

## **Investigating the effect of Covid-19 limitations constraints on the adoption of electronic banking technology among middle-aged customers of the Iranian banking industry**

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### **Abstract**

The aim of this study was to investigate the effect of Covid-19 epidemic limitations on the adoption of electronic banking technology in the Iranian banking industry. This research is applied and its approach is descriptive-survey. In this study, middle-aged customers (40 to 60 years old) of the Iranian banking industry were considered as a statistical population whose number was unlimited. According to the Cochran's formula, this community needed at least 384 statistical samples. In this study, cluster sampling method was used to select statistical samples and 400 people were selected as a statistical sample. The research data collection tool was a researcher-made questionnaire that contained 32 items. The validity of this questionnaire was checked and confirmed by the method of expert validity. The reliability of the questionnaire was assessed and confirmed by Cronbach's alpha method. The data obtained from the questionnaires were analyzed using descriptive and inferential methods and SPSS and LISREL software. Finally, the results showed that in the study population, the epidemic constraints of Covid-19 (individual constraints and social constraints) have made the middle class of Iranian society more receptive to electronic banking technology and show less resistance in this area.

**Keywords:** Covid-19, Epidemic, Technology Adoption, E-Banking, Banking Industry

### **1.Introduction**

Organizations and companies are in a complex global competitive environment that is due to environmental, organizational changes and new technologies. The rapid growth of information technology and the Internet has changed the nature of the work of organizations. Therefore, the optimal use of new technologies in business is an essential factor for the survival of organizations in today's competitive environment (Chan et al., 2020).

Today, the world is in the post-technological age due to the advancement of technology. So most jobs are about to become electronic. As it turns out, the banking industry is one of the pioneers in this field. The advent of e-banking services has greatly changed the nature of financial services provided to customers. Banks can save a considerable amount of money by providing these services. In addition, the development of e-banking should be considered with a customer-centric goal and

# **Investigating the effect of Covid-19 limitations constraints on the adoption of electronic banking technology among middle-aged customers of the Iranian banking industry**

attention to their satisfaction to ensure their loyalty, because the maintenance and survival of any organization depends on its customers (Amoh et al., 2020; Ghayourazar and Moezzi, 2020). E-banking has been considered as the most common type of banking in the current era. In order to improve and increase its acceptance by the customer in public societies, first the effective factors must be examined in order to accept it (Aduba, 2021).

At present, the Covid-19 epidemic is one of the macro-environmental variables for businesses that has brought many opportunities and threats (Yao et al., 2021; Ifdil et al., 2020). This epidemic has also been very effective on the Iranian banking industry. Due to the control of the Covid-19 epidemic, many bank branches were partially closed and many people turned to new technologies to do their banking. Considering the implications of Covid-19 in 2021, e-banking services and artificial intelligence will make the customer experience in remote banking smoother by improving the quality of banking services. Although bank branches continue to close, making it more difficult to access cash, it is encouraging to see a banking future that is tailored to the needs of governments and communities. Accordingly, it is likely that the Covid-19 epidemic could play a constructive role in the spread and adoption of electronic banking technologies (Amoh et al., 2020).

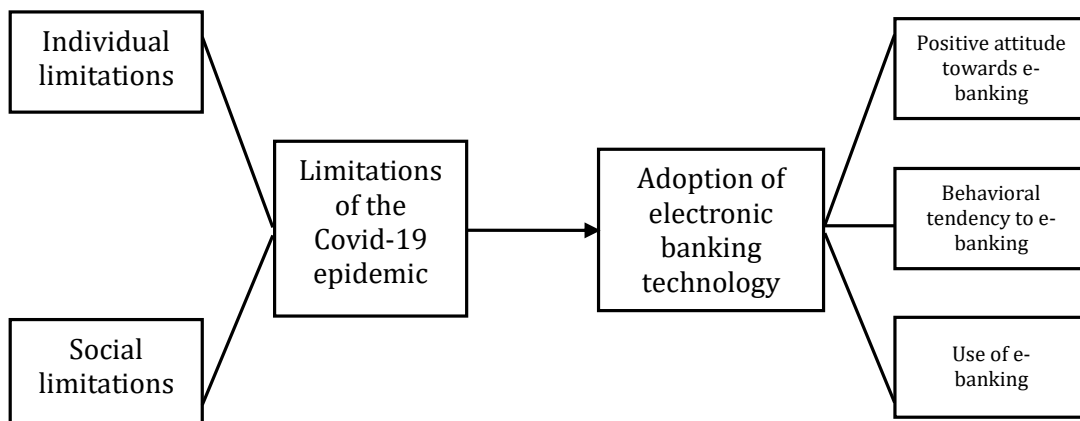
In this regard, based on studies conducted in the Iranian banking industry and also interviews with some senior managers of this industry, it was found that one of the important questions in the minds of decision makers in the Iranian banking industry is how the restrictions caused by the Covid-19 epidemic affect e-banking technology. By middle-aged customers. The reason why industry managers focus on the middle class of customers is that they usually find it very difficult for young people to adapt to new technologies. Given this study gap, the present study sought to answer the following main jump: "In the Iranian banking industry, what effect do the constraints of the Covid-19 epidemic have on the acceptance of e-banking technology by middle-aged customers?"

## **2. Research background**

Ghosh and Saima (2021) showed that the Covid-19 epidemic has affected the behavior of banking customers and encouraged them to pursue e-banking. Marwa et al (2021) also showed in a study that the Covid-19 epidemic has been able to have significant effects on the stability of global banking. Research by Muhammad and Wilson (2021) found that social media played an important role in Internet banking during the Covid-19 epidemic. Bergman et al. (2021) also showed that the Covid-19 epidemic has revolutionized online services. Borri and Giorgio (2021) also showed in their banking research that the Covid-19 epidemic posed a systematic risk to European banking, and that individual and social constraints on customers in the epidemic led European banks to adopt banking policies. Make your own electronic changes. In this regard, Aduba (2021) based on research conducted in the field of e-banking, showed that the adoption of e-banking technology should be considered in terms of three dimensions of attitude, desire and behavior. Brewer and Sebby (2021) also showed that in the Covid-19 epidemic, customers became more inclined to use online restaurant services and often preferred to order their food online. In this regard, Gavilan et al. (2021) Research in the food industry found that the Covid-19 epidemic has revolutionized online food ordering and delivery systems. Kimber et al. (2020) also showed that in the Covid-19 epidemic, the demand for online education of children in the field of health care has increased.

## **3. Conceptual model and research hypotheses**

According to the theoretical foundations and research background, as well as the direct use of research by Borri and Giorgio (2021) and Aduba (2021), the following hypothetical model was designed as a conceptual model of research:



**Figure 1) Conceptual model of research**

Based on this, the research hypotheses were formulated as follows:

H1: Limitations of the Covid-19 epidemic have a significant impact on the adoption of e-banking technology by middle-aged customers.

H1-1: Individual limitations have a significant effect on the adoption of electronic banking technology by middle-aged customers.

H1-2: Social limitations have a significant effect on the adoption of electronic banking technology by middle-aged customers.

**4. Research methodology**

This research is applied in terms of purpose, descriptive-survey in terms of approach, and is of the type of causal studies.

**4.1. Statistical population and statistical sample:**

The statistical population of this study, middle-aged customers (40 to 60 years old) of the Iranian banking industry were considered as the statistical population, whose number was unlimited. According to the Cochran's formula, this community needed at least 384 statistical samples. In this study, cluster sampling method was used to select statistical samples and 400 people were selected as a statistical sample.

**4.2. Data collection tool:**

The main tool used in this study was a researcher-made questionnaire that contained a total of 32 items. In this questionnaire, the answers were designed based on a five-point Likert scale (from strongly disagree to strongly agree). In the following table, the structure of this questionnaire can be seen:

**Table 1) Structure of the questionnaire**

Variable	Dimensions	Number of items	Abbreviation Signs	Source
Limitations of the Covid-19 epidemic	Individual limitations	7	PL	Borri and Giorgio (2021)
	Social limitations	7	SL	
Adoption of electronic	Positive attitude towards e-banking	6	PA- eBanking	Aduba (2021)

**Investigating the effect of Covid-19 limitations constraints on the adoption of electronic banking technology among middle-aged customers of the Iranian banking industry**

banking technology	Behavioral tendency to e-banking	6	BD-eBanking
	Use of e-banking	6	U- eBanking

In the present study, face validity was used to evaluate the validity of the questionnaire. In this way, first the questionnaire questions were prepared and given to several experts, experts and professors in the field of management, and after reviewing and commenting on the experts and professors and editing the questions, the final questionnaire was compiled. In addition, the validity of the research questionnaire was examined through confirmatory factor analysis. Also, Cronbach's alpha method was used to evaluate the validity (reliability) of the questionnaire. Considering that Cronbach's alpha of all variables and the whole questionnaire was higher than 0.7, therefore, the reliability of the dimensions and the whole questionnaire was confirmed.

**4.3. Data analysis tools and methods:**

According to the type of research and the type of variables, descriptive statistics and inferential tests appropriate to the type of data and variables were used to analyze statistical data and study research questions using SPSS and LISREL statistical software.

**5. Data Analysis Results**

**5.1. Demographic Characteristics of the Research Statistical Sample:**

In the following table and diagrams the descriptive (frequency) statistics regarding 400 statistical samples included in the research has been presented (Table 2):

**Table 2: Demographic Characteristics of Respondents**

Variable		Frequency	Percentage
<b>Gender</b>	Female	242	60.5
	Male	158	39.5
	Total	400	100
<b>Age</b>	40-45 years	49	12.25
	45 to 50 years	215	53.75
	50 to 55 years	75	18.75
	55 to 60 years	61	15.25
	Total	400	100
<b>Education Level</b>	Associate or Less	37	9.25
	Bachelor	246	61.5
	Master	94	23.5
	Ph.D.	23	5.75
	Total	400	100

**5.2. Testing Hypotheses Using Linear Structured Relationships:**

After determining the measurement models in order to evaluate the research conceptual model and also to ensure the existence or absence of causal relationship between the research variables and to examine the appropriateness of the observed data with the research conceptual model, research hypotheses were also tested using structural equation model. The test results of the hypotheses are reflected in the following figures:

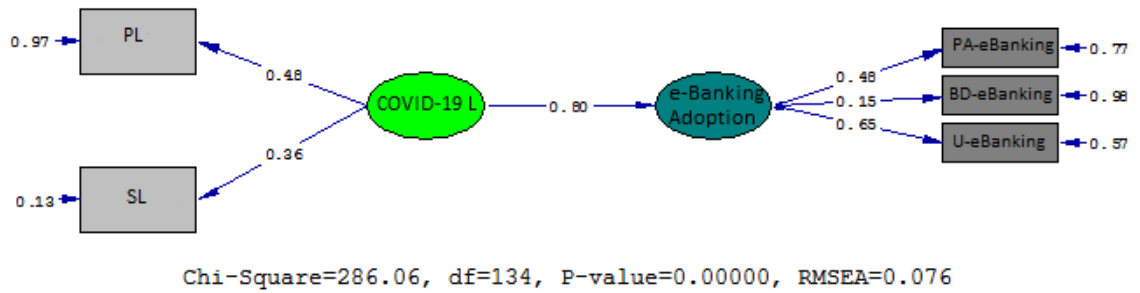


Figure 2) General model of research in standard mode

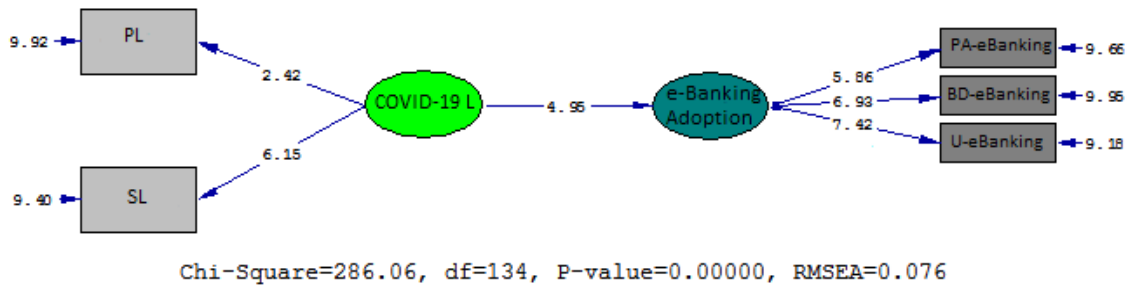


Figure 3) General model of research in meaningful mode

According to Figures (2 and 3), Table (3) summarizes the significance coefficient and test results of direct research hypotheses:

Table 3) Test result of hypotheses

Hypotheses	Standard	Significance	Result
H1	0.8	4.96	Confirmed
H1-1	0.48	2.42	Confirmed
H1-2	0.36	0.36	Confirmed

## 6. Discussion, conclusions and recommendations

In this study, an attempt was made to conduct a detailed study among the middle-aged customer community (40 to 60 years old) of the banking industry in Iran to examine the effects of the restrictions caused by the Covid-19 epidemic on the adoption of electronic banking technology. Based on a detailed review of the theoretical foundations of the research, three hypotheses were designed and tested. The main hypothesis of the study considered the limitations caused by the Covid-19 epidemic as a macro variable and the test results of this hypothesis showed that such limitations with high power (0.80) and positively on the acceptance of electronic banking technology by middle-aged customers. (40 to 60 years) The banking industry is influential in Iran. But for a more careful study, based on the theoretical foundations of the research, it was tried to divide the restrictions caused by the Covid-19 epidemic into two categories. In this regard, the test of the first sub-hypothesis showed that the individual constraints caused by the epidemic Quid-19 with moderate and positive power (0.48) and the social constraints caused by the epidemic Quid-19 with moderate and positive power (0.36) on acceptance. Electronic banking technology is influenced by middle-aged customers (40 to 60 years old) in the banking industry in Iran. As it turns out, individual constraints are more effective than social constraints. Based on this, it can be suggested to senior managers and decision makers of Iran's banking industry that in the wake of the Covid-19 epidemic, e-banking services be designed to reduce the individual and social constraints of middle-aged customers to see more middle-aged people use banking services. Be electronic. In addition, future researchers are suggested to take steps to develop a

# Investigating the effect of Covid-19 limitations constraints on the adoption of electronic banking technology among middle-aged customers of the Iranian banking industry

conceptual model of this research. In this regard, it is suggested to enter the digital literacy variable as a moderator variable and examine its effects.

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