Factors Influencing the Adoption of Online-to-Offline E-commerce Models by Rural Residents in Shanghai Gaohang Town

Review of Integrative Business & Economics Research

Jie Yang
KMITL Business School, King Mongkut's Institute of Technology Ladkrabang

Nuttawut Rojniruttikul*
KMITL Business School, King Mongkut's Institute of Technology Ladkrabang

ABSTRACT

This study examines the factors influencing the adoption of Online-to-Offline (O2O) e-commerce in Gaohang Town through a multiple linear regression analysis. Data was collected from a sample of 385 respondents using convenience sampling and a survey with a structured questionnaire. The results reveal that education, online platform experience, logistics services, and after-sales service are significant predictors of O2O e-commerce adoption. Education (B = 0.084, Beta = 0.097, p = .000), online platform experience (B = 0.158, Beta = 0.160, p = .001), logistics services (B = 0.296, Beta = 0.301, p = .000), and after-sales service (B = 0.304, Beta = 0.296, p = .000) all positively influence adoption rates. The mediating effect analysis indicates that online platform experience mediates the relationships between logistics services and after-sales services and O2O e-commerce adoption, with estimates of 0.061 and 0.079, respectively ($p < .01$). The model explains 78.8% of the variance in adoption (R-square = 0.788), confirming its robustness. The findings suggest that improving user interface design, logistics operations, and after-sales support, along with increasing digital literacy, can significantly boost O2O e-commerce adoption. This study contributes to the theoretical understanding of O2O e-commerce adoption and offers practical implications for businesses and policymakers. Future research directions include longitudinal studies, exploring emerging technologies, behavioral and psychological factors, cross-cultural comparisons, and the impact of policy and regulation.

Keywords: O2O E-commerce, Rural Adoption, Online Platform Experience, Logistics Services.

Received 8 December 2023 | Revised 21 June 2024 | Accepted 9 August 2024.

1. INTRODUCTION

The rapid growth of China's economy over the past thirty years has garnered widespread attention throughout the nation. However, since the 2008 economic crisis, the economy's growth rate has slowed, prompting increased scrutiny and speculation about the future trajectory. Economic transformation is imminent, and the stimulation of domestic demand is recognized as a long-term imperative. The government and enterprises place high value

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

on the development of the rural economy, and the surge in e-commerce presents a new historical opportunity.

As of 2022, the Ministry of Finance and the Ministry of Commerce announced a significant investment of 2 billion yuan in 200 e-commerce demonstration counties nationwide. This investment aims to bolster support services for rural logistics, finance, e-commerce, and talent. Major companies like Alibaba, JD, Suning, and China Post strategically position themselves in rural areas, providing a favorable environment for rural e-commerce.

According to recent reports, China's urbanization process continues to advance, with the urban population accounting for 54.1% of the national population in 2021. Simultaneously, internet penetration rates in both urban and rural areas are increasing. In 2021, the internet penetration rates in urban and rural areas reached 83.2% and 43.2%, respectively.

The ongoing decrease in Engel's coefficient for urban and rural households, coupled with the growing internet penetration, indicates a substantial increase in service demand and the acceptance and application of online-to-offline (O2O) services by rural consumers. This trend is driven by the popularization of the internet, rising consumption levels, and improved living standards.

The upgrade of consumer institutions and the improvement of consumption levels in the rural market are underway. A burgeoning middle class in rural areas, unburdened by soaring housing prices, exhibits robust consumption capabilities, influencing trends and contributing to a burgeoning rural market. This "middle class phenomenon" promises a vast future consumption space in the rural market. Rural market consumption is rapidly evolving, with data indicating a richer dietary consumption structure, increased spending on transportation and information, and a notable uptick in healthcare expenditures. The internet era's development has led more people to rely on online platforms, exposing rural residents to a myriad of online stores. E-commerce, offering convenience, efficiency, and a plethora of choices, is becoming integral to driving the rural shopping economy.

Despite the wide and scattered coverage of rural e-commerce, encompassing over a thousand small counties and 600,000 villages and towns, accounting for approximately 45.2% of the national population, challenges persist. Approximately 178 million rural residents use the internet, but the penetration rate of rural internet users stands at only 28.8%. Many underdeveloped towns, constrained by limited internet access, have untapped potential for rural e-commerce development. Addressing the urgent need for a socialized logistics system is crucial. The public's high acceptance of socialized logistics, coupled with low construction and operation costs, facilitates faster and better communication for rural store managers. In contrast, the self-built logistics system poses significant challenges for rural e-commerce due to its high construction and operation costs, inadequate third-party logistics support, and low operational efficiency. Successful implementation of channels for logistics, marketing, and payment relies on a robust internet infrastructure. This research aims to provide a structured framework for assessing the level of adoption of O2O e-commerce among rural residents in Gaohang Town and to identify the factors influencing the adoption of O2O e-commerce in the same area. Gaohang Town, Shanghai, serves as an ideal testing ground for examining Online-to-Offline (O2O) e-commerce adoption in rural areas due to its representative nature and unique socio-economic characteristics. Positioned within proximity to Shanghai, one of China's major urban centers, Gaohang Town offers insights into the interplay between rural and urban dynamics and how neighboring urbanization and e-commerce

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

development may influence O2O adoption in rural settings. Furthermore, Gaohang Town embodies typical challenges faced by many rural areas in China, including limited internet access and underdeveloped infrastructure, making the findings applicable to a broader range of rural contexts. The presence of a burgeoning middle class with robust consumption capabilities and potentially distinctive socio-economic features in Gaohang Town provides an opportunity to explore how these factors influence O2O adoption patterns. Thus, by focusing on Gaohang Town, this research aims to contribute valuable insights into rural e-commerce dynamics and inform policies and strategies aimed at enhancing O2O adoption and promoting inclusive economic growth in non-urban contexts. Amidst these challenges and opportunities, the study aims to contribute to the understanding of Online-to-Offline (O2O) e-commerce adoption in rural areas, with a specific focus on Gaohang Town in Shanghai. By assessing the level of O2O e-commerce adoption and identifying the factors influencing adoption in this area, the research seeks to provide valuable insights that can inform policymakers and businesses in their efforts to enhance e-commerce in similar rural settings. Ultimately, this research aims to contribute to the ongoing discourse on rural e-commerce dynamics and facilitate the sustainable growth of O2O adoption in non-urban contexts.

2. LITERATURE REVIEW

2.1 Relationship between Online Platform Experience and the Adoption of O2O E-commerce

The exploration of online platform experience and its profound impact on consumer behavior and e-commerce adoption has been a central theme in academic discourse. A multitude of studies has scrutinized the intricate facets of online platform interactions and their consequential influence on users' decision-making processes. Extensive research, exemplified by Thatcher et al. (2006), contends that a positive online platform experience plays a crucial role in enhancing user satisfaction and trust, thereby increasing the likelihood of technology adoption. Scholars such as Davis and North (1971) and Oxley and Yeung (2001), building upon the Technology Acceptance Model (TAM) and analogous frameworks, underscore the pivotal role of user satisfaction as a precursor to technology adoption, emphasizing the contribution of positive online platform experiences to heightened user satisfaction and a positive inclination toward adopting innovative technologies. Trust, identified as a cornerstone for successful e-commerce transactions by Gibbs et al. (2003), is significantly influenced by positive online platform experiences, fostering a sense of security for users in sharing personal information and engaging in online purchases. Social interactions within online platforms, as demonstrated by Gibbs and Kraemer (2004), play a crucial role in shaping user behavior, with positive interactions, reviews, and recommendations within online communities substantially impacting individual users' perceptions and influencing their decisions to adopt e-commerce practices. Considering the cultural and institutional factors influencing B2B e-commerce adoption decisions in Taiwan, as discussed by Thatcher et al. (2006), it becomes evident that the institutional environment significantly shapes users' experiences on online platforms. Global perspectives on e-commerce adoption, emphasized by studies from Gibbs et al. (2003), Oxley and Yeung (2001), and others, provide insights into the cross-country determinants of online platform experiences and their profound impact on user behavior. In conclusion, the collective evidence from the literature suggests a positive and significant relationship between online platform experience and the adoption

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

of Online-to-Offline (O2O) e-commerce, highlighting the pivotal role of users' experiences in shaping attitudes, satisfaction levels, and, ultimately, decisions to embrace O2O e-commerce practices.

2.2 Relationship between Price and the Adoption of O2O E-commerce

The examination of the interconnection between pricing strategies and the adoption of Online-to-Offline (O2O) e-commerce constitutes a pivotal focus within academic research, drawing insights from diverse studies that scrutinize the nuanced dynamics of pricing and its profound impact on consumer behavior. A considerable body of literature underscores the pivotal role of price sensitivity in shaping consumer behavior and adoption decisions, exemplified by Poon and Swatman's (1999) exploration of small business Internet commerce issues. Zhu, Kraemer, and Xu's (2006) investigation into innovation assimilation emphasizes the significance of pricing models in the global assimilation of e-commerce innovations, highlighting how strategic pricing decisions wield influence over adoption trajectories in diverse markets. Wong's (2003) work on global and national factors affecting e-commerce diffusion contributes insights into the interplay between pricing strategies and the international adoption of e-commerce, emphasizing the importance of considering global economic factors in understanding pricing dynamics. Husted and Allen's (2006) exploration of Corporate Social Responsibility (CSR) within multinational enterprises reveals that CSR practices can impact pricing decisions, subsequently influencing consumer perceptions and adoption behaviors. Examining e-commerce readiness from an institutional perspective, Oxley and Yeung (2001) demonstrate how the institutional environment can shape pricing strategies and competitiveness, providing crucial insights into the institutional factors influencing pricing decisions and their impact on the adoption landscape. Cultural factors, as highlighted by Yoon (2009), play a significant role in consumer acceptance of e-commerce, revealing how national culture values can influence pricing perceptions and adoption decisions. In conclusion, the collective evidence from the literature substantiates a significant positive relationship between pricing strategies and the adoption of O2O e-commerce, positioning pricing decisions as a critical factor that shapes consumer behavior and steers the trajectory of adoption.

2.3 Relationship between Logistics Services and the Adoption of O2O E-commerce

This literature review investigates the intricate relationship between logistics services and the adoption of Online-to-Offline (O2O) e-commerce, drawing insights from pivotal studies that underscore the crucial role played by logistics in shaping consumer behavior within the O2O paradigm. Oxley and Yeung's (2001) study emphasizes the significance of robust logistics services in contributing to the international competitiveness of e-commerce, emphasizing the integral role of efficient product and service delivery in overall adoption success. Gibbs and Kraemer's (2004) cross-country investigation, rooted in an institutional approach, highlights logistics infrastructure as a determining factor influencing the scope and success of e-commerce adoption across different nations. Building on this, Gibbs, Kraemer, and Dedrick (2003) explore global factors, including logistics infrastructure, shaping the diffusion of e-commerce, emphasizing the necessity of a robust logistics network in overcoming adoption barriers. Husted and Allen's (2006) examination of Corporate Social Responsibility (CSR) reveals the influence of CSR considerations on logistics practices in multinational enterprises, impacting consumer perceptions and, consequently, e-commerce adoption. Zhu, Kraemer, and Xu's (2006)

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

investigation into innovation assimilation accentuates the pivotal role of logistics in the global diffusion of e-business innovations, emphasizing the influence of efficient logistics services on the prompt and effective adoption of innovations by businesses. Wong's (2003) study on global and national factors affecting e-commerce diffusion underlines the importance of logistics efficiency in overcoming adoption barriers within specific national contexts. In conclusion, the cumulative evidence from the literature supports a compelling argument for a significant positive relationship between logistics services and the adoption of O2O e-commerce, with logistics infrastructure emerging as a critical determinant influencing consumer perceptions and adoption behaviors.

2.4 Relationship between After-sale Service and the Adoption of O2O E-commerce

This literature review delves into the nuanced relationship between after-sale service and the adoption of Online-to-Offline (O2O) e-commerce, synthesizing insights from pertinent studies that illuminate the pivotal role of post-purchase services in shaping consumer behavior. Explored within this context, the correlation between after-sale service and consumer satisfaction has been extensively studied, with Poon and Swatman (1999) emphasizing its significance in fostering customer contentment, trust, and loyalty in the realm of small business Internet commerce. Contributions from scholars like Gibbs and Kraemer (2004), Gibbs, Kraemer, and Dedrick (2003), and Husted and Allen (2006) shed light on how institutional, environmental, and corporate social responsibility factors intricately influence e-commerce adoption, underscoring the importance of after-sale services within the broader e-commerce ecosystem. Furthermore, the investigation by Zhu, Kraemer, and Xu (2006) highlights the facilitative role of efficient after-sale services in the assimilation of e-business innovations, contributing to a favorable environment for technology adoption. Wong's (2003) exploration of global and cultural factors affecting e-commerce diffusion emphasizes the need to tailor after-sale services according to cultural expectations. Lastly, Yang and Rivers' (2009) study on CSR practices in multinational enterprises provides insights into stakeholder and institutional perspectives on service, recognizing the profound impact of CSR practices on after-sale services and their influence on consumer behavior and adoption decisions. In conclusion, the collective evidence from the literature underscores a significant positive relationship between after-sale service and the adoption of O2O e-commerce, affirming the integral role of after-sale services in shaping the overall consumer experience, including satisfaction, trust, and loyalty.

2.5 Relationship between Product Quality and the Adoption of O2O E-commerce

The examination of the connection between product quality and the adoption of Online-to-Offline (O2O) e-commerce reveals a consistent and crucial relationship. Research emphasizes that product quality is integral in building consumer trust and loyalty, as evidenced by studies such as Poon and Swatman (1999)'s exploration of small business Internet commerce. Institutional factors, highlighted in the works of Gibbs and Kraemer (2004), play a significant role in shaping perceptions of product quality, indicating that robust institutional environments contribute to consumers' trust in e-commerce practices. Corporate Social Responsibility (CSR), as studied by Husted and Allen (2006), extends to ensuring product quality, underscoring its impact on consumers' perceptions of reliability. Product quality's significance in the assimilation of e-business innovations, as emphasized by Zhu, Kraemer, and Xu (2006), further solidifies its role in creating a positive environment for technology adoption. Additionally, global perspectives on

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

quality standards, as discussed by Wong (2003), and stakeholder and institutional perspectives on product quality, as examined by Yang and Rivers (2009), highlight the broad-reaching impact of product quality considerations on international and stakeholder contexts, providing comprehensive insights for O2O e-commerce practitioners seeking to optimize their product quality strategies.

Based on the literature review, a conceptual framework and five hypotheses have been developed, as shown below.

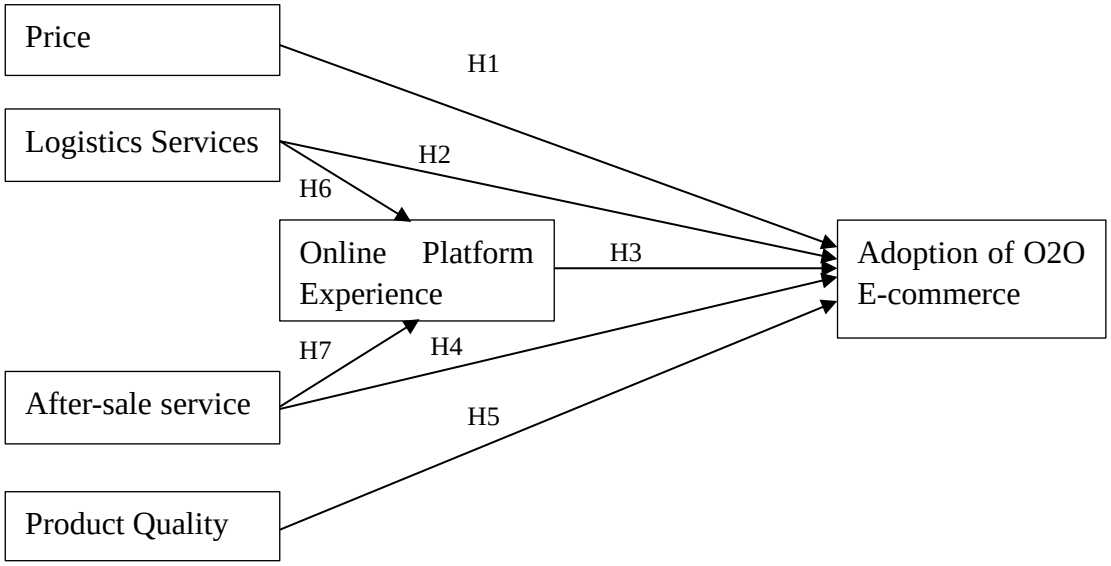

Figure 1.1 Conceptual Framework

In conclusion, five hypotheses have been proposed as follows:

H1: There is a significant positive relationship between price and the adoption of O2O e-commerce.

H2: There is a significant positive relationship between logistics services and the adoption of O2O e-commerce.

H3: There is a significant positive relationship between online platform experience and the adoption of O2O e-commerce.

H4: There is a significant positive relationship between after-sale service and the adoption of O2O e-commerce.

H5: There is a significant positive relationship between product quality and the adoption of O2O e-commerce.

H6: There is a significant positive relationship between logistics services and online platform experience.

H7: There is a significant positive relationship between after-sale service and online platform experience.

3. METHODOLOGY

3.1 Population and Sample

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

This study focuses on the residents of Gaohang Town in the Pudong New Area, Shanghai, which encompasses a dynamic population, including both permanent and floating residents. The precise population size of Gaohang Town poses challenges due to its fluctuating nature. In the absence of an exact population figure, Cochran's formula has been utilized to determine an appropriate sample size for this study. Cochran's formula takes into account the unknown population size and provides a calculated sample size that ensures statistical reliability. In alignment with Cochran's formula, a sample of 385 residents has been purposively selected for inclusion in this study. This sample size is strategically chosen to capture a representative cross-section of the diverse community in Gaohang Town, accommodating both permanent and floating residents. The use of Cochran's formula contributes to the robustness of the study design, ensuring that the selected sample is statistically sound for the investigation of the factors at hand.

3.2 Scope of the study

This study investigates various factors influencing the adoption of Online-to-Offline (O2O) e-commerce among residents of Gaohang Town in the Pudong New Area, Shanghai. The research encompasses a comprehensive exploration of key variables to understand the intricate dynamics associated with O2O e-commerce adoption in this dynamic community.

3.3 Variables

Independent Variables:

- Price: Analyzes how pricing strategies influence consumer decisions to adopt O2O (Online-to-Offline) e-commerce.
- Logistics Services: Examines the impact of logistics services, including delivery efficiency and reliability, on the likelihood of O2O adoption.
- After-sale Service: Investigates the role of after-sale services in shaping consumer perceptions and influencing O2O e-commerce adoption.
- Product Quality: Evaluates the significance of product quality in the decision-making process of O2O adoption.

Mediating Variable:

Online Platform Experience: Assesses the quality and usability of online platforms, focusing on ease of navigation, user interface, and overall user satisfaction.

Dependent Variable:

Adoption of O2O E-commerce: Focuses on understanding the extent to which residents of Gaohang Town embrace and engage in O2O e-commerce activities.

3.4 Research Instrument

To gather comprehensive and meaningful data for the investigation into Online-to-Offline (O2O) e-commerce adoption among residents of Gaohang Town, a meticulously designed research instrument is employed. The instrument aims to capture a comprehensive range of responses and insights related to key variables. A structured survey Likert scale questionnaire is administered to gather quantitative data on the independent and

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

dependent variables identified in the research scope. Questions related to Online Platform Experience, Price, Logistics Services, After-sale Service, and Product Quality are crafted to solicit respondents' opinions, perceptions, and behaviors regarding O2O adoption.

3.5 Data Collection

Before full-scale implementation, the research instrument, including the survey questionnaire, undergoes pilot testing with a small group of 30 individuals from another town, not Gaohang Town. Using reliability and validity tests, this phase aims to identify and rectify any ambiguities, ensure clarity of questions, and refine the instrument for optimal data collection. After meeting the criteria for a Cronbach's alpha greater than 0.7 and an Index of Item Objective Congruence (IOC) greater than 0.5, questions are distributed using the convenience sampling method to obtain the planned 385 respondents.

3.6 Data Analysis

Data processing and analysis typically involve the utilization of statistical software for conducting descriptive statistics and regression analysis to test hypotheses. Specifically, the statistical analysis employed in this study, including multiple regression analysis, is intended to assess the relationship between the independent and dependent variables.

4. RESULTS

Table 1: Demographic Information

Demographic	Number	Percent
Gender		
Male	172.0	44.7
Female	213.0	55.3
Age		
Less than or equal to 20 years old	41	10.6
21-30 years old	230	59.7
31-40 years old	96	24.9
41-50 years old	18	4.7
Education		
High School or lower	31	8.1
Vocational School	34	8.8
Bachelor’s degree	248	64.4
Master’s degree	62	16.1
Doctorate degree	10	2.6
Marital Status		
Single	220	57.1
Married	138	35.7
Others	28	7.1
Monthly income (unit: RMB)		
Less than or equal to 3,000	69	17.9
3,001-6,000	89	23.1

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

6,001-9,000	76	19.7
9,001-12,000	52	13.5
Over 12,000	99	25.7
Occupation		
Student	107	27.8
Employed full-time	10	2.6
Employed part-time	45	11.7
Self-employed	7	1.8
Unemployed	216	56.1
Retired	107	27.8
Other	10	2.6
Living in rural/township		
Less than or equal to 10 years	220	57.1
11-20 years	127	33.0
21-30 years	28	7.1
31-40 years	10	2.7
Number of family member		
1-3	155	40.3
4-6	186	48.3
7-9	31	8.1
more than 9 people	13	3.4

Table 1 provides a detailed snapshot of the demographic characteristics of the study participants in Gaohang Town. The gender distribution indicates a fairly balanced representation, with 44.7% identified as male and 55.3% as female. In terms of age, the majority falls within the 21-30 years old category (59.7%), emphasizing the presence of a youthful demographic. Education levels reveal a predominance of individuals with a Bachelor's degree (64.4%), highlighting a relatively higher educational attainment within the sample. Marital status shows that 57.1% of participants are single, while 35.7% are married.

Examining monthly income, a noteworthy proportion (23.1%) falls within the 3,001-6,000 RMB bracket, suggesting a diverse economic spectrum. The occupation distribution indicates a significant student population (27.8%), with a substantial portion (56.1%) being unemployed. Regarding the duration of residence in rural/township areas, the majority (57.1%) have lived there for ten years or less, showcasing a relatively recent settlement pattern. Family sizes vary, with 48.3% having 4-6 members, reflecting diverse household compositions.

Table 2: Mean and Standard Deviation for Each Variable

Variable	Mean	Standard Deviation	Level
Adoption of O2O E-commerce	4.380	.617	Highest
Online Platform Experience	4.230	.686	Highest
Price	4.052	.790	High

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

Logistic Services	4.280	.599	Highest
After-sales service	4.245	.599	Highest
Product quality	3.932	.827	High

The results in Table 2 indicate that respondents have a generally positive perception of factors influencing O2O e-commerce adoption in Gaohang Town. The mean scores for Adoption of O2O E-commerce (4.380), Online Platform Experience (4.230), Logistic Services (4.280), and After-sales Service (4.245) are all very high, suggesting that these aspects are well-regarded and consistent among respondents, as reflected by their relatively low standard deviations. Price (4.052) and Product Quality (3.932) also receive high ratings but exhibit more variability, with standard deviations of 0.790 and 0.827 respectively, indicating that perceptions in these areas are more varied.

Table 3: Multiple Linear Regression Results

Variable	B	Beta	t	p-value
Constant	.290		1.785	.075
Gender	-.029	-.018	-.740	.460
Age	.008	.009	.255	.799
Education	.084	.097	3.665	.000**
Marital Status	-.027	-.018	-.667	.505
Income	-.003	-.006	-.202	.840
Occupation	-.002	-.006	-.202	.840
Living in Rural/township	-.045	-.061	-1.950	.052
Family Size	-.009	-.010	-.394	.694
Online Platform Experience	.158	.160	3.348	.001**
Price	.114	.121	2.329	.020*
Logistic Services	.296	.301	5.889	.000**
After-sales service	.304	.296	5.642	.000**
Product Quality	.067	.072	1.606	.109
R-square = .788; SEE = 106.317, Sig. = .000**				

* $p<0.05$; ** $p<0.01$

Table 3 presents the results of a linear regression analysis examining variables influencing the adoption of Online-to-Offline (O2O) e-commerce in Gaohang Town. The findings reveal several significant predictors: Education (B = 0.084, Beta = 0.097, t = 3.665, p = .000), Online Platform Experience (B = 0.158, Beta = 0.160, t = 3.348, p = .001), Price (B = 0.114, Beta = 0.121, t = 2.329, p = .020), Logistics Services (B = 0.296, Beta = 0.301, t = 5.889, p = .000), and After-sales Service (B = 0.304, Beta = 0.296, t = 5.642, p = .000). These variables positively influence the adoption of O2O e-commerce. Conversely, Gender, Age, Marital Status, Income, Occupation, Living in rural/township, Family Size, and Product Quality did not show statistically significant effects. The model's goodness of fit is reflected in an R-square of .788, indicating that 78.8% of the variance in O2O e-commerce adoption can be explained by the included variables. The Standard Error of Estimate (SEE) is 106.317, and the overall model significance is p

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

= .000, underscoring its robustness in predicting O2O e-commerce adoption patterns in the context studied.

Table 4. Mediating effect of Online Platform Experience

Effect	Estimate	t	p-value
Logistics Services → Online Platform Experience	.386	7.376	.000**
Logistics Services → Online Platform Experience → Adoption of O2O E-commerce	.061	3.062	.002**
After-sale Service → Online Platform Experience	.499	9.144	.000**
After-sale Service → Online Platform Experience → Adoption of O2O E-commerce	.079	3.152	.002**

** p<0.01

Table 4 presents the mediating effect of Online Platform Experience on the relationships between logistics services, after-sale services, and the adoption of O2O (Online-to-Offline) e-commerce. The findings indicate that logistics services significantly enhance the online platform experience, with an estimate of .386 and strong statistical significance ($t = 7.376$, $p < .01$). This improved platform experience indirectly contributes to the adoption of O2O e-commerce, as evidenced by an estimate of .061 ($t = 3.062$, $p < .01$). Similarly, after-sale services also have a substantial positive impact on the online platform experience, with an estimate of .499 ($t = 9.144$, $p < .01$). This improvement in the online platform experience mediates the effect of after-sale services on O2O e-commerce adoption, reflected in an estimate of .079 ($t = 3.152$, $p < .01$). Overall, both logistics and after-sale services significantly enhance the online platform experience, which in turn positively affects the adoption of O2O e-commerce, with all effects showing strong statistical significance ($p < .01$).

5. CONCLUSION

This study provides a comprehensive analysis of the factors influencing Online-to-Offline (O2O) e-commerce adoption in Gaohang Town, revealing both significant and non-significant predictors. Significant predictors such as education level, online platform experience, pricing strategies, logistics services, and after-sales support collectively explain 78.8% of the variance in adoption behavior. The mediating role of online platform experience underscores how enhancements in logistics and after-sales services positively influence adoption through improved user experiences. Conversely, non-significant results for variables like gender, age, marital status, income, occupation, living situation, family size, and product quality suggest that these factors may play a lesser role in driving O2O e-commerce adoption in this context.

6. DISCUSSION

The findings from the multiple linear regression analysis and the mediation model provide valuable insights into the factors influencing the adoption of Online-to-Offline (O2O) e-commerce in Gaohang Town. Key variables such as Education, Online Platform Experience, Price, Logistics Services, and After-sales Service emerged as significant predictors of O2O e-commerce adoption.

Influence of Significant Predictors

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

Education was found to positively influence O2O e-commerce adoption (B = 0.084, Beta = 0.097, p = .000), suggesting that higher levels of education might correlate with a greater propensity to adopt O2O e-commerce platforms. This finding is consistent with previous research highlighting education as a critical factor in technology adoption (Rogers, 2003; Venkatesh et al., 2003). Educated consumers are often more familiar with technology and may perceive greater benefits from adopting new digital platforms. Online Platform Experience also played a crucial role, with a strong positive impact on adoption rates (B = 0.158, Beta = 0.160, p = .001). This underscores the importance of user interface design, ease of navigation, and overall user satisfaction with online platforms in driving O2O e-commerce adoption (Hong & Cha, 2013; Liang & Turban, 2011). The mediating effect analysis further substantiated this relationship, showing that enhancements in Online Platform Experience mediated the effects of logistics services (estimate = 0.061, p < .01) and after-sales services (estimate = 0.079, p < .01) on the adoption of O2O E-commerce. Logistics Services (B = 0.296, Beta = 0.301, p = .000) and After-sales Service (B = 0.304, Beta = 0.296, p = .000) were also significant predictors independently, highlighting their direct positive impacts on O2O e-commerce adoption. These findings suggest that efficient logistics operations and responsive after-sales support are critical in fostering consumer trust and satisfaction, thereby encouraging adoption of O2O e-commerce platforms (Zhao & Bao, 2020; Homburg et al., 2012).

Model Fit and Robustness

The model demonstrated a strong goodness of fit (R-square = 0.788), indicating that 78.8% of the variance in O2O e-commerce adoption can be explained by the included variables. This robustness suggests that the identified predictors collectively provide a comprehensive understanding of the factors driving adoption in the studied context. The Standard Error of Estimate (SEE) of 106.317 further supports the reliability of the regression model in predicting adoption patterns.

7. IMPLICATION

The findings of this study have several practical and theoretical implications. Practically, the identification of education, online platform experience, logistics services, and after-sales services as significant predictors of O2O e-commerce adoption offers valuable insights for businesses and policymakers aiming to promote O2O e-commerce. Businesses should invest in improving user interface design, ensuring seamless navigation, and enhancing overall user satisfaction to boost online platform experience. Additionally, efficient logistics operations and responsive after-sales support are crucial in building consumer trust and satisfaction, thereby encouraging O2O e-commerce adoption.

Policymakers should consider creating supportive policies that enhance the infrastructure for logistics and after-sales services. Educational programs that increase digital literacy can also play a significant role in promoting the adoption of O2O e-commerce, particularly in areas with lower levels of education.

Theoretically, this research contributes to the existing body of knowledge by highlighting the mediating role of online platform experience in the relationship between logistics and after-sales services and O2O e-commerce adoption. This emphasizes the importance of a holistic approach that considers both direct and indirect factors influencing adoption. Moreover, the strong goodness of fit of the regression model (R-

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

square = 0.788) underscores the relevance of the identified predictors in explaining the variance in O2O e-commerce adoption.

8. FUTURE RESEARCH

Future research should consider conducting longitudinal studies to gain insights into the sustainability of O2O e-commerce adoption over time. Additionally, examining the impact of emerging technologies such as AI, augmented reality, and blockchain could provide a better understanding of their influence on user experience and logistics. Investigating behavioral and psychological factors, alongside cross-cultural comparisons, could offer deeper insights into consumer decision-making processes. Further studies should also explore various O2O business models and the role of policy and regulation in identifying unique drivers and barriers to adoption. Examining consumer feedback mechanisms and their effect on service quality, as well as the influence of sustainability and ethical considerations on consumer preferences, will guide businesses in aligning their practices with evolving consumer values. Addressing these research directions will contribute to a comprehensive understanding of O2O e-commerce adoption, benefiting businesses, policymakers, and other stakeholders in fostering an effective and inclusive e-commerce ecosystem.

ACKNOWLEDGEMENTS

The authors express sincere appreciation to the study participants for their invaluable contributions to this research. Special gratitude is extended to the KMITL Business School for providing unwavering support throughout the study.

REFERENCES

[1] Davis, L. E., & North, D. C. (1971), *Institutional Change and American Growth. Cambridge University Press, NY.*

[2] Gibbs, J., Kraemer, K. L., & Dedrick, J. (2003), "*Environment and policy factors shaping global e-commerce diffusion: a cross-country comparison" Information Society*, 19(1), 5-18.

[3] Gibbs, K.L. Kraemer. (2004), "*A cross-country investigation of the determinants of scope of e-commerce use: an institutional approach" Electron Mark,* 14 (2), pp. 124-137.

[4] Homburg, C., Jozić, D., & Kuehnl, C. (2012). "Customer experience management: Toward implementing an evolving marketing concept" *Journal of the Academy of Marketing Science, 41*(3), 269-296.

[5] Hong, I. B., & Cha, H. S. (2013). "The mediating role of consumer trust in an online merchant in predicting purchase intention" *International Journal of Information Management, 33*(6), 927-939.

[4] Husted, B., & Allen, D. (2006), "*Corporate social responsibility in the multinational enterprise: strategic and institutional approaches" Journal of International Business Studies,* 37(2006), 838-849.

[5] Liang, T. P., & Turban, E. (2011). "Introduction to the special issue social commerce: A research framework for social commerce" *International Journal of Electronic Commerce, 16*(2), 5-14.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

[6] Muljadi, I.W, Abdul,R. (2022), "*Analysis of Social Media Marketing and Product Review on the Marketplace Shopee on Purchase Decisions" Review of Integrative Business and Economics Research*, Vol. 11(1), 274-284.
[7] Oxley, J. E., & Yeung, B. (2001), "*E-commerce readiness: institutional environment and international competitiveness" Journal of International Business Studies,* 32(4), 705-723.
[8] Poon, S., & Swatman, P. M. (1999), "*An exploratory study of small business Internet commerce issues" Information Management*, 35(1), 9-18.
[9] Rogers, E. M. (2003). *Diffusion of Innovations* (5th ed.). Free Press.
[10] Thatcher, S. M., Foster, W., & Zhu, L. (2006), "*B2B e-commerce adoption decisions in Taiwan: the interaction of cultural and other institutional factors" Electronic Commerce Research and Applications,* 5(2), 92-104.
[11] Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). "User acceptance of information technology: Toward a unified view" *MIS Quarterly, 27*(3), 425-478.
[12] Wong, P.-K. (2003), "*Global and national factors affecting e-commerce diffusion in Singapore" Information Society International Journal*, 19(1), 19-32.
[13] Xu, H., Yao Z., Yang, J. (2023), "*The Impact of Rural Homestead Reform on the Willingness of Migrant Populations to Settle Down" Review of Integrative Business and Economics Research*, Vol. 12(2), 80-96.
[14] Yang, X., & Rivers, S. (2009), "*Antecedents of CSR practices in MNCs' subsidiaries: a stakeholder and institutional perspective" Journal of Business Ethics*, 86(2), 155-169.
[15] Yoon, C. (2009), "*The effects of national culture values on consumer acceptance of e-commerce: online shoppers in China" Information Management*, 46(5), 294-301.
[16] Zhao, X., & Bao, Y. (2020). "The impact of logistics service quality on online shopping intention: Moderated mediation model" *Asia Pacific Journal of Marketing and Logistics, 32*(1), 20-38.
[17] Zhu, K., Kraemer, K. L., Xu, S. (2006), "*The process of innovation assimilation by firms in different countries: a technology diffusion perspective on e-business" Management Science*, 52(10), 1557-1576.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)