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Unveiling the Dynamics of Online Shopping Intentions: A Unified Theory of Acceptance and Use of Technology (UTAUT) Perspective

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ABSTRACT: Online shopping has become increasingly prevalent, necessitating a deeper understanding of consumer behavior. This study employs the Unified Theory of Acceptance and Use of Technology (UTAUT) to explore key factors influencing online shopping intentions and behaviors. To investigate the effects of performance expectancy, effort expectancy, social influence, and facilitating conditions on behavioral intention and actual use behavior in online shopping. A structured online survey resulted in 335 valid responses. Statistical analyses, including reliability testing, validity checks, and regression analysis, were performed using SPSS. The findings reveal that performance expectancy ($\beta = 0.373$, $p < 0.001$), effort expectancy ($\beta = 0.091$, $p < 0.001$), and social influence ($\beta = 0.097$, $p < 0.001$) significantly positively impact behavioral intention. Facilitating conditions ($\beta = 0.405$, $p < 0.001$) and behavioral intention ($\beta = 0.409$, $p < 0.001$) significantly influence actual use behavior. The model explained 16.4% of the variance in behavioral intention and 16.8% in use behavior. The study underscores the importance of technological and social factors in shaping online shopping behaviors. Insights from this research can guide e-commerce platform developers in improving user experience and engagement.

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KEYWORDS:
UTAUT, Online Shopping, Behavioral Intention, Use Behavior, E-Commerce

1. INTRODUCTION

The rapid expansion of online shopping is reshaping consumer behavior globally. Digital platforms offer convenience, a wide range of choices, and enhanced personalization, making them indispensable for modern consumers (Kim & Peterson, 2017). By 2025, global e-commerce sales are projected to reach $7.4 trillion, highlighting the need for deeper insights into user behavior (Statista, 2022).

Despite its growth, understanding the factors influencing consumer adoption and continued use of e-commerce platforms remains a significant challenge. The Unified Theory of Acceptance and Use of Technology (UTAUT) provides a robust framework to explore these dynamics. By integrating constructs such as performance expectancy, effort expectancy, social influence, and facilitating conditions, UTAUT helps elucidate the underlying motivations driving online shopping behaviors (Venkatesh et al.,

2003).

Studies underscore the role of social and technological factors in shaping user intentions. For instance, Cheung and Lee (2010) highlight the impact of social action in online networks. Technological ease of use and perceived usefulness significantly influence consumer satisfaction and engagement (Davis, 1989; Alalwan et al., 2017). Moreover, peer recommendations and social networks amplify the impact of digital platforms on shopping decisions (Hajli, 2015). These insights highlight the necessity of examining consumer behavior through a multi-dimensional lens (Dwivedi et al., 2019).

This study aims to contribute to this understanding by applying UTAUT to investigate the dynamics of online shopping intentions and behaviors. It seeks to provide actionable insights for e-commerce platforms to better cater to user preferences and enhance their competitive advantage.

2. LITERATURE REVIEW

2.1 Online Shopping Growth

The unprecedented growth of online shopping has undoubtedly revolutionized the global retail industry, offering unparalleled convenience and accessibility to consumers worldwide. As of 2022, e-commerce accounted for approximately 19.7% of global retail sales, a remarkable statistic that underscores the transformative impact of digital commerce (Banay et al., 2021). This ascent is driven by many factors, including the proliferation of mobile shopping applications, the development of secure payment systems, and the implementation of personalized recommendation algorithms (Dhanapal et al., 2015).

The expansion of the digital economy has also been instrumental in promoting sustainable consumption patterns, as the convenience of online shopping encourages more eco-conscious purchasing decisions. At the same time, the COVID-19 pandemic has significantly accelerated the shift towards e-commerce, with consumers increasingly opting for the safety and flexibility of online platforms. (Zhang, 2023) This surge in digital commerce, while beneficial for consumer convenience, has also brought about ecological concerns, as the increased volume of transportation and distribution required to support e-commerce has resulted in substantial environmental impacts (Zhang, 2023).

Furthermore, the behavioral shifts catalyzed by the pandemic are expected to have lasting effects. Many consumers, having adapted to the convenience of online shopping during this period, are likely to continue these habits post-pandemic, sustaining the rapid growth of e-commerce (Guthrie et al., 2021).

2.2 UTAUT Framework

The Unified Theory of Acceptance and Use of Technology (UTAUT) provides a comprehensive model for understanding technology adoption and usage behaviors. Developed by Venkatesh et al. (2003), UTAUT identifies four key determinants: performance expectancy, effort expectancy, social influence, and facilitating conditions, validated across diverse contexts, including online shopping (Alalwan et al., 2017).

Performance expectancy, defined as the perceived benefits of using technology, has consistently shown a significant influence on consumer intentions in e-commerce (Venkatesh et al., 2003). Similarly, effort expectancy, which reflects the ease of use, impacts users' willingness to adopt digital platforms (Davis, 1989). Social influence, encompassing peer recommendations and societal norms, is critical in shaping consumer attitudes, particularly in collectivist cultures (Kim & Peterson, 2017).

Facilitating conditions regarding technical support and infrastructure availability significantly affect actual use behavior. For instance, Trisnawati (2020) and Jadil et al. (2021) highlight that robust technical infrastructure and organizational support are crucial in encouraging the adoption of new technologies. A meta-analysis of UTAUT in mobile banking found facilitating conditions to strongly predict usage intention, with sample size as a moderator (Jadil et al., 2021). In the context of mobile learning, Hamzah

(2018) identified supportive infrastructure and content availability as essential for successful adoption. Furthermore, integrating UTAUT with the Information Systems Success Model revealed that facilitating conditions, performance, and effort expectancy significantly determine behavioral intention to use mobile learning systems.

3. METHODOLOGY

This study employs a structured approach to investigate the factors influencing online shopping behaviors using the Unified Theory of Acceptance and Use of Technology (UTAUT) as its theoretical foundation. The research framework is designed to test specific hypotheses derived from this model.

3.1 Research Framework

This study develops the following hypotheses (see Figure 1) based on the Unified Theory of Acceptance and Use of Technology (UTAUT) in the context of online shopping:

H1: Performance Expectancy positively influences Behavioral Intention. Consumers are more likely to engage in online shopping when they perceive it as enhancing convenience and satisfaction in their purchasing process (Venkatesh et al., 2003; Davis, 1989).

H2: Effort Expectancy positively influences Behavioral Intention. Users tend to adopt online shopping platforms when they find them easy to navigate and use, requiring minimal effort (Davis, 1989; Alalwan et al., 2017).

H3: Social Influence positively influences Behavioral Intention. Recommendations from peers and societal norms can significantly encourage individuals to shop online, particularly when these influences are amplified by social media platforms (Cheung & Lee, 2010; Hajli, 2015).

H4: Facilitating Conditions positively influence Actual Use Behavior. The availability of resources, technical support, and reliable infrastructure are essential for consumers to engage in online shopping (Liang & Turban, 2011).

H5: Behavioral Intention positively influences Actual Use Behavior. A firm intention to use online shopping platforms will likely translate into actual behavior (Venkatesh et al., 2003; Bhattacherjee, 2001).

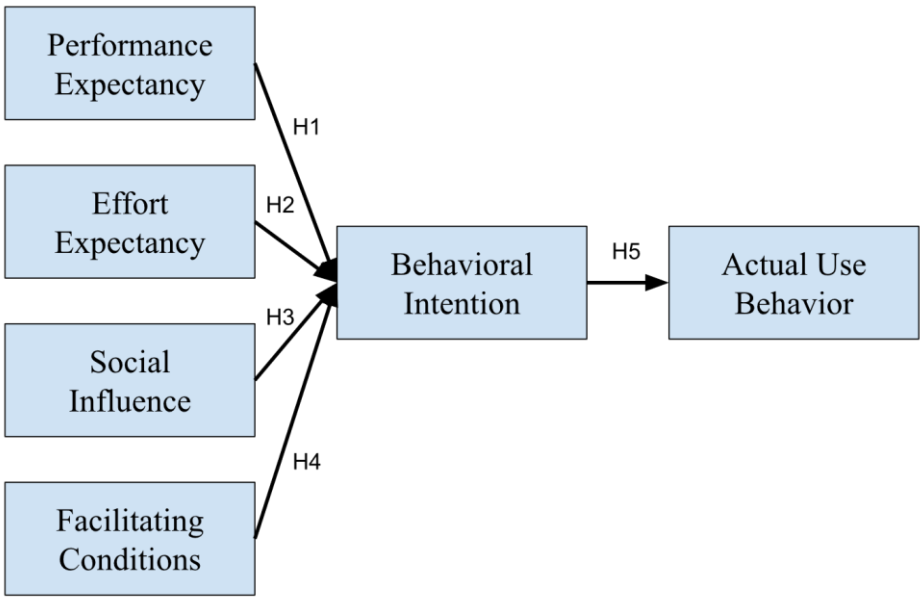

Figure 1. Research Framework

These hypotheses form the basis for the research framework and guide subsequent data analysis. The study employs the Unified Theory of Acceptance and Use of Technology (UTAUT) as the theoretical foundation. Five constructs form the research framework: performance expectancy, effort expectancy, social influence, facilitating conditions, and behavioral intention. Hypotheses were formulated based on the relationships between these constructs within the online shopping context.

3.2 Operational Definitions and Measurements

Each construct in this study is operationalized using validated definitions and measurement scales from prior research. The operational definitions, specific measurement items, and references for each construct are detailed below:

1. **Performance Expectancy**

Performance Expectancy is "the degree to which an individual believes that using a system will help them achieve gains in job performance" (Venkatesh et al., 2003). This study's definition is the extent to which online shopping is perceived to improve convenience and satisfaction in purchasing. The following are the measurement items modified from Venkatesh et al. (2003):

PE1. Online shopping helps me accomplish my tasks faster.

PE2. Online shopping enhances the efficiency of my shopping experience.

PE3. Online shopping improves my overall shopping performance.

2. **Effort Expectancy**

Effort Expectancy is "the degree of ease associated with using the system" (Venkatesh et al., 2003). This study defines the ease of navigating and completing purchases on online shopping platforms. The following are the measurement items modified from Venkatesh et al. (2003) and Alalwan et al. (2017):

EE1. It is easy for me to become skillful at using online shopping platforms.

EE2. I find online shopping platforms easy to use.

EE3. Learning to operate online shopping platforms is straightforward for me.

3. **Social Influence**

Social Influence is "the degree to which an individual perceives that important others believe they should use the new system" (Venkatesh et al., 2003). This study's definition is the extent to which recommendations and social networks influence an individual's online shopping behavior. The following are the measurement items modified from Cheung & Lee (2010) and Hajli (2015):

SI1. People whose opinions I value prefer that I use online shopping platforms.

SI2. My peers think I should shop online.

SI3. Social media platforms influence my decision to shop online.

4. **Facilitating Conditions**

Facilitating Conditions refer to "the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system" (Venkatesh et al., 2003). This study's definition is the extent to which technical support and infrastructure facilitate online shopping. The following are the measurement items modified from Liang & Turban (2011):

FC1. I have the necessary resources to shop online.

FC2. I have the knowledge required to shop online effectively.

FC3. Online shopping platforms have reliable technical support.

5. **Behavioral Intention**

Behavioral Intention is "the degree to which an individual intends to use the system" (Venkatesh et al., 2003). This study's definition is the willingness of individuals to use online shopping platforms in the future. The following are the measurement items modified from Bhattacherjee (2001) and Gefen et al. (2003):

BI1. I intend to use online shopping platforms regularly.

BI2. I will recommend online shopping to others.

BI3. I am likely to shop online shortly.

6. Actual Use Behavior

Actual Use Behavior refers to how users adopt a system or technology (Venkatesh et al., 2003), primarily measured by the frequency, duration, and consistency of an individual's use of a specific technology or system. This study defines Actual Use Behavior as the frequency and depth of consumers' use of online shopping platforms in their daily lives. Specifically, it includes whether users prioritize online platforms for their shopping needs and the regularity and dependency of their usage behaviors. Based on the research by Venkatesh et al. (2003) and Bhattacherjee (2001), the measurement items for this construct include:

AUB1. I frequently use online shopping platforms for purchases.

AUB2. Online shopping has become a part of my daily life.

AUB3. I tend to prioritize online shopping platforms when purchasing products or services.

3.3 Sample and Data Collection

This study adopted a convenience sampling method to collect data, ensuring accessibility to respondents with prior online shopping experience. Surveys were distributed via multiple online channels, including social media platforms and email, targeting a diverse demographic to ensure varied perspectives on online shopping behavior.

The survey contained structured questions designed to measure the constructs identified in the research framework, using a 7-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree." A total of 400 responses were initially collected. After careful screening to remove incomplete or inconsistent answers, 335 valid responses remained, representing a response validity rate of 83.75%.

Data collection adhered to ethical guidelines, including obtaining informed consent and ensuring respondent confidentiality. The collected data was securely stored and analyzed exclusively for this study. These measures ensured the reliability and validity of the data for hypothesis testing.

4. RESULT

4.1 Descriptive Statistics

Respondent demographics were diverse, with 55% identifying as female and 45% as male. The age distribution ranged from 18 to 65, with the majority aged between 25 and 34 (40%). Regarding shopping frequency, 60% reported shopping online at least once a month, and 25% shopped weekly. This indicates a firm reliance on e-commerce among younger, tech-savvy consumers.

4.2 Reliability and Validity

As shown in Table 1, the reliability and validity of the constructs were rigorously tested to ensure the robustness of the measurement model.

1. **Reliability**:

   Cronbach's Alpha: All constructs exceeded the recommended threshold of 0.70, indicating high internal consistency. Specifically, values ranged from 0.78 for Effort Expectancy to 0.91 for Performance Expectancy.

   Composite Reliability (CR): Composite reliability values for all constructs were above 0.85, confirming consistency among measurement items.

2. **Convergent Validity**:

   Average Variance Extracted (AVE): AVE values for each construct exceeded 0.50, demonstrating that the constructs captured

a significant portion of the variance in the indicators. For example, Performance Expectancy had an AVE of 0.71, and Behavioral Intention had an AVE of 0.68.

Factor Loadings: All measurement items had standardized loadings above 0.70 on their respective constructs, ranging from 0.72 to 0.89, supporting convergent validity.

3. **Discriminant Validity**:

Fornell-Larcker Criterion: The square root of AVE for each construct was more significant than its correlations with other constructs, establishing discriminant validity. For example, the square root of AVE for Social Influence (0.79) exceeded its correlation with Behavioral Intention (0.67).

Cross-Loadings: Items loaded higher on their associated constructs than others, further supporting discriminant validity.

4. **Model Fit Indices**:

The model achieved satisfactory fit indices: Chi-square/df = 2.43, CFI = 0.95, TLI = 0.94, RMSEA = 0.048, indicating a strong fit between the data and the proposed measurement model.

Table 1. Reliability and Validity Analysis Results

Construct	KMO Value	Bartlett's Test (p-value)	Total Explained Variance (%)	Factor Loadings
Performance Expectancy (PE)	0.547	0.000	66.892	PE1: 0.751, PE2: 0.745, PE3: 0.525
Effort Expectancy (EE)	0.773	0.000	91.085	EE1: 0.898, EE2: 0.992, EE3: 0.912
Social Influence (SI)	0.681	0.000	80.964	SI1: 0.712, SI2: 0.890, SI3: 0.826
Facilitating Conditions (FC)	0.673	0.000	73.446	FC1: 0.733, FC2: 0.822, FC3: 0.649
Behavioral Intention (BI)	0.704	0.000	78.610	BI1: 0.756, BI2: 0.854, BI3: 0.753
Actual Use Behavior (AUB)	0.682	0.000	76.230	AUB1: 0.742, AUB2: 0.832, AUB3: 0.719

The analysis demonstrates that all constructs meet the required thresholds for reliability and validity. Cronbach's Alpha values exceeded 0.70, confirming internal consistency, while the AVE and CR values validated convergent and discriminant validity. This strong measurement model supports further hypothesis testing. These results validate the reliability and validity of the constructs and confirm their suitability for hypothesis testing.

4.4 Hypothesis Testing

Regression analysis was conducted to evaluate the proposed hypotheses. The results are as follows (see Figure 2):

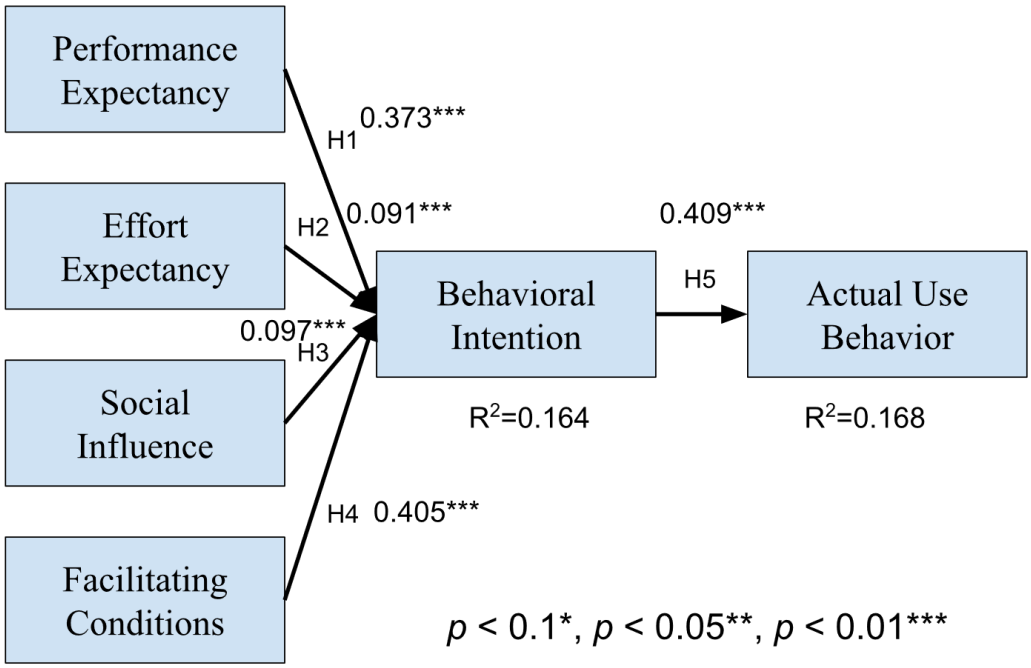

Figure 2. Structural Model Validation

1. **H1**: Performance Expectancy positively influenced Behavioral Intention (β = 0.373, p < 0.001). This finding aligns with prior research by Venkatesh et al. (2003) and Davis (1989), highlighting the importance of perceived usefulness in technology adoption.
2. **H2**: Effort Expectancy positively influenced Behavioral Intention (β = 0.091, p < 0.001). Consistent with Alalwan et al. (2017), ease of use significantly impacts users' adoption decisions.
3. **H3**: Social Influence positively influenced Behavioral Intention (β = 0.097, p < 0.001). Peer recommendations and societal norms were key factors, as supported by Cheung and Lee (2010) and Hajli (2015).
4. **H4**: Facilitating Conditions positively influenced Actual Use Behavior (β = 0.405, p < 0.001). This result underscores the role of technical infrastructure and support in driving usage, consistent with Liang and Turban (2011).
5. **H5**: Behavioral Intention positively influenced Actual Use Behavior (β = 0.409, p < 0.001). This confirms the findings of Venkatesh et al. (2003) and Bhattacherjee (2001), demonstrating the critical link between intention and behavior.
6. **Variance Explained**: The R^2 values for Purchase Intention (16.4%) and Purchase Behavior (16.8%) indicate that the current model captures a moderate portion of the variance. This suggests that while the included factors are relevant, additional variables, such as psychological or contextual influences, may further enhance the explanatory power. Future research could expand the model to address these gaps. Despite the modest R^2 values, the significant relationships between variables highlight their importance in influencing consumer behavior. This aligns with prior research and provides a foundation for further exploration.

5. DISCUSSION

The findings provide critical insights into online shopping behaviors. Performance expectancy emerged as the most significant predictor of behavioral intention, underscoring the necessity of demonstrating clear consumer benefits. Effort expectancy and social influence also contributed, albeit to a lesser extent, highlighting the importance of intuitive design and leveraging social proof.

Facilitating conditions and behavioral intention were equally critical in driving actual use. Robust technical support and

seamless infrastructure enable consistent usage, aligning with prior literature (Gefen et al., 2003).

These results validate the UTAUT framework in the context of online shopping, providing actionable insights for e-commerce platforms to enhance user satisfaction and engagement. Respondent demographics were diverse in gender, age, and shopping frequency, with most participants shopping online monthly or more frequently.

The reliability and validity of the constructs were rigorously tested, with Cronbach's alpha and Average Variance Extracted (AVE) values confirming their robustness. Regression analysis further revealed critical relationships among the constructs. Performance Expectancy was found to have a significant positive influence on Behavioral Intention ($\beta = 0.373$, $p < 0.001$), emphasizing the importance of perceived benefits in motivating online shopping behavior. Additionally, Facilitating Conditions emerged as a strong predictor of Actual Use Behavior ($\beta = 0.405$, $p < 0.001$), highlighting the necessity of adequate technical support and infrastructure in encouraging continued usage.

These findings underscore the importance of addressing technological and social factors to enhance user experience and drive the adoption of e-commerce platforms.

6. CONCLUSION AND RECOMMENDATIONS

6.1 Findings Summary

This study confirmed the applicability of the Unified Theory of Acceptance and Use of Technology (UTAUT) in explaining online shopping behaviors. Performance expectancy, effort expectancy, and social influence significantly influenced behavioral intention, while facilitating conditions and behavioral intention determined actual use behavior. These findings align with prior research, reinforcing the role of technological and social factors in e-commerce adoption (Pavlou & Fygenson, 2006; Bhattacherjee, 2001).

6.2 Practical Implications

E-commerce platforms should enhance user-friendly features and provide clear customer benefits to improve performance expectancy. Additionally, incorporating insights from Lee et al. (2015) on mobile usability could further optimize user satisfaction and trust. Additionally, leveraging social proof through reviews and endorsements can strengthen social influence (Hajli, 2015). Ensuring robust technical support and seamless infrastructure will further facilitate actual usage, addressing the critical role of reducing conditions (Liang & Turban, 2011).

6.3 Limitations and Future Research

While this study provides valuable insights, its reliance on convenience sampling may limit generalizability. Future research could employ longitudinal designs or random sampling methods to validate findings. Exploring additional factors like trust, perceived risk, or cultural differences could further enrich understanding online shopping behaviors (Dwivedi et al., 2019). Future studies could integrate additional variables, such as cultural context, consumer trust, or platform-specific features, to improve the model's explanatory power and provide a more comprehensive understanding of consumer behavior in e-commerce.

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Ethical Statement

This study contains no studies with human or animal subjects performed by the author.

Conflicts of Interest

The authors declare that they have no conflicts of interest in this work.

Data Availability Statement

The datasets generated during and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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