An investigation on factors influencing electronic banking adoption in private banks versus public banks

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CHRONICLE	ABSTRACT
	The movement of industrial societies towards implementation of information technology has begun and it has gained moment since early 90th and presently the speed of this movement is well obvious in less developed countries, including Iran. Internet Banking is one of the most tangible trends in today's electronic commerce. It has direct relationship with the perception of the service qualities not only because of unique absorption of the internet, but also because of e-commerce, acceptance of internet services of banks by clients and the tendency for using such services. This paper investigates different factors influencing on acceptance of electronic banking in private banks versus public banks in a case study of two Iranian banks namely; Eqtesade Novin and Sepah using Technology Acceptance Model (TAM). Correlation test reveals that there was a positive and significant relationship between clients of private and public bank on five factors associated with TAM. In addition, structural equation method was used for investigation of relationships in offered model. In conclusion, all primary and secondary hypotheses for clients of private and public bank were confirmed.

1. Introduction

During the past few years, there have been tremendous efforts on online banking but there are several challenges to encourage all people to do their daily banking activities through internet. Aladwani (2001) reported the results of a quantitative investigation of the perceptions of banks' executive and information technology (IT) managers and potential customers on drivers, development challenges, and expectations of online banking. Bradley and Stewart (2002) performed an empirical investigation on drivers and inhibitors of Internet banking. Byers and Lederer (2001) explained the impact of electronic distribution technologies such as PC banking on the choice of a bank's distribution strategy. They presented a competitive framework of distribution strategy choice, including heterogeneous

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consumers and banks, which allowed a rich variety of customer preference and technology cost parameters. The analysis suggested that changing consumer behavior and attitudes, instead of banks' cost structure with new technologies could substantially influence on the bank's distribution strategy choice.

Liao and Cheung (2002) performed an empirical investigation on internet-based e-banking and consumer attitudes. The survey was established in Singapore, because its geography and well-developed infrastructure implied similar and small physical- and tele-communication expenses, thereby highlighting the changes between traditional and Internet-based retail banking upon the latter's introduction. They reported that expectations of accuracy, security, network speed, user-friendliness, user involvement and convenience were the most essential quality attributes underlying perceived usefulness. They also reported that willingness to apply depended substantially on the first five factors, allowing the interdependencies or marginal rates of substitution between them to be estimated.

Corrocher (2006) examined the determinants of adoption of Internet banking among Italian retail banks. More specifically, the study concentrated at investigating the nature of Internet banking in association with traditional banking activity. He analyzed the role of firm-specific and market-specific characteristics in influencing the decision to provide financial services via the Internet. The empirical analysis stated that the adoption of Internet banking depends entirely on the characteristics of traditional banking activities, specifically in terms of existing networks of distribution as well as customers. First, banks with high branching intensity adopted more slowly than banks with a few branches in place. Second, adoption was negatively influenced by the existence of a large customer base. Singh and Malhotra (2004) helped fill significant gaps in knowledge about the Internet banking landscape in India.

2. The proposed method

This paper investigates different factors influencing on acceptance of electronic banking in private banks versus public banks in a case study of two Iranian banks namely; Eqtesade Novin and Sepah using Technology Acceptance Model (TAM) (Davis et al., 1989; Burton-Jones & Hubona, 2006; McKechnie et al., 2006). The proposed study chooses a sample of 300 (217 male and 83 female) and 121 (120 male and 92 female) people from regular customers of Sepah and Eqtesade Novin. Fig. 1 demonstrates the summary of their personal characteristics of the participants.
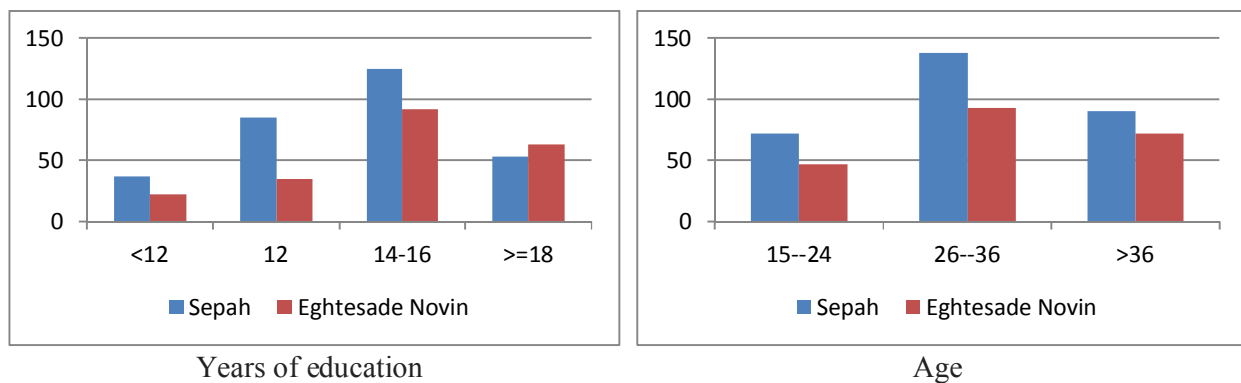
Fig. 1. Personal characteristics of the participants

As we can observe from the results of Fig. 1, most participants had university background and they are middle aged people. There is one main hypothesis associated with the proposed study of this paper as follows,

Main hypothesis: Important factors influencing electronic banking are meaningful in both private and public Iranian banks.

There are five sub-hypotheses associated with the proposed study of this paper as follows,

1. Self-efficiency computer influences positively on electronic banking.

2. The benefits of electronic banking influence positively on electronic banking.

3. Perceived ease of use electronic banking influences electronic banking.

4. Perceived usefulness of electronic banking influences electronic banking.

5. Having good attitude towards learning electronic banking influences electronic banking.

The proposed study uses designs a questionnaire in Likert scale and uses different statistical observation to examine various hypotheses of the survey.

3. The results

In this section, we present details of our findings on testing various hypotheses of the survey. Table 1 shows mean and standard deviation associated with each factor of the proposed model.

Table 1
The summary of some basic statistics associated with different components of TAM

	Eghtesad novin		Sepah	
	Mean	Standard dev.	Mean	Standard dev.
Perceived usefulness	4.11	0.85	3.45	0.88
Self-efficiency computer	4.12	0.94	2.73	0.91
Perceived usefulness	4.18	0.89	3.26	0.79
Perceived ease of use	4.22	0.73	3.67	0.86
Attitude	4.35	0.77	2.81	0.79
ATM	4.23	0.84	3.11	0.91

As we can observe from the results of Table 1, all components maintain high numbers, which are well above the minimum acceptable limits for two private and public banks. Table 2 demonstrates the summary of our results.
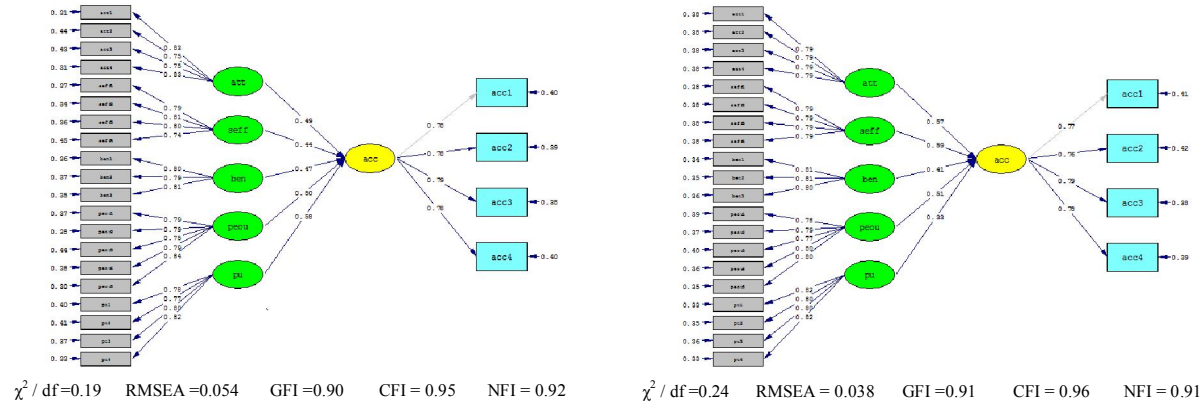
Table 2
The summary of statistical observations on testing various hypotheses

variable		Eghtesad novin				Sepah			
Latent	Manifest	LAMBDA		t	Cronbach's alpha	LAMBDA		t	Cronbach's alpha
		Standardized	estimate			Standardized	estimate		
Acc	Acc1	0.77	0.81	16.23		0.78	0.81	16.74	
	Acc2	0.76	0.80	16.09	0.75	0.78	0.82	16.81	0.79
	Acc3	0.79	0.83	16.75		0.79	0.82	16.97	
	Acc4	0.78	0.82	16.51		0.78	0.81	16.75	
Att	Att1	0.79	0.82	16.16		0.83	0.87	17.99	
	Att2	0.79	0.83	16.21	0.77	0.75	0.78	15.62	0.75
	Att3	0.79	0.83	16.21		0.75	0.79	15.72	
	Att4	0.79	0.83	16.22		0.83	0.87	17.98	
Seff	Seff1	0.79	0.82	16.18		0.79	0.83	16.78	
	Seff2	0.79	0.82	16.21	0.79	0.81	0.85	17.32	0.72
	Seff3	0.79	0.83	16.21		0.80	0.84	16.93	
	Seff4	0.79	0.82	16.20		0.74	0.78	15.46	
Ben	Ben1	0.81	0.85	16.61		0.80	0.84	16.94	
	Ben2	0.81	0.85	16.54	0.74	0.79	0.83	16.80	0.75
	Ben3	0.80	0.84	16.31		0.81	0.85	17.14	
Peou	Peou1	0.78	0.82	15.94		0.79	0.83	16.85	
	Peou2	0.79	0.83	16.26		0.79	0.83	16.76	
	Peou3	0.77	0.81	15.71	0.76	0.75	0.79	15.66	0.77
	Peou4	0.80	0.84	16.44		0.79	0.83	16.67	
	Peou5	0.80	0.84	16.61		0.84	0.88	18.10	
Pu	Pu1	0.82	0.86	16.77		0.78	0.81	16.50	
	Pu2	0.80	0.84	16.39	0.81	0.77	0.81	16.32	0.75
	Pu3	0.80	0.84	17.28		0.80	0.83	17.03	
	Pu4	0.82	0.86	17.78		0.82	0.86	17.72	

Acc=Accepting electronic banking, Att=attitude, Seff=self-efficiency computer, Ben=benefit, Peou=perceived ease of use, Pu=perceived usefulness

According to the results of Table 2, Cronbach alphas are well above the minimum acceptable limits. In addition, t-student values are also statistically significant. Next, we present details of the implementation of structural equation modeling (Fornell & Larcker, 1981a, 1981b; Bagozzi, 1981; Bollen, 1998). All implementations have been applied using LISREL software package (Jöreskog & Sörbom, 1989; Fornell & Bookstein, 1982; Anderson & Gerbing, 1988; Bagozzi & Yi, 1988; Byrne, 1989). Fig. 2 demonstrates the results of our survey.

$\chi^2 / df = 0.19$ RMSEA =0.054   GFI =0.90   CFI = 0.95   NFI = 0.92 $\chi^2 / df = 0.24$ RMSEA = 0.038   GFI =0.91   CFI = 0.96   NFI = 0.91

Standard coefficients for Bank Sepah   Standard coefficients for Bank Eghtesad novin
Fig. 2. The results of the implementation of structural equation modeling

According to the results of Fig. 1, all statistics are within acceptable limits, which validates the implementation of structural equation modeling. Table 3 shows details of t-student values on testing various components of the survey.

Table 3
The summary of t-student values for the implementation of structural equation modeling

	Eghtesad novin			Sepah		
	β	t-value	Result	β	t-value	Results
Perceived usefulness	0.47	3.57	√	0.41	3.11	√
Self-efficiency computer	0.44	3.17	√	0.59	4.73	√
Perceived usefulness	0.57	4.45	√	0.51	4.46	√
Perceived ease of use	0.50	4.48	√	0.33	2.47	√
Attitude	0.49	4.45	√	0.57	4.64	√

The results of Table 3 indicate that all coefficients are statistically significance ($\alpha = 5\%$). In other words, five components including perceived usefulness, self-efficiency computer, perceived usefulness, perceived ease of use and attitude influence positively on adoption of electronic banking.

4. Conclusion

In this paper, we have presented an empirical investigation to study the effects of five technology acceptance method (TAM) components including perceived usefulness, self-efficiency computer, perceived usefulness, perceived ease of use and attitude influence positively on adoption of electronic banking. The proposed model designed a questionnaire and distributed it among some regular customers of one private and one governmental bank in city of Tehran, Iran. The results have indicated that all five components positively influence on adoption of electronic banking. In addition, the results of this survey are consistent with Berger (2009), Venkatesh et al. (2003), Wan et al. (2005), Yi and Hwang (2003) and Yousafzai et al. (2003).

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