Modelling behavioural intention to buy apartments in Bangladesh: An extended theory of planned behaviour (TPB)

Muhammad Ariful Islam a,*, Zainil Hanim Saidin a, Meor Azli Ayub a, Md Shamimul Islam b

a School of Distance Education, Universiti Sains Malaysia, Penang, Malaysia
b Brac Business School, Brac University, Dhaka, Bangladesh

ABSTRACT
Understanding the elements that influence buyers’ purchase intentions is critical for real estate companies. The goal of this study is to develop a model for investigating behavioural intentions to purchase apartments in Bangladesh. To obtain the preliminary elements, the Theory of Planned Behaviour (TPB) was used as the underpinning theoretical framework. Other elements relevant to the study context were identified by an extensive literature review, which was subsequently evaluated by industry experts. A systematic questionnaire was used to collect two hundred and thirty-six samples. To find the relevant factors, an exploratory factor analysis (EFA) was used. In addition to the criteria mentioned by the TPB, the results reveal three additional aspects: perceived physical quality, access to money, and favourable government policy. The study contributes to the literature by presenting an extended TPB model suitable for studying behavioural intention to buy apartments in an emerging country.

1. Introduction

In the investment landscape, real estate is a significant and important asset class (Ghent et al., 2019). It is critical for both buyers and the housing industry to investigate the elements that influence buyers’ decision-making in real estate markets. To achieve a competitive advantage, real estate companies must understand consumer behaviour while purchasing apartments. It is one of the most important economic decisions that people make, and making well-informed decisions necessitates gathering a lot of data (Haddad et al., 2011; Zadkarim and Emari, 2011). As a result, it’s vital to comprehend the motivations of potential apartment buyers.

Many behavioural theories in the field of psychology have been created around the world that may be used in marketing and relevant to real estate (DeLisle, 2012). The majority of previous studies used TPB to analyse consumer buying behaviour in the real estate environment. For instance, Kamal and Pramanik (2015a, 2015b) used the TPB as their research model to investigate customers’ intentions to buy apartments in Dhaka, Bangladesh. The same hypothesis was used in another study by Judge et al. (2019) to predict buyer intent to purchase sustainable housing in Australia. Al-Nahdi et al. (2015a, 2015b, 2015c, 2015d) utilized TPB to estimate apartment buying intentions in Saudi Arabia. Other significant parameters besides TPB were not considered in these three previous studies (Kamal and Pramanik, 2015a, 2015b; Al-Nahdi et al., 2015a, 2015b, 2015c, 2015d; Judge et al., 2019).

Ajzen (1988) and Ajzen (1991) proposed TPB to study behavioural intention. Some critics, however, claim that the theory ignores important factors that determine behavioural intention (Yazdanpanah and Forouzani, 2015). As a result, TPB cannot be utilised only to investigate apartment-buying intentions. In the lack of a proper measuring structure in the current setting, it is critical to broaden TPB to include other contextual elements. As a result, the goal of this study is to develop a model for analysing the behavioural intention of buying an apartment in Bangladesh. This study addresses the following research questions. Q1. What are the factors affecting the behavioural intention of consumers to buy apartments? Q2. How to identify the relevant factors and propose a model in the given context? TPB has been adopted as an underpinning theoretical framework. Additional criteria were uncovered during the literature review, which was later confirmed by industry experts. An exploratory factor analysis (EFA) was done to identify the relevant factors. Aside from TPB, the findings point to three more factors. Finally, a model is proposed based on the findings.

This study adds to the body of knowledge in two ways. To begin, this research presents a model for investigating behavioural intentions in apartment purchasing. There are few studies in the literature that investigate buyer behaviour in the context of a real estate market in an
emerging economy. Second, this study expands on the TPB theory by incorporating three new variables: perceived physical quality, access to money, and government favourable policy. The extended theory is appropriate for researching behavioural intentions to buy apartments in developing countries.

This paper is divided into six sections. Following the introduction in section 1, section 2 discusses the theoretical background and conceptualization of the attributes, subjective norms, perceived behavioural control, perceived physical quality, access to money, government policy, intention, and consumer behaviour. Section 3 then provides a detailed discussion of the methods used. Section 4 presents the findings and discussion, while Section 5 presents the measurement items and theoretical implications. Finally, section 6 discusses the conclusion, limitations, and future research suggestions.

2. Literature review

This section discusses the theoretical background, followed by operationalizing the variables that are found relevant for the proposed model.

2.1. The theoretical background

The theory of planned behaviour was proposed as an extension of the theory of reasoned action (Ajzen, 1988, 1991). According to the TPB, consumer behaviour can be predicted by consumers’ attitudes toward the behaviour, subjective norms regarding the behaviour, and perceived control over performing the behaviour (Ajzen, 1991; Sheeran et al., 2003). It is the subject of considerable attention in relation to beliefs. Ajzen (1991) emphasised three types of beliefs related to the three predictors of intention: behavioural beliefs, which are assumed to influence attitudes toward the behaviour, normative beliefs, which serve as the underlying determinants of subjective norms, and control beliefs, which serve as the foundation for perceptions of behavioural control. The degree to which a person has a favourable or unfavourable opinion of the behaviour is referred to as consumer attitudes. The perceived social pressure to perform or not execute the behaviour is referred to as subjective norms. Perceived behavioural control relates to the perceived ease or difficulty of carrying out the behaviour, and is thought to be influenced by expected obstacles (Ajzen, 1991; Sheeran et al., 2003). Despite its dominance in the study of human behaviour, recent criticism alleges that it was impractical in a longitudinal study (Sniehotta et al., 2014). Furthermore, many significant elements that have been discovered to be important determinant factors influencing human behaviour were missed by this theory (Yazdanpanah and Forouzani, 2015). As a result, TPB expansion is required.

Additionally, the behavioural economics theory suggests that human behaviour differs from the standard behavioural models in reality and it mostly matters in economic reality e. g. finance and savings (Mullainathan and Thaler, 2000). The foundation of behavioural economics is based on psychology and economics. This theory primarily investigates biases, tendencies and heuristics behaviours of people while making economic decision (buying decision for example) (Thaler, 1980). This study incorporates finance, perceived physical quality and government favourable policies/incentives to study the behavioural intention to buy the apartment. These three factors are related to economic benefit and can be perceived as savings. Therefore, behavioural economics theory also explain the relationship of variables of interest in our model. As a result, the goal of this study is to investigate the variables determining behavioural intention to purchase an apartment. The variables of TPB and the other three variables identified as important in the exploratory factor analysis (EFA) study are discussed in the following sections.

2.2. Attitude

Attitude is defined as a psychological inclination communicated by evaluating a specific substance with some level of approval or disapproval (Ajzen, 1998). The attitude of a person toward a particular activity is referred to as their liking or dislike of that activity. Customers’ purchasing attitudes have a significant impact on their purchasing intentions (Kamal and Pramanik, 2015a, 2015b). A favourable attitude toward purchasing an apartment is a strong predictor of future intentions (Judge et al., 2019).

According to Kamal et al. (2016), there is a significant relationship between attitude and apartment purchasing intentions in Bangladesh, which is supported by Saudi residents looking to buy real estate (Al-Nahdi et al., 2015a, 2015b, 2015c, 2015d). Wibawa, Hartoyo, and Hartoyo (2017) and Jain (2020) found that attitude has a positive and significant effect on apartment purchase intentions. Other studies have discovered that attitudes have a positive influence on behavioural intentions to buy an apartment (Yazdanpanah and Forouzani, 2015; Khtoo et al., 2019). Based on previous research findings, it is proposed that attitudes have a positive effect on the intention to purchase apartments (Figure 1: P1).

2.3. Subjective norm

Subjective norm is the outcome of pressure placed on a person to do or refrain from performing a behaviour (Han and Kim, 2010; Ajzen, 1991). Individuals’ ideas about performing or not performing specific behaviours, as well as motivation and willingness to do or not do something thought significant, are referred to as subjective norms (Utami, 2017). It denotes the societal pressure to engage in or refrain from a behaviour (Bai et al., 2019). Customers’ intentions to buy a house from the real estate sector were influenced by subjective norms in the case of real estate purchasers (Al-Nahdi et al., 2015a, 2015b, 2015c, 2015d).

Subjective norms have a favourable impact on behavioural intention (Yazdanpanah and Forouzani, 2015). Jain (2020) discovered that subjective norm is positively associated with luxury purchasing intention in another study. It was also discovered that the positive influence of subjective norms resulted in stronger intentions to purchase real estate (Al-Nahdi et al., 2015a, 2015b, 2015c, 2015d). Furthermore, numerous research has demonstrated that subjective norms have a strong positive influence on the intentions to purchase an apartment (Wibawa et al. 2017; Judge et al., 2019). Hence, this study proposed that subjective norm has a positive impact on the intention to buy apartments (Figure 1: P2).

2.4. Perceived behavioural control

Perceived behavioural control is a measurement of an individual’s opportunity and ability to do a behaviour when they believe they have the power to act or decide with that behaviour (Mamun, 2018). Perceived behavioural control, according to Ajzen (2015), can prevent individuals from executing a behaviour or make it easier for them to perform a behaviour when obstacles or resources are present. Perceived behaviour control has been established as a predictor of house-buying intention by researchers (Judge et al., 2019). It is also strongly linked to one’s beliefs about the influence of both situational and internal factors on one’s ability to accomplish a behavioural (Tan et al., 2017).

Wibawa et al. (2017) discovered that having easy access to information, as well as adequate money and time, is important when purchasing an apartment from the real estate sector. Numerous studies have found a positive relationship between perceived behavioural control and purchase behaviour intention (Yazdanpanah and Forouzani, 2015; Wibawa et al. 2017; Judge et al., 2019). Other studies have also confirmed the positive relationship between perceived behavioural control and consumer purchasing intentions in the real estate market (Khtoo et al., 2019). As a result of these studies, it was proposed that perceived behavioural control has a positive effect on the intention to purchase apartments (Figure 1: P3).
2.5. Perceived physical quality

Customers’ purchasing decisions for residential property are heavily influenced by quality (Rachmawati et al., 2019). When purchasing an apartment, the quality of the apartment, particularly the parking facility, the environment, proper ventilation, interior design, utility services, fittings, and construction quality, are all critical considerations (Kamal and Pramanik, 2015a, 2015b). According to Sonia (2020), project quality, construction quality, and environmental quality all influence the decision to acquire an apartment in Dhaka.

House features include house design, building quality, interior and exterior designs, and finishing. These features are expected to influence an individual’s house purchase decision (Chia et al., 2016). The quality of the construction, ventilation, parking, apartment design, and water supply are all important factors to consider when making a purchase (Kumar and Khandelwal, 2018). For the living quality of an apartment, an excellent water supply and drainage system are also essential (Kamal and Pramanik, 2015a, 2015b). Customer intent to acquire residential property is heavily influenced by quality (Kamal and Pramanik, 2015a, 2015b; Maoludyo and Aprianingsih, 2015; Rachmawati et al., 2019; Khoo et al., 2019). In light of past research, it is hypothesised that perceived physical quality has a beneficial impact on the desire to purchase an apartment (Figure 1: P4).

2.6. Access to money

When it comes to purchasing a home, money is a major consideration for customers (Khare and Kader, 2016). Purchasers of real estate must borrow substantial sums of money and pay interest on their loans. This price premium is used to determine whether or not a customer is willing to buy a product (Numraktrakul et al., 2012). If middle-income people had easier access to housing finance, they will be more inclined to buy apartments. The demand for home finance in Bangladesh was BDT 1496 billion in 2019, according to Bangladesh Bank, and it is constantly increasing (Sonia, 2020).

Financial factors had the largest influence on purchasing decisions, according to Paço and Raposo (2009). Finance has always been seen as a critical aspect of the real estate industry’s development. Customers are more interested in buying apartments and houses if they can get long-term, low-cost financing (Sonia, 2020). Previous studies have discovered a positive connection between financial resources and the intent to purchase an apartment (AL-Nahdi, 2015; Chia et al., 2016; Khoo et al., 2019). As a result, it is suggested that having access to money has a beneficial impact on the intention to own an apartment (Figure 1: P5).

2.7. Favourable government policy

An enabling policy makes it easier for the market to produce and distribute housing while also ensuring that it is done efficiently and equitably (Chowdhury, 2013). Governments can also have an impact on the construction industry as investors or users of buildings (Matisoff et al., 2016). Differentiated price and trade restriction policies for housing, as well as government monetary subsidies, can encourage developers to build affordable housing (Zhang et al., 2018). Financial incentives, easy loans, tax benefits, and subsidies can all help to attract more potential home buyers (Ghodrati et al., 2012). Previous research has found that government policies such as incentives have a significant positive effect on apartment purchases (Matisoff et al., 2016; Glaeser et al., 2017; Alam, 2018). As a result, it is proposed that favourable government policy has a positive effect on the intention to buy apartments (Figure 1: P6).

2.8. Intention

In general, a person’s intentions are influenced by a variety of personal and influential beliefs. The dependent variable is purchase
intention, which is predicted by an independent variable such as attitude, perceived behaviour control, and subjective norm (Ajzen, 1991, 2015). Customer purchase intention examines the reasons why customers choose and buy a particular brand, as well as the customers’ preferences when purchasing a product or service (Hoe et al., 2018). When participants resolve to achieve their goals, they will have a reason to do so. No further action can be taken unless that motive is present (Mamun, 2018).

Purchase intention influences consumer behaviour positively (Arora and Sahney, 2018). Intention denotes a person’s desire to perform the behaviour, and it is a direct antecedent of behaviour (Al-Nahdi et al., 2015a, 2015b, 2015c, 2015d). In the case of apartment purchases, the purpose comes before the purchase behaviour (Numraktrakul et al., 2012).

2.9. Consumer behaviour

Understanding consumer purchasing behaviour has become a critical issue in recent decades (Singh et al., 2018). Consumer behaviour is the study of individuals, groups, or organizations and the processes they use to select, secure, use, and dispose of products, services, experiences, or ideas to satisfy needs and the impacts that these processes have on the consumer and society (Stankevich, 2017). According to Dudovskiy (2015), consumers purchase behaviour is the result of an individual’s necessities and desires, and purchases are made to fulfil these desires. Consumer behaviour refers to the process that consumers go through when making purchases, and it includes factors that influence their decisions (Stankevich, 2017). So, consumer behaviour encompasses more than just making a purchasing decision or the act of purchasing; it also encompasses consumer interaction and the wide range of experiences associated with consuming (Nolcheska, 2017). Consumer behaviour is concerned with how individual consumers and families or households decide to spend their available resources (time, money, and effort) on consumption-related items (Karim, 2020). Previous research has predicted that intention influences consumer behaviour (Al-Nahdi et al., 2015a, 2015b, 2015c, 2015d). Thus, studying both intention and consumer behaviour at the same time is illogical and necessitates a longitudinal study. As a result, this study assumes that intention will reflect behaviour.

3. Methodology

3.1. The proposed model

The proposed model is depicted in Figure 1. The model demonstrates that six factors influence behavioural intention, which leads to actual behaviour, such as purchasing an apartment. Attitudes, subjective norms, and perceived behavioural control obtained from TPB and EFA suggested perceived physical quality, access to money, and favourable government policy. Consumer behavioural intention is a very complex study that cannot be fully explained by a single model or theory. According to the proposed model, six variables can predict intention and assumed intention will reflect actual behaviour. This model adds to the literature on the behavioural intention to buy apartments. The model expanded on the TPB model by incorporating three additional latent variables: perceived physical quality, access to money, and favourable government policy, all of which are important in apartment purchasing.

3.2. The case background

Dhaka, the capital of Bangladesh, is one of the most densely populated areas in the world, with a density of 23,234 people per square kilometre (Awval, 2019). Bangladesh’s public sector is struggling to meet the housing needs of Dhaka’s growing population. Over the last four decades, the private real estate sector has played a significant role in apartment supply. Their annual contribution is approximately 15,000 apartments (Seraj, 2012). People are interested in buying apartments in mid or high-rise buildings from the private real-estate market because there is a scarcity of buildable land and land values are high (Mohiuddin, 2014). Family patterns have evolved, and the traditional joint family is no longer the norm (Samad, 2015). The traditional family pattern has given way to a single-family pattern, which has increased the demand for Dhaka apartments (Seraj, 2015). In most cases, an apartment building houses a nuclear family of a husband, wife, and children (Ahmad, 2019).

In Bangladesh, a lack of defined income level makes it difficult to identify targeted clients (Chowdhury, 2013). Due to this, the appropriate product is not being developed to meet the needs of city people’s consumer behaviour, leading to unsold or ready-to-move-in flats. Therefore, research into what factors influence people’s intentions to buy apartments in Bangladesh is necessary. As a result, it is critical to develop a model for studying consumer behaviour. Besides adopting the variables from the TPB, this study also identified other variables from the literature review. The following variables have been identified including, project facilities (Kamal and Pramanik, 2015a, 2015b), environmental condition (Chia et al., 2016), location facility (Kumar and Khandelwal, 2018), perceived physical quality (Jamil et al., 2018), promotion (Rachmawati et al., 2019), price (Sonia, 2020), government incentive, policy and regulation (Glaser et al., 2017; Alam, 2018) and finance (Kho et al., 2019). To establish the key elements, an EFA study was recommended. The EFA was conducted using a structured questionnaire approach (Appendix A). It was then evaluated through consultation with experts in the relevant industry, including buyers, managers, and researchers. The EFA, as well as the data gathering process, are discussed in the following sections.

3.3. Sampling design

This study’s sample population consists of people seeking an apartment in Dhaka. We interacted with real estate salespeople to develop a list of possible Dhaka apartment buyers. Similarly, the Real Estate and Housing Association of Bangladesh (REHAB) hosts an annual housing show to collect information from visitors interested in buying an apartment. We received names of possible purchasers from REHAB and real estate professionals. According to the REHAB, this real estate market has 40,000–50,000 potential buyers. However, no source defines the actual number of people searching for an apartment on the real estate market. As a result, no sampling frame exists. Therefore, this study used a non-probability sampling method in the absence of a sampling frame.

In terms of sample size, the majority of prior studies used Gpower software to calculate the minimal sample size with a predictive power of 0.95 (Mahmud et al., 2017). According to the calculations, a minimum sample size of 146 is needed with six predictors (moderate effect size is 0.15). This study obtained 251 responses out of 400 self-administered questionnaires handed out. A total of 251 questionnaires were returned, with 236 of them including complete responses. As a result, this study relied on cross-sectional data and that is achieved sufficient samples for EFA study.

To fulfil the study’s objectives, certain sequential steps were taken to collect data. The questionnaire was distributed to the respondents through an online Google form. The questionnaire requests information on project facilities, environmental conditions, location facilities, perceived physical quality, promotion, price, government incentive policy and regulation, attitude, subjective norms, perceived behaviour control, and finance. The entire data collecting process took three months, from April 2020 to June 2020. The study also employed the reminder technique to accelerate the response time and response rate through a phone call. The informed consent was obtained from all participants in the research.

3.4. Data analysis method

3.4.1. Exploratory factor analysis (EFA)

Exploratory factor analysis (EFA) is a data-driven approach to factor analysis and is used to extract a smaller number of common factors that
Table 1. Respondents’ biographical information.

| Variables                | Population characteristics | Frequency | Percent |
|--------------------------|----------------------------|-----------|---------|
| Gender                   |                            | 203       | 86.0    |
|                          | Male                       | 189       | 80.6    |
|                          | Female                     | 14        | 6.0     |
| Marital Status           |                            | 231       | 97.9    |
|                          | Single                     | 229       | 97.5    |
|                          | Married                    | 2        | 0.8     |
| Age                      | 21–30 years                | 8         | 3.4     |
|                          | 31–40 years                | 63        | 26.7    |
|                          | 41–50 years                | 98        | 41.5    |
|                          | 51–60 years                | 54        | 22.9    |
|                          | 61–Above                    | 13        | 5.5     |
| Education                | Diploma                    | 1         | .4      |
|                          | Pass Course                | 20        | 8.5     |
|                          | Bachelor/B. Sc.            | 46        | 19.5    |
|                          | Master                     | 144       | 61.0    |
|                          | PhD                        | 25        | 10.6    |
| Occupation               | Public Service             | 64        | 27.1    |
|                          | Private Service            | 92        | 39.0    |
|                          | Self Employed              | 73        | 30.9    |
|                          | Retired                    | 2         | .8      |
|                          | Other                      | 5         | 2.1     |
| Income (in BDT)          | Below 50,000               | 5         | 2.1     |
|                          | 50,001–100,000             | 55        | 23.3    |
|                          | 100,001–150,000            | 57        | 24.2    |
|                          | 150,001–200,000            | 26        | 11.0    |
|                          | 200,001–250,000            | 20        | 8.5     |
|                          | 250,001–300,000            | 27        | 11.4    |
|                          | Above 300,000              | 44        | 18.6    |
| Apartment Size (ft²)     | Below 1000                 | 4         | 1.7     |
|                          | 1001–1500                  | 85        | 36.0    |
|                          | 1501–2000                  | 84        | 35.6    |
|                          | 2001–2500                  | 38        | 16.1    |
|                          | Above 2500                 | 25        | 10.6    |
| Budget (in BDT)          | Below 50,00,000            | 17        | 7.2     |
|                          | 50,001–100,000             | 91        | 38.6    |
|                          | 100,001–150,000            | 55        | 23.3    |
|                          | 150,001–200,000            | 26        | 11.0    |
|                          | 200,001–250,000            | 14        | 5.9     |
|                          | 250,001–300,000            | 16        | 6.8     |
|                          | Above 300,00,000           | 17        | 7.2     |
| Total                    |                            | 236       | 100.0   |

Note: BDT = Bangladeshi Taka. 1 USD = 85 BDT. Source: Authors’ own calculation from the data

represent or explain the common variance of a larger set of manifest variables (Watkins, 2018). Factor analysis is a widely used technique for identifying latent constructs underlying questionnaire responses (Steiner and Grieder, 2020). According to Brown (2015), “a factor is an unobservable variable that influences more than one observed measure and accounts for the correlations between these observed measures.” In other words, the observed measures are linked because they are caused by the same factor. EFA describes how the study was carried out and presents accounts for the correlations between these observed measures. In other words, the observed measures are linked because they are caused by the same factor. EFA is a multivariate statistical method that has become an important tool in the development and validation of psychological theories and measurements (Watkins, 2018).

This study has undertaken an EFA approach since there is a lack of an established measurement scale to study consumer behavioural intention in the real estate industry, particularly with respect to buying an apartment. This study has developed the initial questionnaire based on the literature review that has been subsequently consulted with and validated by the industry experts. The initial questionnaire contains a total of 63 questions, and after the EFA, the final questionnaire (see Appendix A) has been designed with 35 items.

4. Results and discussion

4.1. Descriptive statistics

Table 2 represents the demographic analysis of the respondents. Out of the 236 respondents, there are 203 (86%) male and 33 (14%) female respondents. In Bangladesh, male are the main earning person, so maximum respondents’ interested purchasing apartment are male. Most of the respondents (97.9%) are married in the survey. In Bangladesh, before marriage people live along with parents and don’t think about purchasing apartment. The majority of respondents who participated in the survey are between 41 and 50 years (41.5%). The majority of respondents, 144 in total, have a Master’s degree, accounting for 61% of the total respondents. The first occupation class is private service, which has 91 respondents and accounts for 39% of the total respondents, followed by self-employment, which has 73 respondents and accounts for 30.9%, and public service, which has 64 respondents and accounts for 27.1%. The majority of respondents (24.2%), with 57 respondents, fall into the monthly income range of BDT 100,001–150,000, with the

![Table 2. Result of EFA.

| New Constructs | Initial items | Revised items | Loadings | Reliability (Cronbach alpha) |
|----------------|---------------|---------------|----------|-----------------------------|
| Attitude       | AT1 AT1       |               | 0.923    | 0.895                       |
|                | AT2 AT2       |               | 0.726    |                             |
|                | AT3 AT3       |               | 0.685    |                             |
|                | AT4 AT4       |               | 0.924    |                             |
|                | AT5 AT5       |               | 0.845    |                             |
| Subjective norm (SN) | SN1 SN1 | 0.613 | 0.798 |
| Perceived behavioural control (PB) | PB1 PB1 | 0.769 | 0.862 |
| Perceived physical quality (PPQ) | PF1 PFQ 1 | 0.688 | 0.903 |
| Access to money (AM) | FN1 AM1 | 0.8 | 0.916 |
| Favourable government policy (GP) | GI1 GP1 | 0.793 | 0.906 |
| Purchase intention (PI) | PI1 PI1 | 0.659 | 0.864 |

Source: Authors’ own calculation
second-highest (23.3%), representing 55 respondents, falling into the income range of BDT 50,001–100,000. The majority of respondents (85 out of 236), or 36%, prefer apartment sizes 1001–1500 ft², while the second-highest (84 out of 236) prefer apartment sizes 1501–2000 ft². According to the survey, the highest number of 91 respondents (38.6%) who participated in the survey have an apartment purchase budget of BDT 50,00,001–100,00,000. Hence, it can be said that the demographic profiles and general information of the respondents collected are logical and suitable for this study context.

4.2. Results of EFA

This study used 63 items to analyze the EFA. The results of KMO and Bartlett’s of Sphericity are as follows. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is 0.841 and Bartlett’s Test of Sphericity shows significant with the p-value of 0.000 and Chi-Square 10,037.775. This suggests that the data is suitable for conducting the EFA study. Our initial questionnaire had 63 questions. After EFA, we reduced the questions or measurement items to 35, considering the factor loadings. Loadings are the correlations that exist between the resulting components and the measurement items to 35, considering the factor loadings. Loadings are weakly correlated (less than 0.40), moderate (0.40–0.70), and strongly correlated (above 0.70). Therefore, five items were removed. The majority of items have loadings greater than 0.70, which is recommended in the literature (Hair et al., 2016). However, items loadings below 0.60 have been deleted.

4.3. Proposed measurements

The variables and items associated with the extended TPB model are presented in this section. Table 3 lists the variables, as well as their associated items and sources. Appendix A contains the complete set of questions. The first section consists of measuring attitudes. It includes five items that assess respondents’ beliefs in various aspects of attitudes such as (i) beneficial, (ii) pleasant, (iii) good, (iv) valuable, and (v) enjoyable. All of the items were derived from the secondary sources listed in Table 3. This questionnaire collected responses from interested buyers looking for apartments in Dhaka using a five-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = strongly agree). According to the literature, the five-point scale appears to be less confusing and increases the response rate (Babakus and Mangold, 1992).

The issue of subjective norms was addressed in the second part, which included 5 items adopted from prior studies, as shown in Table 3. The objective of these items was to measure the influences of purchase intention. The five items are (i) parent’s influence, (ii) child’s influence, (iii) spouse’s influence, (iv) friend’s influence. Respondents were asked to rate their level of agreement on a five-point scale ranging from strongly disagree to strongly agree.

Third, the issue of perceived behavioural control was addressed. It was based on the previous studies listed in Table 3. The goal of these items was to assess the impact on purchasing intent. The five items are (i) opportunity (easy market access) in deciding to buy an apartment, (ii) capacity to make a buying decision, (iii) control to buy an apartment, and (iv) knowledge about the apartment to make a buying decision. Respondents were asked to rate their level of agreement on a five-point scale ranging from strongly disagree to strongly agree.

The fourth section included a measurement of perceived physical. This section measured the following eight items: (i) parking, (ii) air pollution, (iii) sound pollution, (iv) preferred location, (v) ventilation, (vi) functional design, (vii) quality building materials (viii) convenient accessibility. Respondents were asked to rate their level of agreement on a five-point scale ranging from strongly disagree to strongly agree.

| Table 3. Measurement items. |
|----------------------------|

| Constructs               | Items                                              | Sources                                                                  |
|--------------------------|----------------------------------------------------|--------------------------------------------------------------------------|
| Attitudes                | Beneficial                                        | Ajzen (1988), Al-Nahdi et al. (2015a, 2015b, 2015c, 2015d), Kamal and Pramanik (2015a, 2015b) and Yadav et al. (2018). |
|                          | Pleasant                                          |                                                                          |
|                          | Good                                              |                                                                          |
|                          | Valuable                                          |                                                                          |
|                          | Enjoyable                                         |                                                                          |
| Subjective Norm          | Guardian influence                                | Numraktrakul et al. (2012), Chowdhury (2013), Al-Nahdi (2015), Wibawa et al. (2017) and Judge et al. (2019). |
|                          | Spouse’s influence                                |                                                                          |
|                          | Family members’ influence                         |                                                                          |
|                          | Friend’s influence                                |                                                                          |
| Perceived Behavioural Control | Opportunity                                     | AL-Nahdi (2015), Wibawa et al. (2017), Judge et al. (2019) and Khoo et al. (2019). |
|                          | Capacity                                          |                                                                          |
|                          | Control                                           |                                                                          |
|                          | Knowledge                                         |                                                                          |
| Perceived Physical Quality | Car parking                                      | Kamal and Pramanik (2015a, 2015b), Chia et al. (2016), Kumar and Khandelwal (2018), Rachmawati et al. (2019) and Sonia (2020). |
|                          | Air pollution                                     |                                                                          |
|                          | Sound pollution                                   |                                                                          |
|                          | Preferred location                                |                                                                          |
|                          | Ventilation                                       |                                                                          |
|                          | Design                                            |                                                                          |
|                          | Quality materials                                 |                                                                          |
|                          | Accessibility                                     |                                                                          |
| Access to Money          | Enough money                                      | Islam and Zahur (2016), Jamil et al. (2018), Khoo et al. (2019), Rachmawati et al. (2019) and Sonia (2020). |
|                          | Access to home loan                               |                                                                          |
|                          | Access to borrowings                              |                                                                          |
| Favourable Government Policy | Government incentive                             | Chowdhury (2013), Matisonn et al. (2016), Glaeser et al. (2017) and Alam (2018). |
|                          | Policy of affordable home                         |                                                                          |
|                          | Regulation pressure                               |                                                                          |
|                          | Special credit                                    |                                                                          |
|                          | Reduction of property transfer fees               |                                                                          |
| Intention                | Commitment to buy                                 | AL-Nahdi (2015), Kamal and Pramanik (2015a, 2015b), Kamal et al. (2016), Judge et al. (2019) and Khoo et al. (2019). |
|                          | Have the recommendation to buy                    |                                                                          |
|                          | Loyalty to buy                                    |                                                                          |
|                          | Plan to buy                                       |                                                                          |
|                          | Try to buy                                        |                                                                          |
The fifth independent variable, access to money, was determined by asking buyers whether they (i) having enough money, (ii) having access to a home loan, (iii) can borrow money from relatives, (iv) can borrow money from friends. Respondents were asked to rate their level of agreement on a five-point scale that ranged from strongly disagree to strongly agree.

The sixth independent variable, favourable government policy, was assessed by asking whether buyers are influenced in their buying decisions by (i) government incentives, (ii) affordable housing policies, (iii) regulatory pressure, (iv) special credit, and (v) property transfer fee reductions.

The seventh component deals with purchase intention, which is followed by customer behaviour. The respondents were asked whether they (i) had made a promise to buy, (ii) if they had gotten any recommendations to buy, (iii) if they were loyal to any company, (iv) if they had any plans to buy, and (v) if they would try to acquire an apartment. They were asked to rate their level of agreement on a five-point scale that ranged from strongly disagree to strongly agree.

### 4.4. Testing the propositions

We also tested the proposition using multiple regression method. The summary reports are presented in Table 4 and also graphically in Figure 2. The model summary of SPSS output reports that R square values is .484 indicating 48 percent of the variances is explained by the predictors. The result of ANOVA reveals that the F value is 35.769 with p value 0.000 indicating the overall model relationship is significant. Regarding the individual propositions the findings reveal that all the relationships are significant except P2. The predictors namely, attitude, perceived behavioural control, perceived physical quality, access to money and the government favourable policy towards apartments buying have a significant positive relation with the intention. However, there is no sufficient statistical evidence to support the P2. The reason might be cultural change took place in Bangladesh, especially, in urban areas (Kamal et al., 2016). As such, people in urban areas rarely bother about the opinion of guardian, spouse, family member, friends, and reference group in buying apartment.

#### Table 4. Result of multiple regression.

| Propositions | Relationships | Std. Beta | Std. Error | t value | P value | Decision |
|-------------|---------------|-----------|------------|---------|---------|----------|
| P1          | Attitude → Intention to purchase | .528      | .055       | 9.553   | .000    | Supported|
| P2          | Subjective Norm → Intention to purchase | .007      | .058       | .089    | .284    | Not supported|
| P3          | Perceived behavioral control → Intention to purchase | .134      | .049       | 2.494   | .013    | Supported|
| P4          | Perceived physical quality → Intention to purchase | .157      | .081       | 2.365   | .025    | Supported|
| P5          | Access to money → Intention to purchase | .164      | .077       | 2.126   | .017    | Supported|
| P6          | Govt. policy → Intention to purchase | .185      | .043       | 1.982   | .025    | Supported|

#### Figure 2. Graphical representation of the causal relationships.
5. Theoretical and practical implications

The present research used an extended TPB model to examine consumers’ apartment buying behaviour in Dhaka. Aside from TPB, the findings indicated numerous new characteristics that can be used to predict behavioural intention, including perceived physical quality, access to money, and favourable government policy. The physical quality of service leads to satisfaction, and contentment leads to intention, according to the service quality model (Priporas et al., 2017; Parasuraman et al., 1988). The high cost of apartments in Bangladesh has been discovered to be a barrier to buyers (Barua et al., 2010). As a result, having access to money could potentially enhance the desire to buy, particularly in Bangladesh. Furthermore, it is believed that favourable government policies are necessary to encourage customers to purchase real estate (Rahman, 2021). The findings of this study show that buying an apartment is helpful and valuable to consumers and that the demand of family and friends also contributes to the purchase of an apartment that meets the factor-subjective standard. It also recognised the characteristics that influence buying behaviour, such as the ability, capacity, and control over a purchase. The interaction of the apartment with the environment and its interior amenities, on the other hand, influences the decision to purchase an apartment with money available through a loan or other means. This study found that government initiatives such as incentives and regulatory measures that encourage people to own apartments play an important role. The TPB was employed to create initial factors including subjective norm, attitude, and perceived behavioural control in this study. Using exploratory factor analysis (EFA), the researchers discovered three additional important components. Additional aspects include physical quality perceptions, financial access, and favourable government policies. Therefore, this study extended the TPB by integrating three additional contextual factors for studying behavioural intention. The study adds to the body of knowledge by highlighting how money, government policy, and perceived physical quality affect apartment purchasing. The expanded TPB model, rather than the original TPB model, appears to be a better fit for the circumstance. By establishing a model for understanding behavioural intention, this study contributes significantly to the literature.

This study also bring practical implications. First, the proposed model helps practitioners to study the perceptions of consumers in real estate industry with an aim to understand their purchase intention. Second, the empirical evidences of this study also provide useful information to the practitioners engaged in the real estate industry for better decision making regarding designing their products and services.

6. Conclusion

It is critical for both buyers and the industry to understand the elements that influence apartment purchases in real estate markets. To succeed in the real estate industry, companies must first comprehend consumer behaviour while purchasing apartments. The goal of the study is to create a model for analysing behavioural intentions to purchase homes in Bangladesh. TPB was used as an underlying theoretical framework. This study identified other relevant factors by conducting exploratory factor analysis (EFA). Finally, a new proposal is presented. Based on the extended TPB, this study created a theoretical model of behavioural intention to investigate factors influencing apartment buying. This paper adds to the discussion by presenting three additional factors in addition to the one proposed by TPB. The addition of three variables (perceived physical quality, access to money, and favourable government policy) is expected to improve the existing theory’s explanatory power in the given context.

Several limitations apply to this study. First, this study investigated the relevant factors using EFA without delving into the causal relationship between the independent and dependent variables. Second, no moderator or mediator was considered in this study. Therefore, future research could include a mediator and moderator. Although gender and age are commonly used as moderators, it would be interesting to see access to money in this model as either a moderator or a mediator. Finally, this study only takes into account the effects of psychological factors on consumers’ behavioural intentions. Other factors, such as migration to Dhaka and capital pull factors, are not taken into account. As a result, future research could delve deeper into the migration and pull factors.

Declarations

Author contribution statement

Muhammad Ariful Islam, Zainil Hanim Saidin, Meor Azli Ayub, Md Shamimul Islam: Conceived and designed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Funding statement

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data availability statement

The authors do not have permission to share data.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

Acknowledgements

The authors appreciate the suggestions and comments by anonymous reviewers. We are grateful to the reviewers for their tireless effort to improve the quality of the paper. The authors also acknowledge the sincere respondents who assisted us by providing their valuable perceptions in the questionnaire.
Appendix A

Sample of Questionnaire after EFA.

1. Demographic Information:

| Gender:           | Marital Status |
|-------------------|----------------|
| 1. Male           | 1. Single      |
| 2. Female         | 2. Married     |
| Family Size:      | Age:           |
| 1. One            | 1. 21–30 years |
| 2. Two            | 2. 31–40 years |
| 3. Three          | 3. 41–50 years |
| 4. Four           | 4. 51–60 years |
| 5. More __________ | 5. 61–Above    |
| Education:        | Occupation:    |
| 1. Diploma        | 1. Public Service |
| 2. Pass Course    | 2. Private Service |
| 3. Bachelor/B. Sc.| 3. Business/Self Employed |
| 4. Master         | 4. Retired      |
| 5. PhD            | 5. Other _______ |
| Monthly Family Income (BDT): | Preferred Apartment Size (Sft): |
| 1. Below 50,000   | 1. Below 1000 |
| 2. 50,001–100,000 | 2. 1001–1500 |
| 3. 100,001–150,000| 3. 1501–2000 |
| 4. 150,001–200,000| 4. 2001–2500 |
| 5. 200,001–250,000| 5. Above 2500 |
| 6. 250,001–300,000|               |
| 7. Above 300,000  |               |

Budget for Apartment (BDT):

| 1. Below 50,000       | 1. Below 1000 |
| 2. 50,001–100,000     | 2. 1001–1500 |
| 3. 100,001–150,000    | 3. 1501–2000 |
| 4. 150,001–200,000    | 4. 2001–2500 |
| 5. 200,001–250,000    | 5. Above 2500 |
| 6. 250,001–300,000    |               |
| 7. Above 300,000      |               |

Preferred Apartment Size (Sft):

Following items measure the perceptions regarding variables of interest.

### 1.0 Attitudes [to what extent you agree with the following statement to buy an apartment from the real estate market in Dhaka City]

|                | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|----------------|-------------------|----------|---------------------------|-------|---------------|
| **1.1** Buying an apartment is beneficial for me | 1       | 2       | 3                        | 4     | 5             |
| **1.2** Buying an apartment is pleasant for me  | 1       | 2       | 3                        | 4     | 5             |
| **1.3** Buying an apartment is good for me      | 1       | 2       | 3                        | 4     | 5             |
| **1.4** Buying an apartment is valuable for me  | 1       | 2       | 3                        | 4     | 5             |
| **1.5** Buying an apartment is enjoyable for me | 1       | 2       | 3                        | 4     | 5             |

### 2.0 Subjective Norm [to what extent you rate the following attributes]

|                | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|----------------|-------------------|----------|---------------------------|-------|---------------|
| **2.1** My guardians encourage me to have my own house | 1       | 2       | 3                        | 4     | 5             |
| **2.2** My spouse encourages me to own an apartment  | 1       | 2       | 3                        | 4     | 5             |
| **2.3** My family members expect me to own an apartment | 1       | 2       | 3                        | 4     | 5             |
| **2.4** My friends influence me to buy an apartment  | 1       | 2       | 3                        | 4     | 5             |

(continued on next page)
### 1.0 Attitudes [to what extent you agree with the following statement to buy an apartment from the real estate market in Dhaka City]

|                      | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|----------------------|-------------------|----------|----------------------------|-------|----------------|
| 3.0 Perceived Behavioural Control [to what extent you believe that you have control on following attributes] |                   |          |                            |       |                |
| 3.1 I have enough opportunity in making purchase decision | 1                 | 2        | 3                          | 4     | 5              |
| 3.2 I have the capacity to make a purchase decision     | 1                 | 2        | 3                          | 4     | 5              |
| 3.3 I have enough control in my purchase decision       | 1                 | 2        | 3                          | 4     | 5              |
| 3.4 I have enough knowledge to make purchase decision   | 1                 | 2        | 3                          | 4     | 5              |
| 4.0 Perceived Physical Quality [to what extent you believe that your apartment has the following characteristics] |                   |          |                            |       |                |
| 4.1 I prefer to buy an apartment that have a convenient parking space | 1                 | 2        | 3                          | 4     | 5              |
| 4.2 I prefer to buy an apartment that is free from air pollution | 1                 | 2        | 3                          | 4     | 5              |
| 4.3 I prefer to buy an apartment that is free from sound pollution | 1                 | 2        | 3                          | 4     | 5              |
| 4.4 I prefer to buy an apartment that is built in my preferred location | 1                 | 2        | 3                          | 4     | 5              |
| 4.5 I prefer to buy an apartment that has sufficient ventilation | 1                 | 2        | 3                          | 4     | 5              |
| 4.6 I prefer to buy an apartment that has a functional design | 1                 | 2        | 3                          | 4     | 5              |
| 4.7 I prefer to buy an apartment that used good quality building materials | 1                 | 2        | 3                          | 4     | 5              |
| 4.8 I prefer to buy an apartment that has a convenient accessibility | 1                 | 2        | 3                          | 4     | 5              |
| 5.0 Access to Money [to what extent you believe that you have access to the following financial facilities in buying an apartment] |                   |          |                            |       |                |
| 5.1 I have sufficient money at hand to buy an apartment | 1                 | 2        | 3                          | 4     | 5              |
| 5.2 I have access to home loan facility                  | 1                 | 2        | 3                          | 4     | 5              |
| 5.3 I can borrow money from my relatives if I want      | 1                 | 2        | 3                          | 4     | 5              |
| 5.4 I can borrow money from my friends if I want        | 1                 | 2        | 3                          | 4     | 5              |
| 6.0 Government Incentives, Policies and Regulation [to what extent you believe that government policy will influence you buying an apartment] |                   |          |                            |       |                |
| 6.1 Government incentive has impact on my purchase decision | 1                 | 2        | 3                          | 4     | 5              |
| 6.2 Mandatory policy of affordable option in large housing projects can help me to purchase | 1                 | 2        | 3                          | 4     | 5              |
| 6.3 Regulatory pressure can influence me to purchase home in Dhaka city | 1                 | 2        | 3                          | 4     | 5              |
| 6.4 Special credit facilities from Government can influence me to purchase apartment | 1                 | 2        | 3                          | 4     | 5              |
| 6.5 Reduction of property transfer fees from Government can influence me to purchase | 1                 | 2        | 3                          | 4     | 5              |
### References

Ahmad, I., 2019. Influence of Domestic Spatial Organisation on Family Interaction: A Study of Contemporary Apartments in Dhaka. Bangladesh University of Engineering and Technology.

Ajzen, I., 1985. Attitudes, Personality and Behavior, second ed. In: Open University Press. Decker, R.

Ajzen, I., 1991. The theory of planned behavior. Organ. Behav. Hum. Decis. Process. 50 (2), 179–211.

Al-Nahdi, T.S., et al., 2015a. The effect of attitude, dimensions of subjective norm, and perceived behavioral control on the intention to purchase real estate in Saudi Arabia. Int. J. Bus. Soc. Sci. 6 (2), 113–125.

Al-Nahdi, T.S., et al., 2015b. Factors affecting purchasing behavior in real estate in Saudi Arabia. Int. J. Bus. Soc. Sci. 6 (8), 146–154 (1).

Al-Nahdi, T.S., Habib, S.A., Albulour, A.A., et al. 2015d. Factors influencing the intention to purchase real estate in Saudi Arabia: moderating effect of demographic citizenship. Int. J. Bus. Manag. 10 (4), 35–48.

Alam, M.J., 2018. Rapid urbanization and changing land values in mega cities: implications for housing development projects in Dhaka, Bangladesh. Bandung: J. Glob. South 5 (2).

Appelbaum, M., et al., 2018. Quantitative research reporting standards. Am. Psychol. 73 (1), 102–115.

Arora, S., Sahney, S., 2018. Antecedents to consumer' s showrooming behavior : an integrated TAM-TPB framework. J. Consum. Market. 35 (1), 120–131.

Aji, J., et al., 2016. Understanding factors that influence house purchase intention among consumers in Kota Kinabalu: an application of buyer behavior model theory. Inf. Syst. 69, 164–186.

Bah, L., Wang, M., Gong, S., 2019. Understanding the antecedents of organic food purchases: the important roles of beliefs, subjective norms, and identity expressions. Sustainability 11, 1–18.

Banna, S., Mrad, A.H.A.M., Khan, R.H., 2010. Housing real estate sector in Bangladesh present status and policies implications. ASA Univ. Rev. 4 (1), 240–253.

Brown, T.A., 2015. In: Kenny, D.A., Little, T.D. (Eds.), Confirmatory Factor Analysis for Applied Research. A Division of Guilford Publications, Inc. (Second). The Guilford Press.

Chia, J., et al., 2016. Understanding factors that influence house purchase intention among consumers in Kota Kinabalu: an application of buyer behavior model theory. Music Transcendence 3 (2), 94–110.

Chowdhury, M.Z.S., 2013. The Housing Affordability Problems of the Middle-Income Group. In: BRAC Univ. J. XI (2), 17–25. Available at: https://capacitacion.universidaddechile.cl/contenido/784.pdf.

Chowdhury, M.Z.S., 2013. The Housing Affordability Problems of the Middle-Income Group of Dhaka: role of public and private sector. BRAC Univ. J. XI (2), 17–25. Available at: http://dspace.bracu.ac.bd/xmlui/bitstream/handle/10361/8384/M Islam.pdf?sequence=1&isAllowed=y.

Dudovskiy, J., 2015. A brief literature review on consumer buying behaviour. Res. Methodol. 15 (2), 346.

Han, H., Kim, Y., 2010. An investigation of green hotel customers' decision formation: developing an extended model of the theory of planned behavior. Int. J. Hosp. Manag. 29, 659–668.

Hoe, J.T.T., Dantane, O., Selvaraj, K., 2018. Predicting consumer perception and its impact on purchase intention for residential property market. J. Technol. Manag. Bus. 5 (2), 59–77.

Islam, I., Zahur, M., 2016. Housing for middle-income group of Dhaka: role of public and private sector. BRAC Univ. J. XI (2), 17–25. Available at: http://dspace.bracu.ac.bd/xmlui/bitstream/handle/10361/8384/M Islam.pdf?sequence=1&isAllowed=y.

Jain, S., 2020. Assessing the moderating effect of subjective norm on luxury purchase intention: a study of Gen Y consumers in India. Int. J. Retail Distrib. Manag. 48 (5), 517–536.

Jamil, M. A. A., Hossain, A., Siddiqui, M.Z.R., 2018. Factors influencing consumers’ choice criteria to purchase residential apartments in Bangladesh. Int. J. Bus. Soc. Sci. 6 (3), 294–305.

Judge, M., Warren-Myers, G., Paladinino, A., 2019. Using the theory of planned behaviour to predict intentions to purchase sustainable housing. J. Clean. Prod. 215, 259–267.

Kamal, D.M., Pramanik, S.A.K., 2015a. Customers’ intention towards purchasing apartment in Dhaka city, Bangladesh: offering an Alternative buying intention model. Eur. J. Bus. Manag. 7 (35), 45–58.

Kamal, D.M., Sarker, D.M.O., Pramanik, S.A.K., 2016. Investigation of market factors that affect customers’ buying attitude towards apartment buying: an opportunity analysis from Bangladesh perspective. Int. J. Bus. Adm. 7 (3), 153–165.

Kamal, D.M., Pramanik, S.A.K., 2015b. Factors affecting customers to buy apartments in Dhaka city. Daffodil Int. Univ. J. Bus. Econ. 9 (2), 37–49.

Karim, F., 2020. Awareness level of fashion consumers toward ethical purchasing behavior in Bangladesh: BUFT J. Bus. Econ. 1, 67–99.

Khare, H.S., Kader, A.W., 2016. Barriers Constraining the Low and Middle-Income Housing Finance Market in Bangladesh.

Kho, D., Goh, Y.-N., Ting, M.-S., 2019. Investigation on buyers’ purchase intention of high-rise properties in Malaysia in the era of 4.0. Adv. Econ., Bus. Manag. Res. 141, 1–5.

Kumar, V., Khandelwal, U., 2018. Factors affecting buying behaviour in the purchase of residential property: a factor analysis approach. Int. J. Consum. Relat. 6 (2), 27–32.

Mahmud, I., Ramayah, T., Kurnia, S., 2017. To use or not to use: modelling end user grumbling as user resistance in pre-implementation stage of enterprise resource planning system. Int. J. Consum. Relat. 6 (2), 27–32.

Mamun, A. I., 2018. Recycling intention and behaviour among low-income households. Sustainability 10 (7), 1–22.

Maoludyo, F.T., Aprianingsih, A., 2015. Factors influencing consumer buying intention for housing unit in depok. J. Bus. Manag. 4 (4), 484–493.

Matsuo, D.C., Noonan, D.S., Flowers, M.E., 2016. Green buildings: economics and policies. Rev. Environ. Econ. Pol. 10 (2), 329–346.

Mohiddin, M., 2014. The real estate business in Dhaka city: growth and contribution to the economy of Bangladesh. IOSR J. Bus. Manag. 16 (4), 58–60 (II).

Mullainathan, S., Thaler, R.H., 2000. Behavioral Economics. In: National Bureau of Economic Research Working Paper Series.

Nolcheska, V., 2017. The Influence of Social Networks on Consumer Behavior. In: IBANESS Congress Series, pp. 95–108.

Numraktrakul, P., Ngarmyarn, A., Panichpathom, S., 2012. Factors Affecting Green Apartment Purchase Decision. Int. J. Market. Stud. 7 (5), 120–131.

Rachmawati, D., et al., 2019. Factors influencing customers’ purchase decision of residential property in Selangor, Malaysia. Manag. Sci. Lett. 9 (2), 1341–1348.
Rahman, M., 2021. Affordable Housing: a Billion-Dollar Opportunity. The Daily Star. Retrieved from. https://www.thedailystar.net/business/economy/opinion/news/affordable-housing-billion-dollar-opportunity-2210266.

Samad, M., 2015. Marriage in changing family pattern of Bangladesh: the present trends. Int. J. Soc. Work Hum. Serv. Pract. 3 (4), 155–161.

Seraj, D.T.M., 2012. Private Sector Housing. Pearl Publications.

Seraj, D.T.M., 2015. Real estate development: theoretical and practical issues in the context of Bangladesh. Pathak Shamabesh.

Sheeran, P., Traffimow, D., Armitage, C.J., 2003. Predicting behaviour from perceived behavioural control: tests of the accuracy assumption of the theory of planned behaviour. Br. J. Soc. Psychol. 42 (3), 393–410.

Singh, N., Gupta, M., Dash, S.K., 2018. A study on impact of key factors affecting buying behaviour of residential apartments: a case study of Noida and Greater Noida. Int. J. Indian Cult. Bus. Manag. 17 (4), 403–416.

Sniehotta, F.F., Presseau, J., Araújo-Soares, V., 2014. Time to retire the theory of planned behaviour. Health Psychol. Rev. 8 (1), 1–7.

Sonia, S.S., 2020. Factors Affecting Apartment Buying Decision of Middle-Income People in Dhaka, Bangladesh. CENTRIA UNIVERSITY OF APPLIED SCIENCES.

Stankevich, A., 2017. Explaining the consumer decision-making process: critical literature review. J. Int. Bus. Res. Market. 2 (6), 7–14.

Steiner, M.D., Grieder, S., 2020. EFAtools: an R package with fast and flexible implementations of exploratory factor analysis tools. J. Open Source Software 5 (53), 2521.

Tan, C.-S., Ooi, H.-Y., Goh, Y.-N., 2017. A moral extension of the theory of planned behavior to predict consumers’ purchase intention for energy-efficient household appliances in Malaysia. Energy Pol. 107, 459–471.

Thaler, R., 1980. Toward a positive theory of consumer choice. J. Econ. Behav. Organ. 1 (1), 39–60.

Utami, C.W., 2017. Attitude, subjective norms, perceived behavior, entrepreneurship education and self-efficacy toward entrepreneurial intention university student in Indonesia. Eur. Res. Stud. J. XX (2A), 475–495.

Watkins, M.W., 2018. Exploratory factor analysis: a guide to best practice. J. Black Psychol. 44 (3), 219–246.

Wibawa, R.T., Hartoyo, Hartoyo, S., 2017. Purchase intention of an apartment: an application of the theory of planned behavior (TPB). Int. J. Sci. Res. 6 (10), 174–178.

Yadav, N.S., Gupta, D.M., Singh, P., 2018. Factors affecting buying behavior & CRM in real estate sector: a literature survey. Asian J. Res. Bus. Econ. Manag. 8 (6), 32–39.

Yazdanpanah, M., Forouzani, M., 2015. Application of the Theory of Planned Behaviour to predict Iranian students’ intention to purchase organic food. J. Clean. Prod.

Zadkarim, S., Emari, H., 2011. Determinants of satisfaction in apartment industry: offering a model. J. Civ. Eng. Urbanism (JCEU) 1 (1), 15–24.

Zhang, L., Wu, J., Liu, H., 2018. Policies to enhance the drivers of green housing development in China. Energy Pol. 121, 225–235.