

# A Research on E-Commerce Payment Methods

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**Abstract-** E-commerce, or online shopping, has become an integral part of modern-day life. With the growing use of the internet and the proliferation of smartphones and other digital devices, more and more people are turning to online shopping for their everyday needs. The objective of the study is to find the most commonly used payment method and which method gives the most satisfaction when used. The sample size is determined to 133, A percentage analysis and chi-square analysis were used to interpret the data. This study ends with conclusion that security, convenience, and availability are important to customers, and the most commonly used payment method is cash on delivery.

**Keywords-** E-commerce, Payment methods, Online purchase, Cash on delivery, Transactions.

## I. INTRODUCTION

E-commerce, or online shopping, has become an integral part of modern-day life. With the growing use of the internet and the proliferation of smartphones and other digital devices, more and more people are turning to online shopping for their everyday needs. However, with the rise of e-commerce has come the need for safe and secure payment methods that ensure that online transactions are carried out smoothly and securely. The payment process is a critical part of e-commerce as it involves the transfer of sensitive financial information between the buyer and the seller. A secure payment method is essential to protect against fraud, identity theft, and other online scams. It is, therefore, essential for e-commerce businesses to provide their customers with a variety of payment options that are safe, secure, and convenient. The growth of e-commerce has also led to the emergence of new payment methods and technologies that are specifically designed for online transactions. From credit and debit cards to digital wallets and mobile payments, the range of payment options available to consumers is constantly expanding. Electronic commerce, or e-commerce, has revolutionised the way businesses conduct transactions with their customers. With the rise of the internet, e-commerce has become increasingly popular, and online shopping has become the norm for many consumers. As a result, the payment methods used in e-commerce have also evolved significantly over the years.

## 1.1 OBJECTIVES:

1. To evaluate the available e-commerce payment options and identify the most widely used and efficient ones for online customers.
2. To provide information about why customers choose different payment methods.
3. To measure satisfaction level of customers with different payment methods.

## NEED OF THE STUDY

E-commerce is expanding quickly and taking a crucial place in today's corporate operations. Businesses must provide safe and practical payment options as more customers start purchasing online. However, choosing which payment options to provide to customers can be difficult for businesses given the abundance of available payment options. By evaluating the efficacy of various payment modes and determining the customer favorites, this study seeks to offer advice to businesses. The findings of this study will assist companies in streamlining their e-commerce payment procedures and enhancing consumer happiness, both of which can result in more sales and income.

## II. REVIEWS OF LITERATURE

1. **Ashish Baghla's** (2018) "A Study on the Future of Digital Payments in India" study. This essay identifies the difficulties or difficulties Indians have in adopting digital payment methods. Finding out how individuals feel about the adoption of digital payments in India was one of the goals of this study. The report came to the conclusion that while the government's efforts to eliminate cash from India are making progress, it will still take some time for India to do so because there are still many issues that need to be resolved.
2. **Priyanka S. Kotecha's** (2018) empirical study on mobile wallets in India, which focuses on the many wallets that are offered there, more people are using mobile wallets than ever before, primarily due to how convenient and simple they are to use.
3. **Sujith T. S. and Julie C. D.** (2017). In order to improve the e-payment system, this study sought to identify the

problems and obstacles that currently exist in the field. In addition to offering greater options, the electronic payment system also poses significant risks. The study discovered that the availability of mobile networks, the Internet, and power is extending digital payments to outlying regions. The quantity of digital payments will undoubtedly rise as a result.

4. **Dr. S. Manikandan and J. Mary Jayakodi's**(2017), "An Empirical Study on Consumers Adoption of Mobile Wallets with Special Reference to Chennai City," focuses on describing how mobile wallets work. It also lists the difficulties users may encounter when using different mobile wallets and discusses how these issues may influence consumer adoption decisions. The researcher came to the conclusion that while customers are happy using mobile wallets, the security and safety of their money during transactions is a challenge for them.
5. **Mamta, Prof. Hariom Tyagi, and Dr. Abhishek Shukla**(2016). This study aims to pinpoint the problems and difficulties with the electronic payment system and to offer some ideas to raise the standard of e-payments. The market's level of trust in the system will increase with better consumer and seller perceptions of the security and privacy aspects. This will determine how successfully electronic payment systems are implemented.
6. **Pawan Kalyani**(2016) article, "An Empirical Study about the Awareness of Paperless E-Currency Transactions Like E-Wallet Using ICT in the Youth of India," focuses on the paperless transactions that are becoming more and more common around the globe in the form of digital wallets. In this study, the researcher also examined numerous Indian e-wallet services as well as various e-wallet models from around the globe. In order to understand how popular and widely used different e-wallets are in the Indian market, the researcher is attempting to assess all available data. The paper's conclusion made the recommendation that, in order to improve efficiency, more value-added services should be provided to these digital wallets in order to boost their practical usage and awareness.
7. **Rachna and Priyanka Singh** (2013) seek to identify the problems and difficulties associated with using electronic payment systems. It also provides some ideas to enhance the effectiveness of these systems. The lack of security, consumer mistrust of these payment systems, consumer ignorance, and the impossibility of offering online payment services in rural areas of our nation are some of the topics this essay addressed. A few solutions to those issues were also discussed in this article, including firewalls, digital signatures, and encryption, as well as how to ask for further identification if there were any

questions. e-payment systems can be successful if the following conditions are met.

### III. RESEARCH METHODS

The research design is the arrangement of conditions for gathering and investigation of information in a way that intends to consolidate pertinence to the exploration reason with economy in technique. The examination configuration is the reasonable structure inside which inquire about is conducted; it establishes the plan for the gathering, estimation, and investigation of information.

#### SAMPLE SIZE

A sample size of 140 is taken for the main study. And 133 people have responded for the questionnaire given to them.

#### SAMPLING TECHNIQUE

To obtain the representative sample, convenience sampling is used in this study. Sampling helps a lot in research, non-probability sampling techniques include convenience sampling.

#### DATA COLLECTION METHOD

The data was collected from primary data through well-structured questions.

#### PRIMARY DATA

The primary data are those which are collected for the first time and thus happens to be original in character. The primary data was collected through the structured questionnaire from the respondents.

#### QUESTIONNAIRE DESIGN

The structured questionnaire was used to collect the data from the respondents who are using e-commerce platform. Data were collected using close ended questions.

#### STATISTICAL TOOL

For the purpose of analysis and interpretation, the data collected from the questionnaires were taken into consideration and analysed using percentage analysis and chi-square.

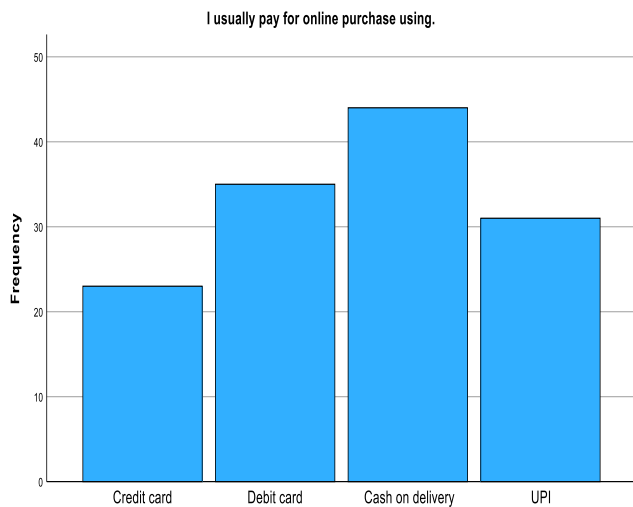
**IV. DATA ANALYSIS AND INTERPRETATION**

**PERCENTAGE ANALYSIS**

Table No: 1 Table Name: Payment for online purchase

I usually pay for online purchase using.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Credit card	23	17.3	17.3	17.3
	Debit card	35	26.3	26.3	43.6
	Cash on delivery	44	33.1	33.1	76.7
	UPI	31	23.3	23.3	100.0
	Total	133	100.0	100.0	

Figure Name:Payment for online purchase



**Interpretation**

From the table, it clearly states that 17.3% of the respondents are using credit card to pay for online shopping, 26.3% of the respondents are using Debit card to pay for online shopping, 33.1% of the respondents are using cash on delivery to pay for online shopping, 23.3% of the respondents are using UPI to pay for online shopping.

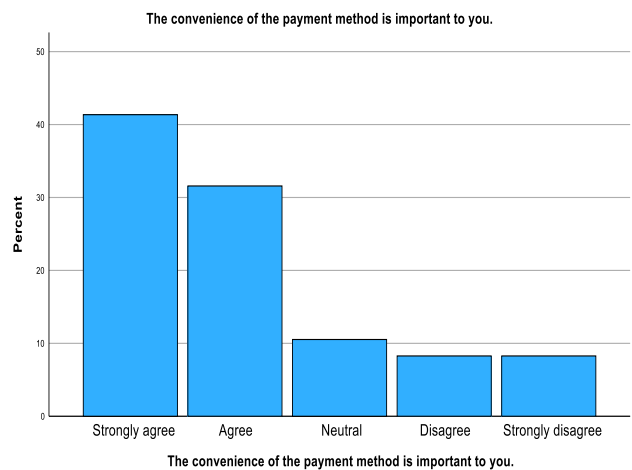
**Inference**

Majority 33.1% of the respondents are using Cash on delivery to pay for online shopping.

Table No:2 Table Name: Convenience of payment method

The convenience of the payment method is important to you.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	56	42.1	42.1	42.1
	Agree	41	30.8	30.8	72.9
	Neutral	14	10.5	10.5	83.5
	Disagree	11	8.3	8.3	91.7
	Strongly disagree	11	8.3	8.3	100.0
	Total	133	100.0	100.0	

Figure Name:Convenience of payment method



**Interpretation**

From the table, it clearly states that 41.4% respondents are Strongly agree the convenience of the payment method is important to them, 31.6% respondents are Agree the convenience of the payment method is important to them, 10.5% respondents are Neutral the convenience of the payment method is important to them, 8.3% respondents are Disagree the convenience of the payment method is important to them, 8.3% respondents are strongly Disagree the convenience of the payment method is important to them.

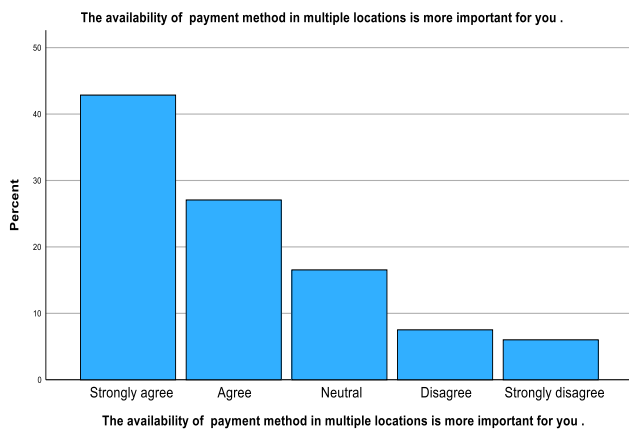
**Inference**

Majority 41.4% respondents Strongly Agree the convenience of the payment method is important to them.

Table No: 3 Table Name: Availability of payment method in multiple location

The availability of payment method in multiple locations is more important for you.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	58	43.6	43.6	43.6
	Agree	35	26.3	26.3	69.9
	Neutral	22	16.5	16.5	86.5
	Disagree	10	7.5	7.5	94.0
	Strongly disagree	8	6.0	6.0	100.0
	Total	133	100.0	100.0	

Figure Name:Availability of payment method in multiple location



**Interpretation**

From the table, it clearly states that 42.9% respondents are Strongly agree Availability of the payment method location is more important to them, 27.1% respondents are Agree Availability of the payment method location is more important to them, 16.5% respondents are Neutral Availability of the payment method location is more important to them, 7.5% respondents are Disagree Availability of the payment method location is more important to them, 6% respondents are Strongly Disagree Availability of the payment method location is more important to them.

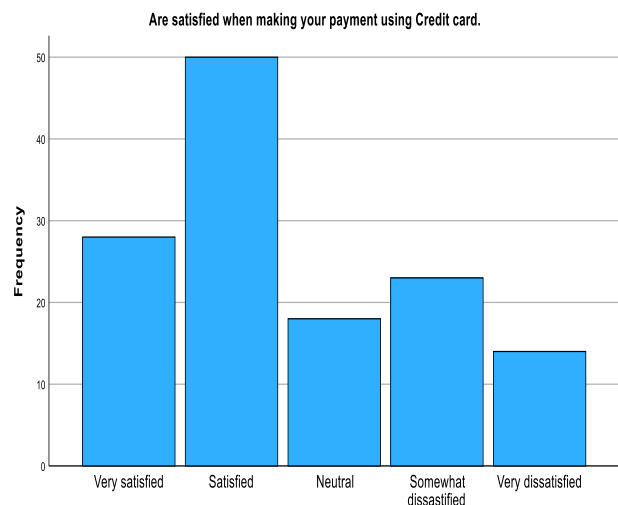
**Inference**

Majority 42.9% respondents are Strongly agree Availability of the payment method location is more important to them.

Table No:4 Table Name: Satisfaction of using credit card payment

Are satisfied when making your payment using Credit card.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	28	21.1	21.1	21.1
	Satisfied	50	37.6	37.6	58.6
	Neutral	18	13.5	13.5	72.2
	Somewhat dissatisfied	23	17.3	17.3	89.5
	Very dissatisfied	14	10.5	10.5	100.0
	Total	133	100.0	100.0	

Figure Name:Satisfaction of using credit card payment



**Interpretation**

From the table, it clearly states that 21.1% respondents are very satisfied using credit card during payment, 37.6% respondents are somewhat satisfied using credit card during payment, 13.5% respondents are neutral using credit card during payment, 17.3% respondents are somewhat dissatisfied using credit card during payment, 10.5% respondents are very dissatisfied using credit card during payment.

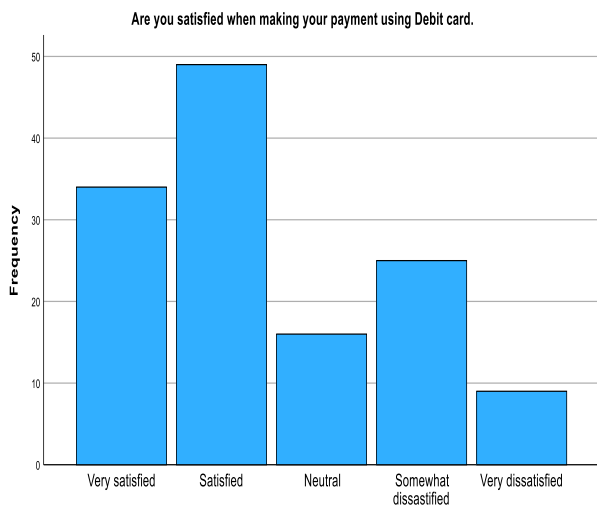
**Inference**

Majority 37.6% respondents are somewhat satisfied using credit card during payment.

Table No: 5 Table Name: Satisfaction of using debit card payment

Are you satisfied when making your payment using Debit card.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	34	25.6	25.6	25.6
	Satisfied	49	36.8	36.8	62.4
	Neutral	16	12.0	12.0	74.4
	Somewhat dissatisfied	25	18.8	18.8	93.2
	Very dissatisfied	9	6.8	6.8	100.0
	Total	133	100.0	100.0	

Figure Name:Satisfaction of using debit card payment



**Interpretation**

From the table, it clearly states that 25.6% respondents are very satisfied using debit card during payment, 36.1% respondents are somewhat satisfied using debit card during payment, 12.8% respondents are neutral using debit card during payment, 18.8% respondents are somewhat dissatisfied using debit card during payment, 6.8% respondents are very dissatisfied using debit card during payment.

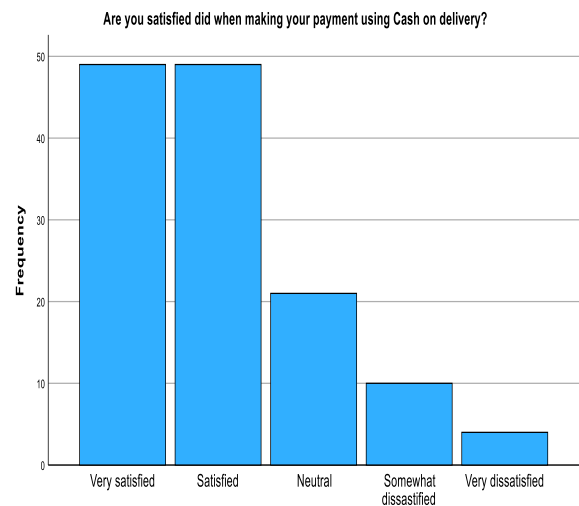
**Inference**

Majority 36.1% respondents are somewhat satisfied using debit card during payment.

Table No: 6 Table Name: Satisfaction of using cash on delivery payment

Are you satisfied did when making your payment using Cash on delivery?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	49	36.8	36.8	36.8
	Satisfied	49	36.8	36.8	73.7
	Neutral	21	15.8	15.8	89.5
	Somewhat dissatisfied	10	7.5	7.5	97.0
	Very dissatisfied	4	3.0	3.0	100.0
	Total	133	100.0	100.0	

Figure Name:Satisfaction of using cash on delivery payment



**Interpretation**

From the table, it clearly states that 36.8% respondents are very satisfied using cash on delivery during payment, 36.8% respondents are somewhat satisfied using cash on delivery during payment, 15.8% respondents are neutral using cash on delivery during payment, 7.5% respondents are somewhat dissatisfied using cash on delivery during payment, 3% respondents are very dissatisfied using cash on delivery during payment.

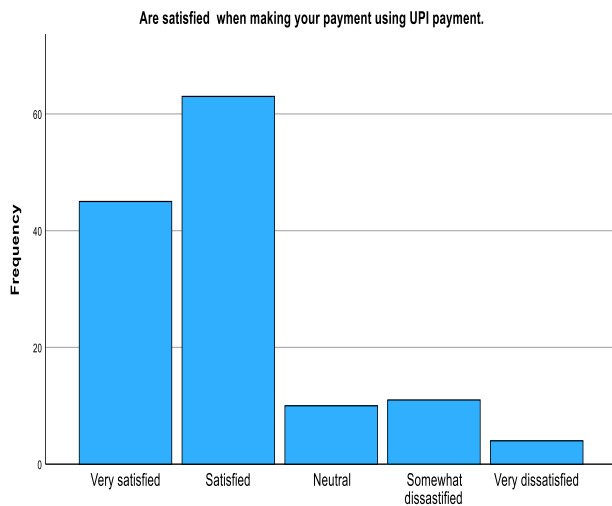
**Inference**

Majority 36.8% respondents are very satisfied and somewhat satisfied using cash on delivery during payment.

Table No: 7 Table Name: Satisfaction of using UPI payment

Are satisfied when making your payment using UPI payment.					
		Freque	Percent	Valid	Cumulativ
		ncy		Percent	e Percent
Valid	Very satisfied	45	33.8	33.8	33.8
	Satisfied	63	47.4	47.4	81.2
	Neutral	10	7.5	7.5	88.7
	Somewhat dissatisfied	11	8.3	8.3	97.0
	Very dissatisfied	4	3.0	3.0	100.0
	Total	133	100.0	100.0	

Figure Name:Satisfaction of using UPI payment



**Interpretation**

From the table, it clearly states that 33.8% respondents are very satisfied using UPI during payment, 47.4% respondents are somewhat satisfied using UPI during payment, 7.5% respondents are neutral using UPI during payment, 8.3% respondents are somewhat dissatisfied using UPI during payment, 3% respondents are very dissatisfied using UPI during payment.

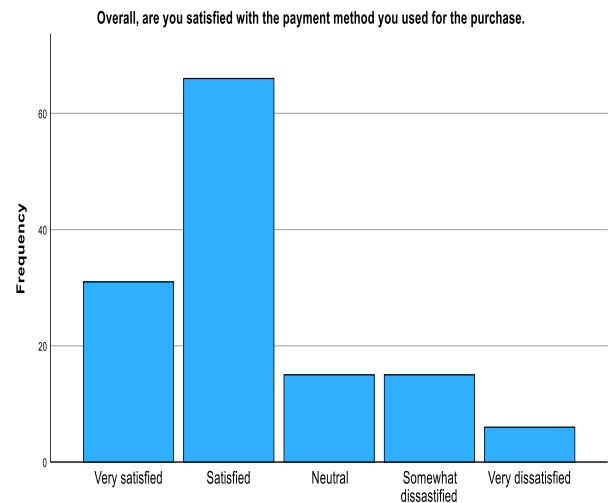
**Inference**

Majority 47.4% respondents are somewhat satisfied using UPI during payment.

Table No: 8 Table Name: Overall satisfaction payment method

Overall, are you satisfied with the payment method you used for the purchase.					
		Freque	Percent	Valid	Cumulativ
		ncy		Percent	e Percent
Valid	Very satisfied	31	23.3	23.3	23.3
	Satisfied	66	49.6	49.6	72.9
	Neutral	15	11.3	11.3	84.2
	Somewhat dissatisfied	15	11.3	11.3	95.5
	Very dissatisfied	6	4.5	4.5	100.0
	Total	133	100.0	100.0	

Figure Name: Overall satisfaction payment method



**Interpretation**

From the table, it clearly states that 23.3% respondents are very satisfied with overall payment method, 49.6% respondents are somewhat satisfied with overall payment method, 11.3% respondents are neutral with overall payment method, 11.3% respondents are somewhat dissatisfied with overall payment method, 4.5% respondents are very dissatisfied with overall payment method

**Inference**

Majority 49.6% respondents are somewhat satisfied with overall payment method.

**HYPOTHESIS 1**

Null Hypothesis [H0]: There is no association between the choice of payment and convenience of the payment method.

Table No: 9 Table Name:Choice of payment and convenience of the payment method.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.743 <sup>a</sup>	12	.388
Likelihood Ratio	14.847	12	.250
Linear-by-Linear Association	.620	1	.431
N of Valid Cases	133		
a. 12 cells (60.0%) have expected count less than 5. The minimum expected count is 1.90.			

**Interpretation**

It is inferred that calculated value 12.743 is less than the table value 21.026. Hence H0 is accepted.

**Inference**

There is no association between the choice of payment and convenience of the payment method.

**HYPOTHESIS 2**

Null hypothesis [H0]: There is no association between choice of payment and concern about security of personal and financial information when making a payment in an e-commerce platform.

Table No:10 Table Name: Choice of payment and concern about security of personal and financial information

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.597 <sup>a</sup>	12	.399
Likelihood Ratio	15.269	12	.227
Linear-by-Linear Association	2.519	1	.112
N of Valid Cases	133		

a. 12 cells (60.0%) have expected count less than 5. The minimum expected count is .52.

**Interpretation**

It is inferred that calculated value 12.597 is less than the table value 21.026. Hence H0 is accepted.

**Inference**

There is no association between choice of payment and concern about security of personal and financial information when making a payment in an e-commerce platform.

**HYPOTHESIS 3**

Null Hypothesis [H0]: There is no association between the choice of payment and availability of payment method in multiple locations.

Alternative Hypothesis [H1]: There is an association between the choice of payment and availability of payment method in multiple locations.

Table No:11 Table Name:Choice of payment and availability of payment method in multiple locations.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.196 <sup>a</sup>	12	.182
Likelihood Ratio	18.496	12	.101
Linear-by-Linear Association	2.548	1	.110
N of Valid Cases	133		
a. 9 cells (45.0%) have expected count less than 5. The minimum expected count is 1.38.			

**Interpretation**

It is inferred that calculated value 16.196 is less than the table value 21.026. Hence H0 is accepted.

**Inference**

There is no association between the choice of payment and availability of payment method in multiple locations.

**HYPOTHESIS 4**

Null hypothesis [H0]: There is no association between the choice of payment and overall satisfaction with the payment method used for the purchase.

Alternative hypothesis [H1]: There is an association between the choice of payment and overall satisfaction with the payment method used for the purchase.

Table No: 12 Table Name: Choice of payment and overall satisfaction with the payment method used for the purchase.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	19.651 <sup>a</sup>	12	.074
Likelihood Ratio	21.129	12	.049
Linear-by-Linear Association	.184	1	.668
N of Valid Cases	133		

a. 12 cells (60.0%) have expected count less than 5. The minimum expected count is 1.04.

**Interpretation**

It is inferred that calculated value 19.651 is less than the table value 21.026. Hence H0 is accepted.

**Inference**

There is no association between the choice of payment and overall satisfaction with the payment method used for the purchase.

**V. FINDING AND RECOMMANTION**

**5.1 PERCENTAGE ANALYSIS**

1. Majority 33.1% of the respondents are using Cash on delivery to pay for online shopping
2. Majority 41.4% respondents Strongly Agree the convenience of the payment method is important to them.
3. Majority 42.9% respondents are Strongly agree Availability of the payment method location is more important to them.
4. Majority 37.6% respondents are somewhat satisfied using credit card during payment
5. Majority 36.1% respondents are somewhat satisfied using debit card during payment

6. Majority 36.8% respondents are very satisfied and somewhat satisfied using cash on delivery during payment.
7. Majority 47.4% respondents are somewhat satisfied using UPI during payment.
8. Majority 49.6% respondents are somewhat satisfied with overall payment method.

**5.2 CHI-SQUARE**

1. There is no association between the choice of payment and convenience of the payment method.
2. There is no association between choice of payment and concern about security of personal and financial information when making a payment in an e-commerce platform.
3. There is no association between the choice of payment and availability of payment method in multiple locations
4. There is no association between the choice of payment and overall satisfaction with the payment method used for the purchase.

**RECOMDANTION**

- The e-commerce platform can gather information on client payment preferences and survey them about how convenient they find each payment choice to be in order to analyse the relationship between the method of payment and the method of payment. The two variables can then be statistically analysed to find out whether there is a substantial link between them.
- The e-commerce platform can examine transaction data and survey results to see if customers who use particular payment methods express higher levels of security concern. If there is a significant correlation between choice of payment and concern about the security of personal and financial information, this can be determined.
- The e-commerce platform can gather information on customer payment preferences and ask them if they have experienced any problems using particular payment methods in various locations in order to investigate the relationship between the choice of payment and availability of payment method in multiple locations. Then, statistical analysis can be performed to see whether there is a significant relationship between the two variables.
- The e-commerce platform can gather information on customer payment preferences and ask them to rate their overall satisfaction with the payment method



they used for their purchase in order to determine whether there is a significant relationship between the choice of payment and overall satisfaction with the payment method used for the purchase. If there is a substantial connection between the two variables, statistical analysis may be used to determine it.

## VI. CONCLUSION

In conclusion, this research on e-commerce payment methods highlights the importance of offering a variety of payment options to customers in order to enhance their shopping experience and increase the likelihood of completing transactions. The study found that credit and debit card payments remain the most popular payment methods among online shoppers, but alternative payment options such as e-wallets and mobile payments are becoming increasingly popular, especially among younger customers. The research also emphasizes the importance of security and trust in payment processing, as customers are more likely to abandon a purchase if they do not feel confident in the security of the payment process. Therefore, online retailers must invest in secure payment processing systems and ensure that their customers' personal and financial information is protected. Overall, the findings of this research suggest that online retailers must keep up with evolving payment trends and consumer preferences in order to remain competitive and successful in the e-commerce industry. By offering a variety of payment options and prioritizing security and trust, retailers can build strong relationships with their customers and ultimately drive sales and revenue growth.

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