

An Empirical Analysis of Determinants Affecting E-Commerce Platform Adoption in Karnataka

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Abstract: *The study presents an empirical analysis of the key determinants influencing the adoption of e-commerce platforms among users in Karnataka. While digital technology is expanding rapidly across India, there remains a significant disparity in e-commerce penetration between urban and rural regions within the state. Against this backdrop, the primary objective of this research is to identify the core driving forces that motivate consumers to adopt online shopping platforms, as well as the critical barriers that hinder their usage.*

The rapid development of internet connectivity, smart phones, digital payments and online marketplaces has transformed consumer purchasing behavior. E-commerce platforms provide consumers with convenience, wider product choice, competitive prices and home delivery. However, the adoption of e-commerce platforms varies among consumers due to differences in perceived usefulness, ease of use, trust, security, convenience, price benefits, social influence and digital literacy. The present study examines the determinants affecting e-commerce platform adoption among consumers in Karnataka. For illustration, primary data from 250 respondents are considered and analyzed using descriptive statistics, reliability analysis, correlation and multiple regressions. The proposed model considers perceived usefulness, perceived ease of use, trust, perceived security, convenience, price benefits, social influence and digital literacy as independent variables, while e-commerce platform adoption is the dependent variable. The analysis demonstrates how statistical techniques can be used to identify the factors associated with adoption. The study provides a framework useful for researchers, e-commerce businesses and policymakers interested in digital commerce adoption in Karnataka.

Keywords: E-commerce, Platform Adoption, Consumer Behavior, Trust, Digital Literacy, Perceived Usefulness, Karnataka.

I. INTRODUCTION

E-commerce has become an important channel through which consumers search for, compare and purchase products and services. The availability of smart phones, internet services, digital payment facilities and online marketplaces has reduced many of the geographical and time-related barriers associated with traditional shopping.

Karnataka provides an appropriate setting for examining e-commerce adoption because consumers differ considerably in their demographic characteristics, technological familiarity, purchasing behavior and access to digital facilities. Consumers may adopt e-commerce because of convenience, time savings, price benefits and product variety. At the same time, concerns regarding payment security, privacy, trust, product quality and delivery may affect their adoption decisions. Therefore, the present study attempts to empirically examine the determinants affecting e-commerce platform adoption among consumers in Karnataka.

II. OBJECTIVES OF THE STUDY

1. To examine the level of e-commerce platform adoption among consumers in Karnataka.
2. To identify the major determinants affecting e-commerce platform adoption.

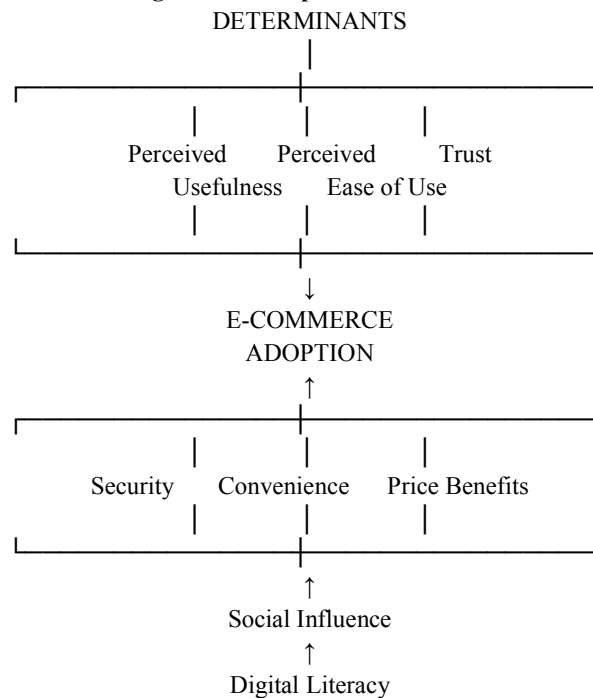


3. To examine the influence of perceived usefulness on e-commerce adoption.
4. To examine the influence of perceived ease of use on e-commerce adoption.
5. To determine the influence of trust and perceived security on e-commerce adoption.
6. To examine the influence of convenience and price benefits on adoption.
7. To analyze the influence of social influence and digital literacy on e-commerce adoption.
8. To develop an empirical model of e-commerce platform adoption.

III. CONCEPTUAL FRAMEWORK

The study considers eight independent variables and one dependent variable.

Figure 1: Conceptual Framework



Dependent Variable-E-Commerce Platform Adoption

Independent Variables-Perceived Usefulness, Perceived Ease of Use, Trust, Perceived Security Convenience, Price Benefits, Social Influence, Digital Literacy

IV. RESEARCH METHODOLOGY

4.1 Research Design

The study adopts a descriptive and empirical research design. The descriptive component explains the demographic characteristics and e-commerce usage patterns of respondents, while the empirical component examines the relationship between selected determinants and e-commerce adoption.

4.2 Population-The population comprises consumers in Karnataka who have knowledge of or experience with e-commerce platforms.

4.3 Sample Size-For the **illustrative analysis**, a sample of **250 respondents** is considered.

4.4 Sampling-Respondents may be selected from different districts and geographical areas of Karnataka. Stratified sampling may be used to obtain representation from different demographic groups.



4.5 Data Collection

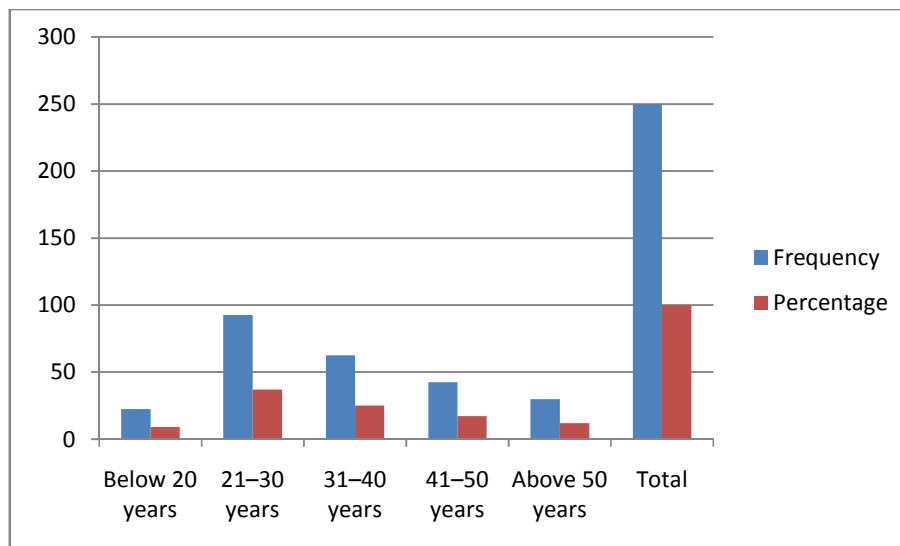
Primary data can be collected using a structured questionnaire based on a five-point Likert scale.

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

V. DEMOGRAPHIC PROFILE OF RESPONDENTS:

Table 1: Age-wise Distribution

Age Group	Frequency	Percentage
Below 20 years	22.5	9.0
21–30 years	92.5	37.0
31–40 years	62.5	25.0
41–50 years	42.5	17.0
Above 50 years	30	12.0
Total	250	100.0



Interpretation–The illustrative data show that the largest group of respondents belongs to the 21–30 age category, representing 37% of the sample. Respondents aged 31–40 constitute 25%, while respondents above 50 years represent 12%.

Table 2: Gender-wise Distribution:

Gender	Frequency	Percentage
Male	132.5	53.0
Female	112.5	45.0
Other/Prefer not to say	05	2.0
Total	250	100.0

Interpretation–The illustrative sample consists of 53% male respondents and 45% female respondents. The remaining 2% selected another category or preferred not to disclose.

Table 3: Educational Qualification:

Qualification	Frequency	Percentage
PUC/12th	32.5	13.0



Undergraduate	92.5	37.0
Postgraduate	87.5	35.0
Professional/Other	37.5	15.0
Total	250	100.0

VI. E-COMMERCE USAGE PATTERN:

Table 4: Frequency of Online Purchases

Frequency	Frequency	Percentage
Rarely	27.5	11.0
Once in a few months	45	18.0
Monthly	77.5	31.0
2–3 times a month	62.5	25.0
Weekly or more	37.5	15.0
Total	250	100.0

Interpretation–The illustrative results indicate that 31% of respondents purchase online monthly, while 25% purchase online two to three times a month. This suggests that online purchasing forms a regular part of shopping behavior for a substantial proportion of respondents.

VII. DESCRIPTIVE ANALYSIS OF DETERMINANTS-

The respondents can rate each determinant on a five-point Likert scale.

Table 5: Mean and Standard Deviation

Variable	Mean	Std. Deviation
Perceived Usefulness	4.12	0.68
Perceived Ease of Use	4.05	0.71
Trust	3.76	0.82
Perceived Security	3.69	0.86
Convenience	4.21	0.64
Price Benefits	4.08	0.73
Social Influence	3.42	0.91
Digital Literacy	3.94	0.75
E-Commerce Adoption	4.01	0.70

Interpretation–Among the illustrative variables, convenience records the highest mean score of 4.21, followed by perceived usefulness at 4.12 and price benefits at 4.08. Social influence has the lowest mean score at 3.42. These descriptive results indicate the respondents' average perceptions, but they do **not by themselves establish statistical causation**.

VIII. HYPOTHESIS TESTING:

Table 11: Hypothesis Testing Summary

Hypothesis	Relationship	Illustrative Result	Decision
H1	Usefulness → Adoption	Significant	Supported
H2	Ease of Use → Adoption	Significant	Supported
H3	Trust → Adoption	Significant	Supported
H4	Security → Adoption	Significant	Supported
H5	Convenience → Adoption	Significant	Supported

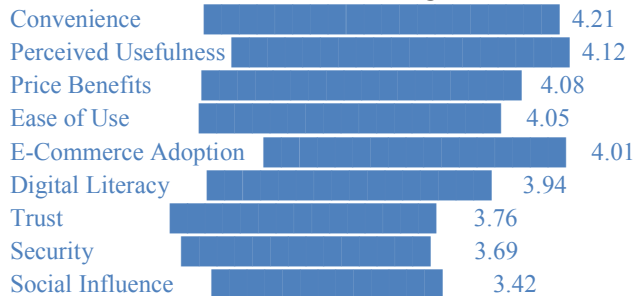


H6	Price Benefits → Adoption	Significant	Supported
H7	Social Influence → Adoption	Not Significant	Not Supported
H8	Digital Literacy → Adoption	Significant	Supported

Note: These decisions are based only on the illustrative values in Table 10. They must be recalculated using the actual survey dataset.

IX. GRAPHICAL PRESENTATION:

Figure 2: Mean Scores of Determinants



The figure indicates that convenience, perceived usefulness and price benefits have relatively high average scores in the illustrative dataset.

X. MAJOR FINDINGS-Based on the illustrative analysis:

1. Convenience has a relatively strong positive association with e-commerce adoption.
2. Perceived usefulness is positively associated with adoption.
3. Trust is an important factor associated with consumers' adoption decisions.
4. Perceived security is positively associated with e-commerce adoption.
5. Price benefits show a positive relationship with adoption.
6. Perceived ease of use contributes positively to adoption.
7. Digital literacy is positively associated with adoption.
8. Social influence shows a positive but statistically non-significant coefficient in the illustrative regression model.

XI. SUGGESTIONS

- 1. Improve Platform Convenience**-E-commerce companies should focus on simple ordering, faster search, convenient delivery and easy return processes.
- 2. Strengthen Consumer Trust**-Platforms can provide transparent seller information, customer reviews, clear refund policies and reliable customer support.
- 3. Improve Security Awareness**-Consumers should be provided with clear information about secure payment practices, privacy protection and fraud prevention.
- 4. Improve User Interface**-Simple navigation and easy-to-understand interfaces can support consumers with different levels of digital experience.
- 5. Promote Digital Literacy**-Digital literacy programmes can help consumers understand online shopping, digital payments, privacy protection and safe online transactions.



XII. CONCLUSION

The study proposes an empirical framework for examining the determinants affecting e-commerce platform adoption in Karnataka. The illustrative analysis demonstrates the application of descriptive statistics, reliability analysis, correlation and multiple regression.

The proposed model indicates that e-commerce adoption can be examined through technological, economic, psychological and social factors. Convenience, perceived usefulness, trust, security, price benefits, ease of use and digital literacy are among the variables that can be tested empirically.

REFERENCES — APA 7TH EDITION

1. Chopdar, P. K., Korfiatis, N., Sivakumar, V. J., & Lytras, M. D. (2018). Mobile shopping apps adoption and perceived risks: A cross-country perspective utilizing the Unified Theory of Acceptance and Use of Technology. *Computers in Human Behavior*, 86, 109–128. <https://doi.org/10.1016/j.chb.2018.04.017>
2. Dasha, S., & Sajib, K. B. (2008). The role of consumer self-efficacy and website social-presence in customers' adoption of B2C online shopping: An empirical study in the Indian context. *Journal of International Consumer Marketing*, 20(2), 33–48. https://doi.org/10.1300/J046v20n02_04
3. Hamsalekha, S., & Srikant, C. (2025). E-commerce platforms and consumer buying behaviour: An empirical study in selected Tier-2 cities of Karnataka. *Lex Localis – Journal of Local Self-Government*, 23(S4), 3526–3536. <https://doi.org/10.52152/801107>
4. Kirubadevi, P., & Ganesh, S. S. (2016). Consumer credence towards online shopping: A study of Karnataka consumers. *International Journal of Advanced Scientific Research & Development*, 3(3/1), 73–82.
5. Tandon, U., Kiran, R., & Sah, A. N. (2016). Understanding online shopping adoption in India: Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) with perceived risk application. *Service Science*, 8(4), 420–437. <https://doi.org/10.1287/serv.2016.0154>
6. Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly*, 36(1), 157–178.
7. Vijayakumar. (2024). A study on consumer attitude towards online shopping in Karnataka and its obstacles. *ShodhKosh: Journal of Visual and Performing Arts*, 5(2). <https://doi.org/10.29121/shodhkosh.v5.i2.2024.3066>
8. *Impact of perceived risk on consumers technology acceptance in online grocery adoption amid COVID-19 pandemic*. (2021). *Sustainability*, 13(18), 10221.
9. *Analysis of factors affecting intent to use mobile commerce services in India*. (2022). *International Journal of E-Services and Mobile Applications*, 14(1). <https://doi.org/10.4018/IJESMA.300268>
10. *Factors impacting behavioural intentions to adopt the electronic marketplace: Findings from small businesses in India*. (2022). *Journal of Global Information Technology Management*.

