

Original Research Article

Artificial Intelligence and Digital Payment Adoption among Generation Z in Navi Mumbai: An Analysis of Awareness, Trust and Usage

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Received: 10 September, 2026 | Accepted: 24 September, 2026 | Published: 17 October, 2026

Abstract

The rapid growth of Artificial Intelligence (AI) and digital payment technologies has transformed the way financial transactions are conducted in India. This study examines AI awareness, trust, and digital payment usage among Generation Z in Navi Mumbai. A quantitative, descriptive and analytical research design was adopted, with primary data collected through a structured questionnaire from 189 respondents. AI awareness and trust were measured using a five-point Likert scale, and the data were analysed using descriptive statistics, the Kruskal–Wallis H test, and Spearman's rank correlation.

Keywords: Artificial Intelligence, Digital Payments, Generation Z, AI Awareness, Trust, UPI, Navi Mumbai**Introduction**

The Digital India Programme, launched by the Government of India on 1 July 2015, aims to transform India into a digitally empowered society and knowledge-based economy. The mission focuses on expanding digital infrastructure, improving access to online services, promoting digital literacy, encouraging innovation, and strengthening financial inclusion.

Digital India has contributed significantly to the growth of India's digital ecosystem through initiatives such as UPI, BHIM, PMGDISHA, GSTN, UMANG, and BHASHINI. These programmes have improved access to digital services, promoted cashless transactions, enhanced digital literacy, and supported inclusive growth.

The mission also emphasises emerging technologies such as Artificial Intelligence, blockchain, and quantum computing. India's focus on AI was further demonstrated through initiatives such as the Global India AI Summit 2024, which highlighted AI infrastructure, skills, innovation, funding, and responsible AI development.

Role of Artificial Intelligence in Digital Payments

Artificial Intelligence (AI) is increasingly becoming an important technology in digital payment systems. It helps payment providers analyse large amounts of transaction data, identify unusual patterns and detect potentially fraudulent activities in real time. AI and machine-learning techniques can also support transaction monitoring, risk assessment and user authentication, thereby improving the security of digital payments.

AI also contributes to a faster and more convenient payment experience by reducing manual processes and enabling personalised services based on users' transaction behaviour and preferences. In India, the growing use of AI alongside digital payment infrastructure such as UPI is contributing to the development of more intelligent, efficient and secure financial services.

Research Gap

Existing studies on digital payment adoption focus on factors such as trust, digital literacy, convenience, and technology. However, limited research examines AI awareness and trust in AI-enabled digital payments, particularly among Generation Z in Navi Mumbai. The relationship between AI awareness, trust, and digital payment usage remains underexplored. This study addresses this gap by examining these factors and demographic influences among Generation Z in Navi Mumbai.

Statement of the Problem

The growth of AI and digital payments has made transactions faster and easier. Generation Z, being highly tech-savvy, increasingly uses digital payment platforms. However, trust in AI-enabled technologies may influence their usage. Limited research examines AI awareness, trust, and digital payment preferences among Generation Z in Navi Mumbai. This study therefore examines these factors among Gen Z users in Navi Mumbai.

Literature Review

Motwani et al. (2026) studied the adoption of mobile payments by Generation Z in India, applying an extension of the UTAUT framework. The study found that adoption is influenced by factors such as price value, effort expectancy, social influence, government initiatives and habit. The study also emphasises the significance of digital infrastructure and trust in sustaining Gen Z's mobile payment usage.

Kagalwala et al. (2025) investigated the fusion of Artificial Intelligence with FinTech. They found that AI tools such as machine learning, predictive analytics and automated systems are transforming digital banking and payment services. AI supports fraud detection, transaction monitoring, personalisation and risk management. However, privacy, cybersecurity, algorithmic bias and regulatory concerns remain important challenges. AI enables fraud detection, transaction monitoring, personalisation, and risk management. But concerns about privacy, cybersecurity, algorithmic prejudice, and regulation remain major obstacles.

Yadav and Kalluru (2024) examined the link between trust and the use of digital financial services in India. Their results showed that digital proficiency, smartphone literacy and digital infrastructure are influential to adoption, while lack of trust can be a barrier. This study highlights the importance of trust in encouraging consumers to shift from traditional cash-based transactions to digital financial services.

Mahesh, Salunkhe and Maurya (2024) studied Generation Z in Navi Mumbai with particular reference to UPI. The study examined awareness, preferences, spending behaviour and cybersecurity concerns associated with digital payments. This shows how important UPI and digital payment systems are to Generation Z in Navi Mumbai, which is a key part of this study because it looks at a specific area.

Patil et al. (2020) looked at how people in India use mobile payments. They used a special model to understand what makes people adopt this technology. What they found out is that people are more likely to use mobile payments if they think it will work well, if they intend to use it, and if they know their problems will be solved. Also, trust is a big factor in whether people will use mobile payments or not. It's not just about making things easy, but also about making people feel confident in the system. This study shows that for mobile payments to be successful, it needs to be more than just convenient - people need to feel safe using it too.

Objectives of the Study

1. To study the usage pattern of digital payment services among Generation Z in Navi Mumbai.
2. To assess the awareness of Generation Z regarding AI in digital payment services.
3. To examine the level of trust of Generation Z in AI-enabled digital payment services.

Hypothesis of the Study

Hypothesis 1

Alternative Hypothesis (H1):

There is a significant relationship between demographic characteristics and digital payment usage among Generation Z.

Null Hypothesis (H0): There is no significant relationship between demographic characteristics and digital payment usage among Generation Z.

Hypothesis 2

Alternative Hypothesis (H1):

There is a significant relationship between AI awareness and digital payment usage among Generation Z.

Null Hypothesis (H0):

There is no significant relationship between AI awareness and digital payment usage among Generation Z.

Hypothesis 3

Alternative Hypothesis (H1):

There is a significant relationship between trust in AI-enabled digital payment services and digital payment usage among Generation Z.

Null Hypothesis (H0):

There is no significant relationship between trust in AI-enabled digital payment services and digital payment usage among Generation Z.

Hypothesis 4

Alternative Hypothesis (H1):

There is a significant relationship between AI awareness and trust in AI-enabled digital payment services among Generation Z.

Null Hypothesis (H0):

There is no significant relationship between AI awareness and trust in AI-enabled digital payment services among Generation Z.

Research Methodology

The study adopts a quantitative, descriptive and analytical research design to examine AI awareness, trust and digital payment usage among Generation Z in Navi Mumbai.

Sample: The study comprises 189 Generation Z respondents from Navi Mumbai.

Data Collection: Primary data were collected through a structured questionnaire covering demographic details, digital payment usage, AI awareness and trust in AI-enabled digital payments.

Variables: The major variables include age, gender, occupation, AI awareness, trust, and digital payment usage.

Measurement: AI awareness and trust were measured using a five-point Likert scale.

Data Analysis: Frequency, percentage, mean and standard deviation were used for descriptive analysis. Kruskal–Wallis H test was used for demographic differences, while Spearman's rank correlation was used to examine relationships among AI awareness, trust and digital payment usage.

Statement of the Problem

The rapid growth of Artificial Intelligence and digital payment technologies has transformed the way financial transactions are conducted in India. Generation Z, being highly familiar with digital technologies, is increasingly using digital payment platforms. However, awareness of AI-enabled features and trust in their safety, privacy, and reliability may influence their willingness to use such services. Despite the growing adoption of digital payments, limited research has examined the combined relationship between AI awareness, trust, and digital payment usage among Generation Z in Navi Mumbai. Therefore, the present study seeks to examine these factors and understand their influence on digital payment adoption among Generation Z in Navi Mumbai.

Significance of the Study

This study identifies how different levels of AI awareness and how much AI-based technology users in Generation Z trust in Navi Mumbai influences their use of digital payments. Understanding these factors may stimulate changes by digital payment service providers and FinTech companies that focus on security and transparency, as well as overall user experience. The results may also assist government agencies and financial institutions in developing projects that support more safe digital payment practices and digital trust, as well as digital literacy. From a safety perspective, the study identifies a need for increased AI awareness in

Generation Z surrounding the use of AI-based payment systems. The study also provides a gap in the literature by examining the reflection, trust, and digital payment integration within AI in a defined geographical area and era.

Data Analysis and Results

Profile of Respondents

The study was conducted among 189 Generation Z respondents. The demographic profile was analysed using frequency and percentage distributions.

Table 1: Age-wise Distribution of Respondents

Age Group	Frequency	Percentage
18–20 years	165	87.30%
21–23 years	20	10.58%
24–26 years	3	1.59%
27 years and above	1	0.53%
Total	189	100.00%

Interpretation:

The majority of respondents (87.30%) belong to the 18–20 years age group. A further 10.58% belong to the 21–23 years group, while only 1.59% and 0.53% belong to the 24–26 and 27 years and above groups, respectively. Thus, the sample is predominantly composed of younger Generation Z respondents.

Table 2: Gender-wise Distribution

Gender	Frequency	Percentage
Female	117	61.90%
Male	70	37.04%
Prefer not to say	2	1.06%
Total	189	100.00%

Interpretation:

Female respondents constitute the largest proportion of the sample (61.90%), followed by males (37.04%). Only 1.06% preferred not to disclose their gender.

Table 3: Occupational Distribution

Occupation	Frequency	Percentage
Student	175	92.59%
Employed	9	4.76%
Self-employed	3	1.59%
Unemployed	1	0.53%
Articleship/student	1	0.53%
Total	189	100.00%

Interpretation:

The sample is overwhelmingly student-oriented, with 92.59% of respondents being students. Only 4.76% are employed and 1.59% are self-employed. Therefore, the findings primarily represent the perceptions and behaviour

of young student respondents.

Digital Payment Usage Pattern

Table 4: Most Frequently Used Digital Payment Method

Digital Payment Method	Frequency	Percentage
UPI	154	81.48%
Other	25	13.23%
Debit/Credit Card	4	2.12%
Mobile Wallet	3	1.59%
Net Banking	3	1.59%
Total	189	100.00%

Interpretation:

UPI is clearly the dominant digital payment method among respondents, with 81.48% reporting it as their most frequently used method. The category "Other" accounts for 13.23%, while mobile wallets and net banking are used by only 1.59% each. This demonstrates the strong dominance of UPI within the sample.

Table 5: Frequency of Digital Payment Usage

Frequency of Use	Frequency	Percentage
Rarely	19	10.05%
Occasionally	30	15.87%
Several times a week	37	19.58%
Once a day	18	9.52%
Multiple times a day	85	44.97%
Total	189	100.00%

Interpretation:

Digital payment usage is relatively high among the respondents. Nearly 45% use digital payment services multiple times a day, while 19.58% use them several times a week. Only 10.05% reported using digital payments rarely. Overall, the findings indicate that digital payments have become a regular part of the respondents' financial activities.

Awareness of AI in Digital Payment Services

Table 6: Awareness of the Use of AI in Digital Payment/Financial Services

Response	Frequency	Percentage
Yes	82	43.39%
Not Sure	47	24.87%
No	60	31.75%
Total	189	100.00%

Interpretation:

Only 43.39% of respondents stated that they had heard about the use of AI in digital payment or financial services. Approximately one-fourth (24.87%) were unsure, while 31.75% had not heard about it. This is an important finding because respondents may be frequent digital-payment users without necessarily understanding the AI technologies

operating behind these services.

Descriptive Statistics of AI Awareness

AI awareness was measured through seven statements using a five-point Likert scale, where higher scores indicate greater awareness.

Table 7: Descriptive Statistics of AI Awareness Items

AI Awareness Statement	N	Mean	SD
I am aware of the concept of AI	189	3.926	0.942
I am aware AI is used in digital payment and financial services	189	3.503	0.926
I am aware AI can help detect fraudulent/suspicious transactions	154	3.662	0.539
s	189	3.698	0.812
I am aware AI can analyse user behaviour to improve digital payment services	189	3.810	0.796
I am aware digital payment platforms may use AI-based technologies	189	3.810	0.776
I understand potential benefits of AI in digital payment services	189	3.677	0.697

Overall AI Awareness Mean = 3.740; SD = 0.547

Interpretation:

The overall AI awareness score of 3.740 indicates a relatively high level of awareness among respondents. The highest mean (3.926) was observed for awareness of the general concept of AI. Respondents also demonstrated relatively strong awareness that AI can analyse user behaviour and that digital payment platforms may use AI-based technologies (both $M = 3.810$). However, awareness that AI is used specifically in digital payment and financial services was comparatively lower ($M = 3.503$). This suggests that respondents may be familiar with AI as a general technology but have comparatively less specific knowledge about its application in financial services.

Important data-quality note: The fraud-detection awareness item has only 154 valid responses, compared with 189 for the other awareness items. This should be transparently reported in the methodology/results rather than treating the missing 35 responses as actual answers.

Descriptive Statistics of Trust in AI-enabled Digital Payments

Table 8: Descriptive Statistics of Trust Items

Trust Statement	N	Mean	SD
I believe AI can make digital payment services safer	189	3.487	0.879
I trust AI to help detect fraudulent/suspicious transactions	189	3.582	0.758
I trust AI-enabled digital payment systems to protect my financial information	189	3.275	0.922
Overall Trust	189	3.448	0.737

Interpretation:

The overall trust score is 3.448, indicating a moderately positive level of trust in AI-enabled digital payment services. The highest level of agreement relates to trusting AI to help detect fraudulent or suspicious transactions ($M = 3.582$). However, respondents were relatively less confident about AI-enabled payment systems protecting their financial information ($M = 3.275$). This indicates that although respondents generally recognise the security benefits of AI, concerns about the protection of personal and financial information remain.

Composite Descriptive Statistics**Table 9:** Descriptive Statistics of Major Study Variables

Variable	N	Mean	SD	Median	Minimum	Maximum
AI Awareness	189	3.740	0.547	3.714	1.50	5.00
Trust	189	3.448	0.737	3.333	1.00	5.00
Digital Payment Usage	189	3.635	1.436	4.00	1.00	5.00

Interpretation:

The results indicate that the respondents have comparatively high AI awareness and moderately positive trust in AI-enabled digital payment services. The median digital payment usage score of 4 indicates that the typical respondent uses digital payment services at least once a day. The relatively high standard deviation of usage (1.436) indicates greater variation in payment frequency compared with the AI awareness and trust measures.

Reliability Analysis**Table 10:** Reliability Statistics

Scale	Items	Cronbach's Alpha	Interpretation
AI Awareness	7	0.675	Moderate internal consistency
Trust	3	0.826	Good internal consistency

Interpretation:

The Trust scale demonstrates good internal consistency with Cronbach's alpha of 0.826. The AI Awareness scale has an alpha of 0.675, which is slightly below the conventional 0.70 benchmark but can be regarded as reasonable for an exploratory study. The AI awareness scale should nevertheless be reported transparently rather than describing it as highly reliable.

Test of Normality**Table 11:** Shapiro–Wilk Normality Test

Variable	W	p-value	Decision
AI Awareness	0.963	< .001	Not normally distributed
Trust	0.951	< .001	Not normally distributed
Digital Payment Usage	0.814	< .001	Not normally distributed

Interpretation:

The Shapiro–Wilk test indicates statistically significant departures from normality for all three major variables ($p < .001$). Therefore, non-parametric statistical techniques were used for hypothesis testing.

Hypothesis Testing

H1: Demographic Characteristics and Digital Payment Usage

The first hypothesis examined whether digital payment usage differs according to demographic characteristics. Because digital payment usage is an ordinal frequency measure and normality was not satisfied, the Kruskal–Wallis H test was used.

Table 12: Demographic Characteristics and Digital Payment Usage

Demographic Variable	Test	Statistic	df	p-value	Decision
Age	Kruskal–Wallis	1.305	3	.728	Not significant
Gender	Kruskal–Wallis	2.339	2	.311	Not significant
Occupation	Kruskal–Wallis	3.375	4	.497	Not significant

Interpretation

The results show that age does not have a statistically significant relationship/difference in digital payment usage, $H(3) = 1.305$, $p = .728$.

Similarly, gender does not show a statistically significant difference in digital payment usage, $H(2) = 2.339$, $p = .311$.

Occupation also does not produce a statistically significant difference, $H(4) = 3.375$, $p = .497$. Since all p-values are greater than .05, the null hypothesis is retained.

H_0 : Accepted H_1 : Rejected

Thus, the study does not find statistically significant differences in digital payment usage based on age, gender or occupation.

H2: AI Awareness and Digital Payment Usage

Table 13: Spearman Correlation between AI Awareness and Digital Payment Usage

Variables	Spearman's ρ	P-value	Relationship	Decision
AI Awareness ↔ Digital Payment Usage	0.082	.260	Very weak positive	Not significant

Interpretation:

The Spearman correlation coefficient is $\rho = .082$, indicating a very weak positive association between AI awareness and digital payment usage. However, the relationship is not statistically significant ($p = .260 > .05$).

Therefore, there is insufficient evidence to conclude that respondents with greater AI awareness use digital payment services more frequently.

Decision: H_0 : Accepted, H_1 : Rejected

H3: Trust and Digital Payment Usage**Table 14:** Spearman Correlation between Trust and Digital Payment Usage

Variables	Spearman's ρ	p-value	Relationship	Decision
Trust $\leftrightarrow$ Digital Payment Usage	0.084	.248	Very weak positive	Not significant

Interpretation:

The correlation coefficient between trust and digital payment usage is $\rho = .084$. Although the relationship is positive, it is very weak and statistically non-significant ($p = .248$).

Thus, higher trust in AI-enabled digital payment services is not associated with significantly more frequent digital payment usage in this sample.

Decision: H_0 : Accepted H_1 : Rejected

4.12 H4: AI Awareness and Trust**Table15:** Spearman Correlation between AI Awareness and Trust

Variables	Spearman's ρ	p-value	Relationship	Decision
AI Awareness $\leftrightarrow$ Trust	0.431	< .001	Moderate positive	Significant

Interpretation:

A statistically significant moderate positive relationship was found between AI awareness and trust in AI-enabled digital payment services ($\rho = .431$, $p < .001$). This means that respondents who demonstrate higher awareness of AI tend to have greater trust in AI-enabled digital payment systems.

The result provides empirical support for the proposition that understanding AI and its applications in digital financial services is associated with greater confidence in AI-enabled payment systems.

Decision H_0 : Rejected H_1 : Accepted

Overall Hypothesis Summary**Table 16:** Summary of Hypothesis Testing

Hypothesis	Relationship Tested	Statistical Test	Result	Decision
H1	Demographics $\rightarrow$ Digital Payment Usage	Kruskal–Wallis	Not significant	H_0 accepted
H2	AI Awareness $\rightarrow$ Digital Payment Usage	Spearman correlation	$\rho = .082$, $p = .260$	H_0 accepted
H3	Trust $\rightarrow$ Digital Payment Usage	Spearman correlation	$\rho = .084$, $p = .248$	H_0 accepted
H4	AI Awareness $\rightarrow$ Trust	Spearman correlation	$\rho = .431$, $p < .001$	H_0 rejected

Findings of the Study

1. **High digital payment usage:** UPI is the most frequently used digital payment method, reported by 81.48% of respondents. Nearly 45% use digital payments multiple times a day.
2. **AI awareness:** The overall AI awareness score was 3.740, indicating a relatively high level of awareness. However, awareness of the specific use of AI in digital payments was comparatively lower.
3. **Trust:** Respondents showed a moderately positive level of trust, with an overall mean of 3.448. Trust was highest regarding AI-based fraud detection, while confidence in the protection of financial information was comparatively lower.
4. **Demographics and usage:** Age, gender, and occupation showed no significant differences in digital payment usage ($p > 0.05$).
5. **AI awareness and usage:** AI awareness had a very weak and statistically insignificant relationship with digital payment usage ($\rho = 0.082$, $p = 0.260$).
6. **Trust and usage:** Trust also showed a very weak and statistically insignificant relationship with digital payment usage ($\rho = 0.084$, $p = 0.248$).
7. **AI awareness and trust:** A moderate, positive and statistically significant relationship was found between AI awareness and trust ($\rho = 0.431$, $p < 0.001$).

Suggestions and Recommendations

1. **Increase AI Awareness:** Digital payment providers should conduct awareness campaigns to educate Generation Z about how AI is used in fraud detection, security, and transaction monitoring.
2. **Improve Transparency:** Payment platforms should clearly explain the role of AI in digital transactions so that users understand how their data and transactions are processed.
3. **Strengthen Data Protection:** Greater emphasis should be placed on protecting users' personal and financial information, as trust in financial information protection was comparatively lower.
4. **Promote Digital Financial Literacy:** Educational institutions can include digital payment security and AI awareness in financial literacy programmes, particularly for young users.
5. **Enhance Fraud Prevention:** Payment service providers should continue improving AI-based fraud detection systems and communicate their security measures effectively to users.
6. **Build User Trust:** Banks and digital payment platforms should provide simple information about security features, privacy policies, and mechanisms available to users in case of fraudulent transactions.
7. **Encourage Responsible AI Use:** AI-enabled payment services should be developed and implemented with emphasis on security, privacy, transparency, and responsible use of user data.
8. **Future Research:** Future studies may include a larger and more diverse sample from different cities and examine additional factors such as perceived security, convenience, privacy concerns, and technological familiarity.

Conclusion

The study concludes that Generation Z in Navi Mumbai demonstrates high digital payment usage and relatively high awareness of Artificial Intelligence, while their trust in AI-enabled payment services is moderately positive. However, AI awareness and trust do not significantly influence the frequency of digital payment usage in the present sample. The significant positive relationship between AI awareness and trust suggests that better understanding of

AI and its applications may strengthen users' confidence in AI-enabled digital payment systems.

Overall, the findings indicate that Generation Z is already comfortable with digital payments, but greater awareness and transparency about AI's role, particularly in security and protection of financial information, may help build stronger trust

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