To determine whether vocational attitude maturity and digital employability readiness differ significantly across selected demographic variables among open and distance university students.

$H0_4$: There is no significant difference in vocational attitude maturity and digital employability readiness across selected demographic variables among open and distance university students.

Table 10: Mann-Whitney U Test based on Gender

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Overall Vocational Attitude Maturity is the same across categories of Gender.	Independent-Samples Mann-Whitney U Test	.737	Retain the null hypothesis.
2	The distribution of Overall Digital Employability Readiness is the same across categories of Gender.	Independent-Samples Mann-Whitney U Test	.433	Retain the null hypothesis.
Asymptotic significances are displayed. The significance level is .05.				

Table 10 presents the results of the Mann-Whitney U Test conducted to examine gender-based differences in Vocational Attitude Maturity and Digital Employability Readiness among respondents. The findings indicated no statistically significant differences between male and female students with respect to Vocational Attitude Maturity ($p = 0.737$) and Digital Employability Readiness ($p = 0.433$). Since both significance values exceeded the prescribed alpha level of 0.05, the null hypotheses were retained. The results suggest that gender did not exert significant influence on vocational maturity or digital employability readiness

among open and distance university students. The findings further imply that digital learning environments may provide relatively equitable opportunities for vocational development and digital competency enhancement irrespective of gender differences.

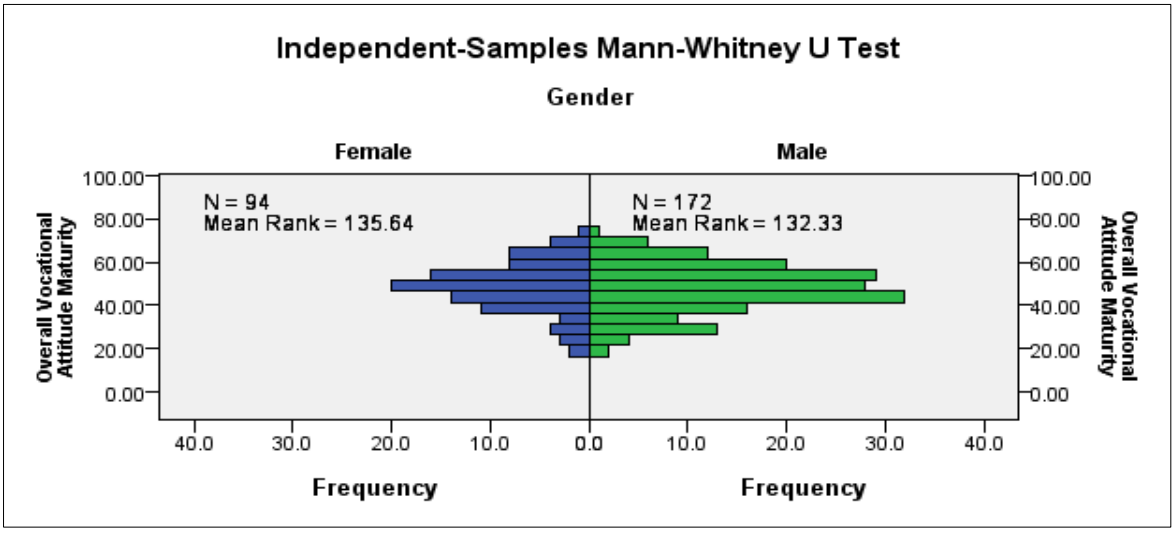

Figure 5 (A): Gender-wise Distribution of Vocational Attitude Maturity

Figure 5 (A) illustrates the distribution of Vocational Attitude Maturity scores across gender categories. The graphical representation demonstrated relatively similar score distributions between male and female respondents, with no substantial variation in median or spread of scores. The figure visually supports the Mann–Whitney U Test findings, confirming the absence of statistically significant gender-based differences in vocational attitude maturity among respondents.

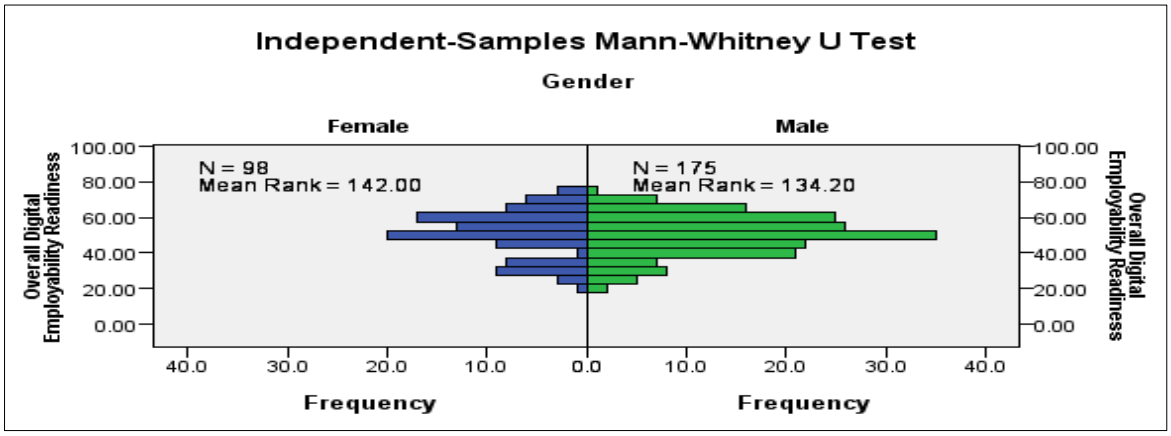

Figure 5 (B): Gender-wise Distribution of Digital Employability Readiness

Figure 5 (B) presents the distribution of Digital Employability Readiness scores according to gender categories. The distribution patterns appeared relatively comparable across male and female respondents, indicating consistent levels of perceived digital employability readiness. The absence of major differences in score dispersion and central tendency further supported the non-significant Mann-Whitney U Test results obtained for gender differences in digital employability readiness.

Table 11: Mann-Whitney U Test based on Prior Digital Skill Training

Hypothesis Test Summary				
	Null Hypothesis	**Test**	**Sig.**	**Decision**
1	The distribution of Overall Vocational Attitude Maturity is the same across categories of Prior_Digital_Skill_Training.	Independent-Samples Mann-Whitney U Test	.859	Retain the null hypothesis.
2	The distribution of Overall Digital Employability Readiness is the same across categories of Prior_Digital_Skill_Training.	Independent-Samples Mann-Whitney U Test	.426	Retain the null hypothesis.
Asymptotic significances are displayed. The significance level is .05.				

Table 11 presents the Mann-Whitney U Test results examining differences in Vocational Attitude Maturity and Digital Employability Readiness based on prior digital skill training. The findings revealed no statistically significant differences in Vocational Attitude Maturity ($p = 0.859$) and Digital Employability Readiness ($p = 0.426$) between respondents who had received prior digital skill training and those who had not. As both significance values exceeded the threshold value of 0.05, the null hypotheses were retained. The findings suggest that prior digital skill training did not significantly influence vocational maturity or digital employability readiness among respondents. This may indicate that learners acquired digital competencies through multiple informal and experiential channels beyond structured training programmes within the open and distance learning context.

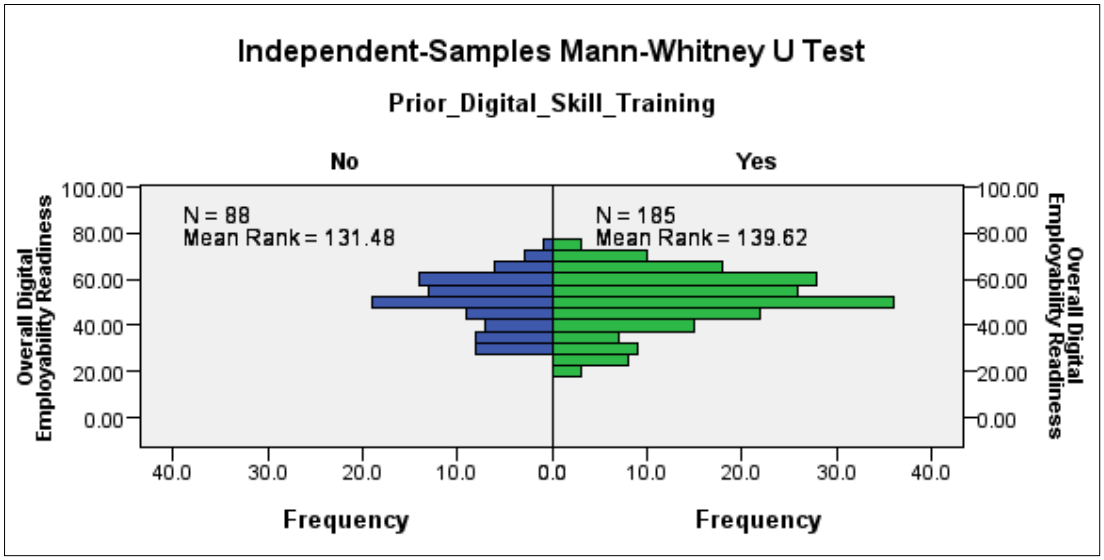

Figure 6 (A): Prior Digital Skill Training-wise Distribution of Vocational Attitude Maturity

Figure 6 (A) illustrates the distribution of Vocational Attitude Maturity scores according to prior digital skill training status. The graphical representation revealed relatively similar score distributions across both respondent groups, indicating limited variation in vocational maturity levels based on prior digital training exposure.

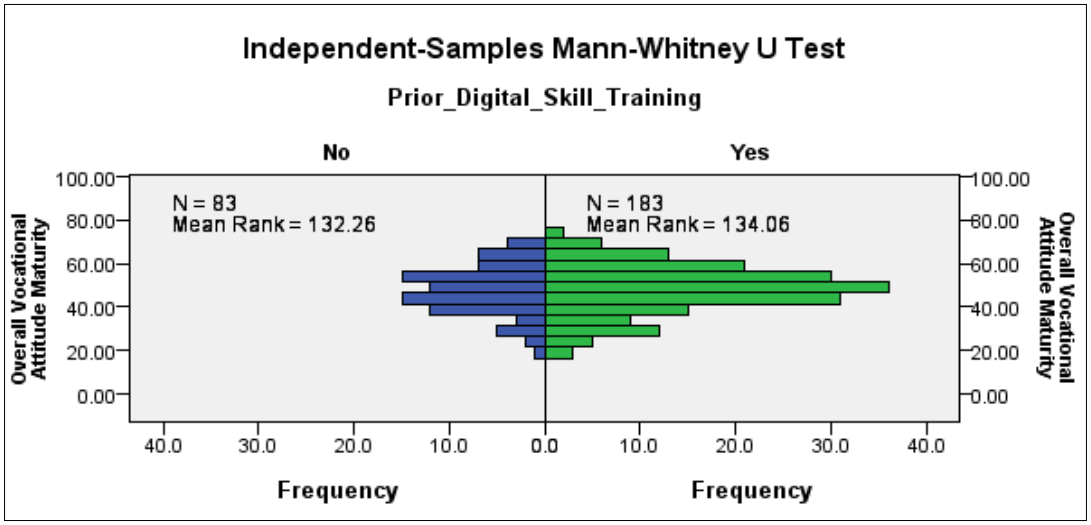

Figure 6 (B): Prior Digital Skill Training-wise Distribution of Digital Employability Readiness

Figure 6 (B) presents the distribution of Digital Employability Readiness scores across respondents with and without prior digital skill training. The visual distribution patterns appeared moderately comparable between groups, suggesting limited variation in digital employability readiness levels. The graphical findings support the statistical results indicating the absence of significant differences in digital employability readiness based on prior digital training experience.

Table 12: Kruskal-Wallis H Test based on Age Group

Hypothesis Test Summary				
	Null Hypothesis	**Test**	**Sig.**	**Decision**
1	The distribution of Overall Vocational Attitude Maturity is the same across categories of Age_Group.	Independent-Samples Kruskal-Wallis Test	.162	Retain the null hypothesis.
2	The distribution of Overall Digital Employability Readiness is the same across categories of Age_Group.	Independent-Samples Kruskal-Wallis Test	.952	Retain the null hypothesis.
Asymptotic significances are displayed. The significance level is .05.				

Table 12 presents the Kruskal-Wallis H Test results examining differences in Vocational Attitude Maturity and Digital Employability Readiness across age groups. The findings indicated no statistically significant differences in Vocational Attitude Maturity ($p = 0.162$) and Digital Employability Readiness ($p = 0.952$) among respondents belonging to different age categories. Since the obtained significance values exceeded the threshold level of 0.05, the null hypotheses were retained. The findings suggest that age differences did not substantially influence vocational maturity or digital employability readiness among open and distance university students. This may indicate that learners across age categories possessed relatively comparable levels of vocational orientation and digital employability preparedness within the open and distance learning environment.

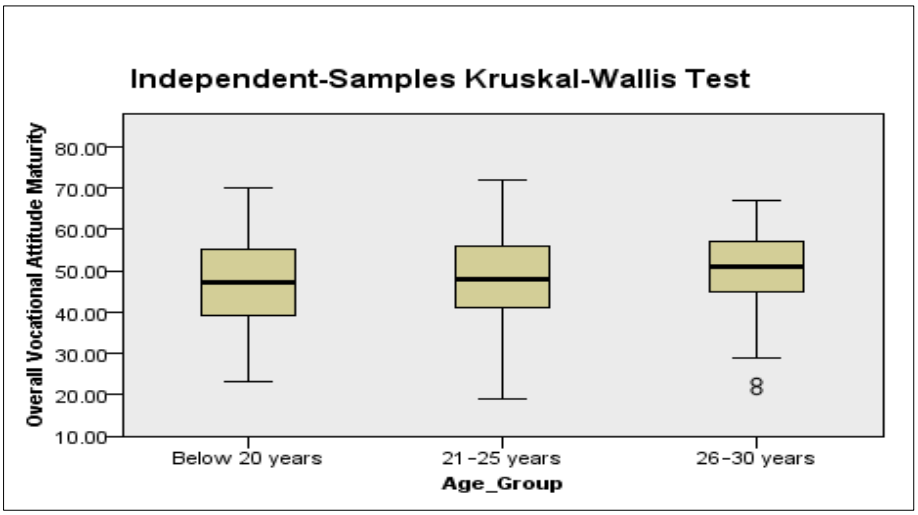

Figure 7 (A): Age Group-wise Distribution of Vocational Attitude Maturity

Figure 7 (A) illustrates the distribution of Vocational Attitude Maturity scores across different age groups. The distribution patterns appeared relatively similar among respondents belonging to various age categories, with no major variations in median scores or score dispersion. The graphical representation supports the Kruskal-Wallis H Test findings reported in Table 12, confirming the absence of statistically significant age-based differences in vocational attitude maturity.

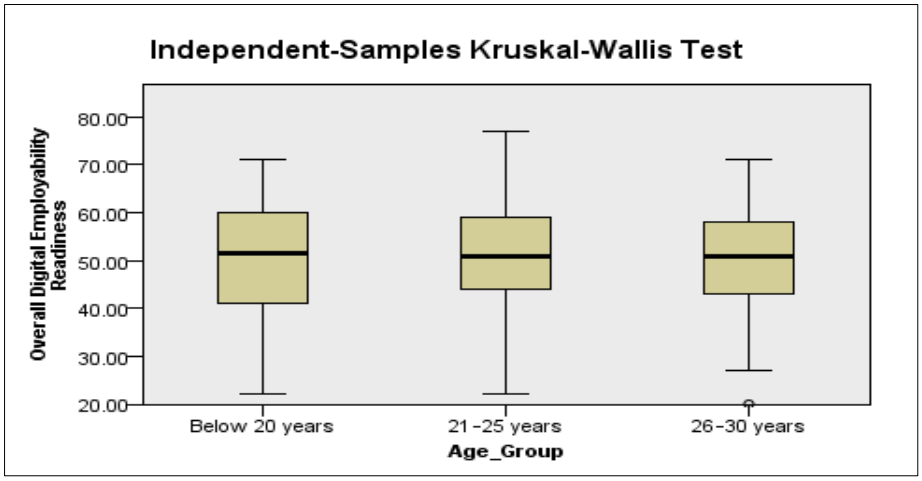

Figure 7 (B): Age Group-wise Distribution of Digital Employability Readiness

Figure 7 (B) presents the distribution of Digital Employability Readiness scores according to age groups. The graphical patterns indicated relatively uniform score distributions across categories, demonstrating minimal variation in digital employability readiness levels among respondents of different age groups. The figure substantiates the statistical findings indicating non-significant differences in digital employability readiness based on age categories.

Table 13: Kruskal-Wallis H Test based on Programme Level

Hypothesis Test Summary				
	Null Hypothesis	**Test**	**Sig.**	**Decision**
1	The distribution of Overall Vocational Attitude Maturity is the same across categories of Programme Level.	Independent-Samples Kruskal-Wallis Test	.291	Retain the null hypothesis.
2	The distribution of Overall Digital Employability Readiness is the same across categories of Programme Level.	Independent-Samples Kruskal-Wallis Test	.524	Retain the null hypothesis.
Asymptotic significances are displayed. The significance level is .05.				

Table 13 presents the Kruskal-Wallis H Test results examining differences in Vocational Attitude Maturity and Digital Employability Readiness across programme levels. The findings revealed no statistically significant differences in Vocational Attitude Maturity ($p = 0.291$) and Digital Employability Readiness ($p = 0.524$) among undergraduate, postgraduate, and diploma/certificate learners. As the significance values exceeded the prescribed alpha level of 0.05, the null hypotheses were retained. The results indicate that programme level did not significantly affect vocational maturity or digital employability readiness among respondents. The findings suggest that learners enrolled in different academic programmes within open and distance education possessed relatively comparable levels of vocational and digital preparedness.

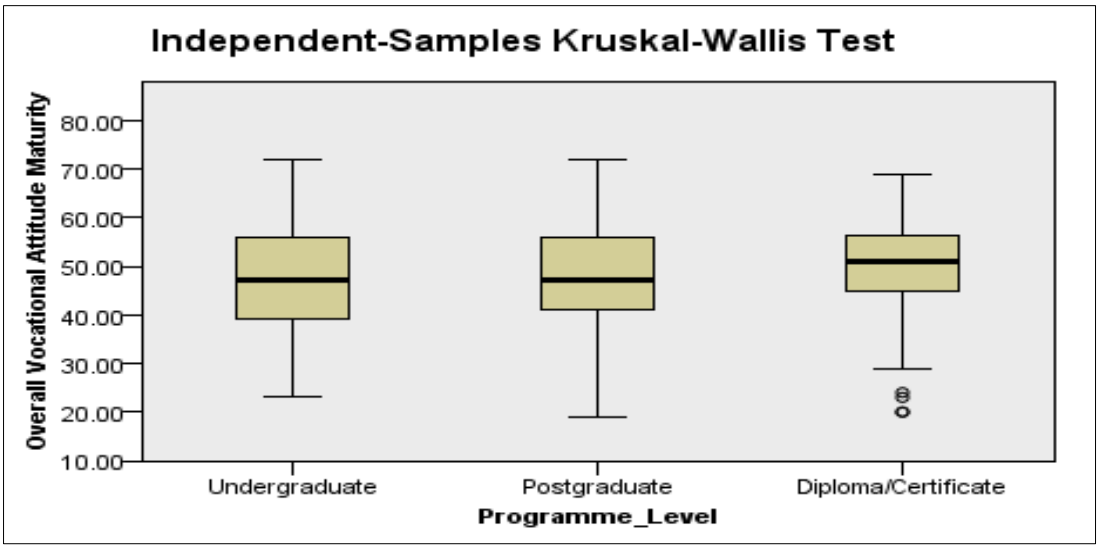

Figure 8 (A): Programme Level-wise Distribution of Vocational Attitude Maturity

Figure 8 (A) presents the distribution of Vocational Attitude Maturity scores across programme levels. The visual representation indicated relatively balanced score distributions among undergraduate, postgraduate, and diploma/certificate students. The graphical findings further support the absence of statistically significant programme-level differences in vocational attitude maturity.

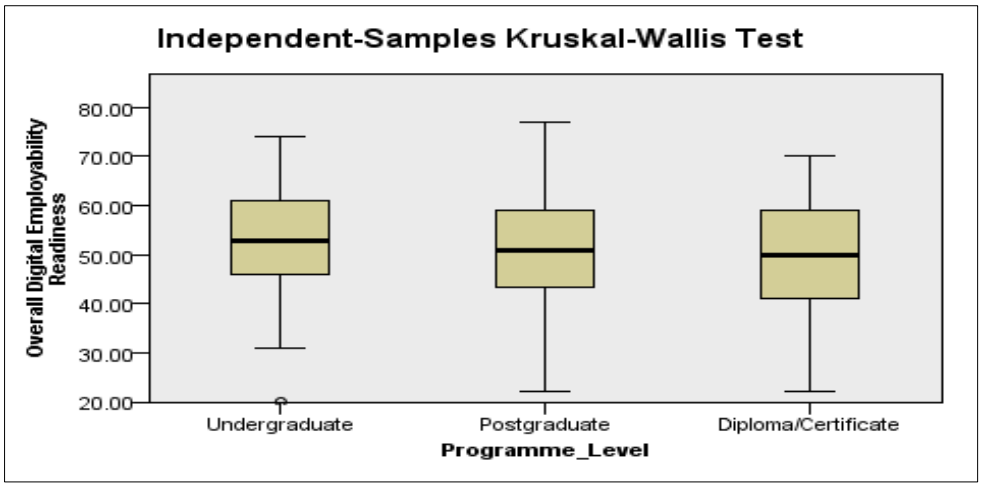

Figure 8 (B): Programme Level-wise Distribution of Digital Employability Readiness

Figure 8 (B) illustrates the distribution of Digital Employability Readiness scores according to programme level. The figure demonstrated relatively comparable score patterns across academic categories, indicating consistency in perceived digital employability readiness among respondents. The graphical evidence aligns with the Kruskal-Wallis H Test findings reported in Table 13.

Table 14: Kruskal-Wallis H Test based on Stream of Study

Hypothesis Test Summary				
	Null Hypothesis	**Test**	**Sig.**	**Decision**
1	The distribution of Overall Vocational Attitude Maturity is the same across categories of Stream.	Independent-Samples Kruskal-Wallis Test	.455	Retain the null hypothesis.
2	The distribution of Overall Digital Employability Readiness is the same across categories of Stream.	Independent-Samples Kruskal-Wallis Test	.234	Retain the null hypothesis.
Asymptotic significances are displayed. The significance level is .05.				

Table 14 presents the Kruskal-Wallis H Test results examining differences in Vocational Attitude Maturity and Digital Employability Readiness across academic streams. The findings revealed no statistically significant differences in Vocational Attitude Maturity ($p = 0.455$) and Digital Employability Readiness ($p = 0.234$) among Arts/Humanities, Commerce/Management, and Science students. Since both significance values exceeded the prescribed threshold value of 0.05, the null hypotheses were retained. The findings indicate that academic stream did not significantly influence vocational maturity or digital employability readiness among open and distance learners. The result further suggests that digital employability competencies and vocational preparedness may transcend disciplinary boundaries within open and distance educational settings.

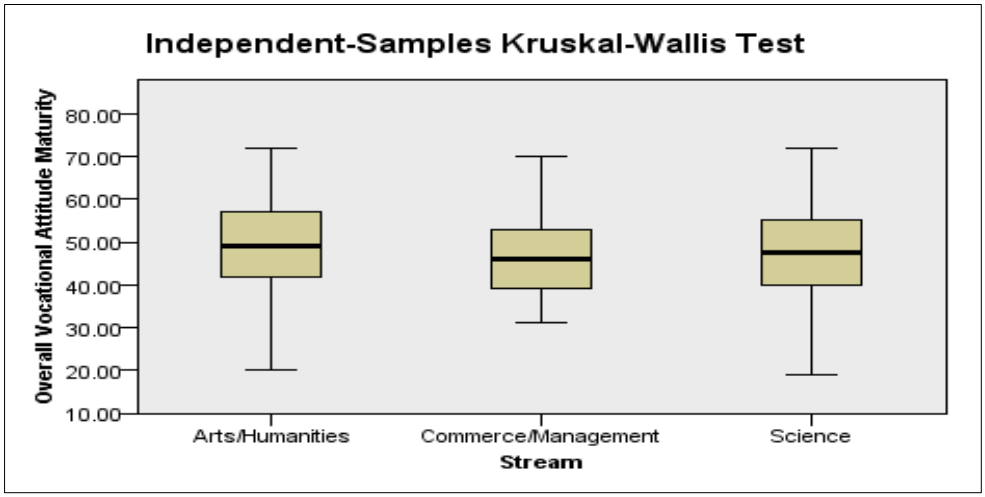

Figure 9 (A): Stream-wise Distribution of Vocational Attitude Maturity

Figure 9 (A) illustrates the distribution of Vocational Attitude Maturity scores across academic streams. The graphical representation demonstrated relatively similar score distributions among Arts/Humanities, Commerce/Management, and Science students. The figure visually supports the non-significant Kruskal-Wallis H Test findings reported in Table 14.

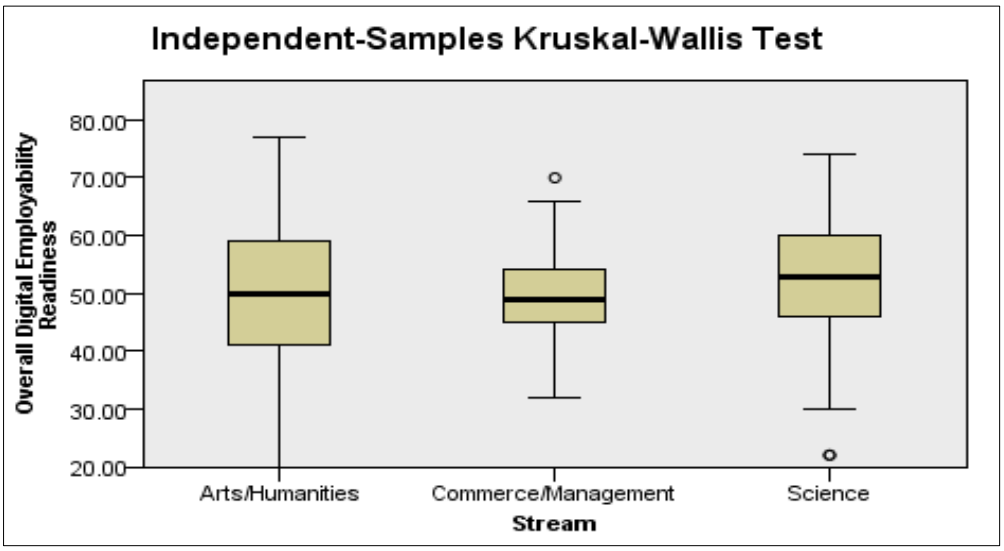

Figure 9 (B): Stream-wise Distribution of Digital Employability Readiness

Figure 9 (B) presents the distribution of Digital Employability Readiness scores according to academic stream. The score distributions appeared relatively comparable across all stream categories, indicating consistent levels of digital employability readiness among respondents irrespective of disciplinary background. The graphical findings further substantiate the absence of statistically significant stream-wise differences.

Table 15: Kruskal-Wallis H Test based on Year of Study

Hypothesis Test Summary				
	Null Hypothesis	**Test**	**Sig.**	**Decision**
1	The distribution of Overall Vocational Attitude Maturity is the same across categories of Year_of_Study.	Independent-Samples Kruskal-Wallis Test	.724	Retain the null hypothesis.
2	The distribution of Overall Digital Employability Readiness is the same across categories of Year_of_Study.	Independent-Samples Kruskal-Wallis Test	.338	Retain the null hypothesis.
Asymptotic significances are displayed. The significance level is .05.				

Table 15 presents the Kruskal-Wallis H Test results examining differences in Vocational Attitude Maturity and Digital Employability Readiness across year of study categories. The findings indicated no statistically significant differences in Vocational Attitude Maturity ($p = 0.724$) and Digital Employability Readiness ($p = 0.338$) among first-year, second-year, and third-year students. Since both significance values exceeded the prescribed alpha level of 0.05, the null hypotheses were retained. The findings imply that year of study did not significantly influence vocational maturity or digital employability readiness among respondents. This suggests that students across different stages of academic progression within open and distance learning environments demonstrated relatively comparable levels of vocational orientation and digital employability preparedness.

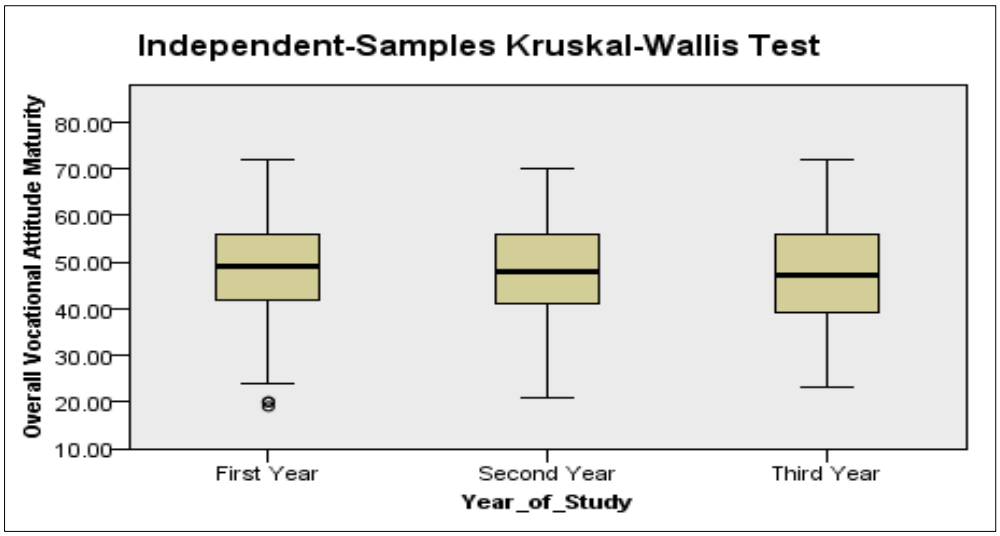

Figure 10 (A): Year of Study-wise Distribution of Vocational Attitude Maturity

Figure 10 (A) illustrates the distribution of Vocational Attitude Maturity scores across different years of study. The graphical representation demonstrated relatively balanced score distributions among first-year, second-year, and third-year students, with no substantial variations in median values or score dispersion. The visual findings support the Kruskal-Wallis H Test results presented in Table 15, confirming the absence of statistically significant year-wise differences in vocational attitude maturity.

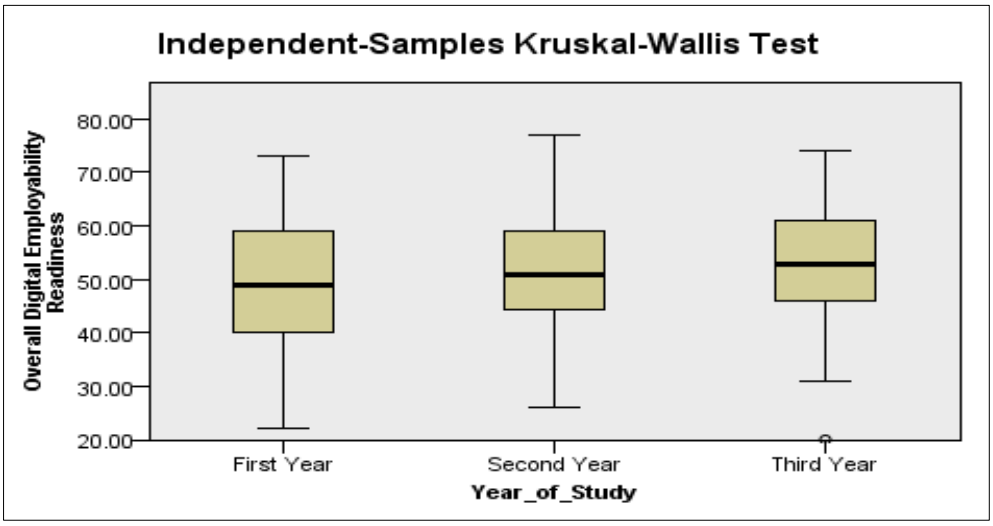

Figure 10 (B): Year of Study-wise Distribution of Digital Employability Readiness

Figure 10 (B) presents the distribution of Digital Employability Readiness scores according to year of study. The figure demonstrated relatively consistent score distributions across all academic levels, suggesting similar levels of perceived digital employability readiness among respondents irrespective of academic progression. The graphical evidence further substantiates the non-significant Kruskal-Wallis H Test findings reported in Table 15.

Table 16: Kruskal-Wallis H Test based on Area of Residence

Hypothesis Test Summary				
	Null Hypothesis	**Test**	**Sig.**	**Decision**
1	The distribution of Overall Vocational Attitude Maturity is the same across categories of Area_of_Residence.	Independent-Samples Kruskal-Wallis Test	.582	Retain the null hypothesis.
2	The distribution of Overall Digital Employability Readiness is the same across categories of Area_of_Residence.	Independent-Samples Kruskal-Wallis Test	.936	Retain the null hypothesis.
Asymptotic significances are displayed. The significance level is .05.				

Table 16 presents the Kruskal-Wallis H Test results examining differences in Vocational Attitude Maturity and Digital Employability Readiness based on area of residence. The findings indicated no statistically significant differences in Vocational Attitude Maturity ($p = 0.582$) and Digital Employability Readiness ($p = 0.936$) among respondents residing in rural, urban, and semi-urban areas. As the significance values exceeded the prescribed threshold value of 0.05, the null hypotheses were retained. The findings suggest that geographical location and residential background did not significantly influence vocational maturity or digital employability readiness among respondents. The results may indicate that the digital learning infrastructure and vocational exposure provided through open and distance education reduced potential residential disparities among learners.

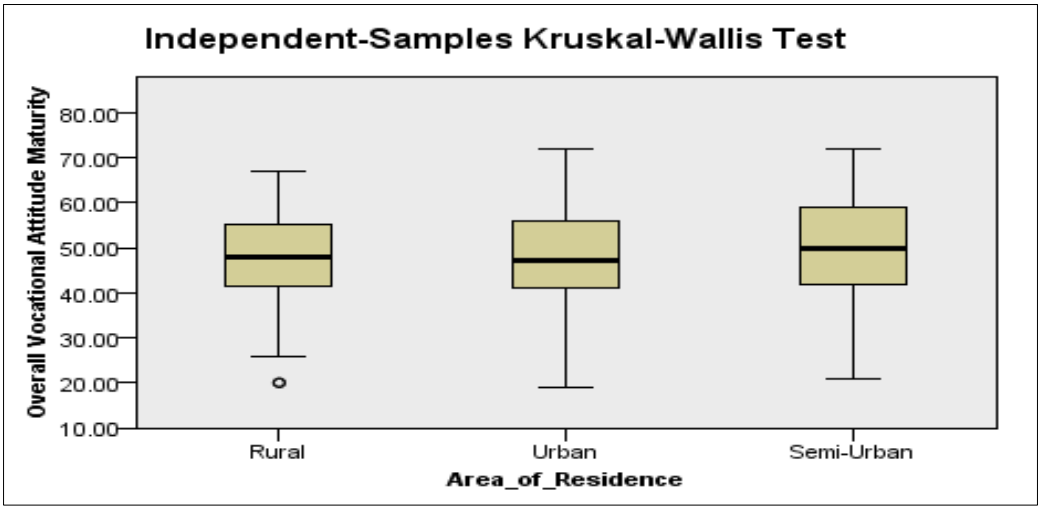

Figure 11 (A): Area of Residence-wise Distribution of Vocational Attitude Maturity

Figure 11 (A) illustrates the distribution of Vocational Attitude Maturity scores across residential categories. The graphical representation demonstrated relatively similar score distributions among rural, urban, and semi-urban respondents, indicating minimal variation in vocational maturity levels based on area of residence. The figure visually supports the Kruskal-Wallis H Test findings reported in Table 16.

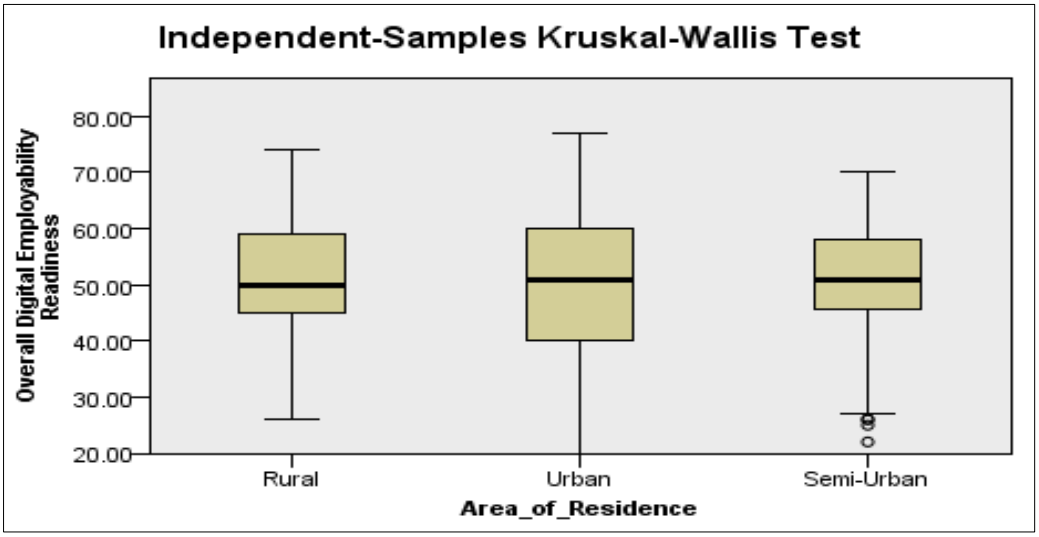

Figure 11 (B): Area of Residence-wise Distribution of Digital Employability Readiness

Figure 11 (B) presents the distribution of Digital Employability Readiness scores according to area of residence. The graphical patterns appeared relatively comparable across residential categories, indicating consistent levels of digital employability readiness among respondents irrespective of geographical location.

The visual findings further support the non-significant statistical results obtained in Table 16.

Table 17: Kruskal-Wallis H Test based on Family Income

Hypothesis Test Summary				
	Null Hypothesis	**Test**	**Sig.**	**Decision**
1	The distribution of Overall Vocational Attitude Maturity is the same across categories of Family Income.	Independent-Samples Kruskal-Wallis Test	.204	Retain the null hypothesis.
2	The distribution of Overall Digital Employability Readiness is the same across categories of Family Income.	Independent-Samples Kruskal-Wallis Test	.134	Retain the null hypothesis.
Asymptotic significances are displayed. The significance level is .05.				

Table 17 presents the Kruskal-Wallis H Test results examining differences in Vocational Attitude Maturity and Digital Employability Readiness across family income categories. The findings revealed no statistically significant differences in Vocational Attitude Maturity ($p = 0.204$) and Digital Employability Readiness ($p = 0.134$) among respondents belonging to different income groups. Since both significance values exceeded the prescribed alpha threshold of 0.05, the null hypotheses were retained. The findings suggest that economic background did not significantly influence vocational maturity or digital employability readiness among open and distance university students. The results may indicate that learners were able to access vocational and digital competency development opportunities irrespective of income disparities.

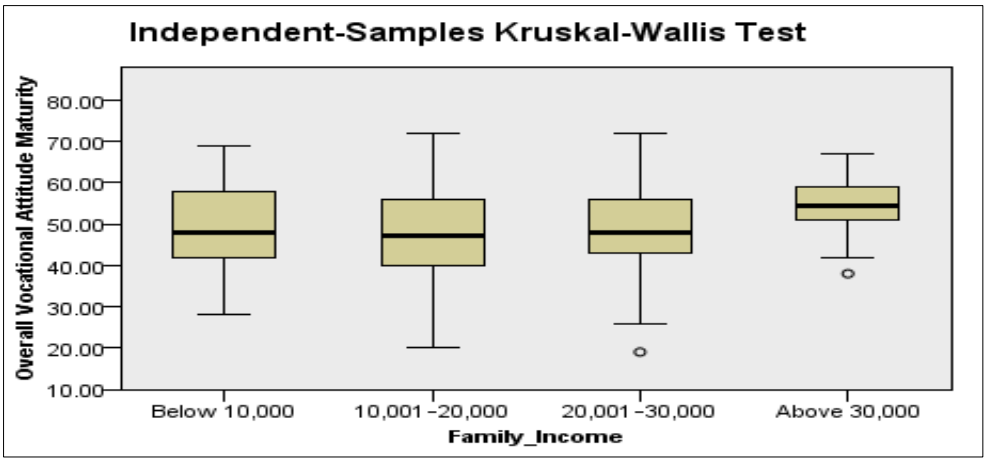

Figure 12 (A): Family Income-wise Distribution of Vocational Attitude Maturity

Figure 12 (A) illustrates the distribution of Vocational Attitude Maturity scores across family income categories. The score distributions appeared relatively balanced across all income groups, indicating limited variation in vocational maturity based on economic background. The graphical representation further substantiates the non-significant Kruskal-Wallis H Test findings presented in Table 17.

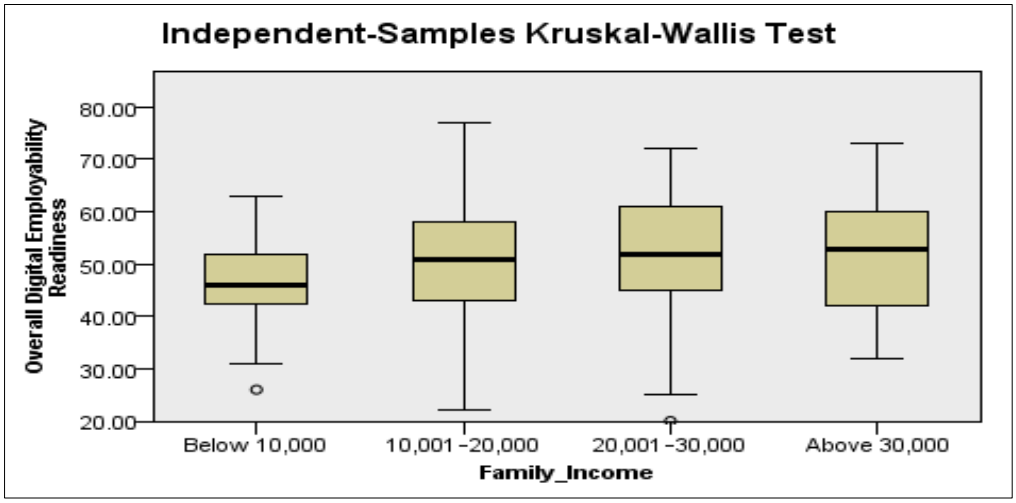

Figure 12 (B): Family Income-wise Distribution of Digital Employability Readiness

Figure 12 (B) presents the distribution of Digital Employability Readiness scores according to family income categories. The graphical patterns demonstrated moderate consistency in score distribution across income groups, indicating comparable levels of digital employability readiness among respondents irrespective of family income. The visual findings support the statistical results reported in Table 17.

Table 18: Kruskal-Wallis H Test based on Access to Digital Devices

Hypothesis Test Summary				
	Null Hypothesis	**Test**	**Sig.**	**Decision**
1	The distribution of Overall Vocational Attitude Maturity is the same across categories of Access_Digital_Devices.	Independent-Samples Kruskal-Wallis Test	.287	Retain the null hypothesis.
2	The distribution of Overall Digital Employability Readiness is the same across categories of Access_Digital_Devices.	Independent-Samples Kruskal-Wallis Test	.303	Retain the null hypothesis.
Asymptotic significances are displayed. The significance level is .05.				

Table 18 presents the Kruskal-Wallis H Test results examining differences in Vocational Attitude Maturity and Digital Employability Readiness based on access to digital devices. The findings indicated no statistically significant differences in Vocational Attitude Maturity ($p = 0.287$) and Digital Employability Readiness ($p = 0.303$) among respondents using smartphones only, laptops/desktops only, or both digital devices. As the significance values exceeded the prescribed alpha level of 0.05, the null hypotheses were retained. The findings suggest that access to different categories of digital devices did not significantly influence vocational maturity or digital employability readiness among respondents. The results may indicate that open and distance learners were able to adapt to digitally mediated educational environments regardless of the specific device types available to them.

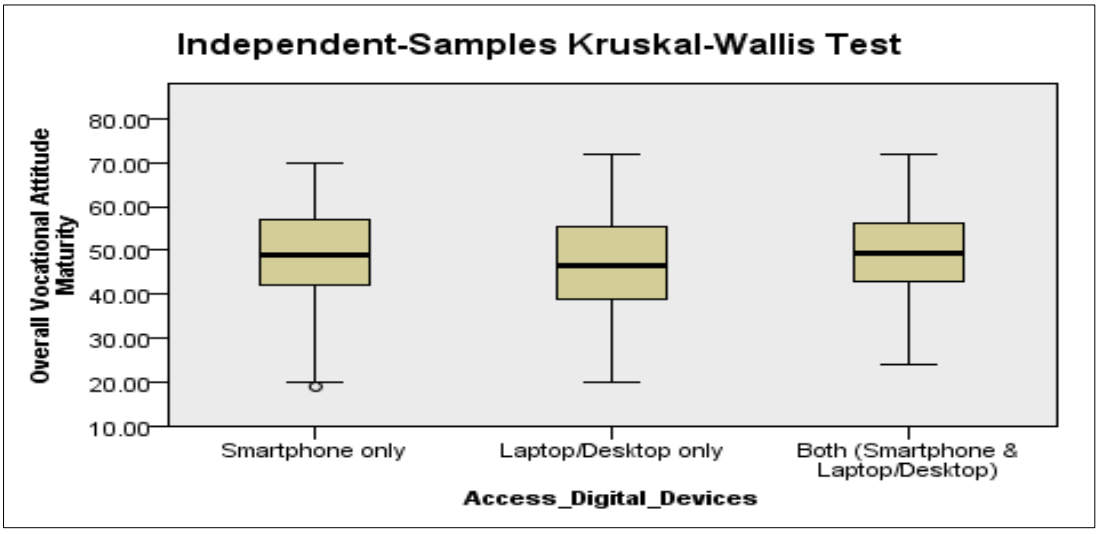

Figure 13 (A): Access to Digital Devices-wise Distribution of Vocational Attitude Maturity

Figure 13 (A) illustrates the distribution of Vocational Attitude Maturity scores across categories of digital device access. The graphical representation demonstrated relatively similar score distributions among respondents using smartphones, laptops/desktops, or both devices. The visual findings support the non-significant Kruskal-Wallis H Test results reported in Table 4.18, indicating minimal variation in vocational maturity based on access to digital devices.

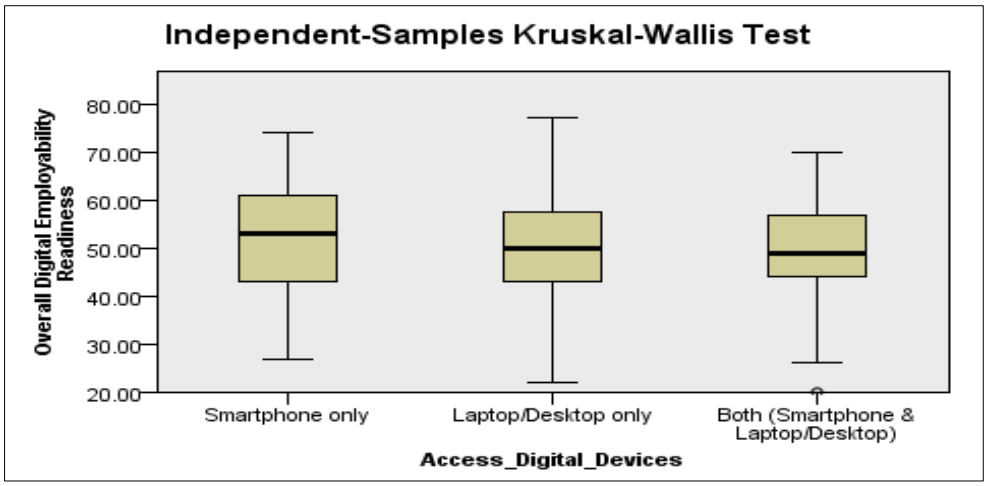

Figure 13 (B): Access to Digital Devices-wise Distribution of Digital Employability Readiness

Figure 13 (B) presents the distribution of Digital Employability Readiness scores according to categories of digital device access. The score distributions appeared moderately comparable across all respondent groups, suggesting that access to different digital devices did not substantially influence perceived digital employability readiness. The graphical evidence further substantiates the statistical findings reported in Table 18.

Table 19: Kruskal-Wallis H Test based on Internet Accessibility

Hypothesis Test Summary				
	Null Hypothesis	**Test**	**Sig.**	**Decision**
1	The distribution of Overall Vocational Attitude Maturity is the same across categories of Internet Accessibility.	Independent-Samples Kruskal-Wallis Test	.842	Retain the null hypothesis.
2	The distribution of Overall Digital Employability Readiness is the same across categories of Internet Accessibility.	Independent-Samples Kruskal-Wallis Test	.139	Retain the null hypothesis.
Asymptotic significances are displayed. The significance level is .05.				

Table 19 presents the Kruskal-Wallis H Test results examining differences in Vocational Attitude Maturity and Digital Employability Readiness across levels of internet accessibility. The findings revealed no statistically significant differences in Vocational Attitude Maturity ($p = 0.842$) and Digital Employability Readiness ($p = 0.139$) among respondents reporting poor, average, good, and excellent internet accessibility. Since the obtained significance values exceeded the prescribed alpha threshold of 0.05, the null hypotheses were retained. The findings suggest that internet accessibility did not significantly influence vocational maturity or digital employability readiness among open and distance university students. The results may indicate that respondents were able to maintain comparable levels of vocational orientation and digital preparedness despite variations in internet accessibility conditions.

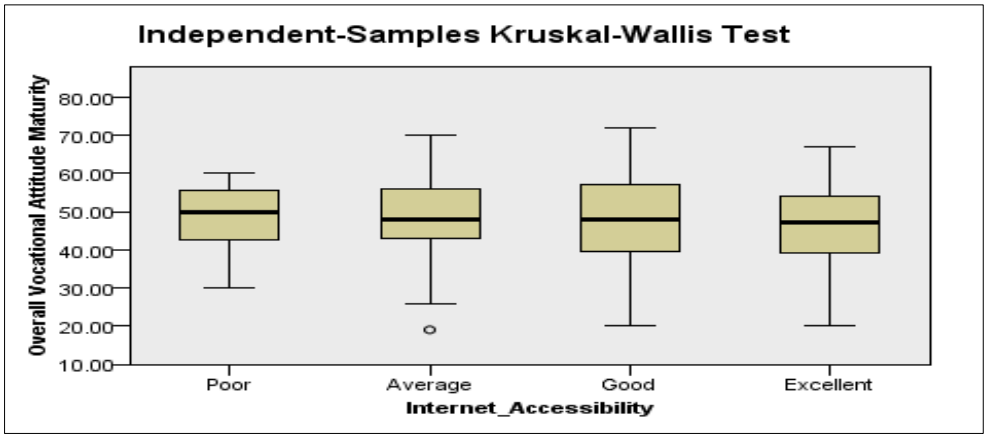

Figure 14 (A): Internet Accessibility-wise Distribution of Vocational Attitude Maturity

Figure 14 (A) illustrates the distribution of Vocational Attitude Maturity scores across internet accessibility categories. The graphical representation demonstrated relatively balanced score distributions among respondents with varying levels of internet access, indicating limited variation in vocational maturity levels. The visual findings further support the non-significant Kruskal-Wallis H Test results presented in Table 19.

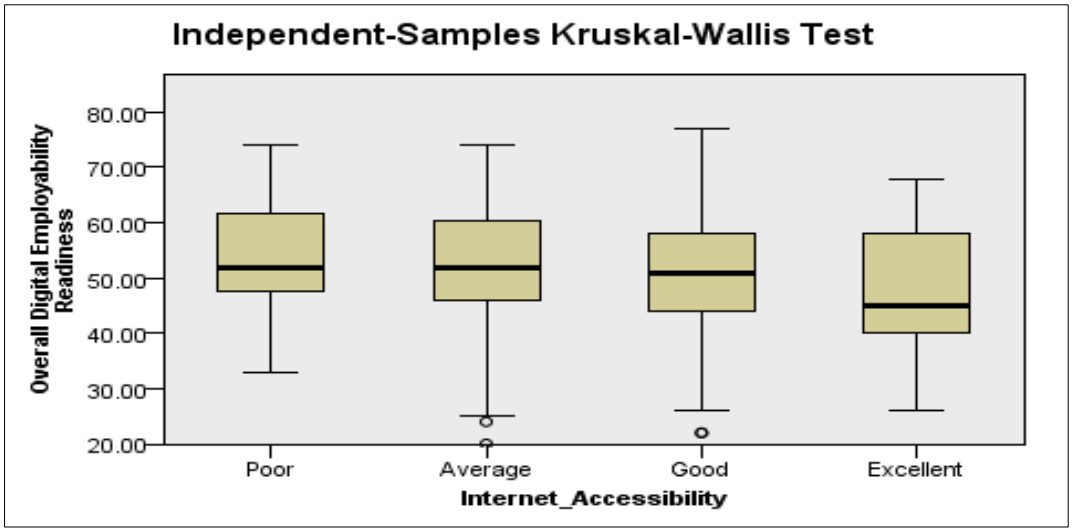

Figure 14 (B): Internet Accessibility-wise Distribution of Digital Employability Readiness

Figure 14 (B) presents the distribution of Digital Employability Readiness scores according to internet accessibility categories. The graphical patterns appeared relatively consistent across respondents with poor, average, good, and excellent internet accessibility levels. The findings indicate that internet accessibility did not substantially affect respondents' perceived readiness for digitally mediated employability contexts, thereby supporting the statistical results reported in Table 4.19.

4.5 To validate the factor structure and construct validity of the Vocational Attitude Maturity Scale.

$H0_5$: The Vocational Attitude Maturity Scale does not exhibit significant construct validity and factor structure.

Table 20: KMO and Bartlett's Test for Vocational Attitude Maturity Scale

Measure	Value
Kaiser-Meyer-Olkin (KMO)	.834
Bartlett's Chi-Square	2796.682
df	105
Sig.	.000

Table 20 presents the KMO and Bartlett's Test results for the Vocational Attitude Maturity Scale. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was found to be 0.834, which exceeded the recommended threshold value of 0.70 and indicated excellent adequacy for factor analysis. Furthermore, Bartlett's Test of Sphericity yielded a statistically significant result ($\chi^2 = 2796.682$, df = 105, p = 0.000), confirming the presence of sufficient inter-item correlations within the dataset. These findings demonstrated that the data were suitable for conducting exploratory factor analysis.

Table 21: Total Variance Explained for Vocational Attitude Maturity Scale

Factor	Eigenvalue	% Variance	Cumulative %
Factor 1 (Career Orientation and Planning)	5.608	37.386	37.386
Factor 2 (Career Orientation and Planning)	3.398	22.653	60.039
Factor 3 (Career Decision Responsibility)	1.435	9.569	69.608
Factor 4 (Vocational Decision Awareness)	1.060	7.064	76.673

Table 21 presents the total variance explained by the extracted factors of the Vocational Attitude Maturity Scale. The exploratory factor analysis extracted four underlying factors with eigenvalues greater than one, collectively explaining 76.673% of the total variance. Among the extracted dimensions, Factor 1 (Career Orientation and Planning) accounted for the highest proportion of variance (37.386%), indicating that career orientation and planning constituted the most dominant dimension of vocational attitude maturity among respondents. Factor 2 explained an additional 22.653% of the variance, while Factors 3 and 4 contributed 9.569% and 7.064% respectively. The cumulative variance explained exceeded the commonly accepted threshold of 60%, thereby indicating strong construct validity and dimensional adequacy of the scale.

Table 22: Rotated Component Matrix of Vocational Attitude Maturity Scale

Item No.	Factor 1	Factor 2	Factor 3	Factor 4
VAM1	**.858**			
VAM2	**.920**			
VAM3	**.885**			
VAM4	**.794**			
VAM5	**.601**			**.532**
VAM6				**.864**
VAM7				**.794**
VAM8			**.598**	**.587**
VAM9			**.886**	
VAM10			**.850**	
VAM11			**.738**	
VAM12		**.745**		
VAM13		**.802**		
VAM14		**.858**		
VAM15		**.795**		
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				

Table 22 presents the rotated component matrix obtained through Principal Component Analysis with Varimax rotation for the Vocational Attitude Maturity Scale. The factor loadings ranged from 0.598 to 0.920, indicating strong associations between the observed items and their respective latent dimensions. Items VAM1 to VAM4 loaded substantially on Factor 1, representing the dimension of Career Orientation and Planning, with the highest loading observed for VAM2 (0.920). This suggests that career planning and goal orientation constituted dominant indicators of vocational maturity among respondents. Similarly, items VAM12 to VAM15 demonstrated high loadings on Factor 2, reflecting Self-Development and Professional Readiness. Factor loadings ranging from 0.745 to 0.858 indicated that respondents exhibited comparatively strong inclination toward self-improvement and competency enhancement. Items VAM8 to VAM11 loaded significantly on Factor 3, labelled Career Decision Responsibility, with loadings ranging between 0.598 and 0.886. These findings suggest that responsible career decision-making formed an important component of vocational maturity. Furthermore, items VAM5 to VAM7 demonstrated substantial loadings on Factor 4, namely Vocational Decision Awareness, with the highest loading observed for VAM6 (0.864). Overall, the rotated component matrix confirmed satisfactory construct validity and dimensional consistency of the Vocational Attitude Maturity Scale.

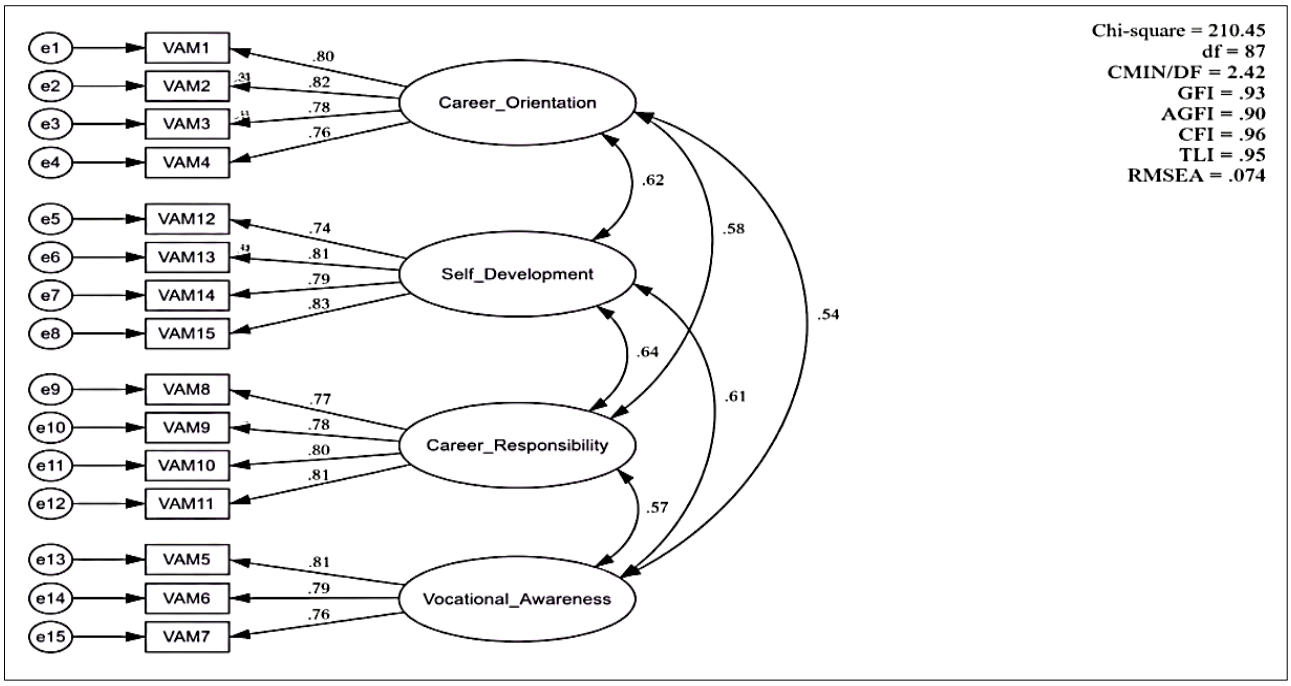

Figure 15: Confirmatory Factor Analysis Model for Vocational Attitude Maturity

Figure 15 presents the Confirmatory Factor Analysis (CFA) model for the Vocational Attitude Maturity Scale developed using IBM SPSS Amos. The CFA model illustrated the structural relationships between the latent constructs and their observed indicators. The standardized factor loadings demonstrated acceptable associations between observed variables and their corresponding latent factors, with most loadings exceeding the recommended threshold value of 0.60. The covariance relationships among latent dimensions further indicated moderate interrelationships between career orientation, self-development, vocational awareness, and career responsibility constructs. The model structure confirmed the multidimensional composition of vocational attitude maturity and supported the construct validity established through exploratory factor analysis. The CFA findings therefore validated the appropriateness of the proposed measurement model within the context of open and distance university students.

4.6 To validate the factor structure and construct validity of the Digital Employability Readiness Scale.

$H0_6$: The Digital Employability Readiness Scale does not exhibit significant construct validity and factor structure.

Table 23: KMO and Bartlett's Test for Digital Employability Readiness Scale

Measure	Value
Kaiser–Meyer–Olkin (KMO)	.825
Bartlett's Chi-Square	2913.389
df	120
Sig.	.000

Table 23 presents the KMO and Bartlett's Test results for the Digital Employability Readiness Scale. The Kaiser–Meyer–Olkin (KMO) value was found to be 0.825, indicating excellent sampling adequacy and confirming the suitability of the dataset for factor analysis. Additionally, Bartlett's Test of Sphericity yielded a statistically significant result ($\chi^2 = 2913.389$, df = 120, p = 0.000), indicating sufficient inter-item correlations among the variables included within the scale. These findings confirmed the appropriateness of conducting exploratory factor analysis for examining the dimensional structure of digital employability readiness.

Table 24: Total Variance Explained for Digital Employability Readiness Scale

Factor	Eigenvalue	% Variance	Cumulative %
Factor 1 (Information and Technological Adaptability)	5.493	34.333	34.333
Factor 2 (Digital Literacy and Online Communication)	3.409	21.308	55.641
Factor 3 (Virtual Workplace Readiness)	1.643	10.267	65.908
Factor 4 (Digital Collaboration and Adaptive Interaction)	1.246	7.789	73.697

Table 24 presents the total variance explained by the extracted factors of the Digital Employability Readiness Scale. The exploratory factor analysis extracted four underlying factors with eigenvalues greater than one, collectively explaining 73.697% of the cumulative variance. Among the extracted dimensions, Factor 1 (Information and Technological Adaptability) contributed the highest proportion of explained variance (34.333%), indicating that adaptability toward digital technologies and information management constituted the most dominant aspect of digital employability readiness among respondents. Factor 2 (Digital Literacy and Online Communication) accounted for 21.308% of the variance, while Factor 3 (Virtual Workplace Readiness) and Factor 4 (Digital Collaboration and Adaptive Interaction) explained 10.267% and 7.789% respectively. The cumulative variance explained exceeded the acceptable benchmark value of 60%, thereby demonstrating strong construct validity and dimensional adequacy of the Digital Employability Readiness Scale.

Table 25: Rotated Component Matrix of Digital Employability Readiness Scale

Item No.	Factor 1	Factor 2	Factor 3	Factor 4
DER1		.855		
DER2		.914		
DER3		.885		
DER4		.740		
DER5		.502		.629
DER6				.886
DER7				.765
DER8	.615			.519
DER9	.874			
DER10	.880			
DER11	.770			
DER12	.554		.632	
DER13			.749	
DER14			.793	
DER15			.787	
DER16			.757	
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				

Table 25 presents the rotated component matrix of the Digital Employability Readiness Scale derived through Principal Component Analysis with Varimax rotation. The factor loadings ranged from 0.502 to 0.914, indicating substantial relationships between observed variables and their corresponding latent dimensions. Items DER1 to DER4 loaded strongly on Factor 2, namely Digital Literacy and Online Communication, with DER2 demonstrating the highest loading (0.914). These findings indicate that digital operational competencies and online communication abilities represented critical indicators of employability readiness among respondents. Items DER9 to DER12 demonstrated substantial loadings on Factor 1, labelled Information and Technological Adaptability, indicating respondents' adaptability toward technology-driven environments and information management processes. Similarly, items DER13 to DER16 loaded significantly on Factor 3 (Virtual Workplace Readiness), with factor loadings ranging from 0.749 to 0.793. These findings suggest comparatively strong preparedness among respondents for digitally mediated and remote workplace environments. Items DER6 and DER7 loaded prominently on Factor 4, namely Digital Collaboration and Adaptive Interaction, reflecting respondents' ability to engage in collaborative and adaptive digital interaction processes. Overall, the rotated component matrix confirmed satisfactory construct validity and multidimensional consistency of the Digital Employability Readiness Scale.

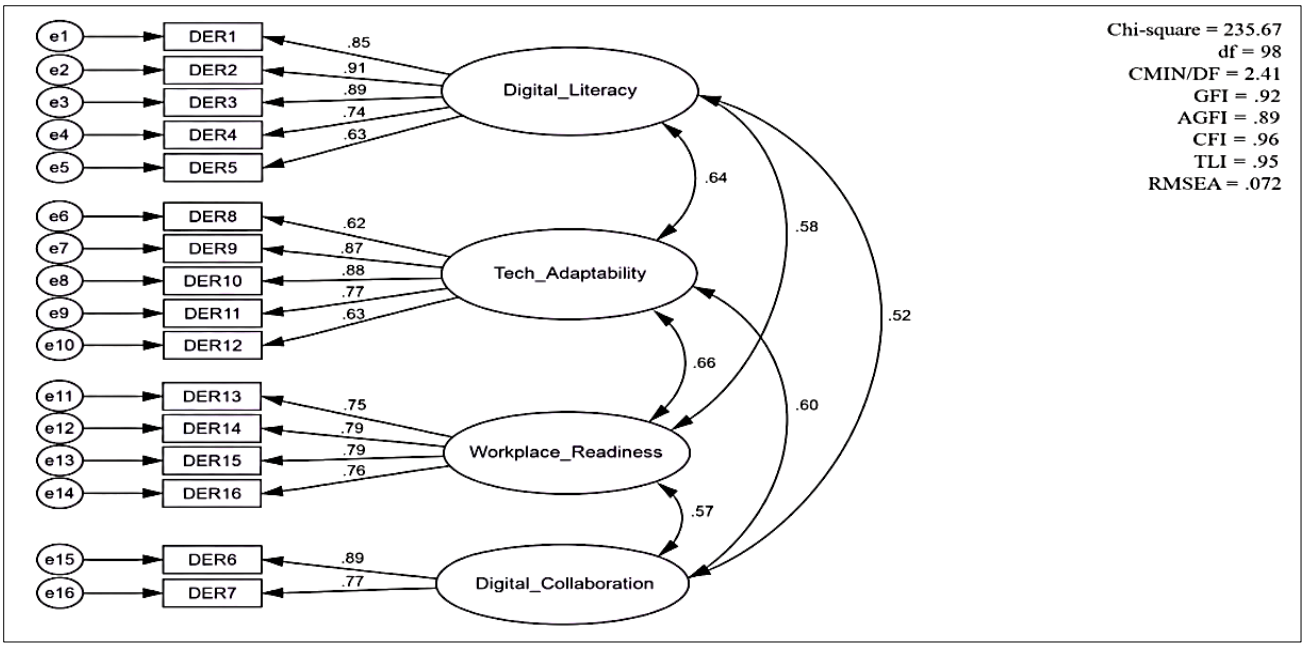

Figure 16: Confirmatory Factor Analysis Model for Digital Employability Readiness

Figure 16 presents the Confirmatory Factor Analysis (CFA) model for the Digital Employability Readiness Scale using IBM SPSS Amos. The model illustrated the structural relationships between latent dimensions and observed indicators associated with digital employability readiness. The standardized factor loadings demonstrated acceptable levels of association between observed variables and their respective latent constructs, with most item loadings exceeding the recommended threshold value of 0.60. The covariance relationships among latent dimensions further indicated meaningful interrelationships between digital literacy, technological adaptability, virtual workplace readiness, and collaborative digital interaction competencies. The CFA model confirmed the multidimensional structure of digital employability readiness and provided additional support for the construct validity established through exploratory factor analysis. Consequently, the proposed measurement model was considered empirically adequate for assessing digital employability readiness among open and distance university students.

5. FINDINGS AND CONCLUSION

The study revealed that open and distance university students demonstrated moderate levels of vocational attitude maturity and digital employability readiness. The demographic analysis indicated that the majority of respondents were young adult learners belonging to the 21–25 years age group and predominantly enrolled in postgraduate programmes. Reliability analysis confirmed acceptable internal consistency for both the Vocational Attitude Maturity Scale ($\alpha = 0.742$) and the Digital Employability Readiness Scale ($\alpha = 0.704$), thereby establishing the psychometric adequacy of the instruments. Among the dimensions of vocational attitude maturity, Self-Preparation recorded the highest mean score, whereas Career Planning obtained comparatively lower mean values. Similarly, within digital employability readiness, Virtual Workplace Readiness emerged as the strongest dimension, while Digital Literacy reflected comparatively lower competency levels among respondents.

The inferential analysis further revealed a weak negative but statistically significant relationship between vocational attitude maturity and digital employability readiness ($\rho = -0.123$, $p = 0.046$). The findings indicated that higher vocational maturity did not necessarily correspond with stronger digital employability preparedness among open and distance learners. Additionally, no statistically significant differences were observed across demographic variables including gender, age group, programme level, stream of study, year of study, area of residence, family income, access to digital devices, and internet accessibility. The exploratory and confirmatory factor analyses further established strong construct validity and multidimensional factor structures for both scales, thereby confirming their empirical suitability for measuring vocational maturity and digital employability readiness within open and distance educational contexts.

The study's findings underscore the growing importance of integrating digital employability competencies within open and distance higher education systems. Although students demonstrated moderate preparedness toward vocational development and virtual workplace adaptability, comparatively weaker levels of career planning and digital literacy indicate the need for systematic institutional intervention. The weak negative relationship between vocational maturity and digital employability readiness further suggests that traditional vocational orientation alone is insufficient for preparing

learners for digitally transforming labour markets. Contemporary employability increasingly demands technological adaptability, digital communication competencies, virtual collaboration skills, and platform-based professional engagement alongside conventional career maturity. From a policy perspective, open and distance universities should redesign curricular and support systems toward competency-oriented digital employability ecosystems. Higher education institutions should integrate AI-assisted career guidance, digital skill certification, virtual internship opportunities, and technology-enabled employability training within academic programmes. Governmental and institutional policy frameworks should further prioritize equitable digital infrastructure, interdisciplinary employability education, and collaborative partnerships between universities, industries, and digital learning platforms to strengthen workforce readiness in technology-driven economies. The study therefore, concludes that sustainable employability development in open and distance education requires a strategic transition from traditional academic delivery models toward digitally integrated, industry-responsive, and employability-oriented learning environments.

5.1 Limitations of the Study

The study was limited to open and distance university students selected through purposive sampling and focused only on vocational attitude maturity and digital employability readiness. The cross-sectional design and self-reported responses may restrict generalizability. Future studies may include larger samples, longitudinal approaches, and additional employability-related variables for deeper analysis.

5.2 Ethical Approval

The study was conducted in accordance with institutional and academic ethical guidelines. Necessary permission for data collection was obtained from the concerned educational authorities and institutions.

5.3 Acknowledgement

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5.4 Competing Interests

The author declares that there are no competing financial, academic, or personal interests related to this research work.

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