



Retail Digitalization: Usage Patterns Of E-Commerce Tools In Pune City Stores

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Abstract: This study analyses how digital tools—like UPI, POS systems, and social media—impact 50 diverse retailers in Pune. Findings show that while technology significantly boosts sales, transaction speed, and customer engagement, adoption is often hindered by high costs, technical gaps, and security concerns. Ultimately, the research confirms a strong positive correlation between digital integration and retail performance, recommending better support to help businesses overcome technical barriers.

Index Terms - Digitalisation, Inventory, Retailers, Billing, Point of Sales, UPI, etc.

INTRODUCTION:

In recent years, digital commerce has changed how businesses function. Retailers today are no longer dependent only on traditional methods of selling and managing their stores. The rise of digital commerce tools—such as UPI payments, digital wallets, POS billing systems, online ordering platforms, inventory management software, and social-media marketing—has changed the way retailers interact with customers and run their daily operations. These tools have made business processes faster, more accurate, and more convenient for both retailers and consumers. Many retailers now use digital tools like online payment apps, e-commerce websites, and social media marketing to make their work easier and reach more people; eventually increasing their sales.

Pune, being one of the fastest-growing commercial hubs in the country, has witnessed the rapid adoption of such tools in the past few years by the local retailers. From small neighbourhood shops and ration stores to clothing outlets, pharmacies, and specialty stores, retailers across the city are increasingly using digital tools to keep up with customer expectations and market competition. However, despite the growing presence of digital tools, not all retailers experience the same benefits. Some face challenges such as a lack of technical knowledge, high setup costs, poor digital infrastructure, or concerns about data security. Others may not fully understand the long-term advantages of going digital. As a result, there is a need to study how these tools are being used, what impact they create on daily business activities, and what difficulties retailers encounter in the process. This study focuses on understanding how these digital tools are being used by retailers of different categories in Pune and what impact they have on their business performance, sales, customer engagement and retention and overall growth.

NEED FOR RESEARCH STUDY:

As Pune continues to grow as a major IT and commercial hub, the use of digital commerce tools like online payment systems and digital ordering platforms has become important to improve the quality of service and efficiency in business operations. However, it is still unclear on what level these platforms are used by the different types of retailers in Pune and how aware they are of such tools. Many retailers may still face challenges related to technical knowledge and high costs, which affect their ability to adopt these tools.

Therefore, this study is needed to understand how the retailers in Pune are using digital commerce tools to their benefit and what are the various challenges that they face. The findings of this study will help businesses and policymakers to come up with new policies and digital systems to increase adoption of such tools and improve the operations of retailers in the city.

REVIEW OF RELEVANT LITERATURE:

Atul Kumar, Amol Gawande and Vinaydeep Brar (June, 2023) examined how retailers leverage digitalization to gain competitive advantage and expand market share. The study highlighted the transition from physical retail to hybrid buying experiences, the role of strategic alliances with its providers, and the influence of multi-sided digital platforms in transforming the retail sector. Surveying 110 medium-sized retailers, the research found that digital adoption significantly improved market reach, operational efficiency, and resilience, particularly during the covid-19 period.

Ramanand Chivate and Shailesh Ramakant Siddha Tekkar (2023) analysed the growth of digitalisation in Pune city, focusing on its impact on customer perceptions, behaviour, and the local economy. Based on a survey of 75 users aged 20–50 from diverse professions and income groups, the study revealed substantial digital growth over the last decade, driven by technological advancements and a strong shift in consumer preference towards e-commerce platforms over traditional retail stores.

Himalay Shankhpal (2023) explored consumer behaviour in the digital era and the impact of e-commerce on traditional retailers. The study identified key factors influencing online shopping preferences and assessed strategies for traditional retailers to remain competitive, such as online ordering, home delivery, personalization, loyalty programmes, AI adoption, and enhanced in-store experiences. The findings emphasized that digital transformation is essential for the continued relevance of traditional retail.

Sameer Yadav et al. (2023) conducted a comparative analysis of e-commerce and traditional retail models, highlighting significant shifts in consumer behaviour and the growing dominance of online retail. The study addressed gaps in understanding hybrid retail environments and suggested omnichannel strategies to integrate physical and digital touchpoints, enabling retailers to enhance customer experience and capture new growth opportunities.

STATEMENT OF THE PROBLEM:

The rapid adoption of digital technologies has led to a significant shift in retail operations, with many Pune city retailers increasingly adopting digital commerce tools. However, there is a critical lack of comprehensive understanding regarding:

1. The specific extent of usage of various digital commerce tools among selected retailers in Pune.
2. The direct impact these tools have on the performance of the retailers, i.e. sales, customer engagement, etc.
3. The challenges and barriers retailers in Pune face in implementing and effectively utilizing these digital tools.

Therefore, the problem is that retailers and policymakers lack empirical data and a detailed analysis to accurately assess the current digital commerce landscape and make informed decisions regarding the adoption of these tools and maximizing their benefits.

OBJECTIVES:

1. To study the various digital tools adopted by retailers.
2. To understand and evaluate the impact of digital tools on the performance of retailers.
3. To identify the benefits and problems of using digital tools.
4. To develop and provide suggestions for improved performance of retailers.

STATEMENT OF THE HYPOTHESIS:

- A. Null Hypothesis (H_0)-** Digital commerce tools have no significant impact on the overall performance of the retailers in the market in Pune.
- B. Alternate Hypothesis (H_a) -** Digital commerce tools have a significant impact on the overall business performance of retailers in Pune.

WORKING DEFINITION OF TERMS USED:

1. **Point of Sale (POS) System-** It refers to the location or system where a customer pays for goods or services. This can be a physical checkout counter in a store, or a virtual checkout on an e-commerce site. For example-card swipe machines and billing softwares.
2. **Unified Payments Interface (UPI)-** It is real-time digital payment system that allows instant money transfers in india through mobile applications. Applications like Google Pay, PhonePe, etc., are used to receive payments from customers.
3. **Digital Wallets-** A digital wallet is a software program that securely stores your payment information, like credit/debit card and bank account details, to make online and in-store purchases convenient and fast. It acts as a virtual version of a physical wallet.
4. **Operational Efficiency-** Operational efficiency is a business's ability to generate maximum output with minimum input, meaning it produces goods or services using the fewest resources possible—such as time, money, and labour without sacrificing quality.

POPULATION AND SAMPLING:

- **Population:** For this study, the target population comprises of selected retailers of different strata from Pune city who are using or are familiar with different digital commerce tools. These retailers include both small and medium sized business owners like grocery stores, clothing stores, medical stores, stationary shops etc and large brand stores. All the businesses are different from each other in size, customer base and and the level of digital adoption.
- **Sampling:** For this study, we have used a combination of non-probability convenience sampling and purposive sampling techniques. Convenience sampling was adopted to select retailers who were accessible and who were willing to answer our questions within Pune city. Also, the purposive sampling technique was used to make sure that the selected retailers were aware of digital commerce tools and were using these tools in their business. The researcher conducted interviews and gained practical insights from 50 retailers. The interview included descriptive questions and short the to-the-point questions relevant to the objectives of the research study.

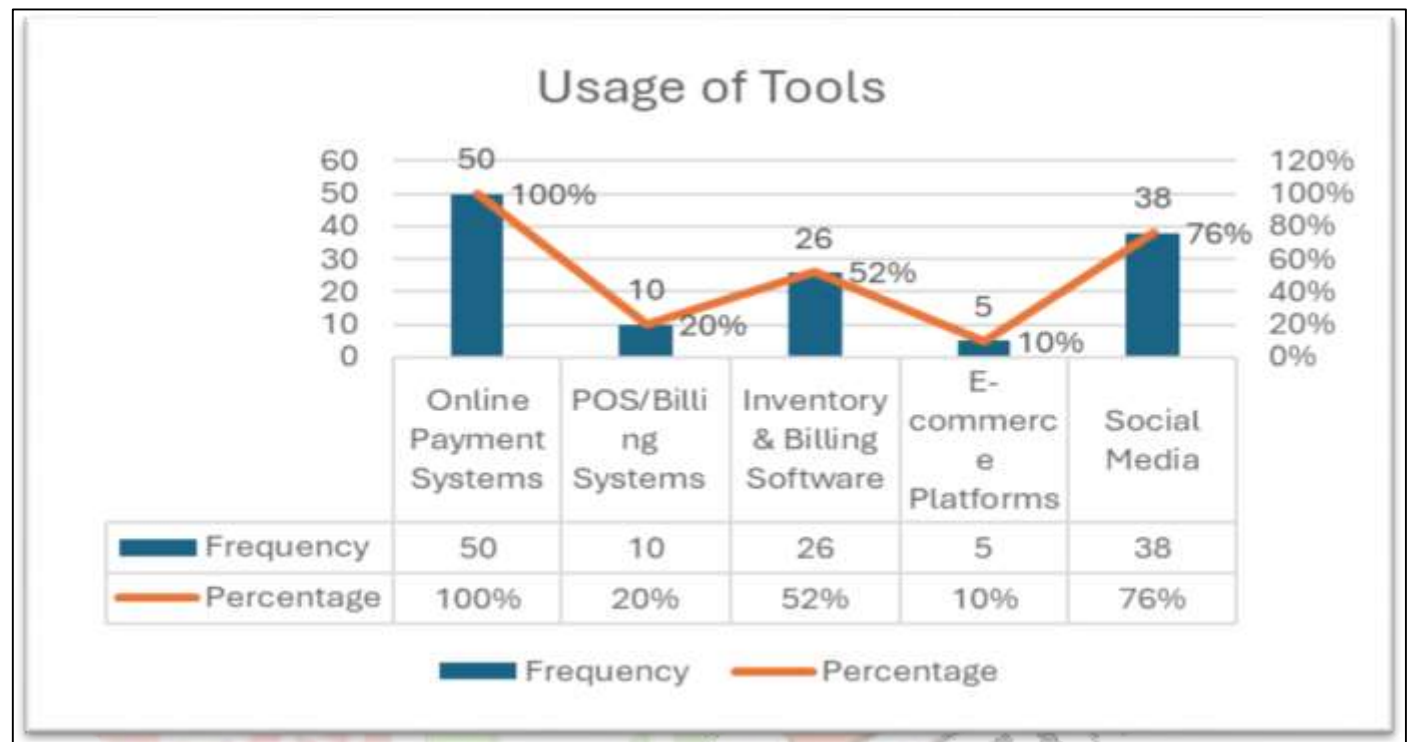
DATA COLLECTION:

The data for this study, which explores the impact and usage of digital commerce tools among retailers in Pune City, was gathered through primary research using a structured, hardcopy questionnaire. The core aim was to understand which digital tools (like online payment systems, e-commerce platforms, or billing software) retailers were using, how often they used them, the benefits they experienced (such as increased sales or better record keeping), and the challenges they faced (like technical issues or lack of training).

ANALYSIS AND INTERPRETATION OF DATA

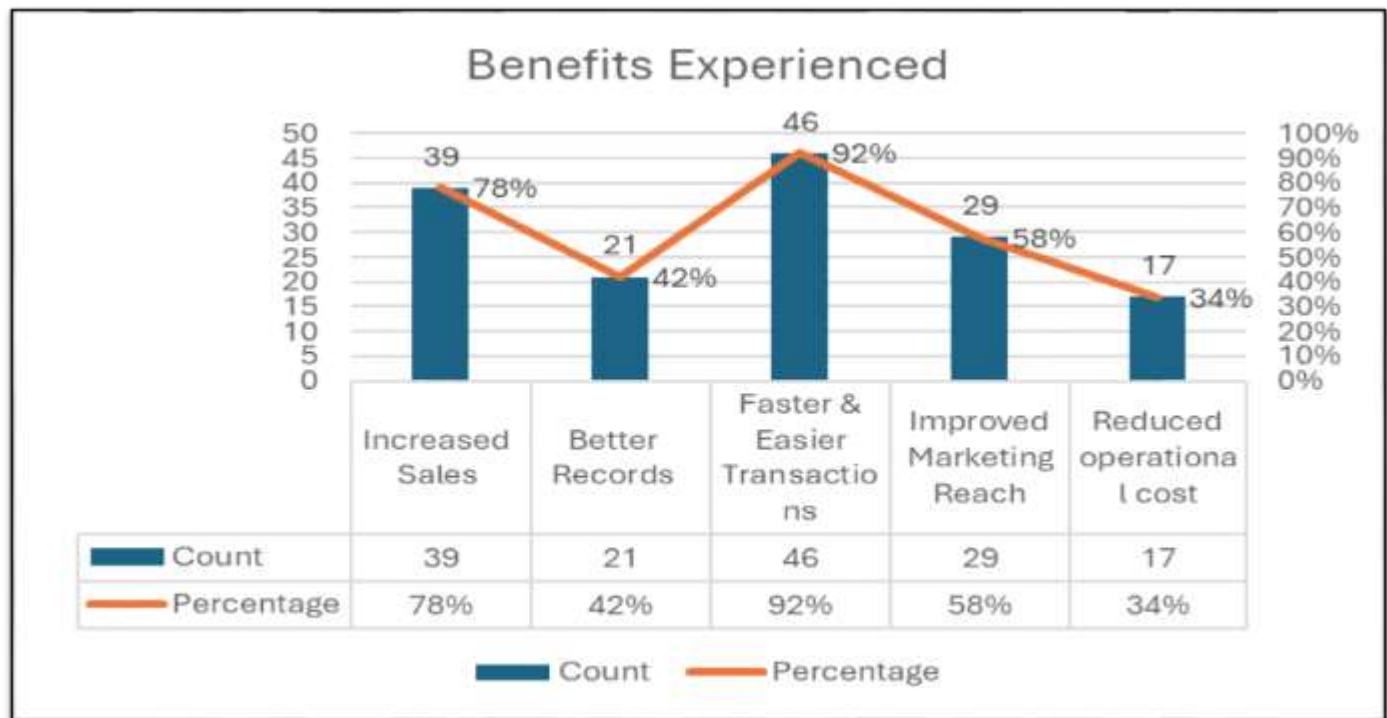
The researcher conducted a survey of the market and got responses from 50 retailers of small, medium and large-scale businesses. Following is the interpretation of the collected data given below-

1. DIGITAL TOOLS ADOPTION AND USAGE ANALYSIS:



Online payment systems like UPI are used by all the respondents surveyed, scoring a 100% frequency, i.e. 50 out of 50 people surveyed. Social media is also a very highly utilised digital tool. Nearly 76% (38 out of 50) of our respondents use platforms such as WhatsApp, Instagram, Facebook, and Google to promote their businesses and reach customers. Inventory and billing software are used by more than half of the respondents (52%), most of whom are large-scale business owners having huge stores, brand showrooms, supermarkets and department stores. The rest 48% retailers are small and medium-scale grocery store, stationery, and hardware store owners who still prefer to rely on the traditional pen and paper method. POS (Point of sales) systems are used by only 20% of the retailers, mainly by departmental stores, supermarkets and brands. The rest of the respondents are mostly unaware of or are critical of POS systems. E-commerce platforms have the lowest usage at 10% (5 out of 50).

2. BENEFIT ANALYSIS:



The most commonly experienced benefit is Faster & Easier Transactions because of online payment UPI systems, shown by 92% (46 out of 50) of respondents. Increased Sales is the second most reported benefit at 78% (39 out of 50), mostly because of the use of social media platforms for promotion and better reach. Improved Marketing Reach (58%) and Better Records (42%) are also cited by a large portion of the retailers as they have adopted inventory management systems and POS. Reduced operational cost is the least cited benefit among the options, at 34% (17 out of 50). Such benefits have been mostly received by the large-scale retailers and small and medium-scale business owners have not felt a significant reduction in operational costs.

3. CHALLENGES AND BARRIER ANALYSIS:



The most prominent challenge, cited by 22% of respondents (11 out of 50), is Technical Issues. Connectivity and technical issues is still prominent, especially amongst small-scale business owners. Lack of Digital skills is a challenge for 14% (7 out of 50). Some traditional retailers who have been in traditional retailing for a long time find it difficult to adapt to digitalisation. Security Concerns affect 20% (10 out of 50). Data privacy and theft are still fears amongst many retailers, most of which is because of unawareness

regarding cybersecurity. Customer resistance stands at 12% as many customers still believe in physical shopping rather than online shopping and feel online payments may risk safety. Transaction Charges are cited by 18% (9 out of 50), mostly large-scale stores.

TESTING OF HYPOTHESES:

- **Null hypothesis (H_0):** Digital commerce tools have no significant impact on the overall performance of retailers in Pune city.
- **Alternate hypothesis (H_a):** Digital commerce tools have a significant impact on the overall performance of the retailers in Pune city.

Table 1: Usage of Digital Commerce Tools by Retailers (n = 50)

Digital Commerce Tool	Number of Retailers	Percentage (%)
UPI Payments	50	100%
POS Machines	10	20%
E-Commerce Platforms	5	10%
Social Media Tools	38	76%
Inventory Software	26	52%

Table 2: Impact of Digital Commerce Tools on Retailer Performance

Performance Outcome	Number of Retailers	Percentage (%)
Improved Performance	40	80%
No Significant Improvement	10	20%
Total	50	100%

Table 3: Contingency Table – Digital Tool Usage vs Retail Performance

Digital Tool Usage	Improved Performance	Not Improved	Total
High Usage	35	5	40
Low Usage	5	5	10
Total	40	10	50

Statistical Test Applied: Chi-Square Test of Independence

Statistic	Value
Chi-Square Value (χ^2)	12.50
Degrees of Freedom (df)	1
Level of Significance (α)	0.05
p-value	< 0.05

Result of Testing of Hypotheses: Since $p\text{-value} < 0.05$, the Null Hypothesis is rejected.

OUTCOMES:

The findings and observations are grouped into three main areas: Digital Tool Adoption and Usage, Benefit Analysis, and Challenges and Barrier Analysis.

1. **Digital Tool Adoption and Usage Analysis:** The survey of 50 retailers shows a high adoption rate for specific tools, with significant variation across categories.

1. Online Payment Systems have 100% adoption, with all 50 respondents using systems like UPI.
2. Social media is the second most used tool, adopted by 76% (38 out of 50) of respondents, primarily for business promotion and customer reach on platforms like WhatsApp, Instagram, Facebook, and Google.
3. Inventory and Billing Software is used by 52% (26 out of 50) of the retailers.
4. Observation: The primary users are large-scale business owners (huge stores, brand showrooms, supermarkets). The remaining 48% (small/medium-scale grocery, stationery, hardware stores)

still rely on traditional pen-and-paper methods.

5. POS (Point of Sales) Systems show a low adoption rate of only 20% (10 out of 50).
6. Observation: Usage is mainly limited to departmental stores, supermarkets, and brands, while the majority of other respondents are either unaware of or critical about POS systems.
7. E-Commerce Platforms have the lowest usage at 10% (5 out of 50).

2. Benefit Analysis: Respondents reported substantial benefits from digital tool usage, with a focus on efficiency and revenue.

1. Faster and Easier Transactions is the most commonly experienced benefit at 92% (46 out of 50), attributed mainly to the use of online payment (UPI) systems.
2. Increased Sales is the second-highest reported benefit at 78% (39 out of 50), largely due to promotion and better reach via social media platforms.
3. Improved Marketing Reach is cited by 58% of retailers.
4. Better Records is reported by 42%, linked to the adoption of inventory management systems and POS.
5. Reduced Operational Cost is the least cited benefit at 34% (17 out of 50).
6. Observation: This benefit was mostly received by large-scale retailers, with small and medium-scale business owners reporting no significant reduction in operational costs.

3. Challenges and Barrier Analysis: Despite high benefits, retailers face several challenges in digital tool adoption. Technical Issues are the most prominent challenge, cited by 22% (11 out of 50) of respondents.

SUGGESTIONS:

1. Many shop owners said that their workers don't fully understand billing apps or online order systems. A short training or demo can make things easier for everyone.
2. Instead of using too many apps at once, retailers can begin with one or two important tools, like online payments or an inventory app. Once they get used to it, they can add more.
3. Some retailers mentioned that online payments fail due to a weak internet connection. Having a better network or a backup option can help avoid delays with customers.
4. Shops often collect customer numbers for bills or WhatsApp updates. They should keep this information safe and not share it unnecessarily. Even simple things like using a phone password can help.
5. Since many people in Pune prefer digital payments, shops can give small discounts or points for digital transactions. This can bring in more customers and improve loyalty.
6. Many small shops are still not using Instagram, Facebook or even WhatsApp Status to promote their products. Posting offers, new arrivals or even simple photos can help reach more customers at no extra cost.
7. Retailers can ask customers if they are happy with the digital services. This small step can help them know where to improve and what customers expect.
8. If retailers find digital tools confusing, they can take help from college students or interns for setting up things like QR codes, Google Forms, posters or online catalogues.
9. Retailers don't have to fully depend on digital tools. They can continue using some manual methods while also trying digital options. This makes the shift easier and less stressful.
10. Retailers should be careful about sharing OTPs or clicking on random links. Awareness about basic online safety can protect them from scams.

RESEARCH LIMITATIONS:

1. **Sampling Limit:** The study was done with only a few retailers from Pune, so the results may not fully represent all shops in the city.
2. **Geographical Limitation:** The study covers only certain parts of Pune, so practices in other parts of the city may be different.

SCOPE FOR FURTHER RESEARCH:

1. Future studies can include more shops from various parts of the city to get a clearer picture of how digital tools are used.
2. Research can also involve customers to understand what they expect from digital services and how they feel about using them.
3. Further research can compare small local shops with big retail stores to see how their use of digital tools differs.
4. A longer study can help understand how digital tools affect sales, customer reach, and overall business growth over time.
5. A study can compare Pune with other cities to understand whether retailers in Pune are ahead, behind, or at the same level in using digital commerce tools.

CONCLUSION:

A study of 50 retailers in Pune confirms that digital commerce tools—such as UPI, POS software, and online promotions—significantly enhance business performance. By increasing transaction speeds, improving record-keeping, and expanding customer reach, these tools have boosted both sales and operational efficiency.

While challenges like high costs, technical issues, and training gaps persist, the overall impact is strongly positive, supporting the hypothesis that digital adoption is vital for growth. To sustain this momentum, the study recommends increased institutional support, affordable technology, and digital literacy training.

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