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CUSTOMERS' TENDENCY TO ADOPT DIGITAL WALLETS IN MUMBAI CITY

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Abstract:

With the rapid digitization of financial services, digital wallets have emerged as a pivotal component in reshaping payment ecosystems worldwide. The researchers endeavored to explore the behavioral intentions of users in Mumbai City towards adopting digital wallets. The study employed a comprehensive research framework to analyze the factors influencing users' decisions to embrace digital wallets and to determine the association of perceived usefulness, perceived risk with behavioral intentions of users to adopt digital wallets. This study had considered two main factors for analyzing the behavioral intentions of users to adopt the usage of digital wallets viz.; Perceived usefulness and Perceived Risk.Ease and convenience, Time-saving, & 24/7 availability are the sub-factors of Perceived usefulness and Fear of losing money while making payments through digital wallets & Fear of duplicate apps or links to download digital wallets are the sub-factors of Perceived risk.The researchers collected the data through a Survey method (structured questionnaire) from a diverse sample of users across different demographic profiles in Mumbai. 297 Responses were collected and the adoption level of digital wallets, the behavioral intentions in choosing the digital wallets as the way of payment method, and their overall financial experiences were examined. Chi square test and Percentage analysis methods were used to analyze the data and test the hypotheses. Preliminary findings suggested that perceived usefulness w.r.t. Ease and convenience plays a crucial role in shaping users' behavioral intentions of users to adopt digital wallets. Whereas, perceived risk impacts the adoption level of users. This study contributes to the existing literature by providing a nuanced perspective on factors influencing the behavioral intentions of users to adopt digital wallet with reference to Perceived Usefulness and Perceived Risk in the dynamic urban landscape of Mumbai.

Keywords: Adoption of Digital Wallets, Behavioral Intentions, Perceived Usefulness, Perceived Risk

1. Introduction:

Among the innovations of digital technologies that have gained prominence in recent years in Mumbai, digital wallets stand out as a disruptive force, reshaping traditional payment methods and offering users unprecedented convenience and efficiency. In the context of this rapidly evolving digital economy, understanding the behavioral intentions of users towards adopting digital wallets becomes crucial for both researchers and stakeholders in the financial sector. Digital wallets, often referred to as mobile wallets or e-wallets, represent a fusion of financial services and technology, providing users with a secure and convenient platform for conducting transactions, making payments, and managing financial assets. The widespread adoption of smartphones, coupled with advancements in digital infrastructure, has laid the foundation for the proliferation of digital wallets. However, despite their potential to revolutionize the way individuals engage with financial services, the rate of adoption varies across different demographic groups and geographic locations. Mumbai, as the financial capital of India, offers a unique and complex environment for studying the adoption patterns of digital wallets. The city's diverse population, characterized by a blend of traditional and modern lifestyles, presents an intriguing context for investigating the factors influencing users' behavioral intentions towards digital wallet adoption. This research aims to contribute to the existing body of knowledge by delving into the intricacies of user perceptions, motivations, and concerns related to the adoption of digital wallets in Mumbai City.

2. Review of Literature:

Researchers and scholars have shown increasing interest in studying the behavioral intentions of users to adopt digital wallets in Mumbai City. Numerous studies have explored different facets of this phenomenon, offering insights into the impact of e-wallet adoption on consumer behavior and financial practices. The literature review that follows presents a summary of pivotal research in this domain.

Jain, M., & Sabharwal, P. (2019), emphasized that a considerable portion of transactions now occurs through mobile wallet applications. Their findings suggest that the younger demographic is particularly adept at transitioning from conventional cash transactions to electronic payments, emerging as the primary users of mobile wallets. The study underscored that factors such as legal procedures, limited awareness, lack of trust, and security concerns act as deterrents to the widespread adoption of mobile wallets. Importantly, the research revealed a notable correlation between individuals' age and their usage of digital wallets, while gender and occupation were found to be non-significant in this context.

Punwatkar, S., &Verghese, D. M. (2018), highlighted in their research that several factors, including 'economic value,' 'perceived usefulness,' 'perceived security,' 'privacy,' 'know-how,' and 'intention to use,' positively influence users' adoption of digital payments. The study's analysis did not find robust evidence linking 'perceived usefulness' to adoption. Participants expressed enthusiasm for this innovative payment technology, with 'perceived security' emerging as the primary factor influencing consumer behavior in the adoption of digital payments.

Chawla, D., & Joshi, H. (2019), investigated consumer attitudes and intentions regarding the usage of mobile wallets. The study revealed a prevailing preference for cash and debit cards over digital payment methods. Utilizing the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance, the research highlighted the significant influence of factors such as 'perceived ease of use,' 'perceived usefulness,' 'trust,' 'security,' 'facilitating conditions,' and 'lifestyle compatibility' on customers' attitudes towards mobile wallets. Notably, the awareness levels regarding mobile wallets are on the rise. The study emphasized that the perceived ease of using mobile wallets has a substantial direct impact on both perceived usefulness and the trust factor.

Singh, et al. (2020), employed the Technology Acceptance Model (TAM) to assess users' intentions to adopt digital services. The study emphasized various factors, including 'perceived ease of use,' 'perceived usefulness,' 'perceived risk,' 'attitude,' 'social influence,' 'innovation,' and 'stress,' to gauge consumer perceptions. Digitalization is swiftly becoming pervasive, with emerging mobile payment technologies facilitating secure credit/debit card transactions between customers and merchants. Notably, the Indian government has also initiated efforts to promote the adoption of these services.

3. Objectives:

1. To analyze the adoption level of Digital wallets by the users.
2. To analyze the factors influencing the behavioral intentions of users to adopt digital wallets with reference to Perceived Usefulness and Perceived Risk.
3. To determine the scope of using digital wallets by the users.
4. To determine the association between gender and perceived usefulness as a behavioral intention to adopt digital wallets.
5. To determine the association between gender and perceived risk as a behavioral intention to adopt digital wallets.

4. Hypotheses:

1. Null Hypothesis H0: There is no association between gender and perceived usefulness as a behavioral intention to adopt digital wallets.

Alternate Hypothesis H1: There is an association between gender and perceived usefulness as a behavioral intention to adopt digital wallets.

2. Null Hypothesis H0: There is no association between gender and perceived risk as a behavioral intention to adopt digital wallets.

Alternate Hypothesis H1: There is an association between gender and perceived risk as a behavioral intention to adopt digital wallets.

5. Research Methodology & Sampling Plan:

Research Methodology:	**Primary data:** It was collected by using a survey method through a structured questionnaire.
	Secondary data: It has been collected through research journals, research articles, thesis, internet, etc.
	Research Design: The study is descriptive in nature.
Sampling Plan:	**Sample Population:** Digital Wallet users above 20 years of age from Mumbai city
	Sample size: 297
	Sampling Method: Random Sampling
	Statistical tool for analysis: Chi-Square test and Percentage method

Limitations:
The data was collected from the digital wallet users of Mumbai region and the users below 21 years are not considered for the present study. The results cannot be generalized due to the limited sample population.

6. Data Analysis and Interpretation:

1. Adoption and usage of digital wallets with reference to the Gender and Age of the respondents:

Table no: 1 Gender and Age wise Adoption level of Digital wallets

Gender /Age	21-30 Years	31-40 Years	41-50 Years	51-60 Years	Above 60 Years	Total
Male	67 (44.97%)	53 (35.57%)	11 (7.38%)	13 (8.72%)	5 (3.36%)	149 (50.17%)
Female	74 (50%)	33 (22.30%)	10 (6.76%)	21 (14.19%)	10 (6.76%)	148 (49.83%)
Total	141 (47.47%)	86 (28.96%)	21 (7.07%)	34 (11.45%)	15 (5.05%)	**297 (100%)**

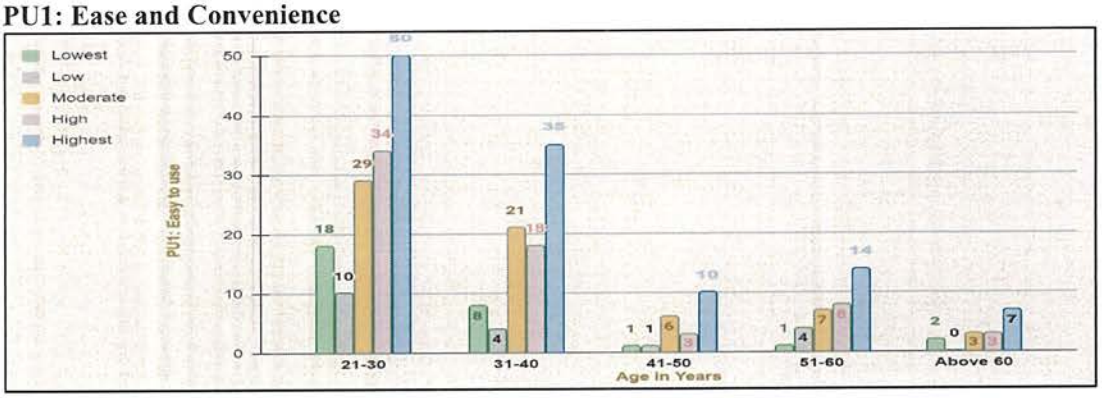
Source: Compiled from Primary data

From above Table no: 1 (Gender and Age wise Adoption level of Digital wallets), out of 297 respondents, the total Female respondents are 148 which is 49.83% and rest of 149 are Male respondents which is 50.17%. Out of 49.83% females, 50%, 22.30%, 6.76%, 14.19% and 6.76% belonged to the age group of 21-30, 31-40, 41-50, 51-60 and above 60 years respectively. Out of 50.17% males, 44.97%, 35.57%, 7.38%, 8.72% and 3.36% belonged to the age group of 21-30, 31-40, 41-50, 51-60 and above 60 years respectively.

2. Age wise factors influencing the adoption of digital wallets with reference to Perceived Usefulness (PU) and Perceived Risk (PR).

Graph no: 1 Age wise factors influencing the adoption of digital wallets w.r.t. Perceived Usefulness

PU1: Ease and Convenience

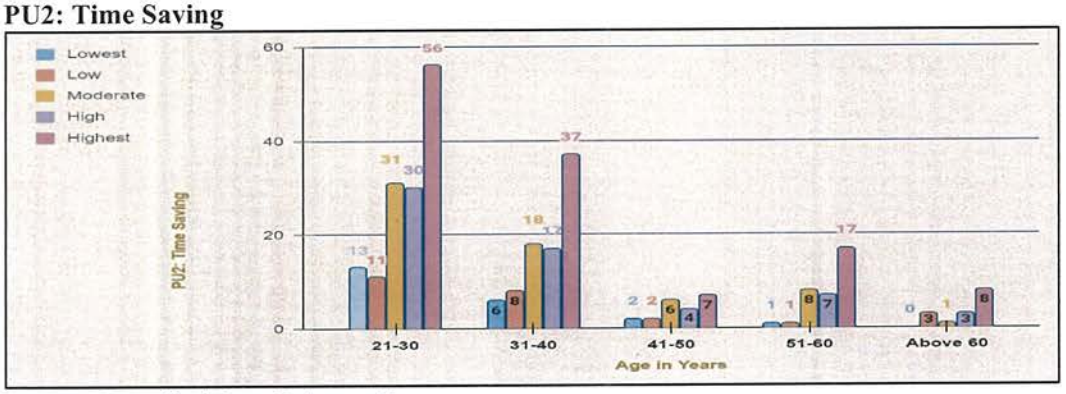


Source: Compiled from Primary data

From the above Graph 1, PU1 (Ease and Convenience) being the first sub-factor of Perceived usefulness, it was found that majority i.e. 16.84% of respondents from age group of 21-30 years were highly influenced by ease and convenience factor followed by 11.78%, 4.71%, 3.37% and 2.36% from age group of 31-40, 51-60, 41-50 and Above 60 years respectively.

Graph no: 2 Age wise factors influencing the adoption of digital wallets w.r.t. Perceived Usefulness

PU2: Time Saving

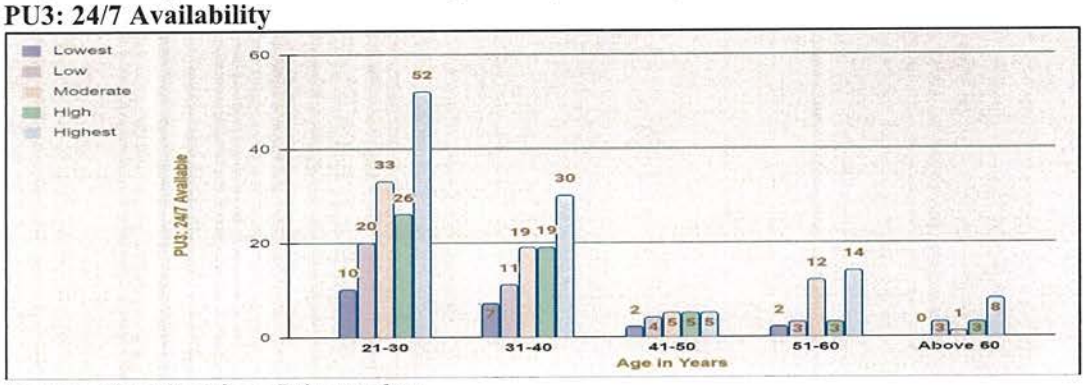


Source: Compiled from Primary data

From the above Graph 2, PU2 (Time Saving) being the second sub-factor of Perceived usefulness, it was found that majority i.e. 18.86% of respondents from age group of 21-30 years were highly influenced by time saving factor followed by 12.46%, 5.72%, 2.69% and 2.36% from age group of 31-40, 51-60, Above 60 and 41-50 years respectively.

Graphno: 3 Age wise factors influencing the adoption of digital wallets w.r.t. Perceived Usefulness

PU3: 24/7 Availability



Source: Compiled from Primary data

From the above Graph 3, PU3 (24/7 Availability) being the third sub-factor of Perceived usefulness, it was found that majority i.e. 17.51% of respondents from age group of 21-30 years were highly

influenced by 24/7 availability factor followed by 10.10%, 4.71%, 2.69% and 1.68% from age group of 31-40, 51-60, Above 60 and 41-50 years respectively.

Table no. 2 Age wise factors influencing the adoption of digital wallets w.r.t. Perceived Risk

PR1: Fear of losing money while doing payment through digital wallets

1 (Lowest), 5 (Highest)	1	2	3	4	5
21-30 Years	33 (11.11%)	26 (8.75%)	33 (11.11%)	33 (11.11%)	16 (5.38%)
31-40 Years	22 (7.41%)	20 (6.73%)	23 (7.74%)	8 (2.69%)	13 (4.38%)
41-50 Years	4 (1.35%)	7 (2.36%)	4 (1.35%)	2 (0.67%)	4 (1.35%)
51-60 Years	11 (3.70%)	5 (1.68%)	10 (3.37%)	3 (1.01%)	5 (1.68%)
Above 60 Years	1 (0.34%)	3 (1.01%)	7 (2.36%)	1 (0.34%)	3 (1.01%)

Source: Compiled from Primary data

From the above Table no: 2 PR1 (Fear of losing money while doing payment through digital wallets) being the first sub-factor of Perceived risk, it is clear that the majority of people i.e. 11.11% belonging to 21- 30 years of age were least scared of losing money while doing payment through digital wallets followed by 7.41%, 3.70%, 1.35% and 0.34% from age group of 31-40, 51-60, 41-50 and Above 60 respectively.

Table no. 3 Age wise factors influencing the adoption of digital wallets w.r.t. Perceived Risk

PR2: Fear of duplicate apps or links to download the digital wallet apps

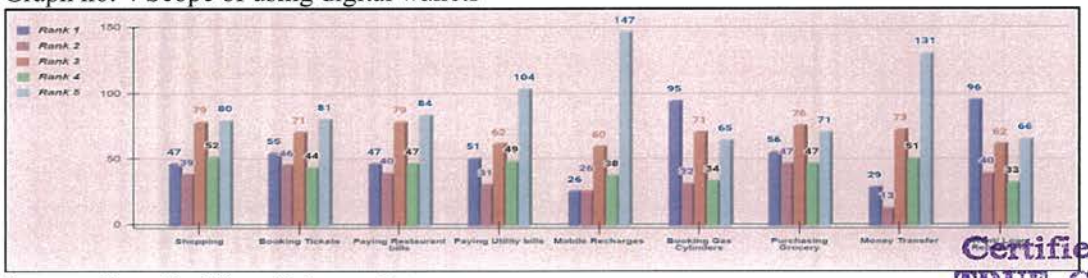
1 (Lowest), 5 (Highest)	1	2	3	4	5
21-30 Years	36 (12.12%)	23 (7.74%)	35 (11.78%)	25 (8.42%)	22 (7.41%)
31-40 Years	28 (9.43%)	7 (2.36%)	21 (7.07%)	18 (6.06%)	12 (4.04%)
41-50 Years	4 (1.35%)	4 (1.35%)	6 (2.02%)	2 (0.67%)	5 (1.68%)
51-60 Years	8 (2.69%)	4 (1.35%)	6 (2.02%)	9 (3.03%)	7 (2.36%)
Above 60 Years	2 (0.67%)	1 (0.34)	3 (1.01%)	6 (2.02%)	3 (1.01%)

Source: Compiled from Primary data

From the above Table no: 3 PR2 (Fear of duplicate apps or links to download the digital wallet apps) being the second sub-factor of Perceived risk, it is clear that the majority of people i.e. 12.12% belonging to 21- 30 years of age were least scared of duplicate apps or links followed by 9.43%, 2.69%, 1.34% and 0.67% from age group of 31-40, 51-60, 41-50 and Above 60 respectively. Whereas, 22 respondents i.e. 7.41% from the age group of 21-30 years were still highly scared of duplicate apps or links.

3. The Scope of using digital wallets:

Graph no: 4 Scope of using digital wallets



Source: Compiled from Primary data

From the above Graph 4 (Scope of using digital wallets), it is evident that the biggest reason for choosing the digital wallets by majority of the respondents i.e. 147 is the mobile recharges followed by 131 for money transfer, 104 for paying utility bills, 84 for paying restaurant bills, 81 for booking tickets, 8o for shopping. Purchasing groceries was also one of the reasons where customers would prefer to pay through digital wallets. Whereas, booking gas cylinders and loan/ rent repayment were not that important reasons for choosing to pay through digital wallets.

Hypotheses Testing:

1.H0: There is no association between gender and perceived usefulness as a behavioral intention to adopt digital wallets.

H1: There is an association between gender and perceived usefulness as a behavioral intention to adopt digital wallets.

(Chi-Square Test)

1a. Association between gender and perceived usefulness w.r.t. to PU1: Ease and Convenience

Table no. 4 Chi-Square Test

Results			
	Male	Female	Row Totals
1	20 (15.05) [1.63]	10 (14.95) [1.64]	30
2	14 (9.53) [2.09]	5 (9.47) [2.11]	19
3	33 (33.11) [0.00]	33 (32.89) [0.00]	66
4	34 (33.11) [0.02]	32 (32.89) [0.02]	66
5	48 (58.20) [1.79]	68 (57.80) [1.80]	116
Column Totals	149	148	**297(Grand Total)**

Source: Compiled from Primary data

The chi-square statistic is 11.1021. The p-value is 0.02544. The result is significant at $p < 0.05$.

Table no. 4 (Calculation of Chi-Square test between Gender and perceived usefulness (PU1) as a behavioral intention to adopt digital wallets) showed, since the p-value (0.02544) is less than 0.05, the null hypothesis is rejected and an alternate hypothesis is accepted i.e.there is an association between gender and perceived usefulness with reference to Ease and Convenience factor as a behavioral intention to adopt digital wallets.

1b. Association between gender and perceived usefulness w.r.t. to PU2: Time saving

Table no. 5 Chi-Square Test

Results			
	Male	Female	Row Totals
1	13 (11.04) [0.35]	9 (10.96) [0.35]	22
2	11 (12.54) [0.19]	14 (12.46) [0.19]	25
3	36 (32.11) [0.47]	28 (31.89) [0.48]	64
4	29 (30.60) [0.08]	32 (30.40) [0.08]	61
5	60 (62.71) [0.12]	65 (62.29) [0.12]	125
Column Totals	149	148	**297 (Grand Total)**

Source: Compiled from Primary data

The chi-square statistic is 2.4315. The p-value is 0.656947. The result is not significant at $p < 0.05$.

Table no. 5 (Calculation of Chi-Square test between Gender and perceived usefulness (PU2) as a behavioral intention to adopt digital wallets) showed, since the p-value (0.656947) is more than 0.05, the null hypothesis is accepted and an alternate hypothesis is rejected i.e.there is no association between gender and perceived usefulness with reference to Time Saving factor as a behavioral intention to adopt digital wallets.

1c. Association between gender and perceived usefulness w.r.t. to PU3: 24/7 Availability

Table no. 6 Chi-Square Test

Results			
	Male	Female	Row Totals
1	13 (10.54) [0.58]	8 (10.46) [0.58]	21
2	17 (20.57) [0.62]	24 (20.43) [0.62]	41
3	42 (35.12) [1.35]	28 (34.88) [1.36]	70
4	28 (28.09) [0.00]	28 (27.91) [0.00]	56
5	49 (54.68) [0.59]	60 (54.32) [0.59]	109
Column Totals	149	148	**297 (Grand Total)**

Source: Compiled from Primary data

The chi-square statistic is 6.2924. The p-value is 0.17835. The result is not significant at $p < 0.05$.

Table no. 6 (Calculation of Chi-Square test between Gender and perceived usefulness (PU3) as a behavioral intention to adopt digital wallets) showed, since the p-value (0.17835) is more than 0.05, the null hypothesis is accepted and an alternate hypothesis is rejected i.e.there is no association between gender and perceived usefulness with reference to 24/7 Availability factor as a behavioral intention to adopt digital wallets.

2. H0: There is no association between gender and perceived risk as a behavioral intention to adopt digital wallets.

H1: There is an association between gender and perceived risk as a behavioral intention to adopt digital wallets.

2a. Association between gender and perceived risk w.r.t. to PR1: Fear of losing money while doing payment through digital wallets

Table no. 7 Chi-Square Test

Results			
	Male	Female	Row Totals
1	44 (35.62) [1.97]	27 (35.38) [1.99]	71
2	32 (30.60) [0.06]	29 (30.40) [0.06]	61
3	41 (38.63) [0.15]	36 (38.37) [0.15]	77
4	20 (23.58) [0.54]	27 (23.42) [0.55]	47
5	12 (20.57) [3.57]	29 (20.43) [3.59]	41
Column Totals	149	148	**297 (Grand Total)**

Source: Compiled from Primary data

The chi-square statistic is 12.6307. The p-value is 0.013228. The result is significant at $p < 0.05$.

Table no. 7 (Calculation of Chi-Square test between Gender and perceived risk (PR1) as a behavioral intention to adopt digital wallets) showed, since the p-value (0.013228) is less than 0.05, the null hypothesis is rejected and an alternate hypothesis is accepted i.e.there is an association between gender and perceived risk with reference to Fear of losing money while doing payment through digital wallets factor as a behavioral intention to adopt digital wallets.

2b. Association between gender and perceived risk w.r.t. to PR2: Fear of duplicate apps or links to download the digital wallet apps

Table no. 8 Chi-Square Test

Results			
	Male	Female	Row Totals
1	51 (39.13) [3.60]	27 (38.87) [3.62]	78
2	19 (19.57) [0.02]	20 (19.43) [0.02]	39
3	34 (35.62) [0.07]	37 (35.38) [0.07]	71
4	30 (30.10) [0.00]	30 (29.90) [0.00]	60
5	15 (24.58) [3.74]	34 (24.42) [3.76]	49
Column Totals	149	148	**297 (Grand Total)**

Source: Compiled from Primary data

The chi-square statistic is 14.9012. The p-value is 0.004911. The result is significant at $p < 0.05$.

Table no. 8 (Calculation of Chi-Square test between Gender and perceived risk (PR2) as a behavioral intention to adopt digital wallets) showed, since the p-value (0.004911) is less than 0.05, the null hypothesis is rejected and an alternate hypothesis is accepted i.e.there is an association between gender and perceived risk with reference to Fear of duplicate apps or links to download the digital wallet apps factor as a behavioral intention to adopt digital wallets.

7. Findings:

→ In terms of Perceived Usefulness, Ease and convenience factor (PU1) was found to be associated with gender i.e. the females preferred to adopt digital wallets more because of ease and convenience factor. Whereas, there is no association between gender and perceived usefulness with reference to Time Saving (PU2) and 24/7 availability (PU3) factors as a behavioral intention to adopt digital wallets.

→ In terms of Perceived Risk, both Fear of losing money (PR1) & Fear of duplicate apps (PR2) found to be associated with gender i.e. Females were more scared of losing money and duplicate apps which affects their behavioral intention to adopt digital wallets.

→ Majority of respondents from the age group of 21-30 years were highly influenced by ease and convenience factor (16.84%), time saving factor (18.86%) & 24/7 availability factor (17.51%).

→ People belonging to 21- 30 years of age were least scared of losing money while doing payment through digital wallets and duplicate applications. Whereas, people above the age of 30 years were found to be scared of losing money and duplicate apps.

8. Conclusion:

The study investigated the behavioral intentions of users in Mumbai City regarding the adoption of digital wallets, revealing gender-related preferences in perceived usefulness and perceived risk factors, as well as age-specific influences on attitudes towards ease, convenience, and concerns about security issues associated with digital wallet usage. The significant findings were: The perceived usefulness of digital wallets, particularly in terms of ease and convenience, played a crucial role in influencing users' behavioral intentions. Gender differences were observed, with females demonstrating a higher preference for digital wallets due to the ease and convenience factor. However, no significant association was found between gender and perceived usefulness concerning time-saving and 24/7 availability. The study also highlighted the impact of perceived risk on users' intentions to adopt digital wallets. Females, in particular, expressed higher concerns about the fear of losing money and encountering duplicate apps, which negatively influenced their behavioral intentions. Age emerged as a significant factor influencing users' perceptions and behaviors. Respondents in the 21-30 age group were notably influenced by factors such as ease and convenience, time-saving, and 24/7 availability. This age group exhibited lower concerns about losing money and duplicate apps compared to individuals above the age of 30, who displayed heightened apprehension in these areas. Overall, the study underscored the importance of considering

demographic factors, especially gender and age, in understanding the behavioral intentions of users towards digital wallets.

9. Suggestions:

1. Ensure that the digital wallet application features an intuitive and user-friendly interface.
2. Simplify the registration process and enhance overall app navigation for user convenience.
3. Communicate and underscore robust security measures, including two-factor authentication, encryption, and secure transactions, to instill trust.
4. Incorporate educational content within the app to elucidate how the digital wallet safeguards user data and transactions.
5. Provide exclusive incentives, discounts, or cashback to encourage consistent adoption and usage of the digital wallet.
6. Execute marketing initiatives to enlighten users about the advantages of embracing digital wallets, focusing on aspects like convenience, speed, and security.
7. Establish a responsive and supportive customer support system to promptly address user concerns.
8. Regularly enhance the digital wallet by introducing new features and improvements based on user feedback.
9. Feature positive testimonials and reviews from satisfied users prominently within the app.

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