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Perception of the Impact of Digital Wallets, Mobile Payments, and Contactless Payment Technologies Among the Senior Citizens Residing in Bangalore in Regard to Purchases, Travel, and Household Expenses

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ABSTRACT

This research delves into the adoption of digital payment technologies—digital wallets, mobile payments, and contactless methods—among senior citizens in Bangalore, India, within the context of a rapidly digitalizing economy. Despite the potential of these technologies for enhanced financial accessibility, their impact on the elderly, a group often overlooked in tech discussions, is not well understood. The study, targeting seniors aged 50 and above through a questionnaire-based approach, aims to fill this gap by examining their perceptions, challenges, and adoption rates, thereby offering insights into their integration into everyday financial activities. With 100 participants surveyed, the research uncovers a growing interest in digital payments among seniors, albeit with significant adoption variances. Key factors influencing acceptance include ease of use, security, and financial independence potential, while notable barriers encompass technological unfamiliarity and security concerns, indicating the need for more accessible, senior-friendly digital payment solutions. The findings show a balanced gender distribution among participants, primarily in the early stages of seniority (50–60 years), and a middle-income concentration, suggesting a ripe demographic for digital payment initiatives but also revealing sporadic digital payment use due to technological and security hurdles. In conclusion, the study highlights the necessity of developing inclusive, secure, and user-friendly digital payment platforms for seniors, urging a collaborative effort among policymakers, tech developers, and the community to boost seniors' financial autonomy and inclusion. It offers valuable insights for tailoring tech innovations to better meet senior needs, contributing to a more inclusive digital financial ecosystem, and outlining actionable strategies for enhancing senior financial empowerment and confidence in the digital economy.

INTRODUCTION

The integration of digital payment technologies within the fabric of global finance has ushered in a transformative era characterized by efficiency, inclusivity, and innovation. This evolution, while predominantly embraced by the younger and middle-aged demographics, presents a unique set of

challenges and opportunities for senior citizens, particularly in technologically advancing societies. The research paper titled "Perception of the Impact of Digital Wallets, Mobile Payments, and Contactless Payment Technologies Among Senior Citizens Residing in Bangalore in Regards to Purchases, Travel, and Household Expenses" delves into this intricate domain, exploring the adoption and utilization of these technologies among the elderly population in Bangalore, India. This introduction aims to contextualize the significance of the study within the broader landscape of digital finance, highlighting the research objectives, methodology, and anticipated contribution to the field. The inception of digital payment systems marks a significant departure from traditional financial transaction mechanisms, redefining the essence of monetary exchanges in the 21st century. As these technologies gain ubiquity, facilitating a broad spectrum of transactions, their implications stretch across diverse demographics, affecting each in unique ways. Among these, senior citizens in developing countries like India find themselves at a crossroads, contending with both the potential benefits and the barriers posed by the digital financial landscape. Bangalore, with its vibrant technological ecosystem and status as a hub for tech innovation, offers an intriguing context for examining the interplay between senior citizens and contemporary digital payment systems. Digital payment technologies, encompassing digital wallets, mobile payments, and contactless payment mechanisms, are at the forefront of this financial revolution. For senior citizens, the rapid evolution of these technologies necessitates an exploration of their adoption, utilization, and the associated challenges. This demographic often grapples with obstacles such as usability issues, a steep learning curve, and concerns over security and privacy. Addressing these challenges is paramount to understanding the broader implications of digital financial inclusion for senior citizens, which encompasses not only the facilitation of transactions but also the potential to significantly impact their social and economic well-being.

The study employs a comprehensive, questionnaire-based methodology targeting senior citizens aged 50 and above residing in Bangalore. This methodological approach is designed to capture a nuanced understanding of their experiences with digital payment technologies, thereby shedding light on adoption rates, usage patterns, and accessibility issues. Through this investigation, the research aspires to contribute valuable insights into the digital financial landscape as experienced by the senior population, offering a basis for developing more inclusive and user-friendly digital payment solutions tailored to their needs. Furthermore, the research underscores the importance of a collaborative effort among technology developers, policymakers, and the community at large to enhance financial inclusion across all age groups. By addressing the unique challenges faced by senior citizens in embracing digital financial technologies, the study advocates for initiatives aimed at promoting a more inclusive digital financial ecosystem. In conclusion, this research endeavors to provide a comprehensive analysis of the adoption and utilization patterns of digital payment technologies among senior citizens in Bangalore. By doing so, it aims to enrich academic discourse on the subject and serve as a catalyst for stakeholders in the digital financial ecosystem to develop and implement strategies that cater to the needs of this demographic. Through informed policy recommendations and targeted interventions, this study seeks to advance the cause of financial inclusion and accessibility for seniors, ultimately contributing to the creation of a more equitable and inclusive digital economy for all age groups. This introduction sets the stage for a detailed exploration of the intersection between senior citizens and digital payment technologies, highlighting the study's significance, methodology, and potential contributions to the field of digital finance.

REVIEW OF LITERATURE

The adoption of digital payment technologies has seen rapid growth worldwide, revolutionizing the way financial transactions are conducted. While these technologies have gained widespread acceptance among younger populations, their impact on senior citizens, typically aged 65 and above, is a topic of growing interest. This review of the literature aims to explore the various dimensions of how digital wallets, mobile payments, and contactless payment technologies have influenced the lives of senior citizens.

Factors Influencing Adoption: Research has identified several factors influencing adoption rates among seniors, including a lack of familiarity with technology, security concerns, and resistance to change (Melenhorst et al., 2006).

Usability Challenges: Seniors often face usability challenges with digital payment apps and devices due to small fonts, complex interfaces, and unfamiliar touch gestures (Aguilera et al., 2010).

User-Centered Design: Studies emphasize the importance of user-centered design for digital payment applications. Design modifications that consider the needs of older users, such as larger fonts and simplified navigation, can significantly improve usability (Smith et al., 2019).

Security Perceptions: Senior citizens express concerns about the security of digital wallets and mobile payments, fearing fraud, identity theft, and financial loss (Aloudat & Michael, 2011).

Security Education: Educational programs and awareness campaigns are recommended to address these concerns and build trust in digital payment technologies (Wästlund et al., 2009).

Budgeting and Tracking: Digital payment technologies offer seniors tools to better manage their finances, providing access to transaction histories and budgeting features (Shin & Hwang, 2019).

Improved Financial Literacy: Some studies suggest that seniors who use these technologies may have improved financial literacy and are more likely to save (Lusardi & Tufano, 2015).

Enhanced Independence: Digital payments enable seniors to access goods and services independently, which can enhance their sense of autonomy (Smith & Anderson, 2020).

Social Inclusion: Conversely, the lack of digital payment adoption can lead to social isolation, especially during times when digital transactions are the primary option (Chen & Chan, 2011).

Effectiveness Evaluation: Research is ongoing to evaluate the effectiveness of such initiatives in increasing senior adoption rates (Smith et al., 2021).

The impact of digital wallets, mobile payments, and contactless payment technologies among senior citizens is a multifaceted topic that spans adoption rates, usability challenges, security concerns, financial management, independence, healthcare access, and government initiatives. This literature review provides a comprehensive overview of existing research on these topics.

highlighting the need for user-centered design, security education, and tailored interventions to maximize the benefits of digital payment technologies for senior citizens while addressing their unique challenges and concerns.

STATEMENT OF THE PROBLEM

This research aims to investigate the adoption and use of digital payment technologies among seniors, acknowledging the complexity of factors influencing their engagement. It will explore cognitive, behavioral, and socio-economic barriers and the implications of digital payment adoption for older adults. As digital payment methods like digital wallets, mobile payments, and contactless technologies become more prevalent, it's crucial to understand how seniors, especially those over 65, interact with these

innovations amidst a digital economy boom. Despite widespread adoption among younger and middle-aged demographics, there's a gap in understanding how seniors perceive and navigate digital payment technologies. Challenges for seniors include lower technological literacy, reliance on traditional banking, limited digital device access, security concerns, and unfamiliarity with digital interfaces. Socio-economic factors such as income, education, and geographic location, along with cultural and social influences, shape their attitudes and behaviors toward these technologies.

The research will employ quantitative surveys, qualitative interviews, and ethnographic studies to analyze seniors' adoption and usage patterns, identifying drivers and barriers, preferences, and the broader social and economic implications of digital payment adoption. It will assess digital payment technology adoption levels among seniors, factors affecting their adoption willingness, usage patterns, platform accessibility, security perceptions, financial literacy, and the impact on their independence and quality of life. This study seeks to enhance understanding of the impact of digital payment technologies on seniors' financial well-being and quality of life, promote financial inclusion and accessibility, and thus foster a more equitable and inclusive digital economy.

OBJECTIVE

1. To assess how senior citizens in Bangalore adopt and perceive digital payment technologies.
2. To examine the impact of digital payments on seniors' financial activities in Bangalore.
3. To identify seniors' knowledge sources and understanding of digital payments.
4. To examine the senior citizens' preferences for using digital payment methods.

SCOPE OF THE STUDY

The study is designed to delve into the perceptions, impacts, and adoption rates of digital wallets, mobile payments, and contactless payment technologies among senior citizens in Bangalore, with a particular focus on their use for purchases, travel, and managing household expenses. Targeting the senior demographic within the urban confines of Bangalore, the research aims to uncover the unique challenges and benefits these individuals encounter when engaging with digital payment systems. It seeks to understand the attitudes, barriers to adoption, and overall comfort level of senior citizens with these modern financial tools. Through a combination of surveys and interviews, the study will collect both qualitative and quantitative data to analyze usage patterns, preferences, and the perceived reliability of digital payments in their daily lives. This research is expected to provide valuable insights into how digital payment technologies can be adapted or improved to meet the specific needs of the senior population, facilitating a smoother transition to digital financial management for this demographic.

METHODOLOGY

Our methodological approach is anchored in a questionnaire-based research design, selected for its effectiveness in engaging our target demographic—senior citizens—and ensuring comprehensive coverage across the desired sample size. This design facilitates a descriptive study, allowing for the collection of quantitative data essential for grasping the nuanced perspectives of senior citizens on digital wallets, mobile payments, and contactless payments technologies. Employing a survey-based methodology enabled us to capture valuable insights that are extensive in scope and detailed in content.

To guarantee the relevance and accuracy of our collected data, we utilized purposive sampling techniques, focusing our efforts on senior citizens residing in Bangalore. This demographic was specifically chosen

due to their potential exposure to and access to digital and contactless payment technologies, thus providing valuable insights into the adoption and use of these technologies. Our sampling criteria targeted individuals aged 50 and above to encompass a broad spectrum of experiences and attitudes towards digital financial services.

The process of participant selection was rigorously designed to include a diverse array of senior citizens. By setting the age criterion at 50 years and older, our aim was to capture varied levels of familiarity and interaction with digital payment technologies, thereby enriching our dataset with a wide range of perspectives on the impact of these technologies across different segments of the elderly population. Our sample size was determined to be 100 individuals, a figure strategically chosen to yield a substantial and informative dataset, facilitating a nuanced analysis of senior citizens' perceptions and experiences with these modern financial tools.

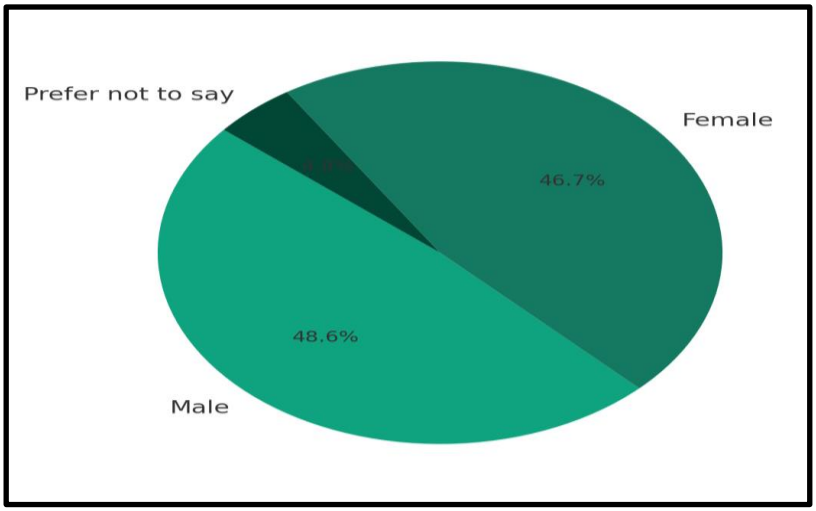
Through this methodological framework, our research aspires to unveil significant insights into the patterns of adoption, perceived benefits, and obstacles encountered by senior citizens in adopting digital and contactless payment technologies. This investigation not only advances academic discussion on the topic of digital financial inclusion but also proposes actionable recommendations for improving the accessibility and user-friendliness of these technologies for the elderly.

DATA ANALYSIS

Table 1 Showing gender of the respondents

Sl.No	Gender	Responses	Percentage (%)
1	Male	51	48.6
2	Female	49	46.7
3	Prefer not to say	5	4.8

Graph 1 Showing gender of the respondents



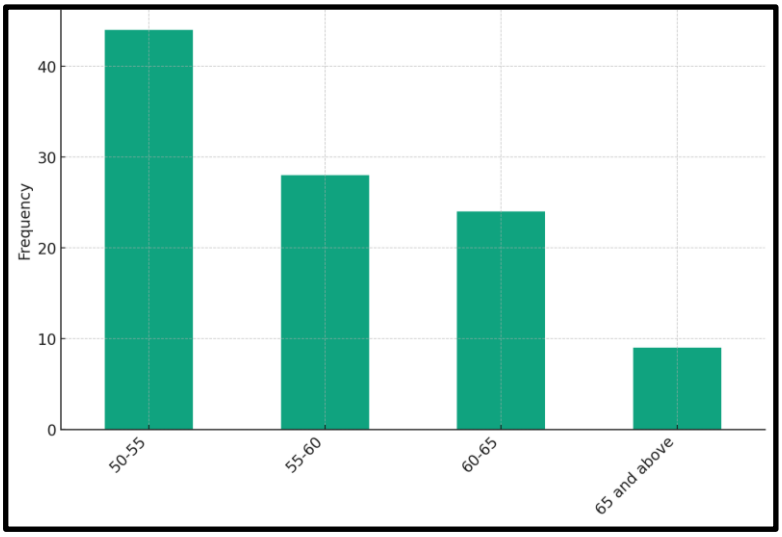
Analysis & Interpretation

The sample consists of 51 males (48.6%), 49 females (46.7%), and 5 individuals who prefer not to disclose their gender (4.8%). This shows a nearly balanced gender representation among the participants.

Table 2 Showing age group of the respondents

SI.NO	AGE GROUP	RESPONSES	PERCENTAGE
1	50 - 55	44	41.9
2	55 - 60	28	26.7
3	60 - 65	24	22.9
4	65 & above	9	8.6

Graph 2 Showing age group of the respondents



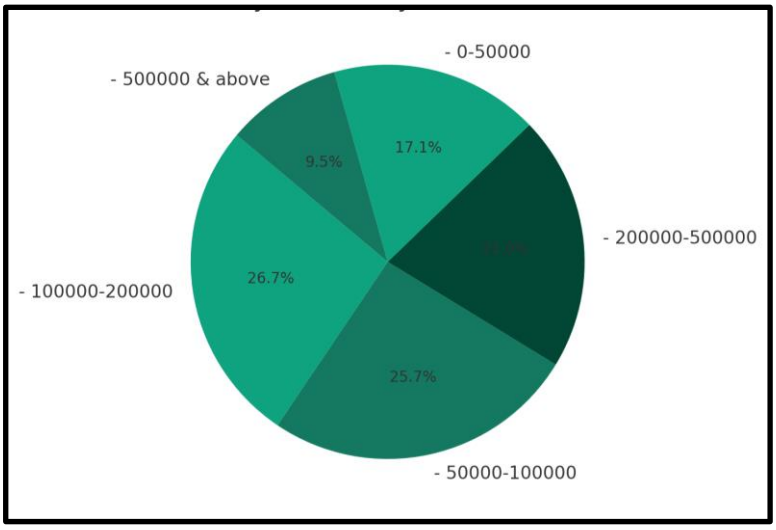
Analysis & Interpretation

Respondents are primarily in the age group of 50-55 years (41.9%), followed by 55-60 (26.7%), 60-65 (22.9%), and those aged 65 and above (8.6%). This indicates that the majority of participants are in the early stages of senior citizenship.

Table 3 Showing monthly household income respondents

SI.NO	Monthly income	Responses	Percentage
1	0 - 500000	18	17.1
2	500000 - 1000000	27	25.7
3	1000000 - 2000000	28	26.7
4	2000000 - 5000000	22	21
5	5000000 & above	10	9.5

Grasph 3 Showing monthly household income respondents



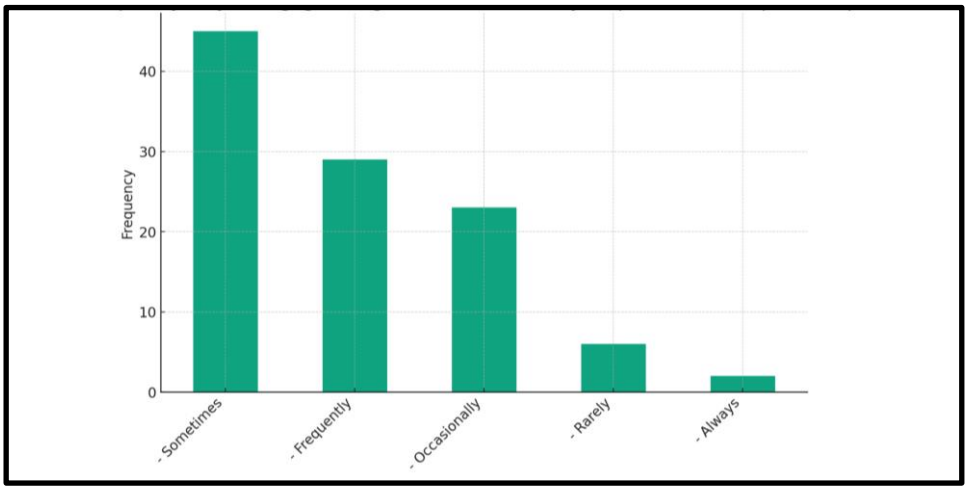
Analysis & Interpretation

Income distribution shows a relatively even spread across different income brackets, with the largest group earning between 1,000,000 and 2,000,000 (26.7%), followed closely by those earning 500,000 to 1,000,000 (25.7%), and 2,000,000 to 5,000,000 (21%).

Table 4 Showing frequent use of engage in professional purchase respondents

SI.NO	Frequently use	Responses	Percentage
1	Rarely	6	5.7
2	Occasionally	23	21.9
3	Sometimes	45	42.9
4	Frequently	29	27.6
5	Always	2	1.9

Graph 4 Showing frequent use of engage in professional purchase respondents



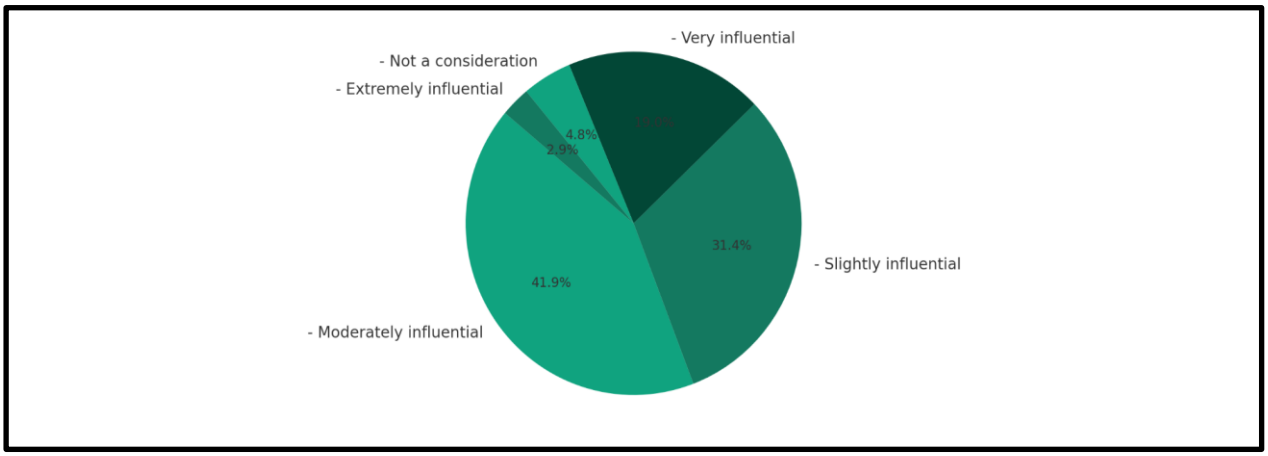
Analysis & Interpretation

A significant portion of respondents use digital payments sometimes (42.9%) and frequently (27.6%) for professional purchases. This suggests a high adoption rate of digital payment methods for business transactions among the participants.

Table 5 Showing impact of decision in high value transactions respondents

SI.NO	IMPACT DECISION	RESPONSES	PERCENTAGE
1	Not a consideration	5	4.8
2	Slightly influential	33	31.4
3	Moderately influential	44	41.9
4	Very influential	20	19
5	Extremely influential	3	2.9

Graph 5 Showing impact of decision in high value transactions respondents



Analysis & Interpretation

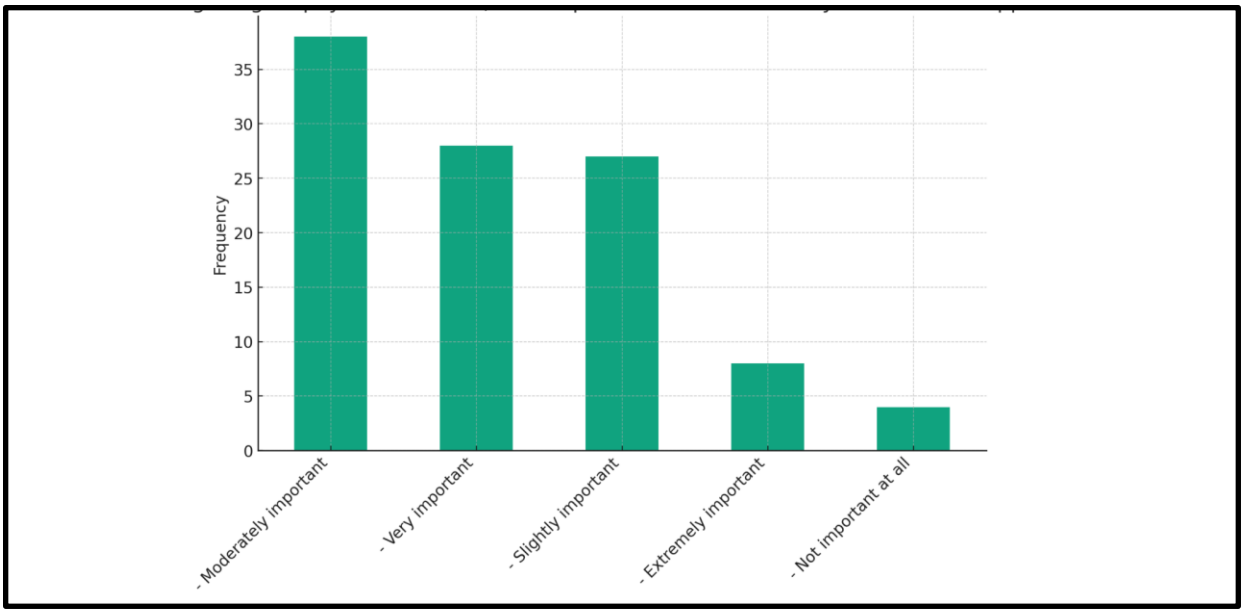
Digital payments are considered moderately (41.9%) to very influential (19%) in decision-making for high-value transactions, indicating the importance of digital payment methods in financial decision-making processes.

Table 6 Showing availability of customer support and assistance respondents

SI.NO	Customer support	Responses	Percentage
1	Not important at all	4	3.8
2	Slightly important	27	25.7
3	Moderately important	38	36.2

4	Very important	28	26.7
5	Extremely important	8	7.6

Graph 6 Showing availability of customer support and assistance respondents



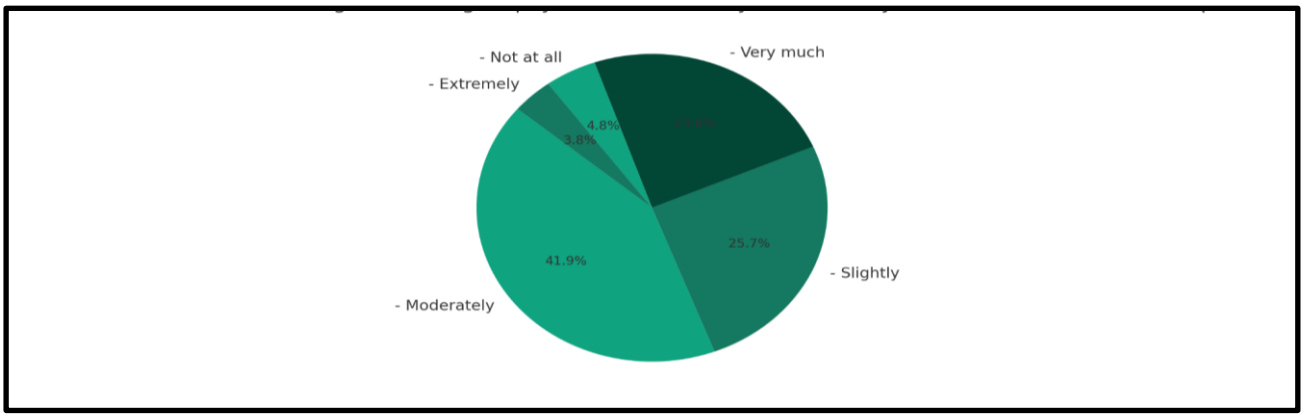
Analysis & Interpretation

The importance of customer support is recognized, with "moderately important" (36.2%) and "very important" (26.7%) being the prevalent responses, highlighting its significance in the service experience.

Table 7 Showing to what extent the integration of digital payments enhanced your efficiency in business-related travel expenses.

SI.NO	Efficiency	Responses	Percentage
1	Not at all	5	4.8
2	Slightly	27	25.7
3	Moderately	44	41.9
4	Very much	25	23.8
5	Extremely	4	3.8

Graph 7 Showing to what extent the integration of digital payments enhanced your efficiency in business-related travel expenses.



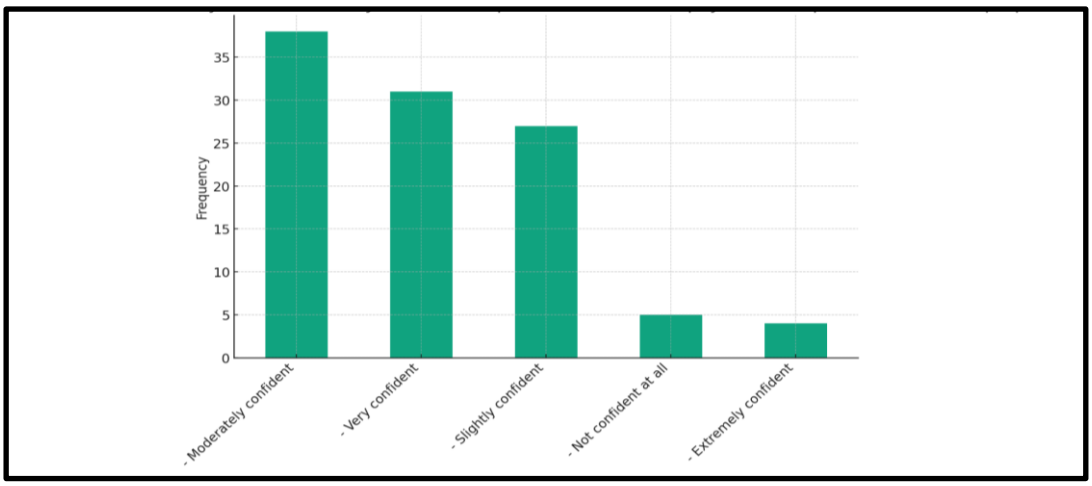
Analysis & Interpretation

The integration of digital payments has moderately (41.9%) to very much (23.8%) enhanced efficiency in managing business-related travel expenses, showcasing the utility of digital payments in professional contexts.

Table 8 Showing how confident are respondents in the security measures implemented in mobile payments for professional travel purposes

SI.NO	Confidence	Responses	Percentage
1	Not at all	5	4.8
2	Slightly	27	25.7
3	Moderately	38	36.2
4	Very much	31	29.5
5	Extremely	4	3.8

Graph 8 Showing how confident are respondents in the security measures implemented in mobile payments for professional travel purposes



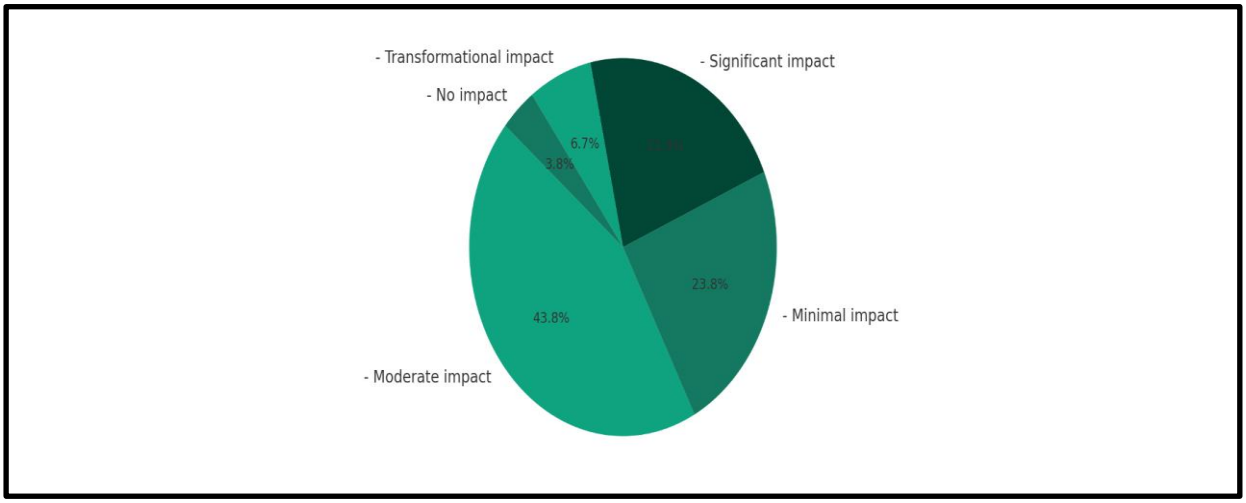
Analysis & Interpretation

Confidence levels in the security of mobile payments are moderately high, with 36.2% feeling moderately confident and 29.5% very much confident, emphasizing the trust placed in the security measures of digital payment platforms.

Table 9 Showing how has the adoption of contactless payment methods positively impacted the respondents professional travel routine

SI.NO	Impact	Responses	Percentage
1	No Impact	4	3.8
2	Minimal	25	23.8
3	Moderate	46	43.8
4	Significant	23	21.9
5	Transformational	7	6.7

Graph 9 Showing how has the adoption of contactless payment methods positively impacted the respondents professional travel routine



Analysis & Interpretation

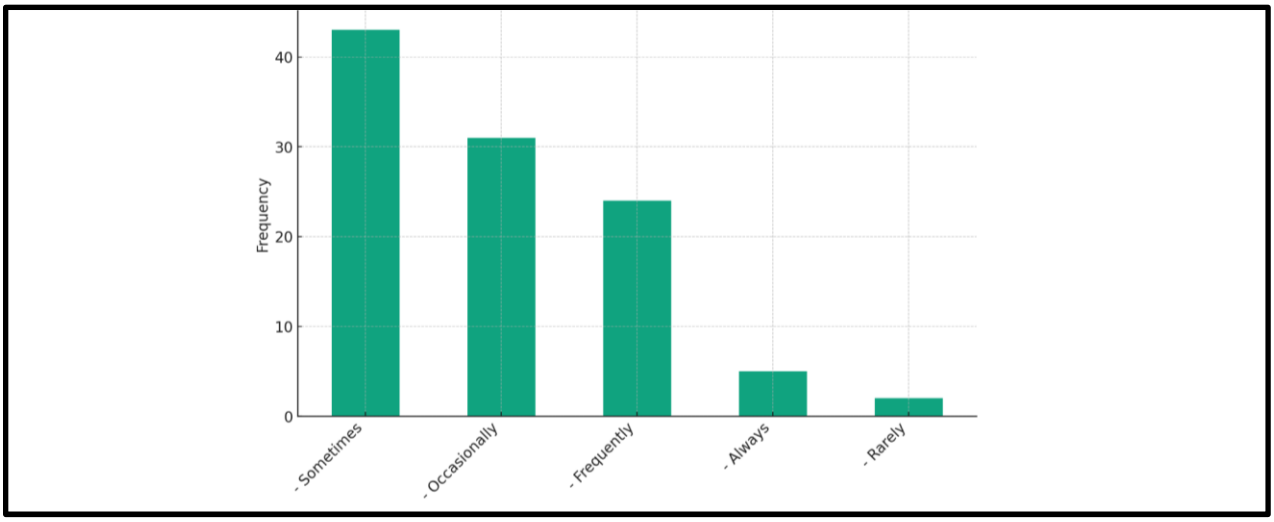
Contactless payment methods have had a moderate (43.8%) to significant (21.9%) positive impact on respondents' professional travel routines, indicating the convenience and efficiency offered by these payment methods.

Table 10 Showing how frequently the respondents rely on digital payment methods for managing recurring professional or business-related expenses

SI.NO	Frequency	Responses	Percentage
1	Rarely	2	1.9

2	Occasionally	31	29.5
3	Sometimes	43	41
4	Frequently	24	22.9
5	Always	5	4.8

Graph 10 Showing how frequently the respondents rely on digital payment methods for managing recurring professional or business-related expenses



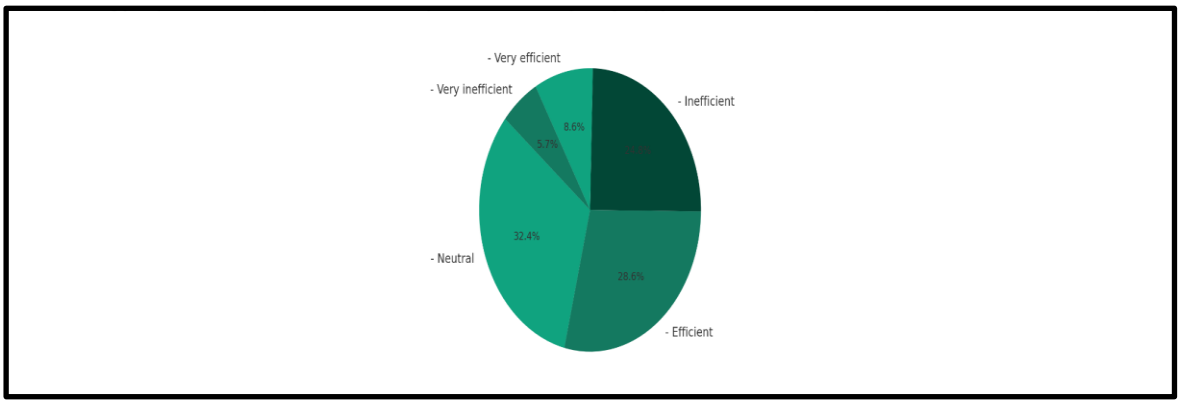
Analysis & Interpretation

There is a high reliance on digital payments for managing recurring professional expenses, with 41% using them sometimes and 22.9% frequently. This reliance reflects the integration of digital payments into the regular financial management practices of respondents.

Table 11 Showing rate the efficiency of digital payments for streamlining financial processes related to business operations of the respondents

Sl.No	Efficiency	Responses	Percentage (%)
1	Very inefficient	6	5.7
2	Inefficient	26	24.8
3	Neutral	34	32.4
4	Efficient	30	28.6
5	Very efficient	9	8.6

Graph 11 Showing rate the efficiency of digital payments for streamlining financial processes related to business operations of the respondents



Analysis & Interpretation

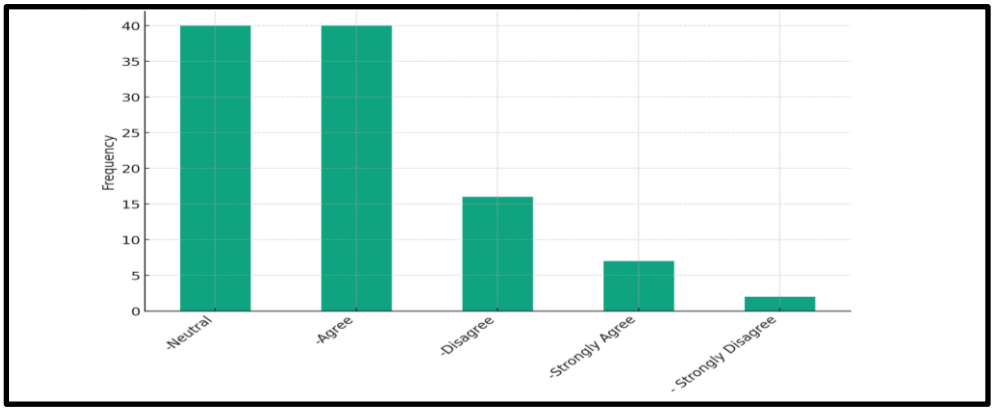
Opinions on the efficiency of digital payments for business operations are varied, with the highest percentage of respondents feeling neutral (32.4%), followed by those finding it efficient (28.6%) and inefficient (24.8%). This suggests a mixed reception regarding the role of digital payments in enhancing business financial processes.

Table 12

Showing Digital wallets provide a convenient and secure way for senior citizens to make purchases of the respondents

Sl.No	Agree/Disagree	Responses	Percentage (%)
1	Strongly Disagree	2	1.9
2	Disagree	16	15.2
3	Neutral	40	38.1
4	Agree	40	38.1
5	Strongly Agree	7	6.7

Graph 12 Showing Digital wallets provide a convenient and secure way for senior citizens to make purchases of the respondents



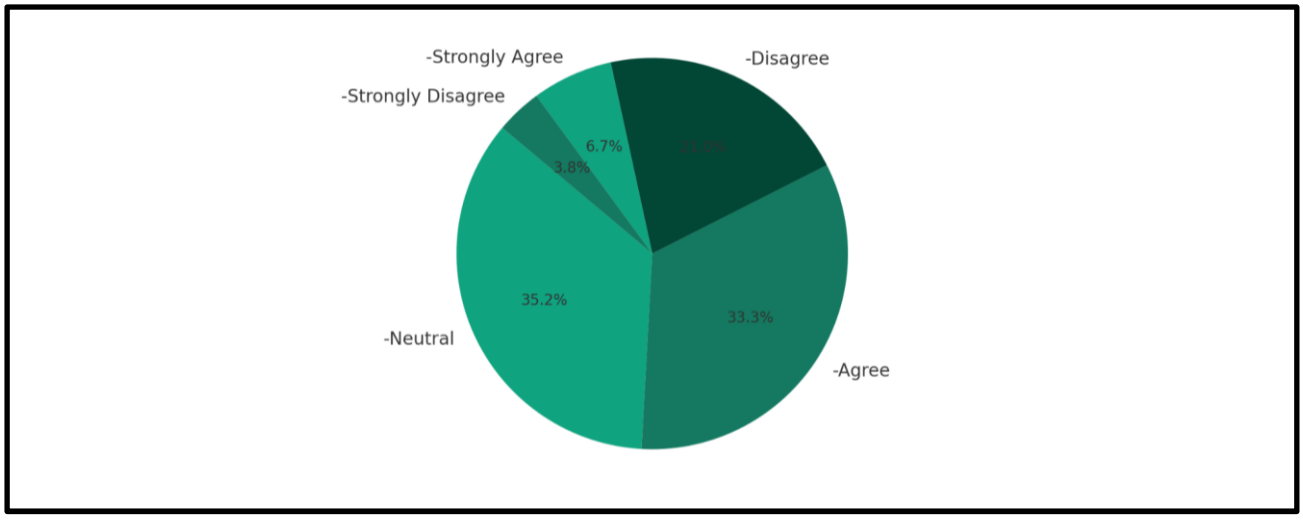
Analysis & Interpretation

The majority of respondents agree (38.1%) or strongly agree (6.7%) that digital wallets provide a convenient and secure way for senior citizens to make purchases, indicating a positive perception of digital wallets' usability and safety among this demographic.

Table 13 Showing Contactless payment technologies are preferable for senior citizens when making household expenses of the respondents

Sl.No	Agree/Disagree	Responses	Percentage (%)
1	Strongly Disagree	4	3.8
2	Disagree	22	21
3	Neutral	37	35.2
4	Agree	35	33.3
5	Strongly Agree	7	6.7

Graph 13 Showing Contactless payment technologies are preferable for senior citizens when making household expenses of the respondents



Analysis & Interpretation

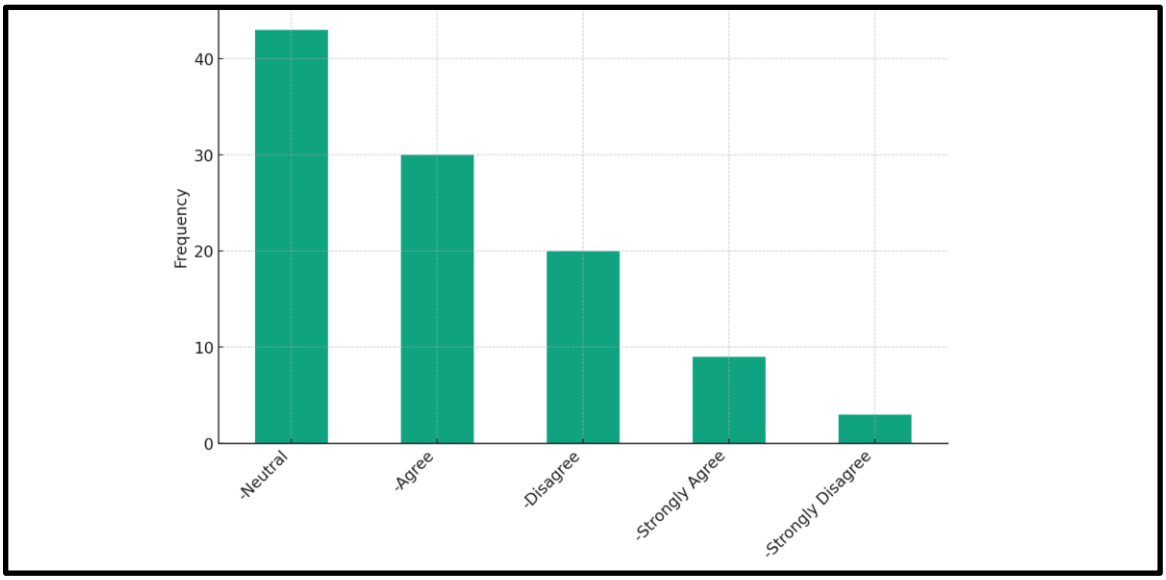
Views on contactless payments are mixed, with the largest groups being neutral (35.2%) and agreeing (33.3%) that contactless technologies are preferable for managing household expenses, showing an openness to adopting such technologies among senior citizens.

Table 14 Showing Senior citizens in Bangalore find it challenging to adapt to digital wallets for their day-to-day purchases of the respondents

Sl.No	Agree/Disagree	Responses	Percentage (%)
1	Strongly Disagree	3	2.9

2	Disagree	20	19
3	Neutral	43	41
4	Agree	30	28.6
5	Strongly Agree	9	8.6

Graph 14 Showing Senior citizens in Bangalore find it challenging to adapt to digital wallets for their day-to-day purchases of the respondents



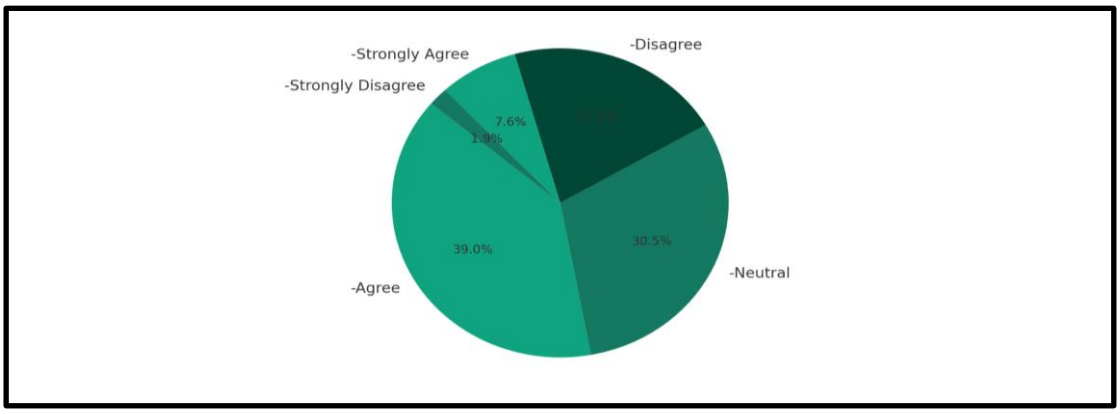
Analysis & Interpretation

A significant number of respondents feel neutral (41%) about the challenges of adapting to digital wallets, while a considerable portion agree (28.6%) that it is challenging, highlighting some difficulties faced by seniors in embracing these technologies for daily transactions..

Table 15 Showing Mobile payments are a time-saving solution for senior citizens to manage their financial transactions of the respondents

Sl.No	Agree/Disagree	Responses	Percentage (%)
1	Strongly Disagree	2	1.9
2	Disagree	22	21
3	Neutral	32	30.5
4	Agree	41	39
5	Strongly Agree	8	7.6

Graph 15 Showing Mobile payments are a time-saving solution for senior citizens to manage their financial transactions of the respondents



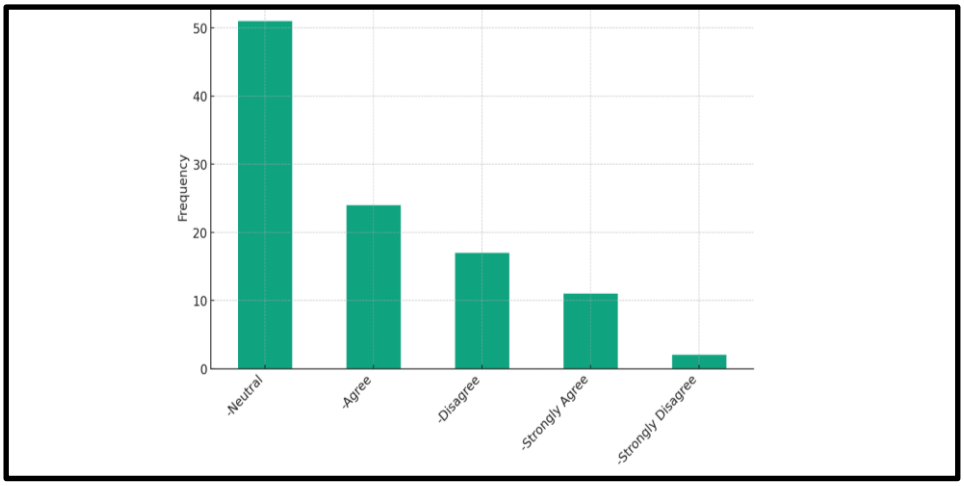
Analysis & Interpretation

Many respondents are neutral (39%) or agree (30.5%) that mobile payments save time in managing financial transactions, reflecting an appreciation for the efficiency of mobile payment solutions among senior citizens.

Table 16 Showing The use of digital wallets has a positive impact on the overall financial independence of senior citizens in Bangalore of the respondents

Sl.No	Agree/Disagree	Responses	Percentage (%)
1	Strongly Disagree	2	1.9
2	Disagree	17	16.2
3	Neutral	51	48.6
4	Agree	24	22.9
5	Strongly Agree	11	10.5

Graph 16 Showing The use of digital wallets has a positive impact on the overall financial independence of senior citizens in Bangalore, according to the respondents



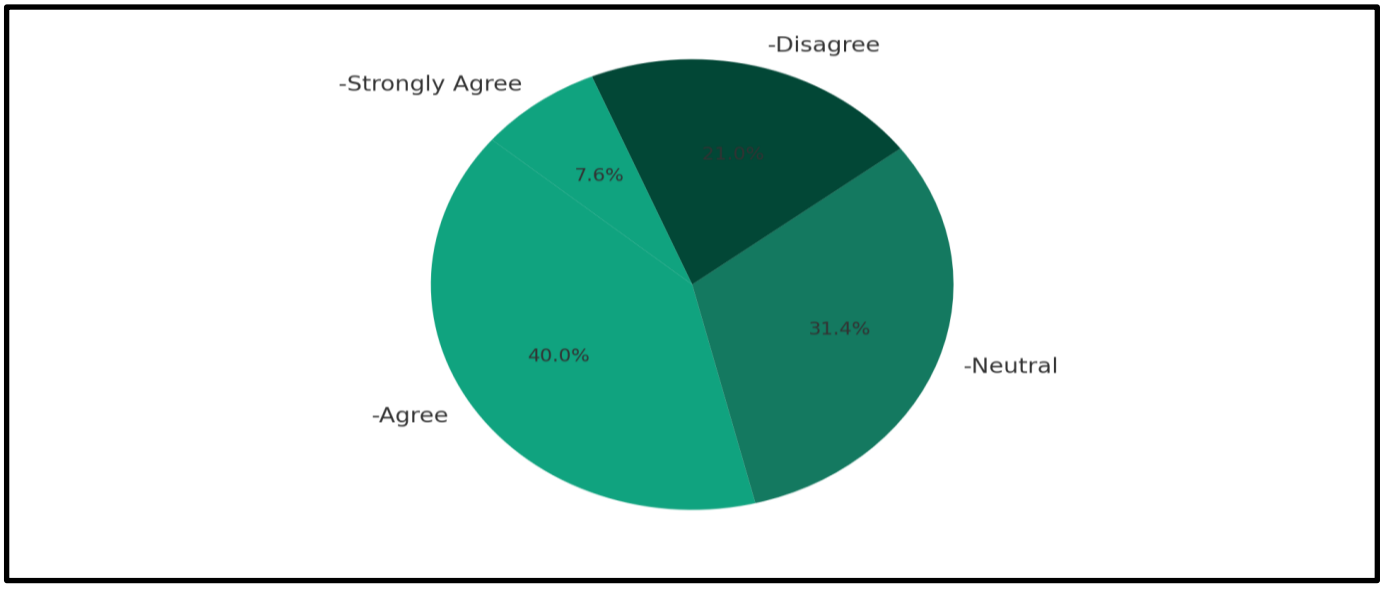
Analysis & Interpretation

A large segment of respondents is neutral (48.6%) regarding the impact of digital wallets on financial independence, suggesting uncertainty or varied experiences with the autonomy provided by these technologies.

Table 17 Showing mobile payments enhance the ease of budgeting for senior citizens in Bangalore of the respondents

Sl.No	Agree/Disagree	Responses	Percentage (%)
1	Strongly Disagree	0	0
2	Disagree	22	21
3	Neutral	33	31.4
4	Agree	42	40
5	Strongly Agree	8	7.6

Graph 17 Showing mobile payments enhances the ease of budgeting for senior citizens in Bangalore, according to the respondents



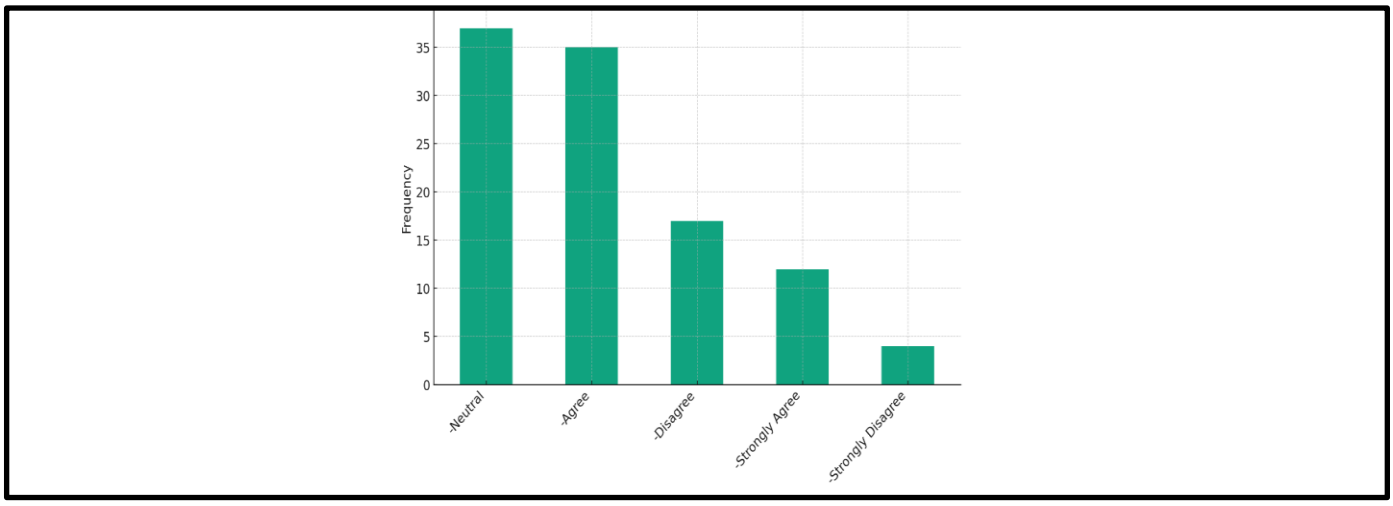
Analysis & Interpretation

The majority of respondents feel neutral (40%) or disagree (21%) that mobile payments enhance budgeting ease, indicating that not all senior citizens find mobile payments to be a straightforward tool for financial management.

Table 18 Overall, digital wallets, mobile payments, and contactless payment technologies are suitable options for senior citizens to manage various aspects of their financial activities of the respondents

Sl.No	Agree/Disagree	Responses	Percentage (%)
1	Strongly Disagree	4	3.8
2	Disagree	17	16.2
3	Neutral	37	35.2
4	Agree	35	33.3
5	Strongly Agree	12	11.4

Graph 18 Overall, digital wallets, mobile payments, and contactless payment technologies are suitable options for senior citizens to manage various aspects of their financial activities, according to the respondents



Analysis & Interpretation

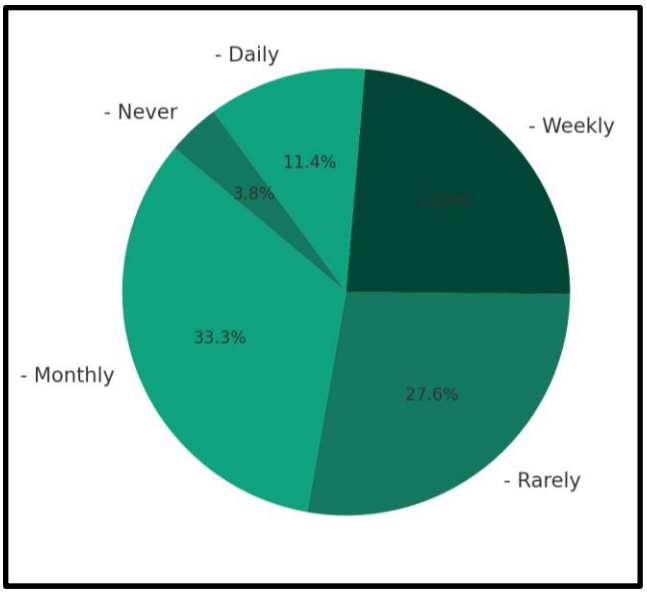
Responses are divided, with a significant number being neutral (35.2%) or agreeing (33.3%) that digital payment technologies are suitable for managing financial activities, showing a general but not universal endorsement of these technologies for seniors.

Table 19 Showing how frequently the respondents use digital wallets to make payments

Sl.No	Time Period	Responses	Percentage (%)
1	Daily	12	11.4
2	Weekly	25	23.8
3	Monthly	35	33.3

4	Rarely	29	27.6
5	Never	4	3.8

Graph 19 Showing how frequently the respondents use digital wallets to make payments



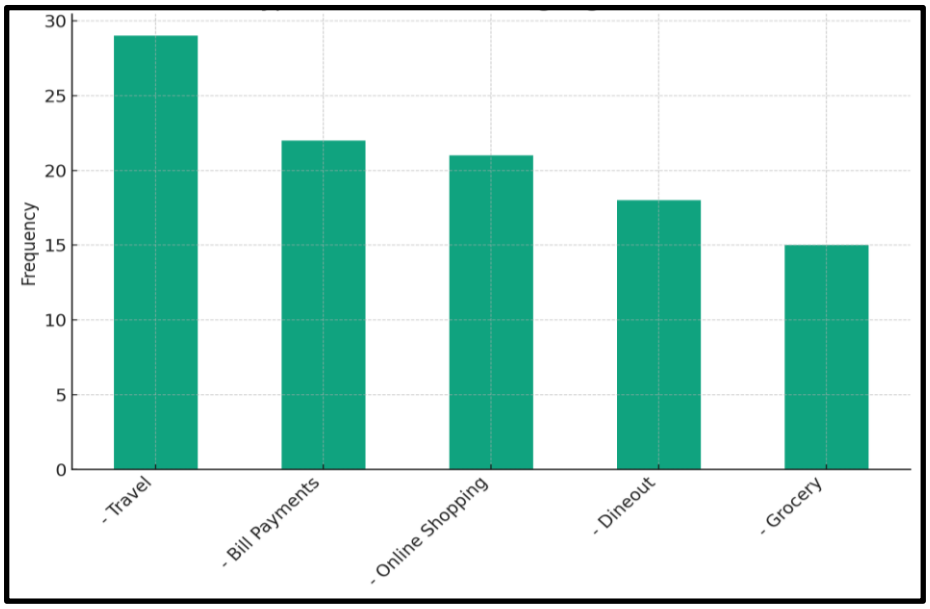
Analysis & Interpretation

The usage frequency varies, with the highest percentage of respondents using digital wallets monthly (33.3%), followed by weekly (23.8%), indicating a regular but not daily reliance on digital wallets for transactions.

Table 20 Showing type of purchases, the respondents mostly use digital wallets for the following:

Sl.No	Type	Responses	Percentage (%)
1	Online Shopping	21	20
2	Grocery	15	14.3
3	Travel	29	27.6
4	Dineout	18	17.1
5	Bill Payments	22	21

Graph 20 Showing the types of purchases, the respondents mostly use digital wallets for the following:



Analysis & Interpretation

Respondents use digital wallets predominantly for travel (27.6%) and bill payments (21%), with online shopping also being a common use case (20%). This diversity in usage reflects the versatility of digital wallets for various types of transactions among senior citizens.

FINDINGS

First and foremost, the age distribution among the respondents was quite telling. Nearly half of them, comprising 46.75 percent, fell within the age bracket of 20 to 22 years. This suggests that online education is predominantly favored by young adults in their early twenties. Interestingly, there were 30.18 percent of respondents who were older than 22 years, indicating that online education appeals to a diverse age group. However, only 23.08 percent were below the age of 20, suggesting that perhaps younger individuals might face challenges or have different preferences regarding online learning.

Gender representation in the survey revealed that more than half, accounting for 54.44 percent, of the respondents were female. This signifies a significant female presence in the realm of online education, which is a notable trend considering the broader societal context of gender dynamics in education.

Furthermore, the distribution of respondents across different fields of study provided insights into academic preferences among online learners. The majority, comprising 37.87 percent, were studying commerce, followed closely by 33.73 percent in science-related fields and 28.40 percent in the humanities. This distribution reflects the diverse academic interests of students engaging in online education.

Geographically, a significant portion of respondents, totaling 42.60 percent, hail from semi-urban areas, highlighting the accessibility of online education beyond metropolitan centers. In comparison, 30.18 percent were from urban areas, and only 27.22 percent were from rural areas, indicating some level of disparity in access to online learning resources based on geographical location.

Income levels among the respondents varied, with the highest proportion (32.54 percent) falling within the income category of 100,000 to 300,000. Additionally, 28.99 percent reported an income below 100,000, while 22.49 percent fell within the 300,000 to 500,000 range. Interestingly, 15.98 percent

reported a yearly family income of 500,000 and above, suggesting a certain level of financial stability among a segment of online learners.

In terms of technology usage, smartphones emerged as the preferred device for attending online classes, with 53.25 percent of respondents utilizing them. This highlights the ubiquitous nature of smartphones and their pivotal role in facilitating remote learning. Desktops or personal computers were the second most commonly used devices, accounting for 24.85 percent, while laptops trailed behind at 21.89 percent. These statistics underscore the importance of mobile technology in enabling access to education, particularly in remote or underprivileged areas.

Examining the respondents' attitudes towards online classes revealed interesting insights. The statement "Felt happy due to utilization of time in attending online classes during the lockdown period" garnered the highest mean score of 4.160, indicating a positive sentiment towards the efficiency of online learning, especially during challenging times like lockdowns. This was closely followed by the variable "Useful to women and physically handicapped learners who can learn at home," which received a mean score of 4.136, underscoring the perceived benefits of online education in promoting inclusivity and accessibility. The variable "It has greater access to experts/specialists" secured the third rank, suggesting that respondents value the opportunity to learn from subject matter experts through online platforms.

However, it is essential to acknowledge the challenges faced by students in the online learning environment. The most significant issue identified was "unaffordability to buy necessary devices," which received the highest rank with a Garrett's score of 10,820 points. This indicates a pressing need for interventions to address the financial barriers hindering access to online education. The next important problem highlighted by respondents was "the students feeling lonely and unable to share feelings with peers," with a Garrett's score of 10,570 points, underscoring the social and emotional challenges associated with remote learning. Lastly, the issue of "do not receive prior information on online classes" received the third rank, emphasizing the importance of effective communication and planning in facilitating online education.

In conclusion, the findings of this research underscore the significant association between the demographic profile of respondents and their opinions towards online classes. The diverse perspectives and experiences highlighted in the survey provide valuable insights for policymakers, educators, and stakeholders in enhancing the accessibility, inclusivity, and effectiveness of online education.

SUGGESTIONS AND RECOMMENDATIONS

The integration of digital payment solutions tailored for senior citizens is pivotal in enhancing their financial inclusion and empowerment, particularly in regions like Bangalore. Develop solutions for the convenience of seniors, keeping in mind their specific needs and preferences for digital payments. That means the development of digital payment solutions through a convenient interface with large fonts, easy navigation, and customizable assistance for male and female seniors. With a low adoption ratio, there are very few touch points with that consumer group that rarely apply to anything but 50- to 60-year-old products. The engagement strategy, whether a series of educational workshops, marketing campaigns, etc. The most important features that would draw the senior members of society into the middle-income category can be said to be the affordability and user-friendliness of the two digital modes of payment. Greater emphasis on its attendant benefits, such as convenience, time-saving, and security itself, may lure the elderly and mostly result in total uptake. Common barriers, either unfamiliarity or security, for instance, have to be okay with familiarity or security. This can probably be helped by their simple designs

being easy to use and understand, and later having strong security measures with definite communication to build the needed trust among the users. More reassurance needs to be built around the process—not placemen—emphasizing the process's safety and effectiveness via its history and customer testimonials. This is also, therefore, a lot of education in the sense of sources, user guides, and tutorials around the worries of older adults, especially for ridiculous security issues, and in terms of usage ease and time, readiness to actually start using hardware and software.

This means that the user experience within the digital wallet will have to be continuously redeveloped in order for its use to be sustainable among seniors. The areas that need to be addressed refer to the problems of search, transaction processes, and feedback on adjustments to enhance functions. Fourth, and by no means least, digital participation must involve an all-inclusive process. User-centered design can indeed go a long way in creating the space when combined with proportionate security, stringent education, and, above all, personalized support, which allows for the functioning of a digitally inclusive ecosystem for seniors. Well, definitely, these strategies and the below recommendations would be helpful in melting down the ice for smooth induction of digital and contactless pay technologies among the senior domiciles of Bangalore for upliftment towards financial inclusion and digital empowerment.

CONCLUSION

Drawing on the comprehensive analysis and findings from the study titled "Perception of the Impact of Digital Wallets, Mobile Payments, and Contactless Payment Technologies Among Senior Citizens Residing in Bangalore in Regards to Purchases, Travel, and Household Expenses," this research paper culminates in several pivotal conclusions and actionable recommendations. The investigation into the adoption, challenges, and perceptions of digital payment technologies among senior citizens in Bangalore has illuminated both the strides made and the distances yet to traverse in achieving digital financial inclusivity for this demographic.

Our study revealed that, despite the burgeoning presence of digital payment systems, senior citizens in Bangalore exhibit a spectrum of adoption rates, underpinned by a complex interplay of factors including ease of use, security concerns, and the perceived value of these technologies in enhancing financial autonomy. While there is a notable interest and willingness among seniors to engage with digital payments, barriers such as technological unfamiliarity, apprehensions regarding privacy and security, and a lack of targeted educational initiatives persist, impeding full-scale adoption. The balanced gender representation and the concentration of participants in the early stages of senior citizenship highlight the potential for increasing digital payment adoption within this demographic. Furthermore, the inclination towards sporadic usage of digital payment methods among seniors underscores the necessity for interventions that address both the technical and perceptual barriers to adoption.

In light of these findings, it is imperative to emphasize the critical role of user-centered design in developing digital payment solutions tailored for senior citizens. Such initiatives must prioritize ease of use, robust security measures, and comprehensive support and education to nurture confidence and competence among elderly users. Additionally, fostering partnerships between technology developers, financial institutions, policymakers, and community organizations can enhance the reach and efficacy of these solutions, ensuring that the benefits of digital financial technologies are accessible to all segments of the population. Moreover, our research advocates for ongoing dialogue and collaboration among stakeholders to monitor the evolving needs and preferences of senior citizens regarding digital payments. By continuously refining and adapting digital payment platforms in response to user feedback and

technological advancements, we can move closer to a future where digital financial inclusion is a reality for seniors, empowering them to navigate the digital economy with confidence and security.

In conclusion, this study contributes valuable insights to the discourse on digital financial inclusion, particularly among senior citizens. While acknowledging the progress made, it calls for a concerted effort to address the remaining challenges, with the ultimate goal of fostering an inclusive digital financial ecosystem that accommodates the diverse needs of all age groups. Through targeted interventions, user-centered design, and collaborative initiatives, we can ensure that senior citizens not only participate in but also benefit from the digital financial revolution, enhancing their autonomy, security, and quality of life in an increasingly digital world.

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