

# A STUDY ON CONSUMERS' ADOPTION AND BEHAVIOURAL INTENTION TOWARDS INNOVATIVE BANKING PRODUCTS



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**ABSTRACT** There is a growing interest in the concept of innovation. It can be seen that especially in banking sector banks have risen their technological investments, and have made various innovations in order to facilitate, simplify and speed up their products, services and processes. Within this context, this study is aimed to analyze the factors affecting consumers' adoption towards innovative banking products, and their relations with consumer behavioural intention to use innovative banking products. In this context, there were conducted a survey with 235 MBA students who study at Bahçeşehir University Graduate School of Social Sciences. It was determined that there are factors having effects on behavioural intention of consumers to use innovative banking products. According to variance analysis, result show that there is no statistically significant difference in the responses of participants' adoption factors towards innovative banking product and their behavioural intention according to demographic variables.

**Keywords:** Innovation, Consumer Adoption towards Innovation, Behavioural Intention Banking Product.

**Jel codes:** O3, M1, M10, M30.

**Scope:** Business

**Type:** Research

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# İNOVATİF BANKACILIK ÜRÜNLERİNE YÖNELİK TÜKETİCİ KABULÜ VE DAVRANIŞSAL NİYETİ ÜZERİNE BİR ARAŞTIRMA



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**ÖZ** İnovasyon kavramına ilgi giderek artmaktadır. Özellikle bankacılık sektöründe bankaların son yıllarda teknolojik yatırımlarını artırdıkları, ürünlerini, hizmetlerini ve süreçlerini kolaylaştırmak, basitleştirmek ve hızlandırmak üzere çeşitli inovasyonlar gerçekleştirdikleri görülmektedir. Bu çalışma çerçevesinde tüketicilerin inovatif bankacılık ürünlerine yönelik kabullerini etkileyen faktörler ve bu faktörlerin tüketici davranışsal niyeti üzerine etkisi belirlenecektir. Bu bağlamda, Bahçeşehir Üniversitesi Sosyal Bilimler Enstitüsü'nde öğrenim görmekte olan 235 MBA öğrencisi üzerinde bir çalışma gerçekleştirilmiştir. Katılımcıların inovatif bankacılık ürünlerine yönelik kabullerinin ve davranışsal niyetleri üzerinde etkisi olduğu belirlenmiştir. Gerçekleştirilen farklılık analizleri sonuçlarına göre katılımcıların inovatif bankacılık ürünlerine yönelik tüketici kabulünü etkileyen faktörlerin ve davranışsal niyetlerinin demografik değişkenlerine göre istatistiksel açıdan farklılaşmadığı tespit edilmiştir.

**Keywords:** İnovasyon, İnovasyona Yönelik Tüketici Kabulü, Davranışsal Niyet, Bankacılık Ürünü.

**Jel codes:** J64; C13; C22,

**Scope:** Economics

**Type:** Research

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## **1. INTRODUCTION**

There have been many technological developments in business life since 20<sup>th</sup> century. Companies could easily sell their products and services around the world and individuals could purchase these products and services easily through these technological developments. However, it can be seen that lots of companies in almost every market try to improve and to differentiate their products and/or services to get competitive advantage and sustainable business success through making innovations in their products, services, organizations, processes and etc.

One of the sectors in which organizations give the highest importance into innovation is banking sector. Banks are the financial institutions providing lots of monetary options for both individuals and companies, and these individuals and companies use these monetary sources to meet their needs. In last decades, banks have supplied many new banking products and services for their customers after advances in technology. These innovative products and services such as Automatic Teller Machines (ATMs), telephone banking, online banking, mobile banking and etc. as branch-free banking activities have facilitated and speed up banking transactions for individuals and companies.

Within the scope of this study, it is aimed to analyze the factors affecting consumers' adoption towards innovative banking products, and their relations with consumers' behavioural intention to use innovative banking products, and also to measure whether or not there are significant differences in participants' adoption factors and their behavioural intention towards innovative banking products according to the demographic variables.

## **2. LITERATURE REVIEW**

In literature review part, detailed information about concept of innovation and innovation in banking sector, factors affecting consumers' adoption towards innovative banking products, consumer behavioural intention and related studies about consumers' adoption factors and behaviour intention towards innovative banking products are mentioned.

### **2.1. Concept of Innovation**

Concept of innovation was developed after 20<sup>th</sup> century. The concept was firstly used by Joseph Schumpeter as the driving force of economic development (Elçi, 2006, p. 17). Schumpeter advocated that produced information does not transform into marketable or usable processes by itself, but he asserted that new combinations of information or inventions can create added

value (transfer Kalça & Atasoy, 2008, p. 96).

There are many definitions in the literature about innovation concept, which is the most important competition tool in today's developing and changing economy. In general, innovation contains all activities from scientific research to finding, developing and commercialising in creating a new product or production process (Demir, 2014, p. 22).

Innovation word comes from "innovatus" in Latin language, which means, "to renew" and "to alter" (Jain et al., 2010, p. 239). Organization for Economic Cooperation and Development (OECD) (2006, p. 50) describes innovation as "developing and carrying out a new or significantly improved product, service or process, a new marketing method or a new organizational model for intra-business practices, workplace organization or external affairs".

According to Turkish Industry and Business Association (TÜSİAD, 2003, p. 23) innovation is defined as transforming science and technology into economic and social return. Gökçe (2010, p. 1) defines innovation as the process of a creative thought's to be transformed into a marketable product which can create added value. Thus, innovation creates new business opportunities, and it has to have the feature of commercialisation. In the literature, related terms for example creativity and invention are used instead of innovation. Barker (2001, p. 23) states that innovation is a process, and creativity is the abilities to provide suitable conditions for this process. Furthermore, according to Fisk (2011, p. 97) creativity is the beginning point of innovation, but also it influences all aspects of innovations process. Moreover, Gümüşlüoğlu (2009, p. 37) states that creativity means developing new and practical thoughts, whereas innovation means carrying out creative thoughts successfully in an organization. Betz (2010, p. 282) defines invention as creating new technology. However, innovation is commercialising of new technologies. Barker (2001, p. 21) states the main difference between invention and innovation is that invention can transform into innovation in case of its launching on the market. Thus every invention cannot be evaluated as innovation.

Innovation has transformed into a tool providing competitive advantage for companies. When thinking that information spreads easily and fast today, innovation is so significant for companies. Companies have to respond quickly to the changed needs of market in order to survive. Furthermore, innovation is required for developing new products and services, preserving existing market share, and entering into new markets. Moreover, innovation increases customer

loyalty and customer satisfaction for companies (Başer et al., 2013, p. 9).

From other point, the more competition rise in a country, the more welfare level and life standard increases. In order to create competition, production is required. The most important way to increase productivity is making innovations. Therefore, innovation is seen as the key point of economic growth, increased employment and life quality in terms of countries (Elçi, 2006, p. 32).

There are lots of innovation types in the literature according to the studies conducted on innovation researches. OECD (2006, p. 20) states the innovation types as product innovation, process innovation, marketing innovation and organizational innovation, technological innovation and radical innovation. In this study, product innovation is considered. *Product innovation* comprises important changes in goods and services. Thus, both new goods and services, and important changes in existing products can be evaluated within the scope of product innovation. For example, a new mobile phone is a product innovation. Moreover, adding internet feature into this mobile phone as a service is also a product innovation (Özen & Bingöl, 2007, p. 403). According to OECD (2006, p. 52) product innovation can be made in technical features, components and materials, conveniences provided for users and other functional features as important improvements. Moreover, it can be said that product innovation contains both product and service innovations.

## **2.2 Innovation in Banking Sector**

Today banks operate in many areas that it is so hard to describe today's bank concept and banking system (Eyüpgiller, 2000, p. 22). The root of the term of bank comes from "Banco" word in Italian that means table, sales booth or bench (Kaya, 2012, p. 3; Parasız, 2007, p. 17). Banks are taking an important place in today's world. Economic and commercial relationships are economic units making and organizing all kinds of transactions about capital, money and credit issues, and choosing activities about all type of companies' all kinds of needs as the main working subject (Şendoğdu, 2006, p. 3).

It can be said that the history of banking services is as older as trade. Both of them have been developed as a result of division of labour and specialization. The beginning of banking activities had started in 3500 before Christ (BC). Red Temple near Uruk city in Mesopotamia is known as the oldest bank structure (Takan & Boyacıoğlu, 2001, p. 2).

The beginning of the modern banking started via the establishment of

Bank of Amsterdam in 1609. With the advances in industrialization and transportation possibilities in 19<sup>th</sup> century, banking activities and services expanded on a large scale (Altuğ, 2000, p. 3). After the Great Depression in 1929, the banking system changed substantially and Bank for International Settlements (BIS) was founded as the bank of the central banks in order to regulate international banking transactions in 1930. Moreover, International Money Fund (IMF) and World Bank (WB) were established in 1944 (Yazıcı, 2011, p. 3).

There are lots of products and services provided by banks. In the literature, some of them are traditional products and services, which have existed since banks to arise, and some of them are modern innovative products and services which have emerged due to technological innovations made by banks (İşler, 2015, p. 38). In traditional banking activities, branch banking is used as traditional service channel to carry out banking transactions. Branch banking is the banking channel in which all banking transactions of customers can be made via bank branches (Alparslan, 1994, p. 54). The traditional banking products and services can be classified as gathering deposits, giving credits and other traditional banking services (İşler, 2015, pp. 38-39).

There arose lots of new and innovative banking products and services with the effects of advances in information and communication technologies. Thus, both individuals and institutions could make banking transactions today much easily, and whenever and wherever they want 7 days 24 hours (7/24). These innovative products and services can be stated as followings; credit card, client cards, consumer loan, customer representation service, electronic funds transfer (EFT), virtual cards and virtual credit cards (Duranlar, 2005, p. 25; İşler, 2015, p. 40; Yavuz, 2011, p. 13; Yetim, 1997, p. 7; Yıldırım, 2007, p. 47).

After the advances in information and communication technologies, there arose lots of new banking channels which are known as branch-free banking channels such as automatic teller machine (ATM), home and office banking, telephone banking, wireless application protocol (WAP), online banking and mobile banking (Ayiguliali, 2016, p. 9; Başaran, 2015, p. 32; İşler, 2015, p. 40; Uray, 1993, p. 25; Sarısakal & Aydın, 2003, p. 85; Seyrek & Akşahin, 2016, p. 49).

As mentioned before, one of the sectors in which companies give the most importance into the innovation is banking sector (Kınık, 2010, p. 66). In order to meet the needs of both companies and individuals effectively and quickly, increase the market share in intense competition environment, provide

more suitable prices for customers rather than rivals, banks have to develop new and innovative products and services. Thus, banks tend to increase their technological investments (Arıkan, 2015, p. 33).

Besides, as mentioned before, innovation is so important in banking sector as well as it is in other sectors, since innovations made by banks provide many benefits for their customers, and this situation also provides benefits for them. The main benefits of innovative products made by banks can also be stated as a brief summary as follows: provide customer satisfaction, enable companies to get new customers, transform existing customers into loyal customers, bring more effective relations with customers, provide development/improvement in banking transactions and processes, bring speed in banking, enable nonstop 7/24 banking service, cause to increase in efficiency in the bank, bring increase in profitability, provide ultimate competitive advantages (Arıkan, 2015, pp. 35-36; Aliyev, 2008, pp. 35-40).

### **2.3. Factors Affecting Consumers' Adoption towards Innovative Banking Products**

There are some factors influencing consumers' adoption towards innovative products in banking sector. Yu (2012, pp. 107-109) states these factors as followings:

- i. *Performance Expectance*: In studies, which are made in banking sector reflect that the more the perceived relative advantage is great, the more likely innovative banking products will be adopted. In this respect, perceived usefulness is identified as an important factor. Moreover, relative advantages significantly affect individuals' intention to adopt innovative banking products.
- ii. *Effort Expectance*: It can be defined as the degree of ease related to the use of technology. Researches state that perceived ease-of-use is a factor influencing customers for using innovative banking products.
- iii. *Social Influence*: It could be described as the degree to which a person perceives that significant others believe the person should use the technology. Previous studies indicate that individuals' intention to use innovative banking products is significantly impacted by people surrounding them.
- iv. *Perceived Credibility*: Some innovation adoption in banking studies support that people reject or are reluctant for using innovative banking products mostly due to perceived risk or perceived credibility. It can be said

that perceived risk is the most important element affecting innovation adoption in banking.

v. *Perceived Financial Cost*: Consumers' adoption towards innovative banking products is promoted by economic factors such as transaction fees or discouraged by economic considerations such as concerns on basic fees for innovative banking products. It can be said that perceived financial cost has negative effects on behavioural intention to use innovative banking products.

vi. *Facilitating Conditions*: It can be defined as the degree to which a person believes that an organizational and technical structure comes into existence to support the use of technology. Studies reflect that the more suitable the reach of customers to computer and Internet is, the more qualified their use of the computer and Internet will be, which leads to high adoption ratio of using innovative banking products.

vii. *Perceived Self-Efficacy*: It can be defined as people's beliefs on their capabilities to produce effects. It is not a predictive factor in impacting the actual behaviour. Thus, it can be said that self-efficacy is an indirect predictive captured by effort expectancy and fully mediated by effort expectancy.

#### **2.4. Consumer Behavioural Intention**

Intentions are motivational factors influencing the behaviours of individuals (Icek, 1991, p. 181). Intention of individuals is the function of two factors as personal and social. Personal factor states the attitudes developed for the behaviour and it consists of positive and negative evaluations of the individual when displaying the behaviour. Moreover, social factor states the social pressure perceived by individual (Gregory, 2011, p. 43).

Behavioural intention is defined as forecasting the behaviour via intentions. It is the indicator of consumers' whether displaying the same behaviour again or not (Baker & Crompton, 2000, p. 3). Moreover, behavioural intention can be described as the indicator of consumers' whether continuing to get service from the company or leaving the company (Lin & Pei, 2005, p. 1601).

In case of the perceived value of consumed experience, product or service is high, the expectations are met and there arises customer satisfaction which affects positively the behavioural intention. Satisfied consumers are less sensible to the price, and make positive word-of-mouth communication with others. Thus, behavioural intention is also accepted as the indicator of customer

loyalty in marketing literature (Widianti et al., 2015, p. 7).

Individual behaviour is foreseeable and affected by individual intention, and it can be said that behavioural intention has significant impact on the use of technology especially in banking sector (Yu, 2012, p. 109).

### **2.5. Related Studies about Consumers' Adoption Factors and Behaviour Intention towards Innovative Banking Products**

There is not as much as study in the literature measuring innovation adoption of consumers' towards innovative banking products directly.

When looking at the literature, Yu (2012) measures the factors impacting individuals to adopt mobile banking. According to the research results, individual intention to adopt mobile banking was significantly affected by performance expectancy, social influence, perceived credibility and perceived financial cost.

Hutchison (2014) measures the factors impacting the adoption of cloud computing-based file storage by health care information technology professionals. According to the research results, performance expectancy and effort expectancy had significant and positive influence on behavioural intention. Moreover, facilitating conditions had significant and positive influence on user behaviour.

## **3. RESEARCH METHODOLOGY**

In this part, the purpose and importance of the research, participants and sampling, research model, variables and hypothesis, measurement instrument of variables are mentioned.

### **3.1 Purpose and Importance of the Research**

There is no previous research on measuring consumers' adoption towards innovative banking products in banking sector in the literature. However there are some indirect studies related to mobile and online banking. In this respect, this study will contribute to the literature through measuring effect on consumers' adoption factors on their behavioural intention towards innovative banking product, and analyzing whether there is any difference in consumers' adoption factors and their behavioural intention toward innovative banking product according to demographic variables or not.

### **3.2 Participants and Sampling of the Research**

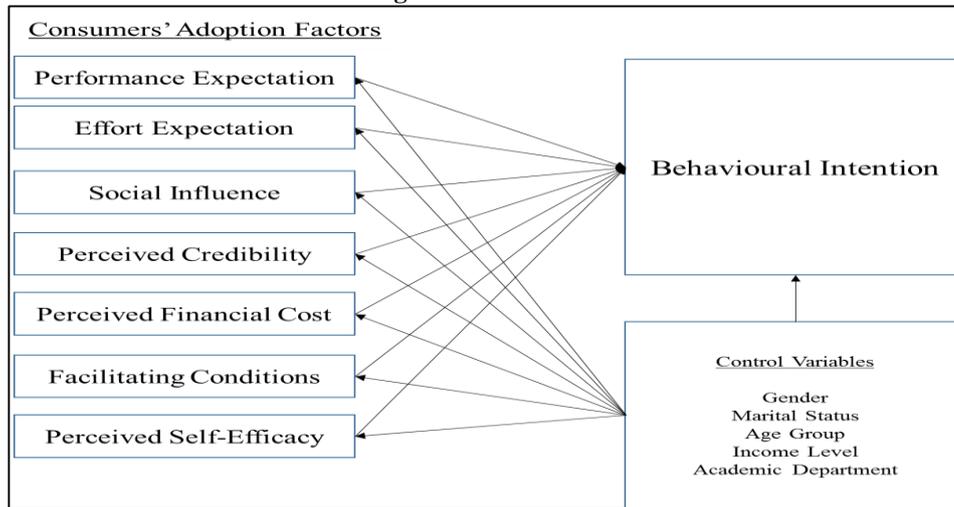
This research was conducted on Bahçeşehir University Graduate School of Social Sciences Master of Business Administration (MBA) English language

students. The sample size has been determined as 221 students for a population of 514 students, at a 95% confidence interval and %5 significance level. The data were obtained from 250 students. Because of missing or wrong data 15 surveys were eliminated. The research has been conducted with 235 surveys left.

### 3.3 Research Model, Variables and Hypothesis of the Study

The research model can be seen in Figure 1. As seen in the figure, dependent variable of the research is behavioural intention. Independent variables of the research are consumers' adoption factors: "performance expectancy", "effort expectancy", "social influence", "perceived credibility", "perceived financial cost", "facilitating conditions" and "perceived self-efficacy". Moreover, there are some control variables in the research such as gender, marital status, age group, income level and academic department.

Figure 1: Research Model



There are 9 hypotheses determined within the scope of this research. These hypotheses are stated as followings:

1.H<sub>1</sub>: Performance expectance towards innovative banking products significantly affects behavioural intention.

2.H<sub>1</sub>: Effort expectance towards innovative banking products significantly affects behavioural intention.

3.H<sub>1</sub>: Social influence towards innovative banking products significantly affects behavioural intention.

4.H<sub>1</sub>: Perceived credibility towards innovative banking products significantly affects behavioural intention.

5.H<sub>1</sub>: Perceived financial cost towards innovative banking products significantly affects behavioural intention.

6.H<sub>1</sub>: Facilitating conditions towards innovative banking products significantly affects behavioural intention.

7.H<sub>1</sub>: Perceived self-efficacy towards innovative banking products significantly affects behavioural intention.

8.H<sub>1</sub>: Consumers' adoption factors towards innovative banking products differentiate according to demographic variables.

9.H<sub>1</sub>: Consumers' behavioural intention towards innovative banking products differentiates according to demographic variables.

### **3.4 Measurement Instrument of the Research Variables**

In this study, survey form has three sections. In the first section, there are 5 questions to measure the demographic characteristics of the participants. Those are gender, marital status, age group, income level and academic department.

Moreover, there are 7 questions in the second section to determine the use of banking services by participants. The 7<sup>th</sup> and 13<sup>th</sup> questions are taken by the study of Kımık (2010). The questions between 8<sup>th</sup> and 12<sup>th</sup> are taken by the study of Aliyev (2008).

Furthermore, independent variables which are used to measured consumers' adoption factors towards innovative banking products, are measured via instrument, which is developed by Yu (2012). This includes 7 factors and 28 items. Those are Performance Expectations (4 items), Effort Expectations (4 items) Social Influence (4 items), Perceived Credibility (4 items), Perceived Financial Cost (4 items) Facilitating Conditions (4 items) and Perceived Self Efficacy (4 items).

Dependent variable of this research's behavioural intention is also measured by an instrument developed by Yu (2012), which includes 3 items.

The answers given for these 31 items were measured by 5-point Likert Scale. The responses of participants for each item were gathered through 5-point Likert scale as "1: Strongly Disagree", "2: Disagree", "3: Neutral", "4: Agree" and "5: Strongly Agree".

## **4. FINDINGS**

In this part, research findings are shown.

#### 4.1 Descriptive Statistics

According to demographic analysis of the participants, as shown in Table 1, 52% of them are female and 76% of them are single. In terms of age groups %87 of them are between the ages of 18 and 34. 81% of participants have monthly income between 2.001 TL and 7.500 TL. Furthermore, the number of participants according to academic department seems in approximately equal.

**Table 1: Descriptive Statistics of Participant**

| <b>Gender</b>                    | <b>Frequency</b> | <b>%</b> | <b>Marital Status</b>      | <b>Frequency</b> | <b>%</b> |
|----------------------------------|------------------|----------|----------------------------|------------------|----------|
| <b>Female</b>                    | 123              | 52       | <b>Single</b>              | 179              | 76       |
| <b>Male</b>                      | 112              | 48       | <b>Married</b>             | 56               | 24       |
| <b>Total</b>                     | 235              | 100      | <b>Total</b>               | 235              | 100      |
| <b>Age Group</b>                 |                  |          |                            |                  |          |
| <b>Age Group</b>                 | <b>Frequency</b> | <b>%</b> | <b>Income Level</b>        | <b>Frequency</b> | <b>%</b> |
| <b>18-25</b>                     | 78               | 33       | <b>None</b>                | 15               | 6        |
| <b>26-34</b>                     | 128              | 54       | <b>1.300 TL - 2.000 TL</b> | 13               | 6        |
| <b>35-44</b>                     | 28               | 12       | <b>2.001 TL - 3.500 TL</b> | 87               | 37       |
| <b>45-54</b>                     | 1                | 1        | <b>3.501 TL - 5.000 TL</b> | 65               | 28       |
| <b>Total</b>                     | 235              | 100      | <b>5.001 TL - 7.500 TL</b> | 37               | 16       |
|                                  |                  |          | <b>7.501 TL and above</b>  | 18               | 7        |
|                                  |                  |          | <b>Total</b>               | 235              | 100      |
| <b>Academic Department</b>       |                  |          |                            |                  |          |
| <b>Academic Department</b>       | <b>Frequency</b> | <b>%</b> |                            |                  |          |
| <b>Non-Thesis Master Program</b> | 119              | 51       |                            |                  |          |

|                                   |     |     |  |
|-----------------------------------|-----|-----|--|
| <b>Master with Thesis Program</b> | 116 | 49  |  |
| <b>Total</b>                      | 235 | 100 |  |

There were asked some questions about participants' use of banking products and services. As shown in Table 2, according to the results, 83% of participants are impacted by Internet and TV advertisements while purchasing for banking products and services. 44% of the participants work with two banks at most. In terms of bank preferences to work, 35% of participants say that they work with the bank their company pays their wages.

Moreover, 50% of participants use money transfer among banking services the most. Furthermore, 66% of participants use mobile banking and online banking to make banking transactions the most. For 74% of participants, quickness and accuracy and reliability are the most important factors while carrying their banking transactions.

In terms of innovative banking products and services, 90% of the participants use ATM banking, 83% of respondents use online banking, 85% of respondents use mobile banking, 38% of respondents use telephone banking, 43% of respondents use credits, 86% of respondents use credit cards, 23% of respondents use investment products, 60% of respondents use drawing account, 34% of respondents use time deposit account.

It can be said that participants have the tendency to use ATM banking, online banking, mobile banking, credit cards and drawing accounts.

**Table 2: Descriptive Statistics of Participants' Use of Banking Products and Services**

| <b>"Which of these communication channels used by banks to catch your attention the most during purchasing for banking services?"</b> | <b>Frequency</b> | <b>%</b> | <b>Number of banks respondents work with</b> | <b>Frequency</b> | <b>%</b> |
|---|------------------|----------|--|------------------|----------|
| <b>Internet Advertisements</b>  | 120              | 51       | <b>Only 1 Bank</b>                           | 53               | 23       |
| <b>Radio Advertisements</b>   | 3                | 1        | <b>2 Banks</b>                               | 103              | 44       |

|   |           |     |  |           |     |
|---|-----------|-----|--|-----------|-----|
| Newspaper/Magazine Advertisements           | 6         | 3   | 3 Banks  | 41        | 17  |
| TV Advertisements                           | 76        | 32  | 4 Banks  | 21        | 9   |
| Brochures                                   | 7         | 3   | 5 Banks or more  | 17        | 7   |
| Other                                       | 23        | 10  | Total  | 235       | 100 |
| Total                                       | 235       | 100 |  |           |     |
|   |           |     |  |           |     |
| “Why do you prefer the bank you work with?” | Frequency | %   | “Which of these banking services do you use the most?” | Frequency | %   |
| Number of branches                          | 23        | 10  | Current accounts transactions                          | 19        | 7   |
| Technological investments and innovations   | 29        | 12  | Money transfers  | 115       | 50  |
| Prestige in banking sector                  | 29        | 12  | Credit transactions                                    | 29        | 12  |
| Advices of others                           | 6         | 3   | Exchange transactions                                  | 13        | 5   |
| Working with the bank for years             | 34        | 14  | Exporting-Importing transactions                       | 2         | 1   |
| The bank the wage to be paid                | 82        | 35  | Gold and stock market transactions                     | 9         | 4   |
| Closeness of the branch                     | 12        | 5   | Tax and invoice payments                               | 29        | 12  |
| Advantageous interest rates                 | 20        | 9   | Other  | 19        | 9   |
| Total                                       | 235       | 100 | Total  | 235       | 100 |
|   |           |     |  |           |     |

| <b>“How do you carry out your banking transactions the most?”</b> | <b>Frequency</b> | <b>%</b> | <b>“From which perspective is the technologies used in banking sector important for you the most?”</b> | <b>Frequency</b> | <b>%</b> |
|---|------------------|----------|--|------------------|----------|
| <b>In branch</b>  | 16               | 7        | <b>Quality</b>   | 35               | 15       |
| <b>ATM</b>  | 38               | 16       | <b>Quickness</b>   | 97               | 41       |
| <b>Telephone banking</b>  | 26               | 11       | <b>Accuracy and reliability</b>  | 78               | 33       |
| <b>Online banking</b>   | 70               | 30       | <b>Decreasing the costs</b>  | 22               | 10       |
| <b>Mobile banking</b>   | 85               | 36       | <b>Other</b>   | 3                | 1        |
| <b>Total</b>  | 235              | 100      | <b>Total</b>   | 235              | 100      |
|   |                  |          |  |                  |          |
| <b>Respondents’ use of ATM</b>                                    | <b>Frequency</b> | <b>%</b> | <b>Distribution of respondents’ use of online banking</b>  | <b>Frequency</b> | <b>%</b> |
| <b>Never use</b>  | 2                | 1        | <b>Never use</b>   | 10               | 4        |
| <b>Underuse</b>   | 16               | 6        | <b>Underuse</b>  | 22               | 10       |
| <b>Neutral</b>  | 7                | 3        | <b>Neutral</b>   | 7                | 3        |
| <b>Use</b>  | 93               | 40       | <b>Use</b>   | 52               | 22       |
| <b>Overuse</b>  | 117              | 50       | <b>Overuse</b>   | 144              | 61       |
| <b>Total</b>  | 235              | 100      | <b>Total</b>   | 235              | 100      |
|   |                  |          |  |                  |          |

| <b>Distribution of respondents' use of mobile banking</b>      | <b>Frequency</b> | <b>%</b>   | <b>Distribution of respondents' use of telephone banking</b> | <b>Frequency</b> | <b>%</b>   |
|--|------------------|------------|--|------------------|------------|
| Never use  | 8                | 3          | Never use  | 32               | 14         |
| Underuse   | 16               | 7          | Underuse   | 81               | 34         |
| Neutral  | 12               | 5          | Neutral  | 33               | 14         |
| Use  | 40               | 17         | Use  | 47               | 20         |
| Overuse  | 159              | 68         | Overuse  | 42               | 18         |
| <b>Total</b>   | <b>235</b>       | <b>100</b> | <b>Total</b>   | <b>235</b>       | <b>100</b> |
| <b> </b>   |                  |            |  |                  |            |
| <b>Distribution of respondents' use of credits</b>             | <b>Frequency</b> | <b>%</b>   | <b>Distribution of respondents' use of credit cards</b>      | <b>Frequency</b> | <b>%</b>   |
| Never use  | 67               | 29         | Never use  | 14               | 6          |
| Underuse   | 51               | 21         | Underuse   | 12               | 5          |
| Neutral  | 16               | 7          | Neutral  | 7                | 3          |
| Use  | 80               | 34         | Use  | 87               | 37         |
| Overuse  | 21               | 9          | Overuse  | 115              | 49         |
| <b>Total</b>   | <b>235</b>       | <b>100</b> | <b>Total</b>   | <b>235</b>       | <b>100</b> |
| <b> </b>   |                  |            |  |                  |            |
| <b>Distribution of respondents' use of investment products</b> | <b>Frequency</b> | <b>%</b>   | <b>Distribution of respondents' use of drawing account</b>   | <b>Frequency</b> | <b>%</b>   |
| Never use  | 92               | 39         | Never use  | 46               | 20         |
| Underuse   | 51               | 22         | Underuse   | 26               | 11         |

|   |                  |          |                |     |     |
|---|------------------|----------|----------------|-----|-----|
| <b>Neutral</b>  | 38               | 16       | <b>Neutral</b> | 22  | 10  |
| <b>Use</b>  | 35               | 15       | <b>Use</b>     | 67  | 29  |
| <b>Overuse</b>  | 19               | 8        | <b>Overuse</b> | 74  | 30  |
| <b>Total</b>  | 235              | 100      | <b>Total</b>   | 235 | 100 |
| <b>Distribution of respondents' use of time deposit account</b> |                  |          |                |     |     |
|   | <b>Frequency</b> | <b>%</b> |                |     |     |
| <b>Never use</b>  | 93               | 40       |                |     |     |
| <b>Underuse</b>   | 41               | 17       |                |     |     |
| <b>Neutral</b>  | 21               | 9        |                |     |     |
| <b>Use</b>  | 42               | 18       |                |     |     |
| <b>Overuse</b>  | 38               | 16       |                |     |     |
| <b>Total</b>  | 235              | 100      |                |     |     |

#### 4.2 Factor and Reliability Analysis and Mean Values of the Variables

In this section, factor, reliability analysis and mean values of consumers' adoption factors and behavioral intention are provided.

##### 4.2.1 Factor and Reliability Analysis of Consumers' Adoptions Factors

For the independent variable which is "Consumers' Adoptions Factors", factor and reliability analysis and mean value is conducted.

The KMO value is 0.87 (p: 0,000) which is higher than 0.70. This shows an excellent value, and data gathered through respondents is suitable for factor analysis (Coşkun et al., 2015, p. 268).

In the factor analysis of consumers' adoptions factors, in order to reach to the effective results in factor analysis for the scale, these 8 items were subtracted from the scale during factor analysis process respectively due to low load factor and their factor loads so close in different factors (Bayram, 2013, p. 205). These items are stated as follows:

- FC3:“Using innovative banking products is compatible with my life.”
- FC4:“Help is available when I get problem in using innovative banking products.”
- SI4:“Most people surrounding with me use innovative banking products.”
- PE3:“I would use innovative banking products anyplace.”
- PFC1:“The cost of using innovative banking products is lower than using traditional banking channels.”
- PFC2:“The wireless link fee is expensive when using innovative banking products.”
- PFC3:“The devices/applications set up to use innovative banking products do not charge me lots of money.”
- PFC4:“Using innovative banking products is cost burden to me.”

After factor analysis, the factor of PFC (perceived financial cost) is eliminated in the scale. There are 4 factors emerged. These factors are named as follows:

- i. Factor 1: Performance and Effort Expectance,
- ii. Factor 2: Social Influence and Facilitating Conditions,
- iii. Factor 3: Perceived Credibility,
- iv. Factor 4: Perceived Self-Efficacy.

Explained variances of 4 factors and the total explained variance of the scale is found as: “Performance Expectance and Effort Expectance” as 1<sup>st</sup> factor explains 23.50% of the variance, “Perceived Self-Efficacy” as 2<sup>nd</sup> factor explains 16.51% of the variance, “Perceived Credibility” as 3<sup>rd</sup> factor explains 15.66% of the variance, “Social Influence and Facilitating Conditions” as 4<sup>th</sup> factor explains 15.57% of the variance. The total explained variance is 71.24%.

Table 3 also shows the factors and their items after rotated component matrix. Moreover, reliability analysis results for each factor can be seen in the table. “Performance expectation and effort expectation” factor has reliability of 0.91; “perceived self-efficacy” factor has reliability of 0.92; “perceived credibility” factor has reliability of 0.89; “social influence and facilitating conditions” factor has reliability of 0.84. This indicates high reliability value (Sekaran 1992, p.633).

Furthermore, Table 3 also shows mean value of each factor. A mean value of “performance and effort expectance” factor is 3.98; “perceived self-efficacy” factor is 3.20; “perceived credibility” factor is 3.53; “social influence and facilitating conditions” factor is 3.47.

**Table 3: Factors, Reliability and Mean Results of Consumers' Adoptions Factors**

| Structure      | Items  | Factors |      |   |   | Reliability |
|----------------|--|---------|------|---|---|-------------|
|                |  | 1       | 2    | 3 | 4 |             |
| EE1            | Learning to use innovative banking products is easy for me.                      | 0.86    |      |   |   | 0.91        |
| EE2            | Becoming skilful at using innovative banking products is easy for me.            | 0.85    |      |   |   |             |
| EE3            | Interaction with innovative banking products is easy for me.                     | 0.80    |      |   |   |             |
| EE4            | I would find innovative banking products is easy to use.                         | 0.75    |      |   |   |             |
| PE2            | Using innovative banking products would save my time.                            | 0.74    |      |   |   |             |
| PE4            | I would find innovative banking products useful.                                 | 0.71    |      |   |   |             |
| PE1            | Using innovative banking products would improve my performance.                  | 0.63    |      |   |   |             |
| Mean EE and PE |  | 3.98    |      |   |   |             |
| PSE2           | I could use innovative banking products, if someone showed me how to do it.      |         | 0.92 |   |   | 0.92        |
| PSE4           | I could use innovative banking products, if I could call someone for help.       |         | 0.89 |   |   |             |
| PSE1           | I could use innovative banking products, if I had the built-in help guidance for |         | 0.88 |   |   |             |

|          |  |      |      |      |      |      |
|----------|--|------|------|------|------|------|
|          | assistance.  |      |      |      |      |      |
| PSE3     | I could use innovative banking products, if I had seen someone else using it.          |      | 0.88 |      |      |      |
| Mean PSE |  | 3.00 |      |      |      |      |
| PC2      | When using innovative banking products, I believe my transactions are secured.         |      |      | 0.85 |      | 0.89 |
| PC3      | When using innovative banking products, I believe my privacy would not be divulged.    |      |      | 0.83 |      |      |
| PC1      | When using innovative banking products, I believe my information is kept confidential. |      |      | 0.83 |      |      |
| PC4      | When using innovative banking products, I believe the banking environment is safe      |      |      | 0.79 |      |      |
| Mean PC  |  | 3,53 |      |      |      |      |
| SI2      | People who are familiar with me think that I should use innovative banking products.   |      |      |      | 0.84 | 0.84 |
| SI1      | People who are important to me think that I should use innovative banking products.    |      |      |      | 0.82 |      |
| SI3      | People who influence my behaviour think that I should use innovative banking products. |      |      |      | 0.81 |      |
| FC1      | My living environment supports me to use innovative                                    |      |      |      | 0.61 |      |

|                |  |      |  |  |      |  |
|----------------|--|------|--|--|------|--|
|                | banking products.  |      |  |  |      |  |
| FC2            | My working environment supports me to use innovative banking products. |      |  |  | 0.54 |  |
| Mean SI and FC |  | 3,47 |  |  |      |  |

\*EE: Effort Expectation, \*PE: Performance Expectation, \*PSE: Perceived Self-Efficacy, \*PC: Perceived Credibility, \*SI: Social Influence, \*FC: Facilitating Conditions.

#### 4.2.2 Factor and Reliability Analysis of Consumers' Behaviour Intention

For dependent variable which is behavioural intention, factor and reliability analysis and mean value is also conducted.

According to factor analysis results, KMO value is high with 0.75 (p: 0.000) which is bigger than 0.70. This shows an excellent value, and data gathered through respondents is suitable for factor analysis (Coşkun et al., 2015, p. 268). And also behavioural intention explains 86.84% of the total variance.

Table 4 shows the factor loads of items for behavioural intention and its reliability result. According to result, behavioural intention has reliability of 0.92. This indicates high reliability value (Sekaran 1992, p.633).

Table 4 also shows mean value of behavioural intention factor, which is 3.98.

**Table 4: Factor, Reliability and Mean Results for Behavioural Intention**

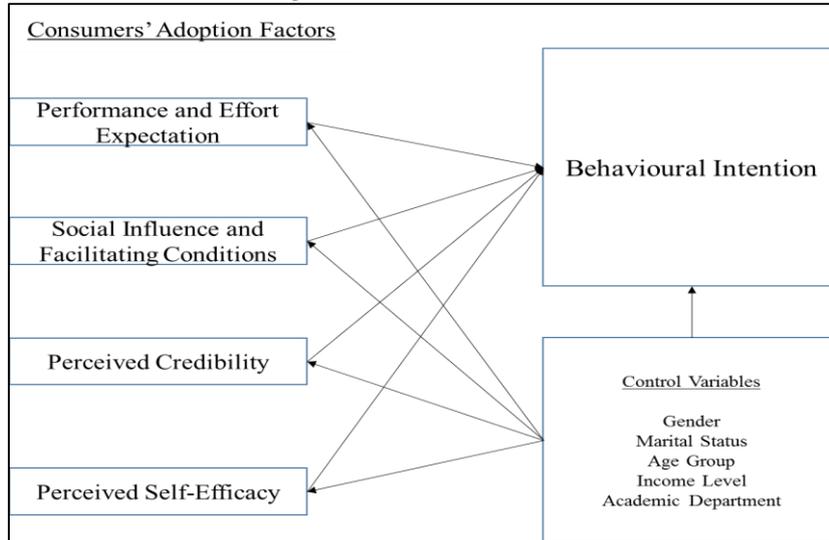
| Structure | Item  | Factor | Reliability |
|-----------|---|--------|-------------|
| BI2       | When dealing with banking affairs, I intend to use innovative banking products. | 0.94   | 0.92        |
| BI1       | When dealing with banking affairs, I prefer to use innovative banking products. | 0.93   |             |
| BI3       | When dealing with banking affairs, I would use innovative banking products.     | 0.91   |             |
| Mean BI   | 3.98  |        |             |

\*BI: Behavioural Intention

### 4.3 Hypothesis Testing

After factor and reliability analyses, reversed research model is formed. This new research model can be seen in Figure 2.

Figure 2: Revised Research Model



The hypotheses after factor and reliability analysis were revised as follows:

- 1.H<sub>1</sub>: Performance and effort expectance towards innovative banking products significantly affects behavioural intention.
- 2.H<sub>1</sub>: Social influence and facilitating conditions towards innovative banking products significantly affects behavioural intention.
- 3.H<sub>1</sub>: Perceived credibility towards innovative banking products significantly affects behavioural intention.
- 4.H<sub>1</sub>: Perceived self-efficacy towards innovative banking products significantly affects behavioural intention.
- 5.H<sub>1</sub>: Consumers' adoption factors towards innovative banking products differentiate according to demographic variables.
- 6.H<sub>1</sub>: Consumers' behavioural intention towards innovative banking products differentiates according to demographic variables.

#### 4.3.1 Regression Analysis

Stepwise regression analysis is conducted to measure whether there is effect of “Performance and Effort Expectance”, “Social Influence and Facilitating Conditions”, “Perceived Credibility” and “Perceived Self-Efficacy” factors on “Behavioural Intention”.

The results of the stepwise regression analysis are shown in Table 5. According to the results, there are two models. For the first model, adjusted R<sup>2</sup> value is 42.8 % (p: 0,000). For the second model, adjusted R<sup>2</sup> value is 45.6 % (p: 0,000).

**Table 5: Stepwise Regression Analysis about the Effect of Consumer Adoption Factors on Behavioural Intention**

| Model | Dependent Variable: Behavioural Intention | Beta  | Sig.  | Adjusted R <sup>2</sup> | F       | Sig.  |
|-------|---|-------|-------|-------------------------|---------|-------|
| 1     | Performance and Effort Expectance         | 0.656 | 0.000 | 0.428                   | 176.039 | 0.000 |
| 2     | Performance and Effort Expectance         | 0.563 | 0.000 | 0.456                   | 99.257  | 0.000 |
|       | Perceived Credibility                     | 0.199 | 0.000 |                         |         |       |

As shown in Table 5, according to Model-1 the only variable influencing behavioural intention is “performance and effort expectance” ( $\beta$ : 0.656 p: 0,000). Thus, it can be said that as performance and effort expectance increases, behavioural intention rises.

Moreover, again as shown in Table 5, according to Model-2, “perceived credibility” factor ( $\beta$ : 0.199 p: 0,000) was added into the model after performance and effort expectance ( $\beta$ : 0.563 p: 0,000). Thus, as it is the case with performance and effort expectance, it demonstrates that when perceived credibility increases, behavioural intention rises. However, its influence is still weaker than performance and effect expectation. Nonetheless, addition of perceived credibility to the second model enhances the explanatory power of the model from 42.8% to 45.6%.

In this respect, the hypotheses of

“1.H<sub>1</sub>: Performance and effort expectance towards innovative banking products significantly affects behavioural intention.” and

“3.H<sub>1</sub>: Perceived credibility towards innovative banking products significantly affects behavioural intention.” are **accepted**.

However, the hypotheses of “2. *H<sub>1</sub>: Social influence and facilitating conditions towards innovative banking products significantly affects behavioural intention.*” [p:0.487] and “4.*H<sub>1</sub>: Perceived self-efficacy towards innovative banking products significantly affects behavioural intention.*” [p:0.485] are **rejected**.

#### 4.5.2 Variance Analysis

Variance analysis is conducted to measure whether there is significant difference according to the demographic variables among the answers of respondents or not.

In this respect the sub-hypothesis is determined as:

*5.H<sub>1a</sub>: Consumers’ adoption factors towards innovative banking products differentiate according to the gender.*

According to the Independent Sample T Test results, there is no significant difference among the answers of respondents for the factors in 0.05 significance level in terms of gender variable ( $F_{\text{performance and effort expectance}}$ :2.02, p:0.116;  $F_{\text{social influence and facilitating conditions}}$ :0.72, p:0.378;  $F_{\text{perceived credibility}}$ :0.79, p:0.102;  $F_{\text{perceived self-efficacy}}$ :0.73, p:0.056). Thus, **5.H<sub>1a</sub> is rejected**.

*5.H<sub>1b</sub>: Consumers’ adoption factors towards innovative banking products differentiate according to the marital status.*

According to the Independent Sample T Test results, there is no significant difference among the answers of respondents for the factors in 0,05 significance level in terms of marital status variable ( $F_{\text{performance and effort expectance}}$ :1.23, p:0.312;  $F_{\text{social influence and facilitating conditions}}$ :1.59, p:0.683;  $F_{\text{perceived credibility}}$ :0.19, p:0.602;  $F_{\text{perceived self-efficacy}}$ :0.00, p:0.797). Thus, **5.H<sub>1b</sub> is rejected**.

*5.H<sub>1c</sub>: Consumers’ adoption factors towards innovative banking products differentiate according to the age group.*

According to the ANOVA Test results, there is no significant difference among the answers of respondents for the factors in 0.05 significance level in terms of age group variable ( $F_{\text{performance and effort expectance}}$ :0.61, p:0.60;  $F_{\text{social influence and facilitating conditions}}$ :1.10, p:0.34;  $F_{\text{perceived credibility}}$ :0.04, p:0.98;  $F_{\text{perceived self-efficacy}}$ :0.69, p:0.55). Thus, **5.H<sub>1c</sub> is rejected**.

*5.H<sub>1d</sub>: Consumers’ adoption factors towards innovative banking products differentiate according to the income level.*

According to the ANOVA Test results, there is no significant difference among the answers of respondents for the factors in 0.05 significance level in

terms of income level variable ( $F_{\text{performance and effort expectance}}$ :0.92,  $p$ :0.46;  $F_{\text{social influence and facilitating conditions}}$ :0.67,  $p$ :0.64;  $F_{\text{perceived credibility}}$ :0.56,  $p$ :0.72;  $F_{\text{perceived self-efficacy}}$ :0.62,  $p$ :0.68;). Thus, **5.H<sub>1d</sub> is rejected.**

*5.H<sub>1e</sub>: Consumers' adoption factors towards innovative banking products differentiate according to the academic department.*

According to the Independent T Test results, there is no significant difference among the answers of respondents for the factors in 0.05 significance level in terms of academic department variable ( $F_{\text{performance and effort expectance}}$ :0.00,  $p$ :0.85;  $F_{\text{social influence and facilitating conditions}}$ :2.38,  $p$ :0.54;  $F_{\text{perceived credibility}}$ :0.40,  $p$ :0.10;  $F_{\text{perceived self-efficacy}}$ :0.00,  $p$ :0.49). Thus, **5.H<sub>1e</sub> is rejected.**

*6.H<sub>1a</sub>: Consumers' behavioural intention towards innovative banking products differentiates according to the gender.*

According to the Independent Sample T Test results, there is no significant difference among the answers of respondents for the factors in 0.05 significance level in terms of gender variable ( $F_{\text{behavioural intention}}$ :3.95,  $p$ :0.970). Thus, **6.H<sub>1a</sub> is rejected.**

*6.H<sub>1b</sub>: Consumers' behavioural intention towards innovative banking products differentiates according to the marital status.*

According to the Independent Sample T Test results, there is no significant difference among the answers of respondents for the factors in 0.05 significance level in terms of marital status variable ( $F_{\text{behavioural intention}}$ :0.31,  $p$ :0.389). Thus, **6.H<sub>1b</sub> is rejected.**

*6.H<sub>1c</sub>: Consumers' behavioural intention towards innovative banking products differentiates according to the age group.*

According to the ANOVA Test results, there is no significant difference among the answers of respondents for the factors in 0.05 significance level in terms of age group variable ( $F_{\text{behavioural intention}}$ :0.45,  $p$ :0.71). Thus, **6.H<sub>1c</sub> is rejected.**

*6.H<sub>1d</sub>: Consumers' behavioural intention towards innovative banking products differentiates according to the income level.*

According to the ANOVA Test results, there is no significant difference among the answers of respondents for the factors in 0.05 significance level in terms of income level variable ( $F_{\text{behavioural intention}}$ :1.55,  $p$ :0.17). Thus, **6.H<sub>1d</sub> is rejected.**

*6.H<sub>1e</sub>: Consumers' behavioural intention towards innovative banking products differentiates according to the academic department.*

According to the Independent T Test results, there is no significant difference among the answers of respondents for the factors in 0.05 significance level in terms of academic department variable ( $F_{\text{behavioural intention}}:3.14, p:0.89$ ). Thus, **6.H<sub>1e</sub> is rejected.**

## **5. CONCLUSION, LIMITATIONS AND RECOMMENDATION**

Within the scope of this research, it was aimed to analyze the factors affecting consumers' adoption towards innovative banking products, and their relations with consumers' behavioural intention to use innovative banking products. Also to measure whether or not there are significant differences in participants' adoption factors and their behavioural intention towards innovative banking products according to the demographic variables. There was conducted a survey with 235 MBA English language department students at Bahçeşehir University Graduate School of Social Sciences.

In globalising business world, companies making innovations come to the forefront in competition. Therefore, they tend to invest in making innovations in products, services, processes, organizational structures and etc. One of the sectors in which innovation is so significant is the banking sector. In traditional banking there was only branch banking, and people went to branches of the banks to make their financial transactions. However, with the advances in technology, they can make lots of their financial transactions easily via innovative banking products and services in context to the branch-free banking system such as ATMs, online banking, mobile banking, telephone banking and etc.

In this study, the effects of consumers' adoption factors as performance expectation, effort expectation, social influence, perceived credibility, perceived financial cost, facilitating conditions and perceived self-efficacy on consumers' behavioural intention in terms of innovative banking products were analysed. After validity and reliability analyses, there emerged four consumer adoption factors as performance and effort expectation, perceived self-efficacy, perceived credibility, and social influence and facilitating conditions. After analysis process within the scope of this study, the result indicates that performance and effort expectation, and perceived credibility factors have significant effects on consumers' behavioural intention towards innovative banking products. It can be said that consumers give importance on issues such as time, performance, easiness, security and safety when they have intent to use innovative banking

products.

In terms of the effect of performance and effort expectation on behavioural intention, it can be said that easiness to use innovative banking products and its features such as being, time-saving, usable anywhere and etc. are effectual for individuals to adopt and use innovative banking products. Moreover, in terms of the effect of perceived credibility on behavioural intention, it can be said that it is important for the consumers' that information is confidential, transactions are secured and banking environment is safe while using innovative banking products. Thus, these factors tend consumers to adopt and use innovative banking products.

Another results of the study specified that there are no significant effects of social influence and facilitating conditions, and perceived self-efficacy on behavioural intention. In this respect, it can be said that consumers do not give so much importance on issues such as advices of people or use of others when they have intent to use innovative banking products.

In addition, consumers' adoption factors towards innovative banking products and services are mostly homogenous, that is, it does not differentiate mostly according to the demographic variables. The reason of this situation can be evaluated as participants' to be in the same age range, to have similar monthly incomes and similarities in using innovative banking products.

This study was limited with only Bahçeşehir University's Graduate School of Social Sciences students. Other students at this university and other universities did not implicate to the context of this research. Furthermore, time problem is one the main limitations in the research that students fill the questionnaires during class, thus it cannot be possible to reach all of the graduate students at the same time.

For future studies, researches on different sample groups, on certain products and/or services such as mobile banking, online banking and etc. can be recommended. Moreover, there could be conducted researches about the effects of Internet and social media use of consumers on the adoption of innovative banking products. Furthermore, culture-based studies could be made since culture has an important role on technology adoption of consumers. Also, some studies could be conducted to compare consumer adoption studying in different universities and cities.

This study is important to understand the factors that affect consumers' adoption towards innovative banking products and their behavioural intention.

Thus, it will contribute into the literature with its results stated above.

In conclusion, innovations in banking sector are perceived by consumers as good, effective, time saving and easing the life, usable and practicable. Therefore, it can be said that banks should continue to invest in innovations in their products, services and processes, and should pursue the changing needs and desires of the consumers in order to keep them in the hand.

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