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"A Study On User's Perception And Satisfaction Towards Digital Payment Services With SpecialReference To Ride-Hailing Services In Bengaluru Urban".

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Abstract: *This study explores users' perceptions and satisfaction with digital payment services within the context of ride-hailing services in Bengaluru Urban. By focusing on convenience, security, ease of use, and reliability, the research aims to identify key factors influencing user satisfaction. A mixed-method approach was employed, combining quantitative surveys and a literature review. A sample size of 130 was selected using convenience sampling and statistical test Chi-square test, Regression analyses were inculcated to check the impact and association of the variables. The findings reveal that most users prefer digital payment methods for their speed and seamless integration with ride-hailing apps. However, concerns regarding data privacy, transaction failures, and lack of customer support persist. Recommendations for service providers and policymakers include improving technological infrastructure, ensuring robust security measures, and offering better grievance redressal mechanisms. This research contributes to the growing body of knowledge on digital payments and offers valuable insights for improving the user experience in the dynamic urban transportation sector.*
Keywords: *Cash payments, Digital payments, Perception, Ride-Hailing Services, Satisfaction.*

I. Introduction

One of the country's first online payment systems dates back to 1996, when the Industrial Credit and Investment Corporation of India (ICICI) began to provide its clients online banking services in their retail offices. India's digital payment history, The National Payments Corporation of India (NPCI) began developing a more established payment and settlement infrastructure in the country in 2008. This has resulted in the creation of numerous products and services, including India's unique digital identity system aadhaar in 2010, and many others.

The need for online payment will almost certainly continue to rise, given how the real impact of its convenience has become an expected element of our online experience. The techniques by which we transact digitally have lately developed, including the ability to acquire goods and services using cryptocurrency and blockchain. The steady increase in smartphone usage and mobile wallets is also something that cannot be overlooked. According to Statista, roughly 950 million mobile payment transactions have occurred worldwide, with that figure predicted to climb to 1.31 billion users by 2023.

1.1. Digital payments

Digital payments are transactions made through virtual or online channels that do not entail the exchange of actual cash. Such a payment, also known as an electronic payment (e-payment), is the transfer of value from one payment account to another in which both the payer and the payee utilize an electronic device that can be reloaded.
Make transactions across bank accounts, simple bill payments, virtual card management, contactless payments, quick self-registration rewards, discounts analytics-based dashboards, and Chatbot.

1.2. Modes of Digital Payments

Digital payments come in a variety of forms and mechanisms.
Among these are debit/credit cards, web-based banking, cellular wallets, digital payment apps, Unified Payments Interface (UPI) service, Unstructured Supplementary Service Data (USSD), bank prepaid cards, immediate payment services, Real Time Gross Settlement (RTGS), National Electronic Fund Transfer (NEFT), Aadhar Enabled Payment System (AEPS), mobile banking, and so on.

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1.3. Various sectors using digital payments

An online transaction is an exchange that takes place without the usage of cash. A digital transaction requires the cooperation of multiple stakeholders, including significant financial firms and a variety of economic sectors.
Digital financial payments also improve transparency and record-keeping by generating a readily traceable electronic trail, which helps prevent document-related fraud. Entrepreneurs who accept digital payments have less cash on hand and thus have a decreased risk of theft. Digital payments have become increasingly popular across various service sectors due to their convenience, security, and speed. Here are some examples of digital payments that are being used in different service sectors: Transportation, Retail, Healthcare, Hospitality, Education, Entertainment, and Government.

1.4. Transportation

Digital payments are used in the transportation industry to purchase tickets for flights, trains, and buses. These payments can be made through mobile apps, online portals, or automated kiosks, making it easier for customers to purchase tickets and avoid long lines.
One such development is ride hailing services. Ride-hailing enables users to schedule tripsand pay for services via an app with a transportation network company (TNC), with the market including vehicle types such as motorbikes and vehicles.
As a whole, digital payments have transformed how numerous service sectors work, makingit easier for customers to pay for products and services in a safe and effective way. Electronic payment methods includes: Debit card, Credit card, E-wallet, Smart card and EFT.

II. Review of Literature

The research on customers demand for to use the digital platform in ride hailing services. The data was collected through survey based questionnaire and the paper studies about the behavioral factors of consumers in order of the usage of digital platforms **Do Giang Nguyen and Minh Tri Ha (2022)**. The researcher studied security and privacy in e-payment. A systematic review of the literature was conducted in order to know the perceived emphasis should be placed on the security and privacy of e-modes **Alaa Mahdi Sahi and Haliyana Khalid(2022)**. It studies ride-hailing services in developing countries. It focuses on passengers' behavior toward ride-hailing services by adapting explanatory factor analysis and explanatory factor analysis. The findings were that to improve users satisfaction with privacy, security, social protection, safety, and comfort **Ali N and Javid MA Et. Al (2022)**. The ride-hailing services in reference to Coimbatore city . The study was conducted with the help of a questionnaire. The aim of the paper was to learn about the various elements that have an impact on the behavior of drivers **R Shiji and Dekshithkumar J Et. Al (2021)**. The consumer attitude regarding e-payment mechanism. Statistical methods such as ANOVA and frequency analysis were used. According to the study's findings, the customer's education level influences e-payment adoption, **Shamsher Singh and Ravish Rana**. The research paper focuses on passengers' satisfaction and loyalty through the tunnel of perceived quality and value for money. Data was gathered through an online survey and was analyzed based on construct validity, convergent validity, and structural equation modeling. The researchers found that perceived quality and value for money indicate a positive influence on passenger satisfaction **Selim Ahmed Et. Al (2020)**. The usage satisfaction in mobile payments and the factors that affect it. A theory model was built on the factors by taking the key factors from Twitter and literature. The findings were that cost, usefulness, trust, social influence, credibility, information privacy, and responsiveness are the factors that satisfy usage of mobile payment services **Arpan Kumar Kar (2020)**. The urban customers' perceptions and worries regarding e-payment systems. Data was gathered through interviews, surveys, and statistical procedures such as percentage analysis, one-way ANOVA, independent sample t-tests, and so on **Dr M Sumathy and Vipin KP (2017)**.

III. Research Design

3.1. Statement of the Problem

The rapid growth of digital payment services has significantly transformed the way consumers make transactions, particularly in urban areas like Bengaluru. Ride-hailing services, as a prominent segment of the urban transportation landscape, have increasingly integrated digital payment options. However, the extent to which users perceive and are satisfied with these digital payment services within the context of ride-hailing remains underexplored. This research addresses this gap by investigating user perceptions, and satisfaction levels, in ride-hailing services in Bengaluru Urban.

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3.2. Objectives

- To infer the rate of user's acceptance of digital payment with ride hailing services inBengaluru.
- To scrutinize the user's perception towards digital payment with ride-hailing servicesin Bengaluru.
- To estimate the user's satisfaction towards digital payment with ride-hailing servicesin Bengaluru.

3.3. Research methodology

This study employed a descriptive design. Samples for the present research were gathered from respondents in Bengaluru. The sample size was set at 130. The information for this study was gathered from both primary and secondary sources. Primary data was gathered via a structured questionnaire produced on Google Forms. Secondary data was gathered from numerous websites, journals, and publications. The convenience sampling approach under the non - probability sampling method was employed to acquire the data. The population of interest in the research was drawn from Bengaluru. Percentage analysis, Regression analysis, Chi-square test, and Pie chart have been used as the analyzing tool.

IV. Need of the study

The rapid growth of digital payment services and the increasing popularity of ride-hailing services in Bengaluru Urban have created a significant need to understand user perceptions and satisfaction towards these digital payment systems. This study aims to fill this gap by investigating the factors influencing user adoption and satisfaction with digital payment services in the context of ride-hailing services. By examining user perceptions of security, convenience, and ease of use, this research will contribute to a better understanding of the factors driving the success of digital payments in the urban Indian context. Additionally, the findings of this study will provide valuable insights for policymakers, service providers, and researchers to develop strategies to further promote the adoption and usage of digital payment services in India.

V. Scope of the study

The scope of this study is to investigate the perceptions and satisfaction of users towards digital payment services, particularly in the context of ride-hailing services within Bengaluru Urban. The research will delve into various aspects of digital payments, including factors like security, convenience, and trust. Additionally, it will explore how these factors influence user satisfaction and overall experience with ride-hailing services. By understanding user preferences and challenges related to digital payments, this study aims to provide valuable insights for both service providers and policymakers to enhance the adoption and utilization of digital payment systems in the urban context of Bengaluru.

VI. Hypotheses

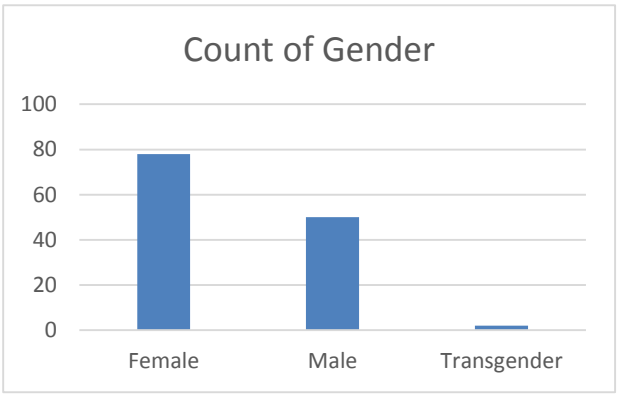
H0: There is no significant impact between the Perceived security of online payment services and user satisfaction.
H0: There is no significant association between satisfaction with ease of use of digital payment and Gender.

VII. Evaluation and interpretation

Table 1: Gender

Gender	Count of Gender
Female	78.00
Male	50.00
Transgender	2.00
Total	130.00

Fig 1: Gender distribution of respondents.



Interpretation: In a sample of 130 responses, 78.00% were female, 50.00% were male and 2.00% were transgender.

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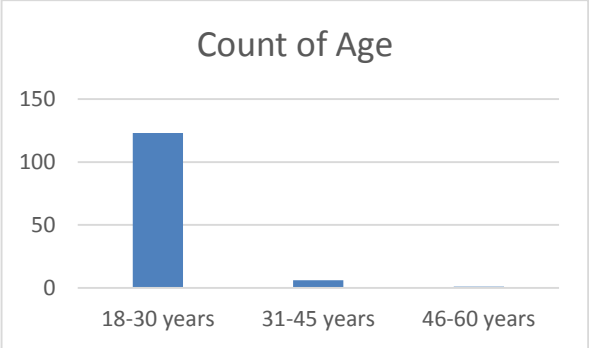
Table 2: Age of respondents

Age	Count of Age
18-30 years	123.00
31-45 years	6.00
46-60 years	1.00
Total	130.00

Fig 2: Age

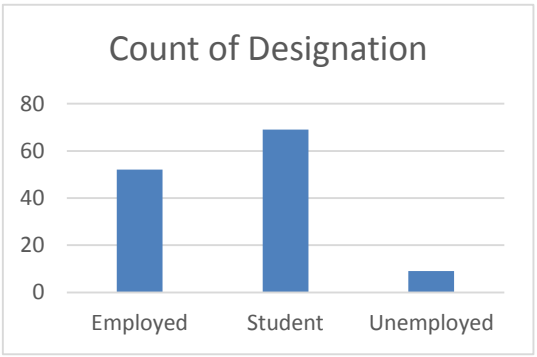


Interpretation: In a sample of 130 responses, 123.00% of the respondents come under the age group of 18-30 years category, 6.00% of the respondents come under the age group of 31-45 years, 1.00% of the respondents come under the age group of 46-60 years and it is shown in the figure that were no respondents from the other categories.

Table 3: Designation of respondents

Designation	Count of Designation
Employed	52.00
Student	69.00
Unemployed	9.00
Total	130.00

Fig 3: Designation

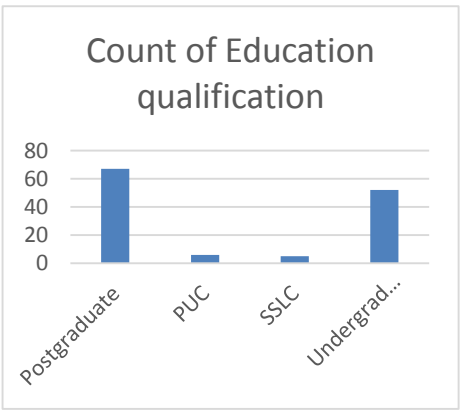


Interpretation: In a sample of 130 responses, 52.00% of the respondents are employed, 69.00% of the respondents are students and rest of the respondents is unemployed that is 9.00%.

Table 4: Education qualification of respondents

Education qualification	Count of Education qualification
Postgraduate	67.00
Undergraduate	52.00
PUC	6.00
SSLC	5.00
Total	130.00

Fig 4: Education



Interpretation: In a sample of 130 responses, 67.00% of the respondents are postgraduates, 52.00% of the respondents are undergraduates and rest of the responses are from other categories.

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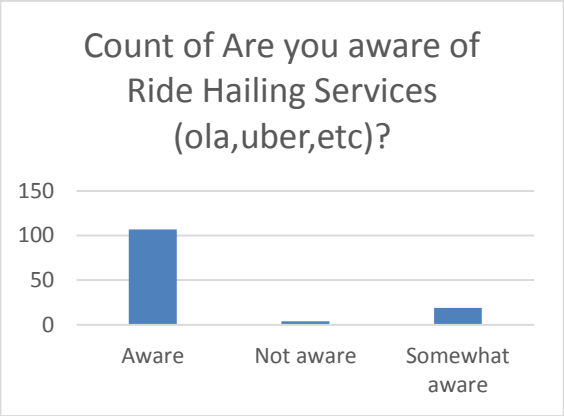
Table 5: Awareness of ride-hailing services

Are you aware of Ride-Hailing Services (ola, uber, etc)?	Count of Are you aware of Ride-Hailing Services (ola, uber, etc)?
Aware	107.00
Not aware	4.00
Somewhat aware	19.00
Total	130.00

Fig 5: Sources through which information about awareness of ride-hailing services is collected

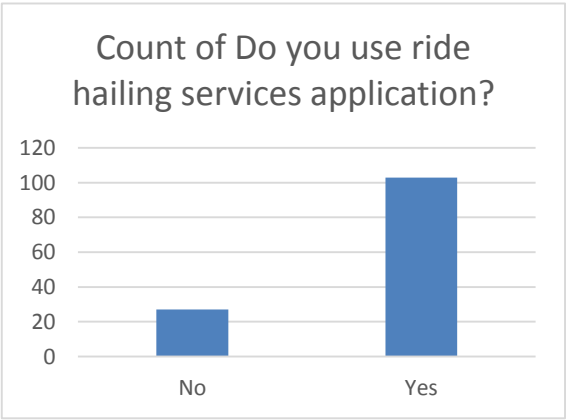


Interpretation: Based on the data collected on the awareness of ride-hailing services, it was found that most of the respondents that are 107.00% respondents are aware of the ride-hailing services. This is followed by 19.00% are somewhat aware and the rest of the respondents are not aware of the ride-hailing services. The data suggests that most people are aware of the ride-hailing services and very least are not aware.

Table 6: The total amount of ride-hailing service application users is obtained

Do you use ride hailing services application?	Count of Do you use ride hailing services application?
Yes	103.00
No	27.00
Total	130.00

Fig 6: The total amount of ride-hailing service application users is obtained



Interpretation: The data collected on the question "Do you use ride hailing services applications?" Indicates that a significant majority that is 103.00% of the sample population in Bengaluru have been using the ride-hailing services applications, while a minority that is 27.00% have not been using the applications. This shows that the majority of the population prefers to use ride-hailing service applications.

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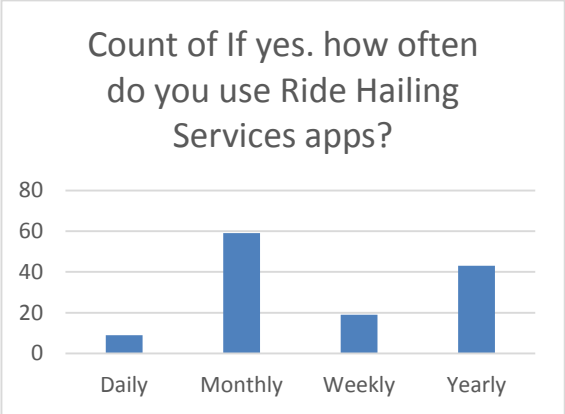
Table 7: How often the users prefer to use the ride-hailing services applications

If yes. how often do you use Ride Hailing Services apps?	Count of If yes. how often do you use Ride Hailing Services apps?
Daily	9.00
Weekly	19.00
Monthly	59.00
Yearly	43.00
Total	130.00

Fig 7: How often the users prefer to use the ride-hailing services applications



Interpretation: The data gathered shows that the majority of the people are likely to be using ride-hailing services applications monthly with the percentage of 59.00% and 43.00% preferring to use ride-hailing services yearly, 19.00% of respondents preferring weekly and others prefer daily. This shows that the population does prefer using ride-hailing services but either monthly or yearly rather than for daily use.

Table 8: Reasons for not using the ride hailing services applications

If no , select the reason?	Count of If no , select the reason?
Don't know how to use	14.00
Drivers don't accept	2.00
Due to high prices	25.00
others	77.00
price varies	1.00
Security purpose	9.00
technical issue	2.00
Total	130.00

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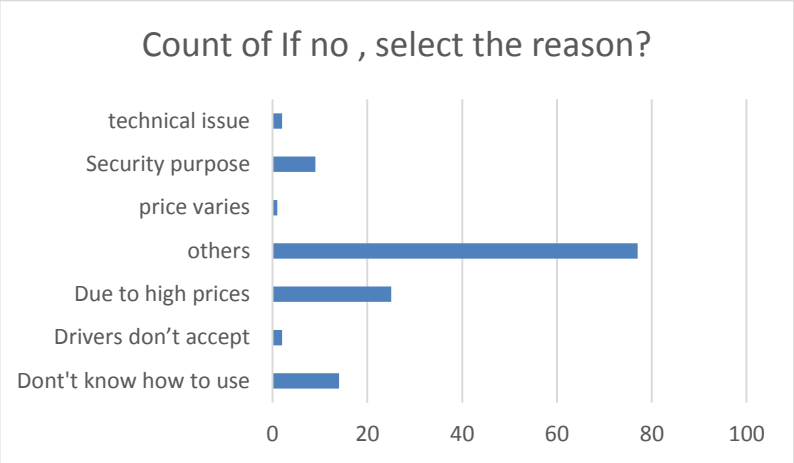
Figure 8: Reasons for not using the ride-hailing services applications

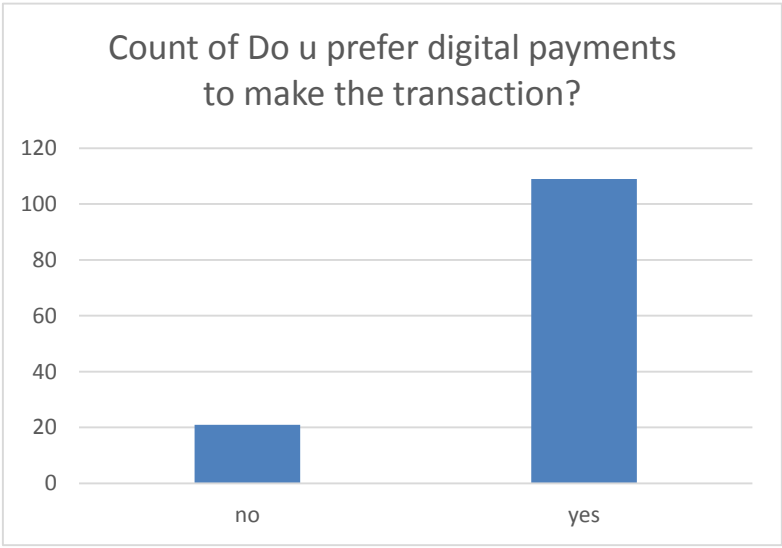


Interpretation: Based on the data collected, 7.8% of the respondents do not want to use ride hailing services because of lack of knowledge to use the application, 16.7% of the respondents do not want to use ride hailing services because of the high prices, 7.7% of the respondents do not want to use ride hailing services because of security purpose and rest of them do not use the applications for various reasons.

Table 9: Do the users prefer using digital payments with ride-hailing services

Do u prefer digital payments to make the transaction?	Count of Do u prefer digital payments to make the transaction?
yes	109.00
no	21.00
Total	130.00

Fig 9: Do the users prefer using digital payments with ride hailing services



Interpretation: Based on the data collected, 109.00% of the respondents prefer to make digital payments while using ride-hailing services and the rest of the respondents that is 21.00% of the respondents do not prefer to use digital payments while making transactions with ride-hailing service providers.

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Table 10: Association of Gender and Ease to use

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender * ease to use	130	100.0%	0	0.0%	130	100.0%

Gender * ease to use Crosstabulation

			ease to use					
			Highly disagree	**Disagree**	**Neutral**	**Agree**	**Highly agree**	Total
Gender	Male	Count	1	4	0	23	18	46
		Expected Count	.4	3.5	.7	27.6	13.8	46.0
	Female	Count	0	6	2	55	19	82
		Expected Count	.6	6.3	1.3	49.2	24.6	82.0
	Transgender	Count	0	0	0	0	2	2
		Expected Count	.0	.2	.0	1.2	.6	2.0
Total		Count	1	10	2	78	39	130
		Expected Count	1.0	10.0	2.0	78.0	39.0	130.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.696[a]	8	.165
Likelihood Ratio	12.739	8	.121
Linear-by-Linear Association	.003	1	.956
N of Valid Cases	130		

H0: There is no significant association between satisfaction with the ease of use of digital payment and Gender.
H1: There is no significant association between satisfaction with the ease of use of digital payment and Gender.

Interpretation: Based on the above table we can infer that there's no significant association or linear trend between the variables based on the Chi-Square tests. Since the p-values in all cases are above the standard significance threshold (0.05), we'll reject the alternate hypothesis and support the null hypothesis.

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Table 11: Regression Analysis

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	DParesecureanduseful[b]		Enter

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.517[a]	.267	.261	.922

a. Predictors: (Constant), DP are secure and useful

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.664	1	39.664	46.635	.000[b]
	Residual	108.866	128	.851		
	Total	148.531	129			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.514	.341		4.440	.000
	DParesecureanduseful	.577	.084	.517	6.829	.000

H0: There is no significant impact between the Perceived security of online payment services and user satisfaction.

H1: There is a significant impact between the Perceived security of online payment services and user satisfaction.

Interpretation: The model indicates a moderate positive relationship between the Perceived security of online payment services and the dependent variable. The predictor variable explains 26.7% of the variation in the dependent variable, and this relationship is statistically significant ($p < 0.05$). Since the p-value is below 0.05, we reject the null hypothesis. This means there is sufficient evidence to conclude that "Digital Payment is secure and useful" has a significant effect on user satisfaction.

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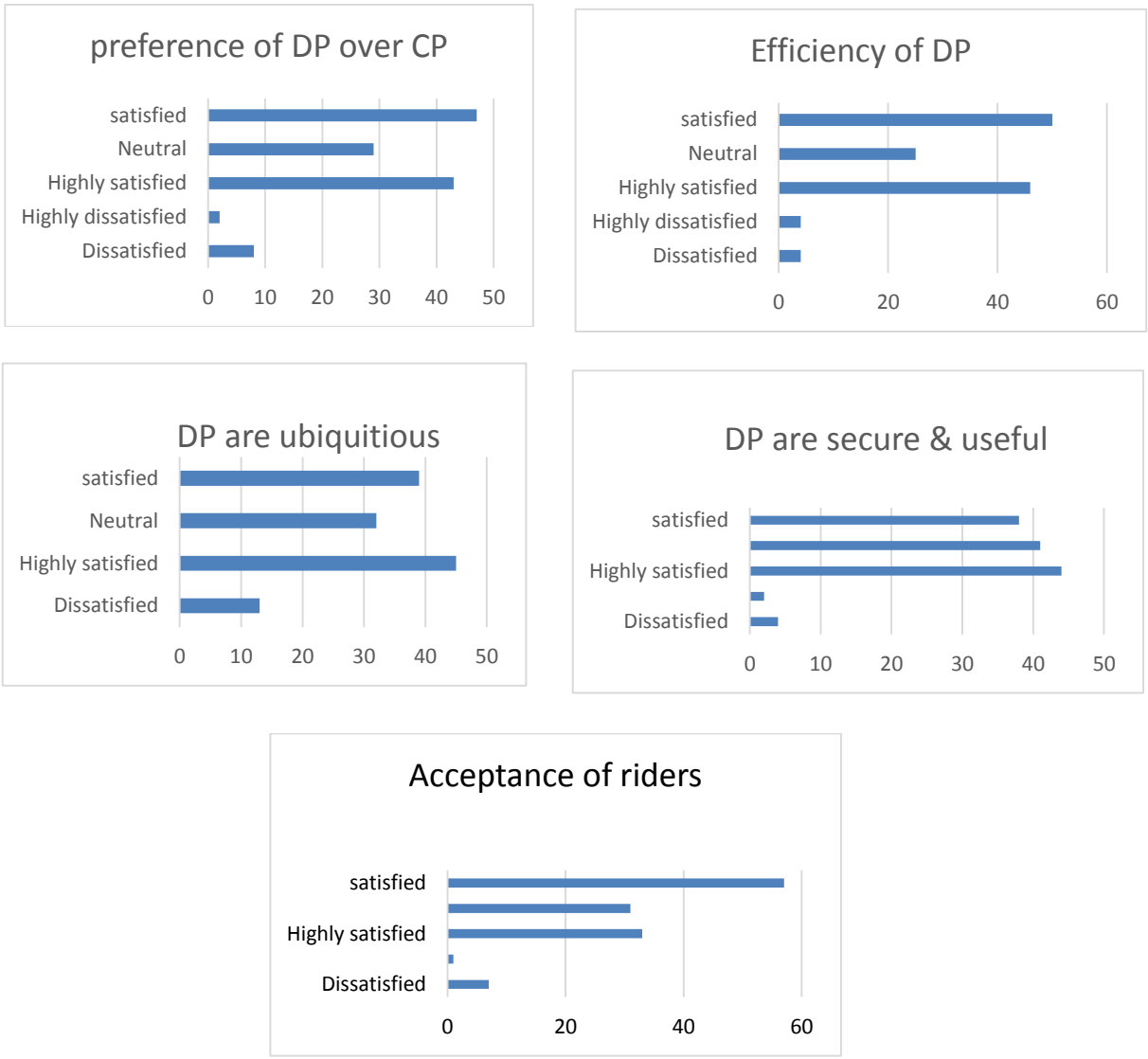
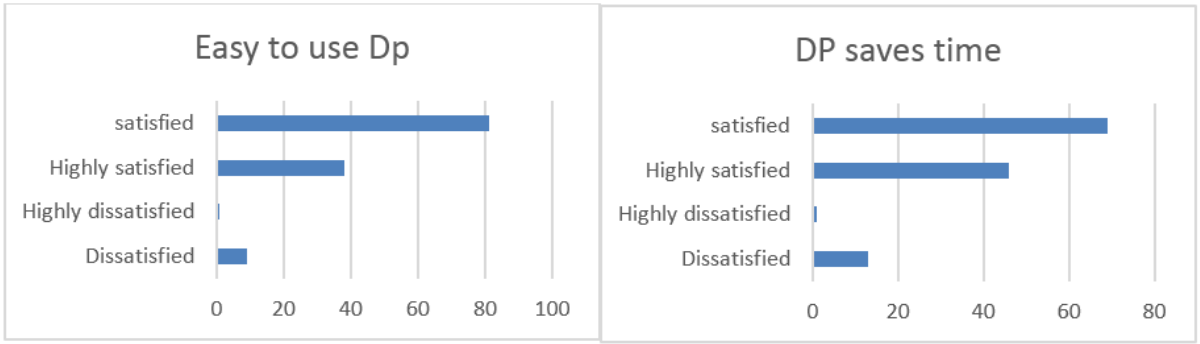
Figure 10: Users perception towards digital payment with ride-hailing services



Interpretation: The study shows that 47 respondents prefer digital payments over cash payments for ride-hailing services. Around 50 respondents agree that digital payments are more efficient, but 25 are neutral. Most respondents believe digital payments are ubiquitous and can be used 24/7. However, many feel insecure and unaccepted by riders. Despite these concerns, many respondents still prefer cash payments due to bank server issues, lack of internet connection, and security issues.

Figure 11: User satisfaction by using digital payment mode while using ride-hailing services



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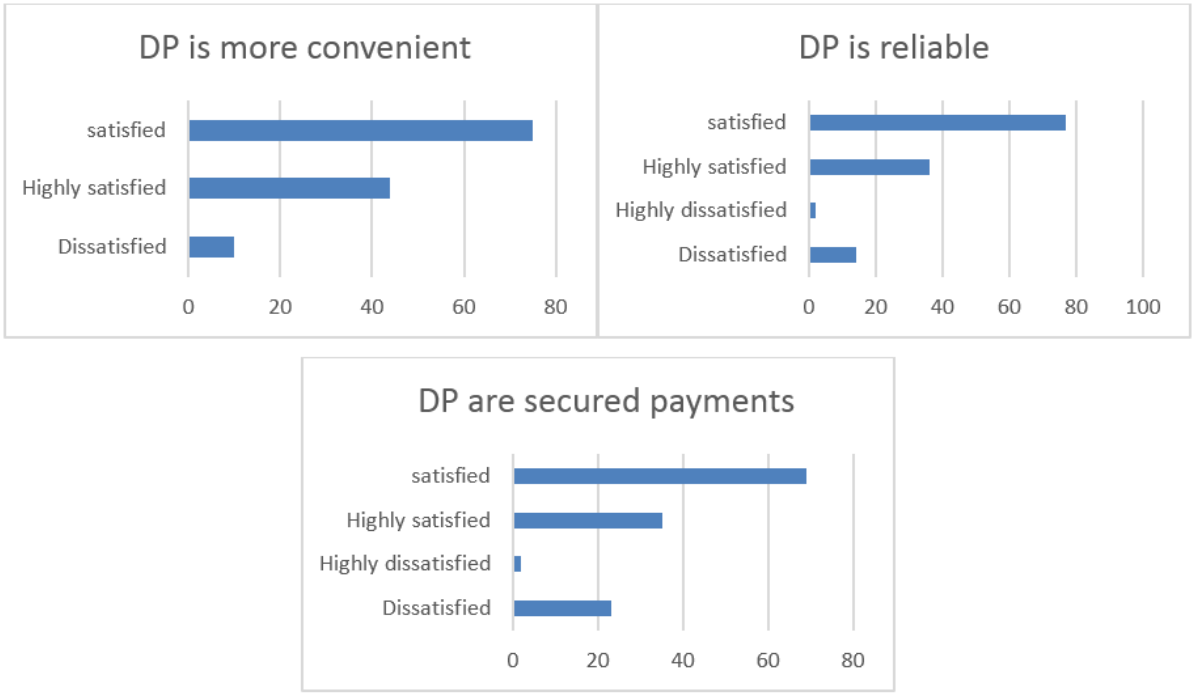

Interpretation: The study shows that 81 respondents are more satisfied with the ease of use of digital payments than cash payments for ride-hailing services, with 69 agreeing and a few disagreeing. Most respondents find digital payments more convenient, reliable, and secure. The majority of respondents believe digital payments are reliable and secure, with average respondents remaining neutral.

VIII. Findings, Suggestions, and Conclusion

8.1 Findings

The ride-hailing services were preferred by **78.00% of female respondents**. 86.00% of **urban consumers** consume the ride-hailing services. The study says that an average of **59.00%** of respondents keep active monthly. The **109.00%** of respondents opt for **digital payment systems** for payment options. The **69.00%** of respondents are students. The majority of the respondents are **Postgraduates and Graduates** which tells that the application is consumed by this set of people.

8.2 Suggestions

To give preference to cash rather than digital payment as it solves the issue from the end of user and Driver. To work on the **transaction speed and privacy**. To tackle the **bank server issues** preferably while using digital payment mode. To improve the **application performance** of ride-hailing services. To increase the **security** to enhance the **user's trust** to use digital payment mode. To provide a **cash back** option while the payment is unsuccessful but the amount is debited from the user's account. To provide **efficient knowledge** about how to use digital payment methods to users. The service providers can come up with an application that is **exclusive for students** where the **cost is minimal, user-friendly, discounts, vouchers for eateries, audiobooks, Books, and cash back options**. They can **tie up** with the **concerned companies** and provide these functions in the application which makes the visibility of Ride-hailing services public.

8.3 Conclusion

The study has given insights regarding the satisfaction and perception of consumers towards ride-hailing services which states that the ride-hailing services are preferred by **Females** from the urban areas and most of the users prefer **either cash or digital payments**. People who have opted for other payment modes than digital payment state that there are **security issues** while making a payment with ride-hailing services and many times payment fails due to the **bank server issues**. The service providers have to focus on generating **trust** among the users and

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tackle the **issues regarding privacy and bank servers** that prevail in digital paymentsystems. The advantage of using digital payment is that people find it easy to make a payment while not having cash in hand and also users may get **discounts using the coupons** provided by ride-hailing service providers for the digital payments.

IX. Limitations of the study

The study is limited to **Bengaluru Urban**, which may not represent user perceptions and satisfaction levels in other cities or rural areas. The findings are based on a **small sample size**, which may not capture the diversity of all digital payment service users in the city. The study focuses only on **digital payments** in the **context of ride-hailing services**. It does not cover **user experiences** with these services in **other domains**. **Satisfaction levels** are **subjective** and may not be fully captured through predefined survey questions or metrics.

9.1 Future Scope of the Research

The study does not include the perspectives of users who prefer **cash payments** or those who have not adopted digital payment services. The research took into consideration Consumer satisfaction but the researchers can look into the **Mercantile perspective**. Factors such as government regulations, network issues, or external economic conditions were not considered in depth but could influence user satisfaction. So, the researchers can focus on these gaps for future research.

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