

Determinants of adopting eCourier services: the moderating role of resistance to change

eCourier
services

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Abstract

Purpose – The purpose of this paper is to understand the determinants affecting the adoption behavior of eCourier services and to establish a moderating role of resistance to change between behavioral intention and actual usage behavior.

Design/methodology/approach – Data were collected through a survey questionnaire that was distributed to the eCourier users. A total of 260 collected data were analyzed by using structural equation modeling.

Findings – The results of the study demonstrate that all the factors considered for the study have a significant impact on the adoption of eCourier except social influence and customer service. The results also confirm that there is no moderating effect of resistance to change in the relationship between behavioral intention and actual usage.

Practical implications – This research provides theoretical contribution by extending the practical knowledge focusing on the adoption intention of eCourier, and actual usage behavior using Unified Theory of Acceptance and Use of Technology model—a pertinent and unresearched topic in the existing literature that presents a number of potential avenues for further study.

Originality/value – This study provides a general understanding of consumers in underdeveloped nations and advances earlier research on the usage of e-commerce in the courier sector.

Keywords eCourier, Adoption, Behavioral intention, Actual behavior, Logistics

Paper type Research paper

1. Introduction

Courier functions are now a vital part of modern trade (Karcz & Ślusarczyk, 2016). Courier service is a combination of services including pick-up, transport and delivery of packages for both domestic and foreign destinations (Karcz & Ślusarczyk, 2016). Traditionally, courier evolved around physical transportation and communication, but the emerging convergence of telecommunication has changed physical communication, by shifting postal courier

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industries toward delivery and e-services in developed countries (Noordin, Hasnan, & Osman, 2012). Though the use of online courier services is widely seen throughout the world, this body of research is under-researched.

Due to the advantages of information technology, eCourier services have gained popularity in recent years (Labiyyi, 2018). eCourier service plays a vital role in the everyday lives of consumers and the supply chain of businesses. It is a type of e-service where users customize services based on an interactive interface via the internet. eCourier services transport and deliver documents, packages, and large shipments of products. eCourier saves time and is reliable because of the ability to track in real time. This growing demand for courier services made the industry integrate technology into their operations.

eCourier service has paved the way to provide better service and convenience to customers by using the Internet of Things (IoT), artificial intelligence (AI) and blockchain (Klubnikin, 2020). Consumers fill out details in automated services availed through mobile application or website that shows delivery status and calculated price. Radio Frequency Identification (RFID)/barcode tags ensure tracking and visibility. Consumers receive delivery confirmation through message or e-mail. Route planning and potential routes are planned through the system to achieve efficiency and growth (Shachar Shamir, 2018). Courier companies now offer improved value propositions with smarter, faster and sustainable logistics. Responsiveness, speed and quality of service can give a competitive advantage in the courier industry. Customers have become more aware and are now looking for augmented service features such as tracking, method of shipment, recovery policies, etc. (Karcz & Ślusarczyk, 2016). However, what are the factors that lead to the intention of adopting eCourier has not received much attention. Prior researchers of technology adoption have given attention to performance expectancy (PE) (Gani, Alam, Alam, Chowdhury, & Ahmed, 2022) and social influence (SI) (Gani, Rahman, Bag, & Mia, 2023). Contemporary to that in digital transformation of transportation adoption research, this study would like to offer three additional variables in Unified Theory of Acceptance and Use of Technology (UTAUT) model. The study would like to add customer service (CS), tracking and shipping in this model as the facilitation condition. In service industry, especially in transportation, CS is paramount, and tracking and shipping are the required as the antecedents (Tan & Sundarakani, 2021).

Since eCourier service is still an emerging concept in developing countries, scopes to gain a competitive advantage with proper knowledge of customer expectation from eCourier are immense. Most of these studies are primarily based on the developed countries like Australia, Europe and South America (Wang, Jie, & Abareshi, 2015). Afterward, two studies were found from Asia (Zhou *et al.*, 2020). As a South Asian country, Bangladesh is densely populated with 160 people of which 100 million people are internet users (BTRC, 2020). However, there are only a few logistics companies providing some form of business to consumer (B2C) and business to business (B2B) delivery service. As of 2018, Bangladesh attained the worst 4th position among South Asian countries in the Logistics Performance Index, which is a demotion as it attained the 2nd position in 2010 (Ali & Tuhin, 2020). This is a broad indicator of performance that Bangladesh is facing problems in maintaining quality because of an unskilled workforce, congested transportation, delay of shipments, lack of technological involvement in courier service (Ali & Tuhin, 2020). As a developing country, without eCourier services, people would face challenges in sending and receiving packages efficiently. This could lead to delays in deliveries, increased reliance on traditional postal services, higher costs, limited tracking options and reduced convenience in today's fast-paced digital world. Even though, there is a pressing need of eCourier services in a developing country like Bangladesh, still there are some people who are stigmatic about welcoming new technologies (Faqih, 2022). When new technology emerges on the market, some people are not interested in changing their experience and that could moderate

between behavioral intention and actual buying behavior (Arora, Prakash, Mittal, & Singh, 2023). However, how resistance to change plays the role between behavioral intent and actual usage has got less attention in developing country perspective as well as in transportation technology adoption research. On the other hand, there is no prior research that has utilized resistance to change in UTAUT model. Moreover, existing studies have not provided enough evidence of these relationships by using structural modeling (SEM-PLS). Thus, the abovementioned research gaps lead us to know some questions that becoming the pressing need to contribute to the literature:

- RQ1. What are the key factors affecting the intention to use eCourier services in Bangladesh?
- RQ2. What is the impact of behavioral intention on actual usage behavior?
- RQ3. What is the role of resistance to change between behavioral intention and actual usage behavior regarding eCourier services?

Along with answering these questions, the study would like to minimize the literature gaps which will help to put forward some theoretical and managerial contributions. While these are significant contributions to extend eCourier literature from a developing country context, a few research gaps are still evident. First, the study would like to contribute by implying UTAUT model in eCourier context from the perspective of a developing country. Second, the study would like to offer some unexplored variables like CS, tracking and shipping in the UTAUT model which has not been studied in earlier studies. previous studies only focused solely on the UTAUT model regarding the adoption of eCourier (Wang *et al.*, 2015; Zhou *et al.*, 2020), whereas adding some additional variables from the perspective of developing nations will add some value in logistics research domain, and which were ignored in many studies (Zhou *et al.*, 2020). Third, in developing countries, people are less interested in changing their adoption behavior. So, to investigate the role of resistance to change as a moderator from a developing country perspective will add some new dimension to the existing literature. This study aims to address the abovementioned research gaps and to contribute to the extant literature on eCourier. To our knowledge, it is the first attempt of a consumer centric study from a developing country such as Bangladesh. This research will give managers insights on how to create and structure digitally enabled services in disruptive circumstances from the standpoint of a developing economy like Bangladesh.

The paper is organized as follows. First, a review of contemporary literature on eCourier and UTAUT model. Then, hypotheses and research model were formulated. That is followed by research methodology, including surveys and data collection procedures. Next, data were analyzed, and hypotheses were tested. Finally, the theoretical and practical contributions were then discussed, and conclusions are drawn based on the results.

2. Theoretical underpinning and hypotheses development

2.1 Unified Theory of Acceptance and Use of Technology (UTAUT)

To understand the behavioral intention, several scholars have utilized different models and theories based on the adoption of new technologies (Gani, Rahman, *et al.*, 2022). Among them the technology acceptance model (Davis, 1989), theory of planned behavior (Ajzen, 1991) and UTAUT (Venkatesh, Morris, Davis, & Davis, 2003), are widely used.

Various models were developed over the years trying to explain the behavior of consumers. UTAUT is a combination of elements from eight other established models that explains behavior intention (Zhou *et al.*, 2020). By exploring the individual models and key moderating influences extensively, this theory generates a cumulative model while retaining a compact structure (Rondan-Cataluña, Arenas-Gaitán, & Ramírez-Correa, 2015). The model

tries to explain acceptance and usage of technology through four key determinants which are PE, effort expectancy, SI and facilitating conditions combined with some moderators. Since this study focuses on adoption, the UTAUT model seemed best suited. The theory has been tested at great lengths with actual data and produced better results in comparison to outputs of other similar models (Venkatesh, Sykes, & Zhang, 2011).

To establish empirical evidence, the study proposes three additional variables: CS, tracking and shipping as a detailed perspective of facilitating conditions from the context of online transportation research. These are requirements an individual believes to get from the service provider organization provide as a technical infrastructure (Venkatesh *et al.*, 2003). Moreover, resistance to change could be a new inclusion in the UTAUT model. Sticking to the existing service is a common nature to someone. This type of behavior might affect technological innovation. So, the study would like to extend its theoretical underpinning by adopting resistance to change as a moderating factor between behavioral intention and actual buying behavior (Arora *et al.*, 2023).

Several past studies have put the evidence for extending the basic UTAUT model in the context of technology acceptance (Soh *et al.*, 2020). Zhou *et al.* (2020) used extended UTAUT model for online parcel delivery services by adding perceived risk and perceived satisfaction. For this study, we will include three other variables (CS, shipping and tracking) with the UTAUT model to best describe the adoption behavior in Bangladesh.

2.2 Behavioral intention (intention to eCourier)

The term “behavioral intention” refers to the willingness or desire on the part of service users to use the service (Gani, Alam, Alam, Chowdhury, & Ahmed, 2022). The term “behavioral intention” has been used with a variety of interpretations. In another sense, it refers to the extent to which anybody has made intentional preparations to engage in or refrain from a particular future behavior (Alotaibi & Mukred, 2022). According to Ajzen (2006), the fusion of control and intention is behavioral intention. Venkatesh *et al.* (2003) specified behavioral intention as the desire of attaining something. However, Venkatesh *et al.* (2003) also mentioned that although the variation explained by UTAUT for behavioral research is relatively high, more study should be done to develop and test additional boundary conditions of the model to provide an even better knowledge of technology adoption and usage behavior. Moreover, Dwivedi, Rana, Jeyaraj, Clement, and Williams (2019) emphasized reexamining the UTAUT model based on the uses of technology to understand more on behavioral intention. Accordingly, behavioral intention to adoption of eCourier would be different from other technologies. Due to advancements in technology, eCourier service providers try to offer the conveniences needed to develop strong relationships with customers and influence their behavior in a favorable way. Changes in intention, attitude and conduct will be brought about by this drive. Attitude is an ideological perspective that leads to intention. Thus, a positive attitude toward eCourier will lead us to accept it. Venkatesh *et al.* (2003) stated in their UTAUT model that actual usage can be predicted by intention behavior.

2.3 Performance expectancy (PE)

PE is the extent to which the user believes using the technology will benefit the individual's performance (Alalwan, Dwivedi, & Williams, 2016; Venkatesh *et al.*, 2003). In the context of eCourier, PE is defined as the users' expectation to solve a problem using this technology. Sun, Wang, Guo, and Peng (2013) demonstrated in their studies that PE has a direct influence on behavioral intention. Thus, the hypothesis can be speculated:

H1. There is a positive relationship between PE and behavioral intention.

2.4 Social influence (SI)

Social influence is defined as the level of importance given to the opinions of peers when using a new system (Venkatesh *et al.*, 2003). The people surrounding the user contribute to the awareness of the service and intention to use it (Alalwan *et al.*, 2016). Many previous studies reported that there is a significant effect of SI on the adoption of technology (Alalwan *et al.*, 2016). Therefore, we can hypothesize the following:

H2. There is a positive relationship between SI and behavioral intention.

2.5 Perceived reliability (PR)

PR is the degree to which the user believes the technology will carry out the task accurately and consistently (Lee, Lee, & Eastwood, 2003). The customer expects that the eCourier will meet his requirements and perform the service at the highest level (Karcz & Ślusarczyk, 2016). For the scenario of eCourier, the user perceives the service to be reliable when they see it is error-free and consistent over time. Shareef, Kumar, and Kumar (2014) asserted that there is a positive correlation between PR and behavior intention. So, we can conclude the following hypothesis:

H3. There is a positive relationship between PR and behavioral intention.

2.6 Customer service (CS)

CS is used broadly to define many service aspects such as salesclerk services, answering emails, solving problems, availability of information, etc. (Cao, Ajjan, & Hong, 2018). Perceived CS has a significant effect on a customer's behavioral intention which has been ignored in many studies (Kassim & Asiah Abdullah, 2010). When using eCourier, users expect prompt CS where the service provider shows sincere interest in helping. Therefore, the following hypothesis is proposed:

H4. There is a positive relationship between CS and behavioral intention.

2.7 Tracking

Tracking means traceability which is the ability to trace the history, application or location of an object through recorded identifications (Bechini, Cimino, Marcelloni, & Tomasi, 2008). Efficient tracking systems rely on real-time information about the goods in delivery. In the context of eCourier, the users expect notifications of tracking stages and the ability to track from mobile anytime. Tracking ability creates a sense of perceived control, and it is positively associated with behavior intention (Cao *et al.*, 2018). Based on the previous literature, the following hypothesis is asserted:

H5. There is a positive relationship between tracking and behavioral intention.

2.8 Shipping

Shipping will encompass the expected time for shipping and the cost of shipping to assess the overall quality of the shipping service (Sorkun, 2019). Consumers prefer to receive their goods as soon as possible. eCourier users always expect they will receive their products on time with multiple shipping methods. According to Cao *et al.* (2018), shipping and handling have a positive influence on behavior intention. Therefore, we can hypothesize the following:

H6. There is a positive relationship between shipping and behavioral intention.

2.9 Behavioral intention and actual usage

Behavioral intention is defined as the degree to which an individual perceives their willingness to use the service (Gani, Alam, *et al.*, 2022). It is used to predict the actual usage

behavior of a service. Behavioral intention can best predict actual use and it has been empirically proven. Behavioral intention and actual use behavior are highly correlated (Turner, Kitchenham, Brereton, Charters, & Budgen, 2010). The following hypothesis is thus stated as:

H7. There is a positive relationship between behavioral intention and actual behavior.

2.10 The moderating role of resistance to change between intention and actual behavior

New technology creates a sense of panic within individuals and resistance is formed subconsciously because they perceive it as a threat to the solidity of old habits (Reginato, Fadda, & Paglietti, 2016). This uneasy and self-conscious feeling plays a huge role in the actual usage of a product. The user may readily accept the new technology or refrain from it. Resistance to change has been reported to have no direct effect on the actual use of technology (Nejati, Rabiei, & Chiappetta Jabbour, 2017). Resistance to change moderates between behavioral intentions and actual behavior (Shahbaz, Gao, Zhai, Shahzad, & Arshad, 2020). Therefore, this study will also focus on resistance to change as a moderating role. Previous studies have shown that resistance to change is indirectly proportional to the adoption of new technology (Huang, 2014). Therefore, the following hypothesis can be proposed (see Figure 1):

H8. Resistance to change has a significant moderating role in the relationship between behavioral intention and actual behavior.

3. Methodology

3.1 Sample and data collection

Our study aims to analyze the factors behind the intention to avail eCourier service and to provide some research direction for the future. Therefore, focusing on individuals who have firsthand experience with these services allows us to gather insights directly related to our research objective. The desire to use e-commerce and other online platforms is growing more

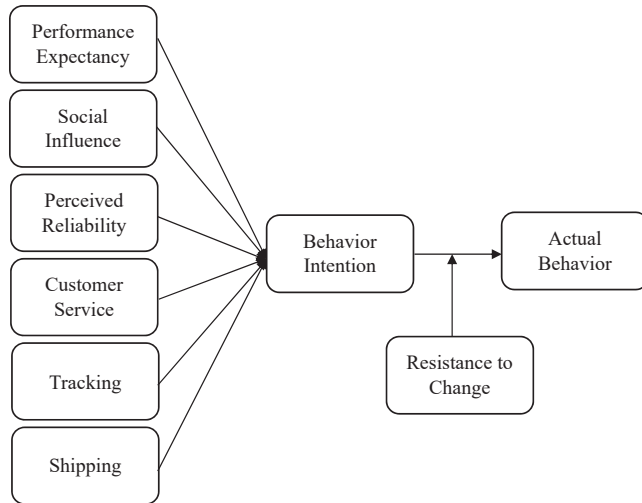


Figure 1. Conceptual framework

Source(s): Figure by authors

widespread than ever across the globe in the first year of the COVID-19, which forced the suspension of all modes of transportation for months. Bangladesh is not unique in this regard. Government of Bangladesh has taken enormous initiative to widen the services using online platforms. As a developing country using online based services could bring some positive changes to the behavior of the users, and the research has taken the scope to investigate this area of research which is not studied earlier. The sampling of this study targeted individuals, who are 18 years or older, and a citizen of Bangladesh. Due to the COVID-19 pandemic, it was difficult to collect data from personal interviews, so a convenience sampling method collected the data through different online platforms. To collect the data, a Google form was developed and circulated in multiple online platforms and social groups (Facebook, WhatsApp) and email. Because of the absence of reliable list of eCourier users, the study availed convenience sampling method. Convenience sampling is the most extensively used sample technique in psychological research as well as being affordable and widely recognized in information system (IS) research (Gani *et al.*, 2023). Initially, 500 questionnaires were distributed but a total of 298 people from Bangladesh responded to the survey, of these 38 respondents did not answer some questions, so 38 responses were excluded. Thus, data from only 260 respondents were used in this analysis.

3.2 Constructs and research instruments

The variables used in the study were operationalized using multi-item reflective measures. The items included for constructing variables were adopted from authentic and verified sources. A list of the survey items and their respective reference sources are given in [Appendix](#). A five-point Likert scale was used for the items, with 5 being “strongly agree” and 1 being “strongly disagree.”

3.3 Control variables

Factors like gender, age, education, monthly income, smart phone use and experience of using technology might affect actual usage behavior. The study used gender as a controlled variable as previous studies have shown that users’ gender could affect technology adoption (Park, Kim, Cho, & Han, 2019; Venkatesh, Morris, & Ackerman, 2000). Second, age was controlled as different age could affect technology adoption (Morris & Venkatesh, 2000). Third, income could affect choosing technology and intention to use (Krishnan & Bhattacharya, 2002). Fourth, length of smart phone use is essential in understanding using intention to different applications (Park *et al.*, 2019). People using smart phones for the long run might install different necessary applications in their phone (Whitehead & Seaton, 2016). Fifth, experience of using different technologies might affect adoption intention of new technology. People using eCourier for long time might use more compared to the new users. Thus, the study utilizes length of using eCourier as the control variable.

4. Findings and analysis

4.1 Demographics analysis

A total of 260 responses were utilized in this analysis. [Table 1](#) displays the demographic profile of the respondents. Around 53% of the respondents were male, and 47% were female. The sample profile also shows that the majority of the age group was between 18–44 years of age, which is around 69% of the total and the rest lies between 45 and above. The monthly income of the respondent was well dispersed across multiple ranges with 27% earning less than 20,000 BDT, 43% earning between 20,000 and 50,000 BDT, and the remaining 30% earning more than 50,000 BDT. Individuals of all educational backgrounds and degrees were represented in the sample, which included higher secondary education students (21%),

Profile	Categories	Frequency	%	
Gender	Male	138	53.08	
	Female	122	46.92	
Age	18–24	67	25.77	
	25–34	58	22.31	
	35–44	55	21.15	
	45–54	42	16.15	
	55 and above	38	14.62	
Monthly income	<20,000	71	27.31	
	20,000–30,000	18	6.92	
	30,001–40,000	17	6.55	
	40,001–50,000	79	30.38	
	50,001–60,000	42	16.15	
	>60,000	33	12.69	
Education	College	55	21.15	
	Bachelor's	105	40.39	
	MBA/MSc/MPhil/Master's	62	23.85	
	PhD	38	14.62	
Profession	Student	63	24.23	
	Employee	81	31.15	
	Doctor	14	5.38	
	Engineer	23	8.85	
	Businessman	69	26.54	
	Others	10	3.85	
	Marital status	Unmarried	41	15.77
		Married	118	45.38
Single		101	38.85	
eCourier service usage experience	1–6 months	64	24.62	
	7–12 months	61	23.46	
	More than 12 months	79	30.38	
	More than 24 months	56	21.54	
Smartphone experience	1–2 years	10	3.85	
	3–4 years	78	30.00	
	5–6 years	85	32.69	
	7–8 years	52	20.00	
	More than 8 years	35	13.46	

Table 1.
Respondent profile

Note(s): Total respondents (n) = 260
Source(s): Table by authors

graduates (40%) and postgraduates (39%). Our sample profile also showed a diverse profession, while around 23% responded they were students, the rest responded to a variety of professions. Of these 260 respondents, 39% were single, 46% were married and 15% said they were unmarried.

4.2 Measurement model assessment

4.2.1 Convergent validity. The reflective measurement validity was checked by analyzing internal consistency, convergent validity, and discriminant validity. [Table 2](#) presents psychometric properties of the constructs, and [Tables 3](#) and [4](#) show the correlation amongst them. Reliability and validity analysis is used to assess the quality of research. They show how well a process, technique or test evaluates something. Reliability is required to evaluate the degree to which the “true value” was calculated by the observed variables and whether they were “error-free.” Convergent validity, discriminant validity and internal consistency of all the reflective measures were examined. Variables with loads greater than 0.3 were

Construct	Items	Standard loadings	Cronbach's alpha	Composite reliability	Average variance extraction (AVE)
Actual behavior (AB)	AB1	0.779	0.800	0.869	0.624
	AB2	0.780			
	AB3	0.763			
	AB4	0.835			
Behavioral intention (BI)	BI1	0.830	0.822	0.894	0.738
	BI2	0.854			
	BI3	0.893			
Customer service (CS)	CS1	0.755	0.790	0.863	0.613
	CS2	0.725			
	CS3	0.828			
	CS4	0.818			
Performance expectancy (PE)	PE1	0.819	0.808	0.875	0.636
	PE2	0.743			
	PE3	0.846			
	PE4	0.779			
Perceived reliability (PR)	PR1	0.722	0.769	0.853	0.593
	PR2	0.822			
	PR3	0.705			
	PR4	0.823			
Resistance to change	RC1	0.916	0.875	0.921	0.796
	RC2	0.865			
	RC3	0.895			
Social influence (SI)	SI1	0.831	0.771	0.864	0.680
	SI2	0.839			
	SI3	0.804			
Shipping (S)	S1	0.807	0.791	0.865	0.617
	S2	0.832			
	S3	0.804			
	S4	0.692			
Tracking (T)	T1	0.819	0.855	0.902	0.697
	T2	0.829			
	T3	0.867			
	T4	0.825			

Source(s): Table by authors

Table 2.
Convergent validity and internal reliability

Constructs	AB	BI	CS	PE	PR	RC	SI	S	T
AB	0.790								
BI	0.680	0.859							
CS	0.522	0.471	0.783						
PE	0.548	0.565	0.443	0.798					
PR	0.568	0.553	0.625	0.495	0.770				
RC	0.233	0.110	0.338	0.078	0.258	0.892			
SI	0.541	0.470	0.506	0.563	0.495	0.224	0.825		
S	0.515	0.450	0.463	0.324	0.428	0.127	0.317	0.786	
T	0.368	0.429	0.401	0.267	0.375	0.066	0.298	0.459	0.835

Note(s): AB: Actual Behavior, BI: Behavioral Intention, CS: Customer Service, PE: Performance Expectation, PR: Perceived Reliability, RC: Resistance to Change, SI: Social Influence

Source(s): Table by authors

Table 3.
Fornell-Larker criterion

Table 4.
Heterotrait– Monotrait
ratio of correlations

Constructs	AB	BI	CS	PE	PR	RC	SI	S	T
AB									
BI	0.820								
CS	0.633	0.569							
PE	0.669	0.694	0.538						
PR	0.705	0.693	0.775	0.628					
RC	0.273	0.139	0.416	0.126	0.303				
SI	0.682	0.569	0.636	0.702	0.641	0.267			
S	0.646	0.554	0.577	0.409	0.539	0.177	0.409		
T	0.434	0.510	0.482	0.325	0.457	0.104	0.367	0.556	

Source(s): Table by authors

significant to establish the minimum load needed to include an object in its respective construct; loads greater than 0.4 were more significant; and loads greater than 0.5 or greater were more significant (Hair, Ringle, & Sarstedt, 2013). This analysis also embraces products with a load of 0.5 or more. The measuring instruments were tested for durability before the data review. If a variable's Cronbach's Alpha is equal or greater than 0.6, that variable is considered reliable (Hair *et al.*, 2013). In Table 2, all the variables Cronbach's alpha is above 0.7 and the composite reliability value ranges from 0.863 to 0.921. Also, our AVE measurements exceeded 0.5. According to Henseler, Ringle, and Sarstedt (2014), if the average variance extracted measurements are above 0.5, then convergent validity is considered satisfactory. Since all the overall reliability measurements were above 0.7, the instruments appeared to have internal consistency. So, the data were found to be appropriate to continue further analysis.

4.2.2 Discriminant validity. The goodness of fit establishes the discrepancy between the values observed and those that would be expected of the model. For this study, all the constructs met the satisfactory discriminant validity based on the Fornell–Larker criterion by assessing the absolute value of the correlations between the constructs and the square root value of the AVE. In Table 4, Fornell–Larker criterion finding of discriminant validity is assured because all square roots of the AVEs are higher than the corresponding correlations between the constructs.

Same as Fornell–Larker criterion, the cross-loading results also shows that all the constructs met the discriminant validity as none of the cross-loading values are less than 0.1 (Chin, 1998). In addition, all the indicators are highly loaded on the respective constructs instead of other constructs. This indicates that each of the constructs is highly distinctive from the other constructs within the framework. The cross-loading findings are as shown in Appendix.

The heterotrait–monotrait ratio of correlations (HTMT) is also used to cross-check the discriminant validity. The HTMT values indicate that there are no values of 1. Accordingly, it is confirmed that all the constructs met the discriminant validity. The HTMT findings are as shown in Table 4.

4.3 Goodness of fit

The standardized root means square residual (SRMR), exact model fit tests: Euclidean distance (d_LS) and geodesic distance (d_G) and normed fit index (NFI) were tested for the fitness analysis. SRMR depicts the difference between the observed correlation matrix and the expected correlation matrix. In our study, for SRMR the saturated model and estimated model are 0.046 and 0.066, respectively, which indicates a good fit, as these are below 0.08 (Hu & Bentler, 1998). The exact model fit tests the difference between an empirical covariance

matrix and the implied covariance matrix by the composite factor model. In this analysis, to test the exact model fit, the d_{LS} value for the saturated model is 3.264, whereas the value for the estimated model is 4.110, which is more than 0.05. Parallel to this, the d_G value for the saturated model is 1.062, whereas the estimated model is 1.117, which is also more than 0.05. This indicates that the model met the exact model fit tests. In NFI, values that are closer to 1 are considered as having a better fit (Bentler & Bonett, 1980). The NFI values for the saturated model and estimated model for this analysis are 0.877 and 0.898, respectively, which is almost 0.90. Overall, this model met the statistical fitness requirement, as shown in Table 5.

4.4 Hypothesis testing

The structural path coefficients and the R -square values of the independent variables were analyzed to assess the structural model. The bootstrapping method was used to test the hypotheses that are significant, i.e. ($p < 0.05$). Table 6 displays the beta-coefficient and t -statistics value for the variables.

In hypothesis H1, H3, H5 and H7, we predicted that there is a positive relationship between PE, PR, T, S and BI respectively, and the result shows a positive and significant association. The results are H1 ($t = 4.848, \beta = 0.309, p < 0.05$), H3 ($t = 3.834, \beta = 0.225, p < 0.05$), H5 ($t = 2.625, \beta = 0.165, p < 0.05$) and H7 ($t = 2.873, \beta = 0.143, p < 0.05$). We also hypothesized that there is a positive relationship between BI and AB, and the result shows a positive and significant association ($t = 13.074, \beta = 0.631, p < 0.05$). Therefore, hypothesis H1, H3, H5, H6 and H7 were supported.

Fitness	Saturated model	Estimated model
SRMR	0.046	0.066
d_{ULS}	3.264	4.110
d_G	1.062	1.117
NFI	0.877	0.898

Source(s): Table by authors

Table 5. Fit summary

Hypothesis	Relationship	Std. Beta	Std. Error	t -value	p -value	Decision
H1	PE → BI	0.309	0.0040	4.848	0.000	Accepted
H2	SI → BI	0.080	0.0039	1.265	0.207	Rejected
H3	PR → BI	0.225	0.0037	3.834	0.000	Accepted
H4	CS → BI	0.021	0.0045	0.296	0.768	Rejected
H5	T → BI	0.165	0.0033	2.625	0.009	Accepted
H6	S → BI	0.143	0.0031	2.873	0.004	Accepted
H7	BI → AB	0.631	0.0030	13.074	0.000	Accepted
H8	BI*RC → AB	-0.096	0.0041	1.320	0.188	Rejected

Control variables

Gender → BI	0.760	0.0031	0.096	0.201	Rejected
Age → BI	0.029	0.0051	0.212	0.741	Rejected
Income → BI	0.266	0.0037	0.891	0.222	Rejected
eCourier service usage experience → BI	0.862	0.0043	0.981	0.176	Rejected
Smartphone experience → BI	0.036	0.0062	0.354	0.219	Rejected

Source(s): Table by authors

Table 6. Result of hypothesis testing

On the other hand, in hypothesis H2, and H4, we anticipated that there is a positive relationship between SI, CS and BI respectively. Although the results showed a positive relationship, they were insignificant in the study. The results are H2 ($t = 2.625, \beta = 0.165, p > 0.05$) and H4 ($t = 2.625, \beta = 0.165, p > 0.05$). The same goes for hypothesis H8 ($t = 1.320, \beta = -0.096, p > 0.05$), the results showed that RC as a moderating factor has a negative impact between BI and AB, as hypothesized earlier in the study but it was insignificant. Hence, hypothesis H2, H4 and H8 were rejected statistically. The study result shows that the relationship between behavioral intention and actual usage behavior is weakened by resistance to change. Moreover, the study has also investigated the effect of controlled variables, but the result show that there no effect of control variables to actual usage intention (see Figure 1).

Figure 2 exhibits the path coefficients among the independent variables with one dependent variable. In the structural model, R^2 represents the amount of variance explained by the structural model, as in multiple regressions. The integrated value explained a 48.1% variance of the intention associated with eCourier adoption.

5. Discussions

This study investigated the perception of people toward adopting eCourier services from a developing country perspective using UTAUT model. This model has a strong explanatory power in the behavioral intent of new technology applications (Zhou *et al.*, 2020).

The result shows that PE was predicted to have a positive influence on behavioral intention, which resembles that of Davis, Bagozzi, and Warshaw (1989) and Sun *et al.* (2013). According to Lallmahomed, Lallmahomed, and Lallmahomed (2017), there have been previous reports of SI being insignificant, similar to our studies. This may happen because the technology is still new, also the customer base is smaller than traditional courier service, the consumers do not ask their peers for advice regarding the use of this service. Another explanation could be the literacy rate of the developing country, most people are not aware of new technology, hence their opinions are disregarded.

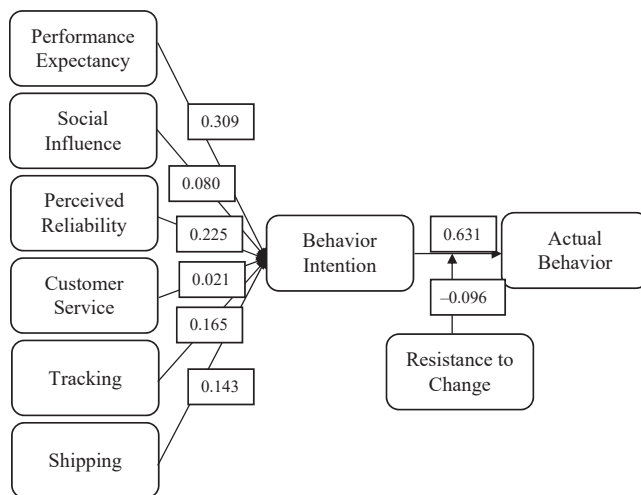


Figure 2. Conceptual framework with results

Source(s): Figure by authors

From the four additional variables considered for this study apart from the ones in the UTAUT model, the CS hypothesis specifically was not supported. All the other 3 constructs—PR, tracking and shipping were consistent with the hypothesis and findings of the previous reports. This is similar to the studies of [Cao et al. \(2018\)](#) and [Shareef et al. \(2014\)](#). CS was found to be insignificant in the context of the adoption of eCourier in Bangladesh. This interesting finding is in accord with what [Rita, Oliveira, and Farisa \(2019\)](#) found in their study of e-service quality and customer satisfaction on customer behavior in online shopping. This may be because of satisfactory tracking and shipping services.

Finally, behavioral intention was found to have a positive and significant effect on actual behavior, which is consistent with our previous hypothesis and reports [Armitage and Conner \(2001\)](#). However, the moderating factor that we considered resistance to change, although has a negative impact as mentioned in our hypothesis but is found to be insignificant. [Lallmahomed et al. \(2017\)](#) also reported similar results. In the context of Bangladesh, resistance to change has little effect on the decision to adopt. Again, this may be explained by the literacy rate of the developing country. Only people educated and acquainted with technology are using eCourier services. Hence, there is no resistance to change.

6. Implications

6.1 Theoretical

This empirical study has made a significant contribution to the field of eCourier adoption. First, primarily this study introduced the concept of how modern couriers provide their service through technology. To our best knowledge, there are no previous studies that explored eCourier in general. This extends the literature and stock of knowledge in the field paving the way for future research works. With the growth of the internet and technology at large, eCourier is vital for consumers and businesses alike. Most of the literature focused on the adoption of eCourier service and the determinants for accepting this new technology. Second, the study contextualized a developing country perspective which also adds value to the existing literature. Third, the study included multiple constructs (CS, shipping and tracking) other than the constructs proposed by [Venkatesh et al. \(2003\)](#) and thus goes beyond traditional studies using the UTAUT model by proposing a new model. These additional factors were overlooked in the existing literature studying behavior intention and adoption. Fourth, the study further enriches the concept of technology adoption by exploring the moderating role of resistance to change in between behavioral intention and actual behavior ([Arora et al., 2023](#)). This enhances the explanatory power of the UTAUT theoretical model. This study also contributes to the literature on the adoption behavior of information technology in the context of developing countries and provides information on this specific to this type of environment.

6.2 Managerial

Since eCourier service is a new concept, majorly focusing on postpurchase logistics ([Cao et al., 2018](#)), the following significant features should be focused on primarily by the managers. Collaboration within eCourier and e-commerce platforms can be a great way to ensure performance and reach potential consumers. Since this is quantitative research, qualitative research needs to be conducted by the managers to expand on the customer to customer (C2C), to provide CS to individual customers. To ensure expected performance, managers may emphasize hiring and training to create an efficient workforce. Good communication with customers regarding the exact location of their packages and visibility of shipments can establish reliability. Moreover, a proper media arrangement is necessary to promote eCourier in the community, which might bring a positive influence to create SI. Additionally, to

establish reliability, service providers must offer the greatest possible services (Choi, Jang, & Kim, 2023). Research and development of innovative tracking and alternative ways of shipping may create a competitive advantage for the eCourier service providers. As an emerging sector, most of the service providers are saturated in the capital city. So, the initiative to expand into other cities and villages is appreciated to ensure sustainable growth and competitive advantage.

7. Conclusion

The adoption of eCourier is important for developing countries to ensure the digitization of the service industry. This is an innovative way to increase the performance of the courier service industry which is currently lacking in traditional courier services. This is also a way of creating a workforce with knowledge of technology which is important to cope with the wave of digitization. To determine factors that affect the adoption of eCourier, hypotheses were developed with the help of the UTAUT model, and other factors that cause adoption. This study shows significant characteristics that are important for any eCourier service to establish a presence in a developing country like Bangladesh.

8. Limitations and future research

Genuine efforts were made to make this study as accurate as possible and despite the interesting conclusions, some limitations are acknowledged. It is necessary to mention these limitations and directions for future works. The first limitation of the study is related to the sample for this research. The study used data from a cross-sectional survey of a convenience sample. This resulted in data collection from a few or similar demographics and data samples mostly from the capital, Dhaka. Hence the results may not reflect the true adoption intention for eCourier. A more diverse sampling from different points in time would give more accurate findings. So, a longitudinal study is suggested. The second limitation of this report is the scope of analysis. It considered a few demographics and variables. Future research might overcome this limitation by further expanding the horizon with additional variables from different models and various demographics. Lastly, another limitation of the study is that it is focused on a developing country. So, any result or finding will not be suitable for a developed country. Further research are suggested to study from the perspective of a developed country with the appropriate variables.

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(The Appendix follows overleaf)

Appendix

Construct items	References
<i>Performance expectancy (PE)</i>	Rahi, Othman Mansour, Alghizzawi, and Alnaser (2019)
1. I think using online courier service will save my time	
2. I think using online courier service will be more cost-effective	
3. I think using online courier service will be more convenient	
4. I think using online courier service will make me feel comfortable	
<i>Social influence (SI)</i>	Zhou <i>et al.</i> (2020)
1. People who are important to me think I should use online courier service	
2. People who affect my behavior think I should use online courier service	
3. E-shopper who use online courier service will be considered as a trendy person	
<i>Perceived reliability (PR)</i>	Gani, Rahman, <i>et al.</i> (2022)
1. I obtain accurate and error free services from online courier service providers	
2. I can rely on the service provided by an online courier service provider	
3. Online courier service is consistent over the time	
4. Online courier services maintain standard continuously	
<i>Customer service (CS)</i>	Cao <i>et al.</i> (2018)
1. I have received prompt service from the online courier service	
2. It is easy to find customer service number that I can call to ask questions	
3. The online courier service shows a sincere interest in solving customer problems	
4. I feel that online courier services are always willing to help customers	
<i>Tracking (T)</i>	Cao <i>et al.</i> (2018)
1. Email or text notifications with a tracking number	
2. The ability to track my shipment directly on the retailer's website	
3. The ability to track my shipment with my mobile device	
4. Sent instant e-mail/text delivery alerts	
<i>Shipping (S)</i>	Cao <i>et al.</i> (2018)
1. The online courier service I use deliver the product based on an agreed time	
2. I often receive my product within expected time period	
3. I often find shipping options that best fit me	
4. The online courier service provides tracking ability during shipping	
<i>Behavioral intention (BI)</i>	Gani, Rahman, <i>et al.</i> (2022)
1. I intend to continue using online courier service in the future	
2. I will always try to use online courier service in my daily life	
3. I plan to continue to use online courier service services frequently	
<i>Resistance to change (RC)</i>	Lallmahomed <i>et al.</i> (2017)
1. I would not change my preference of using traditional courier service to online courier service	
2. I would not willingly change my preference of using traditional courier service to online courier service	
3. I would not substitute using traditional courier service with online courier service	
<i>Actual behavior (AB)</i>	Gani, Rahman, <i>et al.</i> (2022)
1. Online courier service is a pleasant experience	
2. I really want to use online courier services to keep my health safe	
3. I spend a lot of time on online courier service	
4. I use online courier services on a regular basis	

Table A1.
Survey items,
respective constructs
and relevant references

Source(s): Table by authors

Items	AB	BI	CS	PE	PR	RC	SI	S	T
AB_1	0.779	0.602	0.576	0.504	0.635	0.870	0.511	0.480	0.468
AB_2	0.780	0.571	0.373	0.497	0.387	0.066	0.395	0.317	0.575
AB_3	0.763	0.406	0.290	0.317	0.342	0.246	0.380	0.384	0.213
AB_4	0.835	0.538	0.372	0.385	0.395	0.267	0.408	0.434	0.274
BI_1	0.498	0.830	0.383	0.548	0.489	0.029	0.372	0.351	0.369
BI_2	0.661	0.854	0.460	0.435	0.500	0.686	0.435	0.449	0.367
BI_3	0.581	0.893	0.364	0.479	0.435	0.866	0.401	0.352	0.370
CS_1	0.414	0.420	0.755	0.464	0.510	0.821	0.427	0.377	0.313
CS_2	0.315	0.273	0.725	0.267	0.342	0.264	0.369	0.282	0.263
CS_3	0.393	0.386	0.828	0.306	0.539	0.361	0.395	0.400	0.321
CS_4	0.493	0.367	0.818	0.317	0.527	0.329	0.385	0.369	0.350
PE_1	0.396	0.435	0.340	0.819	0.338	0.326	0.400	0.292	0.312
PE_2	0.446	0.480	0.384	0.743	0.395	0.108	0.455	0.779	0.152
PE_3	0.433	0.445	0.384	0.846	0.367	0.244	0.431	0.277	0.204
PE_4	0.468	0.435	0.297	0.779	0.474	0.817	0.506	0.292	0.787
PR_1	0.354	0.407	0.521	0.343	0.722	0.239	0.349	0.385	0.263
PR_2	0.534	0.469	0.578	0.402	0.822	0.215	0.424	0.453	0.363
PR_3	0.399	0.365	0.305	0.385	0.705	0.296	0.326	0.872	0.236
PR_4	0.451	0.455	0.493	0.395	0.823	0.231	0.416	0.283	0.282
RC_1	0.960	0.090	0.285	0.409	0.887	0.916	0.562	0.821	0.690
RC_2	0.893	0.184	0.355	0.419	0.244	0.865	0.212	0.827	0.712
RC_3	0.250	0.236	0.269	0.469	0.246	0.895	0.214	0.097	0.702
SI_1	0.481	0.355	0.411	0.461	0.439	0.833	0.831	0.268	0.236
SI_2	0.436	0.313	0.398	0.438	0.422	0.241	0.839	0.268	0.248
SI_3	0.424	0.461	0.431	0.481	0.372	0.884	0.804	0.250	0.250
S_1	0.457	0.337	0.382	0.326	0.363	0.835	0.353	0.807	0.352
S_2	0.337	0.372	0.358	0.266	0.360	0.508	0.876	0.832	0.386
S_3	0.475	0.352	0.392	0.299	0.347	0.850	0.343	0.804	0.283
S_5	0.352	0.349	0.321	0.927	0.271	0.912	0.831	0.692	0.417
T_1	0.320	0.336	0.275	0.263	0.258	0.021	0.244	0.363	0.819
T_2	0.326	0.331	0.351	0.224	0.340	0.699	0.308	0.348	0.829
T_3	0.302	0.380	0.349	0.883	0.332	0.772	0.287	0.419	0.867
T_4	0.285	0.382	0.361	0.226	0.319	0.831	0.765	0.398	0.825

Note(s): AB: Actual Behavior, BI: Behavioral Intention, CS: Customer Service, PE: Performance Expectation, PR: Perceived Reliability, RC: Resistance to Change, SI: Social Influence

Source(s): Table by authors

Table A2.
Cross-loadings

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