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Exploring Consumer Behaviour and Technology Usage: Insights and Implications for Industry

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Abstract
The rapid advancement of technology has significantly influenced how individuals interact with the world around them. It has become increasingly important for technology companies and policymakers to understand how consumers adopt technology and what factors influence their adoption decisions. This empirical research paper aims to investigate how consumers adopt the technology by conducting a random survey among 108 consumers. The study produces several hypotheses that are tested through data analysis. The results show that security concerns persist as a significant factor influencing the frequency of technology usage. Consumers are more likely to use technology when they feel that their data and information are secure. This highlights the importance of designing certain technologies and implementing effective security measures to increase adoption rates. The study also finds that males spend more time learning new technology than females. This indicates that gender plays a crucial role in shaping technology literacy, and targeted approaches may be necessary to increase female technology literacy. The study does not find any difference in knowledge between people with desk jobs and unemployed individuals. This implies that factors other than occupation play a more significant role in shaping technology literacy levels. The study also highlights a significant difference among different age groups regarding their opinions about the need for new technology. The youngest age group has the most strong opinion on the market for new technology. This may be because more youthful individuals are more exposed to technology and are more likely to adopt new technologies as they become available.

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I. Introduction

The rapid technological advancements in recent years have brought about significant changes in consumer behaviour and preferences, particularly concerning technology adoption. As technology continues to permeate various aspects of our lives, understanding the factors influencing consumer technology adoption has become a crucial area of research [1]. This research paper aims to contribute to this growing body of knowledge by examining the factors influencing consumer technology adoption online.

The objective was achieved through an authentic experimental research design, which relied on statistical analysis to test the hypothesis put forth by the researcher. The study's inquiry is

presumably centred on the determinants that impact technology adoption among consumers. The researcher is expected to identify a series of independent variables and examine their impact on the dependent variable, technology adoption.

The research approach employed in this paper is deductive, involving testing a theory or hypothesis using empirical data. The researcher likely developed an idea regarding the factors influencing technology adoption in consumers and tested it using data collected through an online survey. The data collection method was online surveys, a cost-effective and efficient approach for gathering large amounts of quantitative data from a diverse population. The sample size in this study consisted of 108 data samples, which, although relatively small, can be deemed acceptable if it is representative of the population under study. Statistical analysis was the chosen method for data analysis, allowing researchers to identify patterns, relationships, test hypotheses, and make generalizations about the population. The specific statistical tests employed in this paper depended on the research question and the nature of the collected data.

The reliability test conducted in this study employed Cronbach's alpha, a statistical measure used to assess the internal consistency and reliability of survey or questionnaire data. Cronbach's alpha evaluates whether a set of Likert questions forming a scale is consistent and can be considered a reliable measure of the measured construct. This paper employed Cronbach's alpha to evaluate the reliability of survey data about technology adoption behaviours, attitudes, or intentions among consumers. The reliability test results indicated high levels of internal consistency for the scales used in various aspects of technology adoption. Cronbach's alpha values ranged from 0.826 to 0.971, signifying strong consistency among the items in each scale. These findings suggest that the questions employed in the study are reliable and consistent tools for assessing different aspects of technology adoption among consumers.

Furthermore, various statistical tests were conducted to analyze the collected data and test the research hypotheses. These tests included correlation analysis, t-tests, and the Kruskal-Wallis test. Correlation analysis was employed to investigate the magnitude and orientation of the association between two variables. The statistical technique of t-tests was used to compare means between two distinct groups. On the other hand, the Kruskal-Wallis test was utilized to compare medians among multiple groups. The administered tests facilitated the researchers in concluding the associations between variables and the dissimilarities noted among various groups.

The subsequent sections of this paper present the results and discussions related to hypothesis testing. The objective is to explore the implications of these findings in understanding consumer behaviour and preferences concerning technology adoption. The paper aims to shed light on the influence of factors such as perception of online payment safety, gender, and employment status on technology adoption. This research contributes to the existing body of knowledge by providing insights into the factors influencing consumer technology adoption and offering implications for businesses and researchers in understanding and catering to consumer preferences in an increasingly technology-driven world.

II. Literature Review

Consumer behaviour and technology usage have become increasingly intertwined in the contemporary era, presenting challenges and opportunities for industries across various sectors. Extensive research in consumer behaviour has shed light on the intricate factors that influence consumer decision-making processes, while the rapid advancements in technology have significantly altered how individuals interact with products and services [1] [2]. This literature review aims to provide a comprehensive overview of existing studies, theories, and frameworks that explore the intersection between consumer behaviour and technology usage, offering valuable insights and implications for industry practitioners. The review commences by examining the evolution of consumer behaviour theories and models, encompassing traditional approaches such as the Theory of Reasoned Action (TRA) and the Technology Acceptance Model (TAM) [3]. These theories primarily focused on offline consumer behaviour and served as foundational frameworks for understanding consumers' attitudes, beliefs, and intentions. However, the proliferation of technology, particularly the advent of the internet and mobile devices, necessitated the adaptation of these theories to incorporate online consumer behaviour. The review delves into the emergence of new theoretical perspectives that acknowledge the impact of technology on consumer behaviour [4]. One such perspective is the Unified Theory of Acceptance and Use of Technology (UTAUT) [5], which integrates various factors, such as performance expectancy, effort expectancy, social influence, and facilitating conditions, to explain the adoption and usage of technology. The Technology Readiness Index (TRI) [5] model also provides insights into consumers' readiness to embrace and utilize technology based on their psychological characteristics [5].

Furthermore, this review explores the implications of technology usage on consumer decision-making processes, focusing on the role of online reviews and social media [8]. The increasing prevalence of online platforms has empowered consumers to engage in extensive information searches and gather insights from peer-generated content, ultimately shaping their purchasing decisions [9]. Additionally, integrating technology with traditional retail environments, such as implementing augmented reality and virtual reality experiences, has enhanced consumers' engagement and altered their shopping behaviours [10].

In conclusion, this literature review highlights the significance of understanding the intricate relationship between consumer behaviour and technology usage in the contemporary landscape. Synthesizing existing theories and frameworks provides valuable insights for industry practitioners seeking to adapt their strategies to meet evolving consumer needs and preferences. The implications of technology usage on consumer decision-making processes underscore the importance of leveraging digital platforms and creating immersive experiences to foster consumer engagement. Overall, this review sets the stage for further research and provides a foundation for future studies exploring the dynamic nature of consumer behaviour in the digital age.

2.1. Theories of technology adoption

Numerous theoretical frameworks have been postulated to elucidate the phenomenon of technology adoption. The Technology Acceptance Model (TAM), formulated by Davis in

1989 [7], is a well-established theory. According to the Technology Acceptance Model (TAM), technology adoption is determined by two primary factors: perceived usefulness and perceived ease of use. The concept of perceived usefulness pertains to an individual's perception of how much a specific technological tool can augment their efficacy or efficiency [11]. The concept of perceived ease of use relates to an individual's perception regarding the level of effortlessness and absence of complexity associated with utilizing a particular technology. Another prominent theory is the Diffusion of Innovations theory, which Rogers introduced in 1962. This theory focuses on how an innovation (i.e., a new technology) spreads through a social system [12]. It emphasizes the role of social influence and communication channels in adopting new technologies. According to this theory, individuals are categorized into different adopter categories based on their relative time of adoption: innovators, early adopters, early majority, late majority, and laggards.

Other theories that offer perspectives on the determinants of technology adoption are the Unified Theory of Acceptance and Use of Technology (UTAUT) [5] and the Innovation Diffusion Theory (IDT) [13]. The Unified Theory of Acceptance and Use of Technology (UTAUT) is a comprehensive framework amalgamating multiple established theories and models to facilitate a thorough understanding of technology adoption. The framework encompasses four key factors: performance expectancy, effort expectancy, social influence, and facilitating conditions. In contrast, the Innovation Diffusion Theory (IDT) centres on the attributes of the innovation, the channels of communication employed to disseminate the invention, and the societal context in which the creation is embraced [14].

2.2. Factors influencing technology adoption

Several factors have been identified as significant in the adoption of technology. The factors above can be classified into three distinct categories, namely individual-level, contextual, and technological factors. At an individual level, perceived usefulness and ease of use are critical determinants of the inclination to adopt a technology [15]. The likelihood of individuals adopting technology is positively correlated with their perception of its ease of use and potential benefits. The adoption behaviour of individuals is influenced by their attitudes towards technology, prior experience with similar technologies, and personal innovativeness [2].

Contextual factors, such as social influence, organizational support, and compatibility with existing technologies, can significantly impact technology adoption [16]. Social power refers to the influence of others, such as friends, family, or colleagues, on an individual's decision to adopt a technology. Organizational support, including training, resources, and incentives, can facilitate or hinder technology adoption within an organizational context. Compatibility with existing technologies refers to the degree to which new technology can be integrated and complements existing technologies [17].

Technological factors, such as the perceived risks associated with the technology, trust in the technology, and the availability of technical support, also play a role in adoption decisions [4]. Perceived risks, including concerns about privacy, security, and the potential negative consequences of using the technology, can act as barriers to adoption. Trust in the technology

provider or the platform offering the technology can influence users' willingness to adopt. The availability of technical support, such as customer service or online resources, can enhance users' confidence in adopting and using the technology [18].

2.3. Previous studies on technology adoption

Previous studies have examined various aspects of technology adoption across different contexts and populations. Some studies have focused on specific technologies, such as smartphones, social media platforms, or e-commerce websites, while others have explored technology adoption in particular industries or sectors. These studies have employed various research methods, including surveys, experiments, and case studies, to investigate the factors influencing technology adoption and to understand the patterns of adoption behaviour among consumers. The research on smartphone adoption has examined factors such as perceived usefulness, perceived ease of use, social influence, and compatibility with existing technologies. Studies on social media adoption have explored the role of social influence, privacy concerns, and the perceived benefits of using social media platforms. Research on e-commerce adoption has investigated factors such as trust, security concerns, and the ease of online transactions [19].

2.4. Gaps in the literature

Despite the extensive research on technology adoption, some gaps exist in the existing literature. One notable gap is the limited understanding of technology adoption in specific cultural contexts or among specific demographic groups. Many studies have primarily focused on Western populations, leaving a gap in knowledge about technology adoption patterns in non-Western cultures [20]. Cultural factors, such as values, norms, and beliefs, can significantly influence technology adoption behaviour, and more research is needed to understand these dynamics. Additionally, there is a need for further research on the adoption of emerging technologies, such as artificial intelligence, virtual reality, and blockchain. These technologies present unique challenges and opportunities for consumers, and their adoption behaviour may differ from that of established technologies [21]. Exploring the factors influencing the adoption of emerging technologies can provide valuable insights for technology developers and policymakers. Finally, there is a need for more longitudinal studies that track technology adoption behaviour over time. Many existing studies have relied on cross-sectional data, which provide a snapshot of adoption behaviour at a specific time. Longitudinal studies can offer a deeper understanding of adoption dynamics, including the factors that may influence changes in adoption behaviour over time. Such studies can help identify the drivers and barriers to sustained technology adoption and provide insights into the long-term impacts of technology adoption on individuals and societies.

In summary, the theories of technology adoption, the factors influencing adoption behaviour, and previous studies have contributed to our understanding of technology adoption. However, there are still gaps in the literature, particularly regarding the adoption behaviour in specific cultural contexts, the adoption of emerging technologies, and the adoption dynamics over time. Further research in these areas can enhance our understanding of technology adoption and inform strategies for promoting the adoption of beneficial technologies.

3. **Methodology**

The research design in this paper is an authentic experimental research design. This research design relies on statistical analysis to prove or disprove the researcher's hypothesis. In this case, the research question is likely related to consumer technology adoption factors. The researcher has probably identified a set of independent variables and is testing their effect on the dependent variable, technology adoption. The research approach used in this paper is deductive [22]. Deductive research approaches involve testing a theory or hypothesis using empirical data.

Data collection methods used in this paper include online surveys, a standard procedure for collecting large amounts of quantitative data from a diverse population . Online surveys are cost-effective and can be administered to many people within a short time frame [23]. The sample size in this paper is relatively small, with only 108 data samples evaluated. However, a small sample size is acceptable in some cases, mainly if the sample is representative of the population being studied. The analysis method used in this paper is likely to be statistical analysis, as is common in quantitative research studies. Statistical analysis enables researchers to identify patterns and relationships in the data, test hypotheses and make generalizations about the studied population. The specific statistical tests used in this paper will depend on the research question and the nature of the data collected.

3.1. Reliability Test

Cronbach's alpha is a statistical metric utilized in research investigations to evaluate the dependability and internal consistency of survey or questionnaire data [24]. The purpose of this method is to assess the internal consistency and reliability of a Likert scale comprised of a series of questions in a survey or questionnaire to determine its validity as a measure of the underlying construct being evaluated. In consumer technology adoption, Cronbach's alpha statistical method can be employed to assess the dependability of survey data about technology adoption behaviours, attitudes, or intentions. The assessment of survey data consistency can aid researchers and practitioners in making informed determinations regarding the suitability of the data for drawing meaningful conclusions. Cronbach's alpha is a psychometric tool utilized to evaluate the internal consistency reliability of a given instrument, such as a survey or questionnaire. Its primary function is to assess the consistency and reliability of said instrument. The mathematical expression utilized for computing Cronbach's alpha is:

$$\alpha = N / (N-1) * (1-\sum (i=1 \text{ to } N) ri^2)$$

The formula for calculating the correlation between item i and the mean of all items is represented by ri, where N denotes the total number of objects present in the scale. Cronbach's alpha is a statistical measure that varies between 0 and 1. A score of 0 indicates that the items are not correlated and, thus, do not measure the same construct. Conversely, a score of 1 indicates perfect internal consistency among the items.

A. Technology

Processing summary of a dataset from the feedback related to questions about technology adoption with 108 valid cases, meaning there is no missing data. The excluded cases section reports that no cases were excluded based on the variables in the procedure. The presented Table displays the reliability statistics, which furnish an accurate estimate for Cronbach's alpha, a metric that gauges the internal consistency of a given scale. The Cronbach's alpha value of 0.833 suggests a substantial degree of internal consistency for the scale, as applied to the sample under examination. The Table presents a summary of five scale items, and the reliability coefficient, Cronbach's alpha, based on standardized items, is 0.956.

Table 1: Reliability Statistics: Technology

Reliability Statistics: Technology		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.833	.956	5

B. Social Media

A Cronbach's alpha of 0.826 suggests a high level of internal consistency among the Social Media questions used in the study. The Table also shows five items in the scale, and Cronbach's alpha based on standardized items is 0.960. This indicates that the scale's internal consistency remains high even if things were standardized. These results suggest that the Social Media questions used in this study are a reliable and consistent tool for gathering consumer feedback about technology adoption.

Table 2: Reliability Statistics: Social Media

Reliability Statistics: social media		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.826	.960	5

C. Technology Acceptance

A Cronbach's alpha of 0.826 suggests a high level of internal consistency among the questions used in the study related to technology acceptance among consumers. The Table also shows that there are 14 items on the scale. The results suggest that the questions related to technology acceptance among consumers in this study are reliable and consistent tools for assessing consumer attitudes towards technology adoption.

Table 3: Reliability Statistics: Technology Acceptance

Cronbach's Alpha	N of Items
0.826	14

D. Technology Frequency

A Cronbach's alpha of 0.926 suggests a high level of internal consistency among the questions used in the study related to technology frequency and adoption among consumers. The Table also shows that there are five items on the scale. Overall, these results suggest that the questions related to technology frequency and adoption among consumers in this study are reliable and consistent tools for assessing how often consumers use and adopt the technology.

Table 4: Reliability Statistics Technology Frequency

Cronbach's Alpha	N of Items
0.926	5

E. Knowledge

The results showed that the set of questions used in the study had a high level of internal consistency, with a Cronbach's alpha value of 0.971. This indicates that the questions were closely related and reliable in measuring consumers' knowledge towards technology adoption. The study included 13 questions, and Cronbach's alpha value based on standardized items was also high at 0.979. This means that the scale's reliability remained high even if the questions were standardized. The results suggest that the set of questions used in the study is a reliable and consistent tool for measuring consumers' understanding of technology adoption.

Table 5: Reliability Statistics: Knowledge

Reliability Statistics: Knowledge		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.971	.979	13

The findings indicate that the question sets employed in these investigations were dependable and uniform instruments for gauging consumers' comprehension and conduct about adopting technology. The results of the studies revealed that Cronbach's alpha values fell within the range of 0.826 to 0.971, which suggests a substantial degree of internal consistency among the questions employed in the research. The number of inquiries in each scale varied from 5 to 14, whereby a more significant number of queries denoted a more extensive evaluation of the subject matter. The findings indicate that these question sets are deemed reliable and consistent instruments for evaluating diverse dimensions of technology adoption among consumers.

3.2. Data analysis technique

Several statistical data analysis tests can be used to test hypotheses about consumer technology adoption. This paper performed the following tests: correlation analysis, t-tests, and the Kruskal-Wallis test.

A. Correlation analysis is a statistical method employed to assess the magnitude and orientation of the association between two variables. Researchers can use correlation analysis to examine the association between age and technology adoption. The correlation coefficient (r) has a potential range of -1 to +1, where a value of 0 denotes the absence of correlation, and deals in proximity to -1 or +1 indicate a higher degree of correlation. The mathematical expression used to determine the correlation coefficient is:

$$r = (n\Sigma xy - \Sigma x\Sigma y) / [\sqrt{(n\Sigma x^2 - (\Sigma x)^2)}\sqrt{(n\Sigma y^2 - (\Sigma y)^2)}]$$

Where n is the sample size, x and y are the analyzed variables, and Σ represents the sum of the values.

B. T-tests are a statistical tool utilized to assess the significance of the difference between the means of two groups. This method determines whether the observed difference between the groups is statistically significant. As an illustration, scholars may employ a t-test to contrast the average technology adoption scores between male and female participants. The mathematical expression used to compute the t-statistic is:

$$t = (\bar{x}1 - \bar{x}2) / [s\sqrt{(1/n1 + 1/n2)}]$$

Where $\bar{x}1$ and $\bar{x}2$ are the means of the two groups being compared, s is the pooled standard deviation, and n1 and n2 are the sample sizes.

A. The Kruskal-Wallis test compares the medians of two or more groups and determines whether the difference between them is statistically significant. For example, researchers may use the Kruskal-Wallis test to compare the technology adoption scores of three different age groups. The formula for calculating the test statistic is:

$H = 12 / (n(n+1)) \Sigma(Rj - ((n+1)/2))^2 / (n-1)$

Where n is the total sample size, Rj is the sum of the ranks for the jth group, and Σ represents the sum of the values.

IV. Results & Discussion

The technological advancements in recent years have transformed how people interact with each other and consume products and services. This has led to a significant shift in consumer behaviour and preferences towards technology adoption. As a result, researchers and businesses alike have focused on understanding consumer behaviour towards technology adoption, primarily online. This research paper aims to contribute to this growing body of knowledge by examining the factors influencing consumer technology adoption online. In this section, we present the results of our hypothesis testing and discuss their implications for understanding consumer behaviour towards technology adoption online.

Objective 1: To conclude if people who agree that online payments are safe more frequently use technology in their day-to-day life

H1-0: There is no difference in the frequency of using technology based on the participant's perception of the safety of online payments.

H1: There is a difference in the frequency of using technology based on the participant's perception of the safety of online payments.

To test this hypothesis, an independent sample t-test was conducted. The participants were divided into two groups based on their agreement or disagreement with the safety of online payments (Agree and Disagree). The frequency of technology usage was measured on a scale of 1 to 4.

Table 6: Comparison of Frequency of Technology Usage based on Perception of Online Payment Safety

Group	N	Mean	Std. Deviation	Std. Error Mean
Agree	18	1.000	0.000	0.000
Disagree	36	3.500	1.5213	0.2535

Table 7: Independent Samples Test: t-test for Equality of Means

Variable	Equal Variances Assumed	Equal Variances Not Assumed
t	-6.939	-9.860
df	52	35
Sig. (2-tailed)	0.000	0.000
Mean Difference	-2.5000	-2.5000
Std. Error Difference	0.3603	0.2535
Lower Interval	-3.2230	-3.0147
Upper Interval	-1.7770	-1.9853

The results of the independent sample t-test revealed a significant difference in the frequency of using technology based on the participant's perception of the safety of online payments ($t = -6.939$, $df = 52$, $p < 0.05$). The mean frequency of technology used for the Agree group was 1.000, while for the Disagree group, it was 3.500. This indicates that participants who agreed on the safety of online payments tended to use technology more frequently than those who disagreed. Therefore, we reject the null hypothesis and conclude that there is a difference in the frequency of using technology based on the participant's perception of the safety of online payments. These findings suggest that the perception of online payment safety plays a role in influencing the frequency of technology usage.

Objective 2: To check whether gender is a weighing factor when it comes to spending time learning new technology

H2-0: Both males and females spend equal time learning new technology.

H2: Both males and females do not spend equal time learning new technology.

To test this hypothesis, an independent sample t-test was conducted. The participants were divided into two groups based on gender (Male and Female). The time spent learning new technology was measured on a scale of 1 to 5.

Table 8: Comparison of Time Spent Learning New Technology between Genders

Group	N	Mean	Std. Deviation	Std. Error Mean
Male	54	2.667	1.1159	0.1519
Female	54	2.000	1.5419	0.2098

Table 9: Independent Samples Test: t-test for Equality of Means

Variable	Equal Variances Assumed	Equal Variances Not Assumed
t	2.574	2.574
df	106	96.569
Sig. (2-tailed)	0.011	0.012
Mean Difference	0.6667	0.6667
Std. Error Difference	0.2590	0.1365
Lower Interval	0.1532	0.1526
Upper Interval	1.1802	1.1808

The results of the independent sample t-test revealed a significant difference in the time spent learning new technology between males and females ($t = 2.574$, $df = 106$, $p < 0.05$). The mean time spent by males was 2.667, while for females, it was 2.000. This indicates that males spend more time learning new technology than females. Thus, we reject the null hypothesis and conclude that there is a difference in the time spent learning new technology between genders. These findings suggest that gender is a factor that influences the amount of time individuals dedicate to learning new technology, with males spending more time on average.

Objective 3: To check whether knowledge about technology differs between consumers with a desk job and unemployed people

H3-0: There is no difference in knowledge about technology between people with desk jobs and those who are unemployed.

H3: There is a difference in knowledge about technology between people with desk jobs and those who are unemployed.

To test this hypothesis, an independent sample t-test was conducted. The participants were divided into two groups based on their employment status (Desk Job and Unemployed). Their technology knowledge was measured using a standardized factor score.

Table 10: Comparison of Knowledge about Technology between Desk Job and Unemployed Groups

Group	N	Mean	Std. Deviation	Std. Error Mean
Desk Job	35	0.2834939	0.67813392	0.11462555
Unemployed	8	0.7511226	0.20942227	0.07404195

Table 11: Independent Samples Test: t-test for Equality of Means

Variable	Equal Variances Assumed	Equal Variances Not Assumed
t	-1.914	-3.427
df	41	37.003
Sig. (2-tailed)	0.063	0.002
Mean Difference	-0.4676	-0.4676
Std. Error Difference	0.2444	0.1365
Lower Interval	-0.9557	-0.7442
Upper Interval	0.0204	-0.1910

The results of the independent sample t-test did not reveal a significant difference in knowledge about technology between individuals with a desk job and those who are unemployed ($t = -1.914$, $df = 41$, $p > 0.05$). The mean knowledge score for the Desk Job group was 0.2834939, while for the Unemployed group, it was 0.7511226. Therefore, we fail to reject the null hypothesis and conclude that there is no difference in knowledge about technology between individuals with a desk job and those who are unemployed. These findings suggest that employment status does not significantly impact an individual's ability about technology.

Objective 4: To check whether there is a difference in the opinion about the need for new technology among different age groups

H4-0: There is no difference in the opinion about the need for new technology among different age groups.

H4: There is a difference in opinion about the need for new technology among different age groups.

To test this hypothesis, a Kruskal-Wallis H test was conducted. The participants were divided into different age groups, and their opinions about the need for new technology were measured on a Likert scale.

Table 12: Comparison of Opinions about the Need for New Technology among Different Age Groups

Age Group	Sample Average Rank
Young (18-25)	35.56
Middle (26-40)	44.85
Senior (41-60)	51.28

Table 13: Hypothesis Test Summary

Null Hypothesis	Test	Significance	Decision
The distribution of TA4 is the same across	Kruskal-Wallis Test	0.000	Reject the null hypothesis
Categories of age.			
Asymptotic significances are displayed.			
The significance level is 0.05.			
Each node shows the sample average rank of age.			

The results of the Kruskal-Wallis H test revealed a significant difference in opinions about the need for new technology among different age groups ($p < 0.05$). Post hoc tests can be conducted to determine pairwise differences within the groups. Further analysis using post hoc tests indicated that the youngest age group (18-25) had the most strong opinion on the need for new technology compared to the middle (26-40) and senior (41-60) age groups.

Table 14: Pairwise Comparisons

Sample 1 - Sample 2	Std. Deviation	Std. Error	Statistic	p-value	Adjusted p-value
4.000 - 5.000	0.000	9.996	0.000	1.000	1.000
4.000 - 3.000	31.500	8.657	3.639	0.000	0.003
4.000 - 2.000	49.500	9.996	4.952	0.000	0.000
4.000 - 1.000	76.500	9.996	7.653	0.000	0.000
5.000 - 3.000	31.500	8.657	3.639	0.000	0.003
5.000 - 2.000	49.500	9.996	4.952	0.000	0.000
5.000 - 1.000	76.500	9.996	7.653	0.000	0.000
3.000 - 2.000	18.000	8.657	2.079	0.038	0.376
3.000 - 1.000	45.000	8.657	5.198	0.000	0.000
2.000 - 1.000	27.000	9.996	2.701	0.007	0.069

Each row represents a pairwise comparison between Sample 1 and Sample 2. The test used is the Kruskal-Wallis test, and the statistics include the standard deviation, standard error, test statistic, p-value, and adjusted p-value. The null hypothesis being tested is that Sample 1 and

Sample 2 distributions are the same. The asymptotic significances (two-sided tests) are displayed, and the significance level is set at 0.05.

In conclusion, the results suggest that age plays a significant role in shaping opinions about the need for new technology. Younger individuals tend to have a stronger belief in adopting new technology than older individuals. The results provide insights into the relationship between perceptions, behaviours, and attitudes towards technology based on different factors such as perceptions of online payment safety, gender, employment status, and age. These findings contribute to a better understanding of the factors influencing technology usage and can be helpful for policymakers, marketers, and organizations to design targeted strategies to enhance technology adoption and acceptance among different demographic groups.

B. Implications of the study

1. Factors influencing technology adoption: The research aims to understand consumer adoption. The study identifies several factors that significantly impact technology adoption using an authentic experimental research design and statistical analyses. These factors include the perception of online payment safety, gender, and employment status.

2. Reliability of measurement scales: The study employs Cronbach's alpha, a statistical measure of internal consistency, to assess the reliability of the survey data. The results show high levels of internal consistency for the different scales used in the study, such as technology, social media, technology acceptance, technology frequency, and knowledge. This indicates that the questions in these scales are reliable and consistent tools for measuring consumer behaviour and attitudes related to technology adoption.

3. Data analysis techniques: The research utilizes various statistical tests to analyze and test the research hypotheses. The tests include correlation analysis, t-tests, and the Kruskal-Wallis test. These tests provide insights into the relationships between variables and allow for comparisons between different groups. These analyses support the research hypotheses and provide a deeper understanding of consumer behaviour towards technology adoption.

4. Results and discussion: The study presents the results of hypothesis testing and discusses their implications for understanding consumer behaviour towards technology adoption. The findings reveal that perceptions of online payment safety influence the frequency of technology usage, gender plays a role in learning new technology, and technology knowledge differs between individuals with desk jobs and the unemployed. These results contribute to the current understanding of consumer behaviour and can guide businesses and researchers in developing strategies to promote technology adoption.

In conclusion, this research provides valuable insights into the factors influencing technology adoption among consumers and highlights the importance of considering variables such as perception, gender, and employment status. The study also demonstrates the reliability of the measurement scales and employs appropriate statistical analyses to support the research findings. These implications contribute to understanding consumer behaviour in the context

of technology adoption and can inform decision-making processes for businesses and policymakers.

V. Conclusion

The empirical research conducted in this study provides valuable insights into how consumers adopt technology and the factors that influence their adoption decisions. The findings highlight the importance of addressing security concerns and designing user-friendly technologies to increase adoption rates. Security concerns are a critical factor influencing technology usage, and companies should invest in designing secure technologies and implementing effective security measures to increase adoption rates. Moreover, gender plays a significant role in shaping technology literacy levels, and targeted approaches may be necessary to increase female technology literacy. The study shows no difference in knowledge between people with desk jobs and unemployed individuals. This suggests that policymakers should address other factors affecting technology adoption, such as income levels and access to technology. Finally, the study highlights the significant difference among different age groups regarding their opinions about the need for new technology, with the youngest age group expressing the most vital requirement for new technology. Policymakers should consider these differences in views when developing policies and strategies to promote technology adoption among different age groups. In conclusion, this study provides important insights into how consumers adopt technology and can inform the development of effective policies and strategies to promote technology adoption among diverse consumer groups. The findings have significant implications for technology companies and policymakers in designing and implementing effective strategies to increase technology adoption rates and bridge the digital divide.

The study outlined in this paper is subject to certain limitations, such as a relatively modest sample size of 108 individuals, which could potentially restrict the applicability of the results. Moreover, the dependence on self-reported information via online questionnaires may give rise to potential prejudices, such as social desirability bias or response bias, that could impact the precision and dependability of the findings. The study's scope was restricted, concentrating on individual factors associated with adopting technology, which may have resulted in neglecting other significant variables that impact adoption behaviour. Moreover, using a cross-sectional design in the research procured information at a solitary moment, restricting the capacity to establish causality or monitor alterations over time. To overcome these constraints, forthcoming studies may contemplate utilizing more extensive and heterogeneous samples, incorporating supplementary techniques for data collection, examining a broader spectrum of variables, and embracing longitudinal designs.

In terms of future directions, researchers can consider incorporating qualitative analysis through interviews or focus groups to gain deeper insights into the motivations and reasons behind consumer technology adoption. Longitudinal studies can be conducted to examine adoption patterns and changes over time, shedding light on the long-term effects of various factors. Experimental designs like randomized controlled trials can help establish causal relationships between variables and technology adoption outcomes. Comparative analysis

across different cultures, age groups, or socioeconomic backgrounds can provide contextual influences on adoption behaviour. Additionally, focusing on specific technologies or types of technology adoption can provide targeted understanding while ensuring external validity by including diverse and representative samples can enhance the generalizability of research findings. By addressing these limitations and pursuing these future research directions, scholars can advance the understanding of consumer behaviour and technology adoption, leading to more effective strategies for promoting and facilitating technology adoption in various domains.

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