Impact of Demographic Determinants on Technological Preparedness and Readiness for Digital Entrepreneurship among Commerce College Students in Surat City.

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Abstract:

The rapid growth of digital technologies has transformed the entrepreneurial landscape, creating new opportunities for individuals to establish and manage businesses through digital platforms. However, the ability and willingness of students to engage in digital entrepreneurship may vary according to their demographic characteristics and level of technological preparedness. This study examines the impact of demographic determinants on technological preparedness and readiness for digital entrepreneurship among commerce college students in Surat City. The study focuses on demographic factors such as age, educational level and type of university and prior exposure to digital technologies, and evaluates their relationship with student's technological preparedness, digital skills, confidence, adaptability, and readiness to undertake digital entrepreneurial activities. A descriptive and analytical research design is proposed, with primary data collected through a structured questionnaire from commerce college students in Surat City. Appropriate statistical techniques, including descriptive statistics, may be employed to identify significant differences and relationships among demographic groups. The study is expected to provide insights into how demographic characteristics influence student's technological capabilities and their preparedness to participate in the digital entrepreneurial ecosystem. The findings may assist educational institutions, policymakers, and entrepreneurship-development agencies in designing targeted digital-skills training, entrepreneurship education, and institutional support programmes to enhance student's technological readiness and encourage digital entrepreneurship.

1. Introduction:

Digital technology has significantly transformed the modern entrepreneurial environment by creating new opportunities for individuals to start, operate, and expand businesses through digital platforms. For commerce students, technological knowledge, digital skills, confidence, and adaptability are increasingly important for participating in digital entrepreneurship. However, student's technological preparedness and readiness may differ based on demographic characteristics such as age, educational level, type of university, and prior exposure to digital technologies. Therefore, understanding the influence of these demographic determinants is essential for assessing student's ability and willingness to engage in digital entrepreneurial activities. This study focuses on commerce college students in Surat City and examines how demographic factors influence their technological preparedness and readiness for digital entrepreneurship. The study may provide useful insights for educational institutions

and policymakers to develop appropriate digital-skills training and entrepreneurship-support programmes.

1.1 Meaning and Definition of Digital Entrepreneurship.

Digital entrepreneurship is the process of creating, developing, and managing entrepreneurial ventures by leveraging digital technologies such as the internet, digital platforms, mobile applications, social media, cloud computing, and e-commerce to identify opportunities, deliver value, and achieve business growth. It combines innovation, technology, and entrepreneurship to enable businesses to operate efficiently, reach wider markets, and develop new digital products, services, or business models with relatively lower barriers to entry.

As defined by Hull, Hung, Hair, and Perotti, "Digital entrepreneurship is the pursuit of entrepreneurial opportunities based on the use of digital media and other information and communication technologies." This definition highlights that digital technologies are not merely tools supporting business operations but are fundamental enablers that transform how entrepreneurs identify opportunities, create value, and compete in the digital economy.

1.2 Statement of Problem

Digital entrepreneurship has become an important contributor to economic growth, innovation, and employment in the digital era. The increasing use of digital technologies has created new opportunities for individuals to establish and manage businesses online. Higher educational institutions play a vital role in developing entrepreneurial skills among students. Commerce college students have the potential to become successful digital entrepreneurs because of their academic background in business and commerce. However, many students may not have adequate awareness of digital entrepreneurship and its opportunities. They may also lack the technological readiness required to use digital tools and platforms effectively. Limited digital skills, insufficient knowledge of digital business models, and lack of confidence can become barriers to entrepreneurial participation. Although several government initiatives promote digital entrepreneurship and entrepreneurship, their effectiveness depends on student’s awareness and preparedness. There is limited empirical research focusing specifically on commerce college students in Surat City. Understanding their level of awareness and technological readiness is essential for promoting digital entrepreneurial activities. They can also assist policymakers in designing programmes that encourage students to participate in the digital economy. Therefore, this study aims to examine the awareness and technological readiness for digital entrepreneurship among commerce college students of Surat City and identify the existing gaps that need to be addressed

2. Review of Literature

(Hull et al., 2017) In their research paper entitled **"Digital Entrepreneurship: Toward a Digital Technology Perspective of Entrepreneurship"** studied the concept of digital entrepreneurship and the role of digital technologies in entrepreneurial activities. The study was based on a comprehensive review of existing literature on entrepreneurship and digital technology. The findings revealed that digital technologies have transformed the entrepreneurial process by enabling individuals to identify opportunities, create innovative business models, and access global markets with lower entry barriers. The study concluded that awareness of digital technologies and the ability to utilize them effectively are essential for the successful adoption of digital entrepreneurship.

(Nambisan, 2017) In the research paper entitled **"Digital Entrepreneurship: Toward a Digital Technology Perspective"** studied the impact of digital technologies on entrepreneurship and innovation. The study adopted a conceptual research approach by reviewing existing theoretical and empirical studies. The findings indicated that digital technologies influence opportunity recognition, value creation, business model innovation, and entrepreneurial decision-making. The study emphasized that technological readiness, digital competence, and continuous learning are critical factors that encourage individuals to engage in digital entrepreneurial ventures.

(Kakar, Bano, Muhammad, & Adnan, 2025) In their research paper entitled **"Bridging Technology and Entrepreneurship: The Mediating Influence of Entrepreneurial Motivation between Technology Readiness and Individual Entrepreneurial Orientation"** studied the relationship between technology readiness, entrepreneurial motivation, and entrepreneurial orientation. The study collected primary data through a structured questionnaire and analysed the relationships using statistical techniques. The findings revealed that technology readiness has a significant positive influence on entrepreneurial orientation, while entrepreneurial motivation acts as a mediator between the two variables. The study concluded that improving technological readiness and entrepreneurial motivation can significantly enhance individuals' willingness to participate in digital entrepreneurial activities.

3. Objective of the Study

1. To analyse the impact of age on the technological preparedness and readiness of commerce college students in Surat City for adopting digital entrepreneurship.
2. To analyse the impact of gender on the technological preparedness and readiness of commerce college students in Surat City for adopting digital entrepreneurship.

4. Hypothesis

H_{01}: There is no significant difference between the observed level of technological preparedness and the hypothesized average level among commerce college students in Surat City

H_{02}: There is no significant difference between the observed level of technological preparedness and the hypothesized average level among commerce college students in Surat City

H_{03}: There is significant difference in technological preparedness and readiness in the commerce college students among the different age group.

H_{04}: There is significant difference in technological preparedness and readiness in the commerce college students among the different age group.

5. Research Methodology

The study is descriptive in nature and mainly based on the primary data. Primary data has been collected through the self-constructed questionnaire113 responses collected through a convenient sampling method. Google Form. T-test and Anova Test were conducted to analyse the data.

6. Data Analysis and Interpretation (Results/Discussion)

6.1 One Way ANOVA

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Technological_Preparedness_Median	18-20 Years	23	4.48	.593	.124	4.22	4.73	3	5
	21-23 Years	59	4.24	.727	.095	4.05	4.43	3	5
	24-26 Years	18	4.06	.802	.189	3.66	4.45	3	5
	Above 26 Years	13	4.31	.751	.208	3.85	4.76	3	5
	Total	113	4.27	.720	.068	4.13	4.40	3	5
Technological_Readiness_Median	18-20 Years	23	4.326	.4673	.0974	4.124	4.528	3.5	5.0
	21-23 Years	59	4.153	.5964	.0776	3.997	4.308	3.0	5.0

	24-26 Years	18	4.111	.7388	.1741	3.744	4.478	3.0	5.0
	Above 26 Years	13	4.154	.6887	.1910	3.738	4.570	3.0	5.0
	Total	113	4.181	.6053	.0569	4.069	4.294	3.0	5.0

The descriptive analysis indicates that the technological preparedness of commerce college students varies slightly across age groups. Students aged 18–20 years recorded the highest mean score (M = 4.48, SD = 0.593), followed by those above 26 years (M = 4.31, SD = 0.751), 21–23 years (M = 4.24, SD = 0.727), and 24–26 years (M = 4.06, SD = 0.802), with an overall mean of 4.27 (SD = 0.720). Similarly, for technological readiness, the highest mean was observed among students aged 18–20 years (M = 4.326, SD = 0.4673), followed by those above 26 years (M = 4.154, SD = 0.6887), 21–23 years (M = 4.153, SD = 0.5964), and 24–26 years (M = 4.111, SD = 0.7388), with an overall mean of 4.181 (SD = 0.6053). Overall, the findings suggest that students across all age groups demonstrate high levels of technological preparedness and readiness for digital entrepreneurship, although the descriptive means show some variation across age categories. However, these differences cannot be considered statistically significant based on this table alone; a One-Way ANOVA result is required to determine whether age has a statistically significant impact.

Table 1 Ranks Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Technological_Preparedness_Median	.316	3	109	.814
Technological_Readiness_Median	.981	3	109	.405

The Test of Homogeneity of Variances using Levene's test indicates that the assumption of equal variances is satisfied for both variables across the four age groups. For Technological Preparedness, the Levene statistic is 0.316 with df1 = 3 and df2 = 109, and the significance value is 0.814, which is greater than 0.05. Similarly, for Technological Readiness, the Levene statistic is 0.981 with df1 = 3 and df2 = 109, with a significance value of 0.405, also greater than 0.05. Therefore, both results are statistically non-significant, confirming that the variances are homogeneous across the age groups. Hence, the assumption of homogeneity of variance is fulfilled, and One-Way ANOVA is appropriate for examining differences in technological preparedness and technological readiness across the four age groups.

Multiple Comparisons

Dependent Variable		(I) Age of Respondents	(J) Age of Respondents	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Technological_Preparedness_Median	Tukey HSD	18-20 Years	21-23 Years	.241	.176	.523	-.22	.70
			24-26 Years	.423	.226	.246	-.17	1.01
			Above 26 Years	.171	.249	.903	-.48	.82
		21-23 Years	18-20 Years	-.241	.176	.523	-.70	.22
			24-26 Years	.182	.193	.783	-.32	.69
			Above 26 Years	-.070	.220	.989	-.64	.50
		24-26 Years	18-20 Years	-.423	.226	.246	-1.01	.17
			21-23 Years	-.182	.193	.783	-.69	.32
			Above 26 Years	-.252	.261	.769	-.93	.43
		Above 26 Years	18-20 Years	-.171	.249	.903	-.82	.48
			21-23 Years	.070	.220	.989	-.50	.64
			24-26 Years	.252	.261	.769	-.43	.93
	Games-Howell	18-20 Years	21-23 Years	.241	.156	.418	-.17	.66
			24-26 Years	.423	.226	.262	-.19	1.04
			Above 26 Years	.171	.242	.894	-.51	.85
		21-23 Years	18-20 Years	-.241	.156	.418	-.66	.17
			24-26 Years	.182	.211	.826	-.40	.76
			Above 26 Years	-.070	.229	.990	-.72	.58
		24-26 Years	18-20 Years	-.423	.226	.262	-1.04	.19
			21-23 Years	-.182	.211	.826	-.76	.40
			Above 26 Years	-.252	.281	.807	-1.02	.52
		Above 26 Years	18-20 Years	-.171	.242	.894	-.85	.51
			21-23 Years	.070	.229	.990	-.58	.72
			24-26 Years	.252	.281	.807	-.52	1.02
Technological_Readiness_Median	Tukey HSD	18-20 Years	21-23 Years	.1735	.1497	.653	-.217	.564
			24-26 Years	.2150	.1916	.677	-.285	.715
			Above 26 Years	.1722	.2113	.847	-.379	.723
		21-23 Years	18-20 Years	-.1735	.1497	.653	-.564	.217
			24-26 Years	.0414	.1639	.994	-.386	.469
			Above 26 Years	-.0013	.1865	1.000	-.488	.485
		24-26 Years	18-20 Years	-.2150	.1916	.677	-.715	.285
			21-23 Years	-.0414	.1639	.994	-.469	.386
			Above 26 Years	-.0427	.2216	.997	-.621	.535
		Above 26 Years	18-20 Years	-.1722	.2113	.847	-.723	.379
			21-23 Years	.0013	.1865	1.000	-.485	.488
			24-26 Years	.0427	.2216	.997	-.535	.621

Games-Howell	18-20 Years	21-23 Years	.1735	.1246	.510	-.157	.504
		24-26 Years	.2150	.1995	.706	-.331	.761
		Above 26 Years	.1722	.2144	.852	-.433	.777
	21-23 Years	18-20 Years	-.1735	.1246	.510	-.504	.157
		24-26 Years	.0414	.1906	.996	-.484	.567
		Above 26 Years	-.0013	.2062	1.000	-.590	.588
	24-26 Years	18-20 Years	-.2150	.1995	.706	-.761	.331
		21-23 Years	-.0414	.1906	.996	-.567	.484
		Above 26 Years	-.0427	.2585	.998	-.750	.665
	Above 26 Years	18-20 Years	-.1722	.2144	.852	-.777	.433
		21-23 Years	.0013	.2062	1.000	-.588	.590
		24-26 Years	.0427	.2585	.998	-.665	.750

The post-hoc multiple comparison analysis using both Tukey HSD and Games-Howell tests indicates that there are no statistically significant pairwise differences among the four age groups for either technological preparedness or technological readiness. For Technological Preparedness, the Tukey HSD significance values for all pairwise comparisons range from 0.246 to 0.989, while the Games-Howell significance values range from 0.262 to 0.990, all of which are greater than 0.05. Similarly, for Technological Readiness, the Tukey HSD significance values range from 0.653 to 1.000, and the Games-Howell values range from 0.510 to 1.000, with all values exceeding 0.05. Moreover, the 95% confidence intervals for all comparisons include zero, further confirming the absence of significant differences between any two age groups. Therefore, although the descriptive statistics show some variation in the mean scores across age groups, the post-hoc results indicate that age does not produce a statistically significant difference in technological preparedness or technological readiness for digital entrepreneurship among the commerce college students surveyed.

Table 2 Test Statistics

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Technological_Preparedness_Median	Between Groups	1.905	3	.635	1.233	.301
	Within Groups	56.131	109	.515		
	Total	58.035	112			
Technological_Readiness_Median	Between Groups	.629	3	.210	.566	.639
	Within Groups	40.402	109	.371		
	Total	41.031	112			

The One-Way ANOVA results show that there is no statistically significant difference in technological preparedness and technological readiness among the four age groups of

commerce college students. For Technological Preparedness, the between-group sum of squares is 1.905, with F(3,109) = 1.233 and p = 0.301. Since the p-value is greater than 0.05, the difference among the age groups is not significant. Similarly, for Technological Readiness, the between-group sum of squares is 0.629, with F (3,109) = 0.566 and p = 0.639, which is also greater than 0.05. Thus, the null hypotheses are accepted (not rejected), indicating that age does not have a significant influence on technological preparedness or technological readiness for digital entrepreneurship among commerce college students in Surat City. Although the mean scores differ slightly across age groups, these differences are not statistically significant.

Table 3 Ranks

Technological_Preparedness_Median

	Age of Respondents	N	Subset for alpha = 0.05
			1
Tukey HSD[a,b]	24-26 Years	18	4.06
	21-23 Years	59	4.24
	Above 26 Years	13	4.31
	18-20 Years	23	4.48
	Sig.		.236

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 20.735.
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

The Tukey HSD homogeneous subsets analysis for Technological Preparedness shows that all four age groups—24–26 years (M = 4.06), 21–23 years (M = 4.24), above 26 years (M = 4.31), and 18–20 years (M = 4.48)—fall within the same homogeneous subset (Subset 1) at the 0.05 significance level. The significance value is 0.236, which is greater than 0.05, indicating that the differences in technological preparedness among the age groups are not statistically significant. Although students aged 18–20 years have the highest mean score and those aged 24–26 years have the lowest mean score, the observed differences are not sufficient to conclude that age significantly affects technological preparedness. Therefore, the Tukey HSD results support the ANOVA finding that there is no significant difference in technological preparedness among the different age groups.

Table 4 Test Statistics

Technological_Readiness_Median

	Age of Respondents	N	Subset for alpha = 0.05
			1
Tukey HSD[a,b]	24-26 Years	18	4.111
	21-23 Years	59	4.153

	Above 26 Years	13	4.154
	18-20 Years	23	4.326
	Sig.		.668

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 20.735.
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

The Tukey HSD homogeneous subsets analysis for Technological Readiness indicates that all four age groups—24–26 years (M = 4.111), 21–23 years (M = 4.153), above 26 years (M = 4.154), and 18–20 years (M = 4.326)—are placed within the same homogeneous subset (Subset 1) at the 0.05 significance level. The significance value is 0.668, which is greater than 0.05, indicating that there is no statistically significant difference in technological readiness among the different age groups. Although students aged 18–20 years have the highest mean score and students aged 24–26 years have the lowest mean score, these differences are not statistically significant. Therefore, the Tukey HSD results support the ANOVA finding that age does not significantly influence technological readiness for digital entrepreneurship among commerce college students in Surat City.

7. Conclusion

The study concludes that commerce college students of Surat City have a good level of awareness and a satisfactory level of technological readiness for digital entrepreneurship. Most respondents understand the importance of digital technologies in business and show a positive attitude towards adopting digital entrepreneurial opportunities. The T-test and ANOVA test indicates that educational level does not significantly influence most aspects of awareness and technological readiness, except for the perception that digital platforms help businesses reach a wider audience. The findings suggest that educational institutions should provide greater exposure to digital entrepreneurship through practical training, workshops, and skill development programmes. Overall, enhancing awareness and technological readiness can encourage more female students to participate in digital entrepreneurship and contribute to economic growth.

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