

Factors Influencing Customer Adoption of App-Based Laundry and Ironing Services: The Role of Logistics Efficiency and Consumer Perceptions

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Abstract - The rapid growth of smartphone usage and digital service platforms has significantly reshaped how consumers access everyday services. Among these emerging services, app-based laundry and ironing platforms allow customers to schedule pickup, cleaning, and delivery through mobile applications. This study investigates the factors that influence customer adoption of such services, with particular emphasis on logistics efficiency and consumer perceptions. Key variables examined include price perception, service convenience, trust, online reviews, digital literacy, and logistics efficiency. Data were collected through a structured questionnaire, and 122 valid responses were analysed using IBM SPSS Statistics. The statistical techniques applied include descriptive statistics, reliability analysis, Pearson correlation, multiple regression, and one-way ANOVA. The findings reveal that logistics efficiency, trust, and service convenience play important roles in shaping customer adoption intentions. The study highlights the importance of operational reliability and positive customer perceptions in encouraging the use of app-based laundry services.

Key Words: App-based laundry services, logistics efficiency, service convenience, trust, digital service adoption, customer adoption intention.

1. INTRODUCTION

Advancements in mobile technology and digital platforms have transformed the way services are delivered and consumed across various industries. Consumers increasingly depend on mobile applications to access services such as food delivery, ride-hailing, home maintenance, and other daily conveniences. In this context, app-based laundry services have emerged as a

convenient solution that allows users to manage routine household tasks efficiently.

Urban lifestyles are often characterized by busy schedules, long working hours, and commuting demands. As a result, individuals frequently look for alternatives that help them save time and effort in performing domestic activities such as washing and ironing clothes. Mobile-based laundry platforms address this need by allowing customers to schedule pickup and delivery services directly through smartphone applications.

Although these services offer significant convenience, their adoption is influenced by several consumer-related and service-related factors. Customers tend to evaluate aspects such as pricing fairness, service convenience, reliability, and trust in the service provider before deciding to use a digital platform. In addition, information provided through online reviews and ratings often shapes consumer expectations about service quality.

Considering these factors, this study examines the determinants that influence customer adoption of app-based laundry and ironing services, with particular attention to logistics efficiency and consumer perceptions.

2. Literature Review

Previous research on technology adoption indicates that individuals are more willing to use new digital systems when they believe the technology is beneficial and easy to operate. The Technology Acceptance Model (TAM) introduced by Davis emphasizes that perceived usefulness and perceived ease of use play a significant role in determining user acceptance of technological systems.

Service convenience is widely recognized as an important factor influencing consumer adoption of digital platforms. Mobile applications that enable users to

quickly access services, schedule tasks, and receive timely service delivery contribute to higher levels of customer satisfaction and increase the likelihood of continued usage.

Pricing perceptions also affect consumer decision-making. Customers often compare the cost of a service with the value they expect to receive. When pricing structures are transparent and perceived as fair, consumers are more likely to consider the service worthwhile and adopt the platform.

Trust is another crucial factor in digital service environments. Customers must feel confident that the service provider will handle their garments responsibly and deliver the service as promised. A high level of trust reduces uncertainty and strengthens customer willingness to adopt the service.

Online reviews have become an important source of information in digital marketplaces. Consumers frequently rely on the feedback and experiences shared by other users before choosing a service provider. Positive reviews can increase confidence and reduce perceived risk.

Digital literacy refers to an individual's ability to effectively use digital tools and mobile applications. Individuals who possess higher levels of digital competence are generally more comfortable using app-based platforms for various services.

In addition, logistics efficiency is particularly important in on-demand service models. Effective coordination of pickup and delivery operations ensures that services are completed on time, which enhances customer satisfaction and encourages repeated usage.

3. Research objectives

The study aims to achieve the following objectives:

1. To examine consumer perceptions regarding app-based laundry services.
2. To analyse the influence of price perception, service convenience, trust, online reviews, and digital literacy on customer adoption intention.
3. To evaluate the impact of logistics efficiency on adoption intention.
4. To determine whether adoption intention varies across different location categories.

4. Research Hypothesis

The following hypotheses were developed for this study:

- H1: Price perception positively influences customer adoption intention.
- H2: Service convenience positively influences customer adoption intention.
- H3: Trust positively influences customer adoption intention.
- H4: Online reviews positively influence customer adoption intention.
- H5: Digital literacy positively influences customer adoption intention.
- H6: Logistics efficiency positively influences customer adoption intention.

5. Research Methodology

Research Design

The study adopts a quantitative research approach based on survey data collected from respondents.

Data Collection

Primary data were gathered using an online questionnaire that included demographic questions and perception-based statements measured on a five-point Likert scale.

Sample Size

A total of **122 valid responses** were obtained and used for statistical analysis.

Data Analysis

The collected data were analysed using **IBM SPSS Statistics**. The following statistical techniques were applied:

- Descriptive statistics
- Reliability analysis
- Pearson correlation analysis
- Multiple regression analysis
- One-way ANOVA

6. Result and Analysis

Respondent Profile

The majority of respondents belonged to the 21–30 age group (79.5%). Male respondents accounted for 68% of the sample, while female respondents represented 31.1%. Students formed the largest occupational category among the respondents.

6.1 Descriptive Statistics

The descriptive analysis indicates that respondents placed strong importance on service convenience and online reviews when evaluating app-based laundry services.

Variable	Category	Frequency	Percentage
Age	Below 20	21	17.2
	21-30	97	79.5
	31-40	4	3.3
Gender	Male	83	68.0
	Female	38	31.1
	Prefer not to say	1	0.8
Occupation	Student	81	66.4
	Working Professional	28	23.0
	Business	6	4.9
	Other	7	5.7
Location	Metropolitan	57	46.7
	Urban	26	21.3
	Semi Urban	15	12.3
	Rural	24	19.7

Table 1: Demographic Profile of Respondents

Table 1 shows the demographic characteristics of the respondents. The majority of respondents were aged between 21–30 years (79.5%). Most respondents were students (66.4%), and nearly half of the respondents were from metropolitan areas (46.7%).

6.2 Reliability Analysis

Cronbach’s alpha values ranged between 0.674 and 0.843, suggesting acceptable internal consistency among the measurement items used in the study.

Variable	No of items	Cronbach Alpha
1. Price Perception	3	0.674
2. Service convenience	3	0.759
3. Trust	3	0.795
4. Online Review	3	0.797

5. Digital Literacy	3	0.766
6. Logistics Efficiency	3	0.737
7. Adoption Intention	3	0.843

Table 2: Reliability Statistics

The Cronbach alpha values range from 0.674 to 0.843, indicating acceptable internal consistency among the measurement items.

6.3 Correlation Analysis

The correlation results reveal positive relationships between logistics efficiency, trust, service convenience, and customer adoption intention. These relationships suggest that improvements in operational efficiency and customer confidence can enhance the likelihood of service adoption.

Variable	PP	SC	TR	OR EV	DL	LOG EFF	AI
PP	1						
SC	.544**	1					
TR	.582**	.556**	1				
OR EV	.471**	.708**	.613**	1			
DL	.536**	.637**	.648**	.542**	1		
LOG EFF	.567**	.638**	.662**	.665**	.655**	1	
AI	.596**	.587**	.628**	.468**	.654**	.682**	1

Table 3: Correlation Analysis

** Correlation is significant at the 0.01 level (2-tailed).

6.4 Regression Analysis

The regression model explains 60.3% of the variance in adoption intention ($R^2 = 0.603$). Among the independent variables, logistics efficiency shows the strongest positive effect on adoption intention.

Digital literacy, trust, and price perception also demonstrate statistically significant relationships with adoption intention, while service convenience shows a positive but statistically weaker influence.

Variable	B	Std. Error	Beta	t-value	Sig.
Constant	-0.235	0.336	—	-0.702	0.484
Price Perception (PP)	0.234	0.101	0.18	2.304	0.023
Service Convenience (SC)	0.199	0.108	0.173	1.83	0.07
Trust (TR)	0.202	0.099	0.185	2.035	0.044
Online Reviews (OREV)	-0.213	0.104	-0.191	-2.047	0.043
Digital Literacy (DL)	0.234	0.098	0.212	2.375	0.019
Logistics Efficiency (LOGEFF)	0.387	0.11	0.335	3.528	0.001

Table 4: Regression analysis

The regression results show that logistics efficiency ($\beta = 0.335$, $p = 0.001$) has the strongest positive influence on customer adoption intention. Digital literacy, trust, and price perception also significantly influence adoption intention. Service convenience shows a positive but statistically insignificant effect.

6.5 ANOVA (Regression Model)

The ANOVA results confirm that the regression model is statistically significant ($F = 29.075$, $p < 0.001$), indicating that the independent variables collectively explain a significant portion of the variation in customer adoption intention.

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	56.428	6	9.405	29.075	0.000
Residual	37.198	115	0.323		
Total	93.626	121			

Table 5: Anova (Regression Model)

The results indicate that the regression model is statistically significant ($F = 29.075$, $p < 0.001$). This suggests that the independent variables—price perception, service convenience, trust, online reviews, digital literacy, and logistics efficiency—collectively have a significant influence on customer adoption intention of app-based laundry services.

6.6 One-Way ANOVA (Location Type)

The analysis indicates that there is no significant difference in adoption intention across location categories such as metropolitan, urban, semi-urban, and rural areas.

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.477	3	0.492	0.63	0.597
Within Groups	92.149	118	0.781		
Total	93.626	121			

Table 6: One-Way ANOVA (Location Type)

The results indicate that there is no statistically significant difference in customer adoption intention across the different location categories ($F = 0.630$, $p = 0.597$). This suggests that customers from metropolitan, urban, semi-urban, and rural areas show similar levels of willingness to adopt app-based laundry services.

7. Discussion

The results highlight the importance of digital readiness among consumers. Individuals who possess stronger digital skills tend to be more comfortable using mobile applications for routine services, which increases their likelihood of adopting app-based laundry platforms.

Customer reviews also influence user perceptions, as many consumers rely on feedback from previous users before selecting a service provider. Positive reviews help build credibility and reduce uncertainty regarding service quality.

Another key finding is the significance of logistics efficiency. Efficient coordination of pickup and delivery services improves reliability and enhances the overall customer experience. When services are delivered on time and as expected, customer satisfaction increases, which can lead to higher adoption rates.

8. Managerial Implications

Based on the findings, service providers should consider the following strategies:

- Strengthen logistics systems to ensure reliable pickup and delivery services
- Implement transparent and competitive pricing policies
- Encourage customers to provide reviews and feedback
- Develop user-friendly mobile applications that simplify service access

These measures can help improve customer trust and increase the adoption of app-based laundry services.

9. Conclusion

This study examined the key factors influencing customer adoption of app-based laundry and ironing services. The findings suggest that logistics efficiency, trust, and service convenience are important determinants of adoption intention.

Enhancing operational reliability and maintaining customer confidence can significantly improve the adoption of digital laundry service platforms. As digital service ecosystems continue to grow, companies that focus on efficient logistics and positive customer experiences are more likely to succeed in this market

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The heading should be treated as a 3rd level heading and should not be assigned a number.

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