

# Empirical Study of E-Finance Services for FMCG Products: A Pathway to Sustainable Development Through Innovation

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## Abstract

The main purpose of the study is to find out demographic factors (age, gender, employment & selected district) affecting consumer behaviour towards e- finance services for FMCG products in Uttar Pradesh. Primary data was collected from 448 respondents from the targeted population of Bareilly, Badaun, Pilibhit & Shahjanpur. This research analysed with the help of SPSS software to interpret the data related to the mode of payment available through e-finance services & find the correlation between demographic factors. The study also provides further scope of study in the e-finance and FMCG field. Limitations of the study are extrapolating results to a wide context and the study may not have taken into consideration the particular challenges that the FMCG products faces, such as issues with inventory management or perishable goods management.

**Keywords:** E-finance, FMCG products, sustainable, Uttar Pradesh & consumer behaviour

## 1. Introduction

### 1.1 Background of the study

When the internet evolved into a network of networks in the middle of the 1990s, the era of internet enabled finance truly began. The optimal platform for delivering financial services is then developed by the firm. As systems become more safe and reliable, the business to customer sector and subsequently moved into the business to business arena. The availability of digital payment method enabled data driven decision making so that enthusiasts can quickly adapt to market trends, efficiently manage inventories, & enhance overall financial performance. Consider customer convenience as well as this can promote a smooth shopping experience & possibly boost revenue. Global digital technology is changing the way that payments are made. In the previous years, 52% of adults- up from 42% in 2014 have given or received a digital payment. Technology giants have entered the financial sector by utilizing their extensive client data. In India three years ago men were 20% more likely than women to have a bank account today India's gender gap has decreased to encourage account ownership through biometric identification cards. With a focus on the consumers, engaged employers & sustainable expansion, Indian banks are providing excellent financial services.

### 1.2 Concept of E-finance

*E-finance is the term used to describe the delivery of financial services & markets using electronic means of communication & computing. [Franklin Allen & James, 2002]*

E-finance refers to the provision of financial services & markets through the use of electronic tools, technology and communication through the internet. Banks & the government benefit from a number of financial developments. Due

to the rapid rise in smart phone use, there is a greater demand for digital finance goods & services. . The availability of digital payment method enabled data driven decision making so that enthusiasts can quickly adapt to market trends, efficiently manage inventories, & enhance overall financial performance. Consider customer convenience as well as this can promote a smooth shopping experience & possibly boost revenue.

### **1.3 FMCG sector in Uttar Pradesh**

According to Kotler (2003), Items that require frequent purchases, have low levels of consumer loyalty, impulsive buying, and engagement are classified as fast-moving consumer goods (FMCG). According a business, fast-moving consumer goods (FMCG) include things like food, hygiene, soft beverages, and disposable ones.

The fast-moving consumer goods (FMCG) sector was growing in importance as an employment in Uttar Pradesh. It became clear that Uttar Pradesh's fast-moving consumer goods (FMCG) sector was growing to be a significant employer. As part of the FMCG sector in Uttar Pradesh, Purvanchal, Bundelkhand, and Madhyanchal areas (Prayagraj, Gorakhpur, Amethi, and Chitrakoot) would purchase manufacturing facilities for Rs 3,500 crore through GBC 4.0.

### **1.4 Relate with sustainable development through innovation**

E-finance and the fast-moving consumer goods (FMCG) sector play an important role in promoting sustainable development through innovation. E-finance services include digital payments, online banking and fintech solutions, is less harmful to the environment as it removes the need for physical resources like paper and transportation. It also promotes financial inclusion by making financial services available to poor and rural populations. At the same time, FMCG companies are moving quickly with progressive methods such as energy-efficient manufacturing processes, sustainable sourcing of raw materials and eco-friendly packaging. Technology and innovation allow these companies to cut carbon emissions, improve supply chain management and minimize waste. Both e-finance and FMCG are helping to advance the three pillars of sustainable development: economic growth, environmental sustainability and social progress. Their joint efforts show how innovation can help to balance financial success with social and environmental responsibility.

## **2. Objectives of the study**

- To examine the adoption of e-finance services among users of FMCG products in Uttar Pradesh.
- To analyse how e- finance contributes to sustainable development in FMCG sector.

## **2. Literature review**

1) **Neeti Misra, Sumeet Gupta & T Joji Rao (2026)** the study's conclusions include a high-level architecture based on fintech that is suggested for the financing process of environmentally funded sustainable energy projects. Digital technology also creates new opportunities for the development of creative new financial arrangements. Further analysis of these studies reveals that high costs are the main barrier preventing the growth of green energy initiatives. The study's findings emphasize how crucial perceived utility, perceived ease of use, and external factors like financial returns, customer expectations, operational effectiveness, and market competency are in encouraging the use of fintech solutions in sustainability energy projects that are financed by green sources. Usage ease and adherence to external

components will be crucial in speeding up the promoting sustainability and adopting fintech energy-related objectives.

2) **SHAHBANO (2025)** this study indicates that several different factors, especially when buy FMCG items, affect consumer happiness in Uttar Pradesh's shopping malls. According to the study, customers' shopping experiences are enhanced by mall ambience, brand preference, product availability, and variety. Consumer satisfaction and mall atmosphere were shown to be significantly correlated, and brand preference and frequency of purchase were found to be positively but weakly correlated. According to this study, consumers prefer malls that have an extensive range of FMCG goods, alluring discounts, and a convenient shopping environment. The study's conclusions also show that brand preference and views on product quality.

3) **Reserve bank of India (2024)** this document outlines such a framework for the Fintech sector in the form of a Self-Regulatory Organization (SRO). In essence, SRO is an industry-led organization tasked with creating and upholding regulatory standards, encouraging moral behaviour, protecting market integrity, settling conflicts, and encouraging openness and accountability among its participants. A fair, equal, and competitive environment should be promoted by the SRO-FT, which should also be in charge of handling any complaints, conflicts of interest, or disputes that may emerge among its members. Fintech frameworks must also be creative, adaptable, creative, and appropriate to perceived risks.

Fintech companies can be defined as organizations that offer technological solutions for the delivery of financial products and services to consumers and businesses, or that include regulatory and supervisory compliance in collaboration with traditional financial institutions or otherwise, for the purpose of membership in an SRO-FT under this framework.

4) **Sharma, Shivangi (2024)** The goal of the research is to determine the reasons and mechanisms behind the products' failure in the market and to identify more effective strategies for promoting longer-lived products in order to prevent failure or raise the likelihood of success. The current study aims to identify the characteristics of different FMCG products that differ from those of their parent brands, which could result in a dilution of the parent and product brands.

### 3. Research methodology

#### 3.1 Research design

The state of Uttar Pradesh will serve as the research topic's population. The study was conducted in Bareilly, Budaun, Pillibhit, Shahjanpur districts of Uttar Pradesh. The method used in the research paper is descriptive in nature.

#### 3.3 Data collection

**Primary data:** To collect information from the participants an organised questionnaire or survey with close-ended questions will be administered both online & offline mode.

**Secondary data:** Examining the data that is currently available from sources such as industry reports, websites, RBI publications, government reports, journals & magazines.

#### 3.4 Sampling design

The data is collected with the help of Simple random sampling & sample size is 448.

## 4. Data analysis and results

### 4.1 Demographic profile of respondents

**Table 1: Frequencies for gender**

| Gender | Frequency | Percent | Valid Percent | Cumulative Percent |
|--------|-----------|---------|---------------|--------------------|
| Male   | 201       | 44.9    | 44.9          | 44.9               |
| Female | 247       | 55.1    | 55.1          | 100.0              |
| Total  | 448       | 100.0   | 100.0         |                    |

Source: compiled from Primary data

**Gender:** it was found that majority of dominant category belongs to female with 55.1%.

**Table 2 : Frequencies for age**

| Age      | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------|-----------|---------|---------------|--------------------|
| 18-24    | 193       | 43.1    | 43.1          | 43.1               |
| 25-34    | 94        | 21.0    | 21.0          | 64.1               |
| 35-44    | 90        | 20.1    | 20.1          | 84.2               |
| above 45 | 71        | 15.8    | 15.8          | 100.0              |
| Total    | 448       | 100.0   | 100.0         |                    |

Source: compiled from Primary data

**Age:** out of 448 respondents, most dominating age category people are of age group 18 to 24.

**Table 3: Frequencies of selected Districts**

| District   | Frequency | Percent | Valid Percent | Cumulative Percent |
|------------|-----------|---------|---------------|--------------------|
| Bareilly   | 136       | 30.4    | 30.4          | 30.4               |
| Budaun     | 112       | 25.0    | 25.0          | 55.4               |
| Shahjanpur | 100       | 22.3    | 22.3          | 77.7               |
| Pilibhit   | 100       | 22.3    | 22.3          | 100.0              |
| Total      | 448       | 100.0   | 100.0         |                    |

Source: compiled from Primary data

**District:** the large number of response is collected from the district Bareilly (136) as from all four districts highest population is from Bareilly district.

**Table 4: Frequencies for employment**

| Employment    | Frequency | Percent | Valid<br>Percent | Cumulative<br>Percent |
|---------------|-----------|---------|------------------|-----------------------|
| Student       | 181       | 40.4    | 40.4             | 40.4                  |
| Employed      | 110       | 24.6    | 24.6             | 65.0                  |
| Self-employed | 90        | 20.1    | 20.1             | 85.0                  |
| Unemployed    | 66        | 14.7    | 14.7             | 99.8                  |
| Retired       | 1         | .2      | .2               | 100.0                 |
| Total         | 448       | 100.0   | 100.0            |                       |

Source: compiled from Primary data

**Employment level:** the majority of respondents belong to student's category (40.4%) of total sample.

#### 4.2 Awareness of E- finance services

In the recent years, the way people handle money has drastically changed with the rise of smart phones and internet access, e-finance services have become an important part of daily life. In Bareilly district, this shift is clearly visible, but the level of awareness and usage still varies amongst the varied group of peoples. Especially, the younger population and those living in urban areas are quite familiar with these services. They use them on daily basis for transferring money, paying bills, shopping online, and recharging mobile phones. They see E- finance services as time saving.

However, in rural areas and among older people the situation is different. Many individuals still prefer traditional banking methods as compared to online platforms. One of the main reasons for this is a lack of awareness and confidence in using digital platforms. Some people are also afraid of online fraud and do not trust digital payment systems.

Many initiatives by Banks and government have made to improve awareness amongst the population. Campaigns promoting digital payments, along with schemes encouraging cashless transactions, have been implemented. But still there is a need for more practical training and guidance, especially in rural areas, to help people understand how to do secure and safe payments.

In conclusion, awareness of e-finance services in Bareilly district is growing, but it is not uniform across all sections of society. While urban and younger populations are quickly adopting digital financial tools, rural and less-educated groups still need support. Increasing awareness, improving digital literacy, and building trust are essential steps to ensure that everyone can benefit from the advantages of e-finance services.

### 4.3 Usage pattern of digital financial services

**Table 5: Types of Online platform**

| Online platforms    | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------------|-----------|---------|---------------|--------------------|
| Mobile banking app  | 42        | 9.4     | 9.4           | 9.4                |
| Online banking      | 33        | 7.4     | 7.4           | 16.7               |
| Digital wallets     | 7         | 1.6     | 1.6           | 18.3               |
| UPI                 | 228       | 50.9    | 50.9          | 69.2               |
| Credit/ Debit cards | 138       | 30.8    | 30.8          | 100.0              |
| Total               | 448       | 100.0   | 100.0         |                    |

Source: compiled from Primary data

**Table 6: Types of FMCG products**

| FMCG products          | Frequency | Percent | Valid Percent | Cumulative Percent |
|------------------------|-----------|---------|---------------|--------------------|
| Groceries              | 72        | 16.1    | 16.1          | 16.1               |
| Personal care products | 65        | 14.5    | 14.5          | 30.6               |
| Household products     | 94        | 21.0    | 21.0          | 51.6               |
| Beverages              | 26        | 5.8     | 5.8           | 57.4               |
| All of these           | 191       | 42.6    | 42.6          | 100.0              |
| Total                  | 448       | 100.0   | 100.0         |                    |

Source: compiled from Primary data

## 6. Findings

- Females constitute the majority (55.1%), while males represent 44.9% of respondents. Out of 448 participants, 247 are female and 201 are male, showing a slightly higher representation of females in the sample.
- The largest group of respondents is aged 18–24, with 193 people, which represents 43.1% of the total sample. This means that almost half of the participants are young adults.
- Bareilly has the highest number of respondents, with 136 people, which represents 30.4% of the total sample.
- The results indicate that the largest group of participants are students, followed by employed individuals and self-employed individuals.
- The data indicates that UPI (Unified Payments Interface) is the most commonly used online payment platform among respondents. Out of 448 participants, 228 respondents (50.9%) reported using UPI. This shows that more than half of the respondents prefer UPI for their digital transactions.
- The results show that most respondents (42.6%) purchase all types of FMCG product, indicating that consumers typically buy multiple FMCG categories rather than focusing on just one. Among the individual categories,

household products (21.0%) are the most commonly selected, followed by groceries (16.1%) and personal care products (14.5%), while beverages (5.8%) are the least selected category.

## 7. Conclusion

The study gives a comprehensive picture of the respondents' demographics and spending habits. A sizable percentage of participants are young adults (18–24 years old), and the sample is slightly dominated by women, suggesting that the findings mostly represent the tastes of younger customers. Bareilly has the largest geographic contribution of respondents, making it a noteworthy participant in the study.

Students make up the largest group in terms of occupation, followed by employed and independent contractors, which emphasizes the impact of a younger, potentially tech-savvy populace. This is corroborated by the fact that more than half of the respondents utilize UPI as their preferred digital payment method, indicating a significant move toward practical and cashless payment methods.

The study also shows that instead of concentrating on just one category, customers typically buy a range of FMCG products. Beverages are less popular than household goods, groceries, and personal hygiene products. Overall, the findings indicate that young consumers have a variety of purchasing habits and are more likely to use a digital payment method, which reflects changing FMCG sector consumption trends.

## 8. Limitation of the study

- The sample size may not accurately reflect the entire FMCG (Fast Moving Consumer Goods). There may be limitation to extrapolating results to a wide context.
- The study may not have taken into consideration the particular challenges that the FMCG products faces, such as issues with inventory management or perishable goods management.

## 9. Scope for future research

Some of the potential novelties at which further research may uncover includes the following: Analyzing the influence of modern technologies on financial strategies, evaluating the financial strategies, evaluating the financial effects of green initiatives in the FMCG products and exploring creative financial frameworks for supply chain management studying buying habits and its financial effects in the overall setting of CPG could be significant contribution to the discipline.

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