

CHAPTER V

CONCLUSION

Introduction

This chapter aims to summarize the key findings in the questionnaire survey which have been reported in Chapter IV. All the test result and findings will be integrated and being discussed together. As a result, a more comprehensive conclusion can be drawn. On the other hand, the limitations existed in this research and its according recommendations for further research would also be discussed in detail manner.

5.1 Conclusion

Based on the analysis that has been done in this research, the author concludes that the main conclusion is e-customer satisfaction complementary mediate e-service quality toward e-customer loyalty, showed from the path analysis, e-customer satisfaction can be categorized as a complementary mediator to the e-service quality while affecting the e-customer loyalty. The other conclusions are as follow:

1. Based on demographic analysis, it shows that male customer have high percentage in using Mandiri online application with 52%, and also 59,4% from 175 respondent in the range of 20 – 30 y.o. are often to use mandiri online application.
2. Based on the result above, student are more likely to use mandiri online rather than other occupation with 44% from total 175 with usage level 1-3

times/week 46,3%. Service that most used in the mandiri online application is transfer 51,4%.

3. Based on simple regression analysis that already done in the chapter IV, E-service quality affect positively and significantly to the e-customer satisfaction.
4. Based on simple regression analysis that already done in the chapter IV, E-service quality affecting e-customer loyalty significantly and positively.
5. Based on simple regression analysis that already done in the chapter IV, e-customer satisfaction affecting e-customer loyalty significantly and positively.
6. Multiple regression analysis is used to develop the path analysis between E-service quality and e-customer satisfaction toward e-customer loyalty. The result that author got after analyze the path analysis, the data show that both variable E-service quality and e-customer satisfaction affecting e-customer loyalty positively and significantly.

5.2 Managerial Implication

Based on the data analysis findings, some managerial implications can be suggested. The result suggests that the management of PT Bank Mandiri (tbk) should consider about their application, and also the management should primarily focus on e-customer satisfaction for which e-service quality is an important antecedent. Mandiri online application should have competitive advantage, because it can be their way to communicate their service to the customer, as we can see, our world business is shifting right now from offline

to online, the customers way to have transaction is different as well. Started from how Mandiri online can meet the customer need through the services that provide in the application. The findings of this research showed that E-service quality and e-customer satisfaction are two factors that can affect the e-customer loyalty. The result of this research also shows that E-service quality is the most positively affecting variable toward e-customer satisfaction with value of β 0,861. Other variables in this research also show a positive effect toward e-customer loyalty for Mandiri Online application usage, but it's not as big as E-service quality toward e-customer satisfaction.

This research also helps other service companies to arrange a better strategy that focusing on developing website or application that also rely on service quality to meet their customer's need. Based on the findings of this research service quality has big role to make customers more satisfy, and will lead to customer loyalty as well. Furthermore, management of PT Bank Mandiri should consider all of aspect that contain in the web or application to give the best service to the customer.

5.3 Research Limitations & Suggestion

1. The questionnaires were distributed online, so researcher was not able to monitor the process of answering the questionnaire so there is a big chance that there are some technical problems while filling the questionnaire. So, in the future research, it will be better if there are some questionnaire that filled offline, so the data become more valid and reliable.

2. The research only uses limited variable such as, e-service quality and e-customer satisfaction toward e-customer loyalty. It will be better if future research use another variable that have impact to the e-customer loyalty such as trust, commitment, usability.
3. In this study, only 1 bank company that used by the author to determine the effect of e-service quality and e-customer satisfaction toward e-customer loyalty. Maybe in the future research can use not only 1 company to determine the impact of service quality and e-customer satisfaction toward e-customer loyalty.
4. In this study, researcher didn't use structured equation model to know the effect of e-service quality to the both of dependent variables. Maybe in the future research, SEM or another model can be included to analyze the result.

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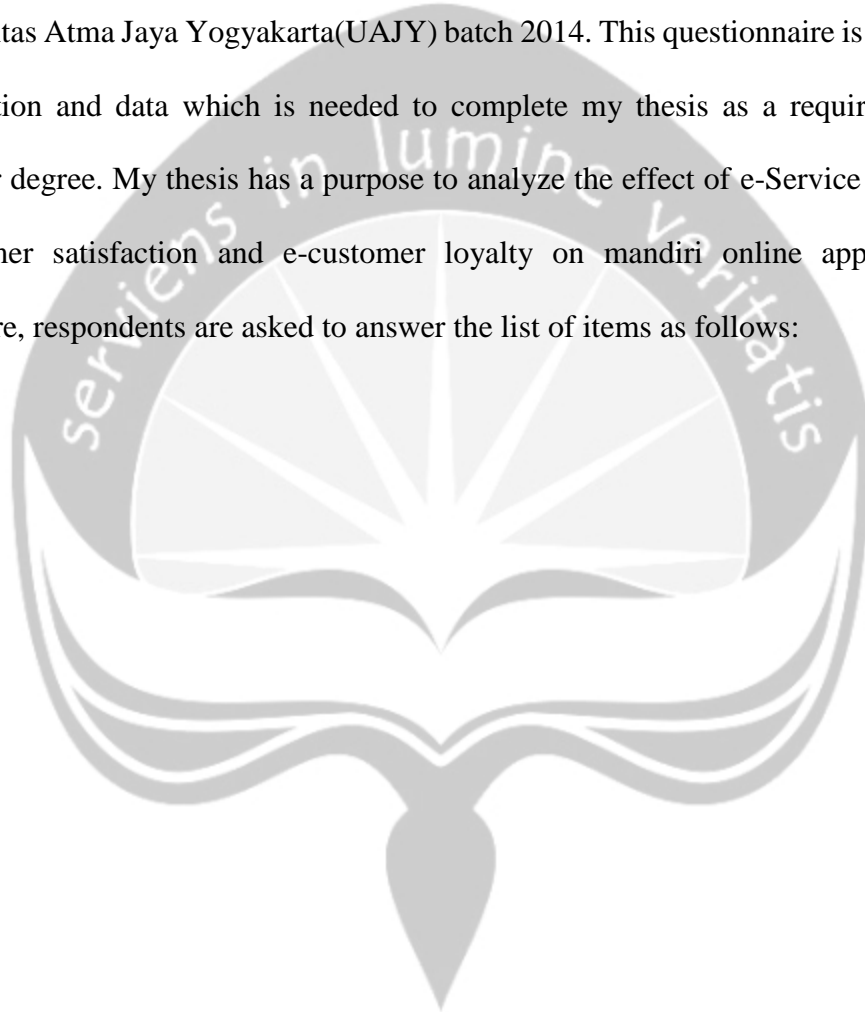
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**EFFECT OF E-SERVICE QUALITY TOWARD E-CUSTOMER
SATISFACTION AND E-CUSTOMER LOYALTY ON MANDIRI ONLINE
APPLICATION
ANGKET KUESIONER**

Dear respondents, my name is Kunto Prasetyo Utomo and I am a student of Universitas Atma Jaya Yogyakarta(UAJY) batch 2014. This questionnaire is used to find the information and data which is needed to complete my thesis as a requirement to get a bachelor degree. My thesis has a purpose to analyze the effect of e-Service Quality toward e-customer satisfaction and e-customer loyalty on mandiri online application usage. Therefore, respondents are asked to answer the list of items as follows:



RESPONDENTS IDENTITY

Gender:

- ☐ Male
- ☐ Female

Age:

- ☐ ≤ 20 y.o
- ☐ 21 – 30 y.o
- ☐ 31 – 40 y.o
- ☐ > 40 y.o

Occupation:

- ☐ Student
- ☐ Entrepreneur
- ☐ Civil Servant
- ☐ Private Employees
- ☐ Others:

Have you ever use Mandiri Online application at least once?

- ☐ Yes
- ☐ No (Stop here)

How often do you use Mandiri Online in a week?

- ☐ 1-3 times
- ☐ 3-5 times
- ☐ 5-7 times

What kind of services that you use the most?

- ☐ Transfer
- ☐ Buy
- ☐ Pay
- ☐ E-money
- ☐ E-cash

KEBUTUHAN PERSONAL (PERSONAL NEEDS)

No.	Pernyataan	Pilihan Jawaban				
		SD	D	N	A	SA
1.	I feel completely safe when making transactions on the Mandiri Online Application.					
2.	I feel that my personal needs have been met when using the Mandiri					
3.	Mandiri Online Application gives me a clear information.					
4.	Mandiri Online gives me services according to y preferences.					

SITUS ORGANISASI (SITE ORGANIZATION)

No.	Pernyataan	Pilihan Jawaban				
		SD	D	N	A	SA
1.	Mandiri Online is simple to use.					
2.	Mandiri Online is well organized.					
3.	I can get on to the Mandiri Online quickly.					
4.	Design of Mandiri Online is user friendly.					

KERAMAHAN UNTUK PENGGUNA (USER FRIENDLINESS)

No.	Pernyataan	Pilihan Jawaban				
		SD	S	N	A	SA
1.	Mandiri Online application is user-friendly					
2.	Navigation on the Mandiri Online is easy.					
3.	Mandiri Online application launches and runs right away.					
4.	Pages at Mandiri Online application is seldom to have problem.					

EFISIENSI SITUS WEB (EFFICIENCY OF WEBSITE)

No.	Pernyataan	Pilihan Jawaban				
		SD	S	N	A	SA
1.	It is easy to find what i need on the Mandiri Online.					
2.	It is easy to get anywhere on the Mandiri Online.					
3.	I can complete a transaction quickly on the Mandiri Online.					

KEPUASAN PELANGGAN (E-CUSTOMER SATISFACTION)

No.	Pernyataan	Pilihan Jawaban				
		SD	S	N	A	SA
1.	I feel pleased with this bank's online services from Mandiri Online.					
2.	I am very satisfied with this online bank services from Mandiri Online.					
3.	I am happy with this Mandiri Online.					
4.	Mandiri Online application is simple to use.					
5.	I am satisfied with overall online bank's products and services from Mandiri Online.					

LOYALITAS PELANGGAN (E-CUSTOMER LOYALTY)

No.	Pernyataan	Pilihan Jawaban				
		SD	S	N	A	SA
1.	I will recommend the Mandiri online to other people.					
2.	I prefer the Mandiri Online above others.					
3.	I would like to say positive things about Mandiri Online to other people.					
4.	I would recommend Mandiri Online to someone who seeks advice.					
5.	I intend to continue using the Mandiri Online.					

APPENDIX 2: RESPONDENTS DATA

Jenis Kelamin	Usia	Pekerjaan	Apakah anda menggunakan aplikasi Mandiri Online?	Seberapa sering anda menggunakan Mandiri Online dalam seminggu?	Layanan apa yang Sering anda gunakan di Mandiri Online?
Pria	20-30 Tahun	Pelajar	Ya	3-5 kali	Beli
Wanita	20-30 Tahun	Pelajar	Ya	3-5 kali	Transfer
Pria	20-30 Tahun	Pelajar	Ya	3-5 kali	Bayar
Pria	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Pria	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Pria	20-30 Tahun	Pelajar	Ya	1-3 kali	Beli
Pria	20-30 Tahun	Pelajar	Ya	3-5 kali	Transfer
Wanita	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	< 20 Tahun	Pelajar	Ya	3-5 kali	Bayar
Wanita	20-30 Tahun	Wiraswasta	Ya	1	Transfer
Wanita	< 20 Tahun	Pelajar	Ya	1-3 kali	Beli
Wanita	20-30 Tahun	Pelajar	Ya	3-5 kali	Transfer
Pria	20-30 Tahun	Pelajar	Ya	5-7 kali	Transfer
Pria	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Pria	20-30 Tahun	mahasiswa	Ya	3-5 kali	Transfer
Wanita	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Pria	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer

Wanita	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Pria	20-30 Tahun	Pelajar	Ya	3-5 kali	Transfer
Pria	20-30 Tahun	Pelajar	Ya	1-3 kali	Bayar
Wanita	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	< 20 Tahun	Pelajar	Ya	1-3 kali	Transfer
Pria	20-30 Tahun	Pelajar	Ya	3-5 kali	Beli
Pria	20-30 Tahun	Pegawai Swasta	Ya	3-5 kali	Transfer
Pria	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	20-30 Tahun	Pegawai Swasta	Ya	1-3 kali	Transfer
Wanita	< 20 Tahun	Pelajar	Ya	5-7 kali	Transfer
Wanita	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Pria	20-30 Tahun	Pelajar	Ya	3-5 kali	Transfer
Pria	31-40 Tahun	Wiraswasta	Ya	3-5 kali	E-money
Pria	20-30 Tahun	Pelajar	Ya	3-5 kali	Transfer
Wanita	20-30 Tahun	Pelajar	Ya	3-5 kali	Transfer
Pria	20-30 Tahun	Pegawai Negeri Sipil	Ya	3-5 kali	Bayar
Pria	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Beli
Wanita	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Bayar
Pria	31-40 Tahun	Pegawai Swasta	Ya	3-5 kali	Bayar
Wanita	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Beli

Pria	20-30 Tahun	Pegawai Negeri Sipil	Ya	3-5 kali	E-money
Pria	31-40 Tahun	Pegawai Negeri Sipil	Ya	1-3 kali	Bayar
Wanita	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Pria	20-30 Tahun	Pelajar	Ya	3-5 kali	Beli
Wanita	20-30 Tahun	Wiraswasta	Ya	1-3 kali	Transfer
Wanita	< 20 Tahun	Pelajar	Ya	3-5 kali	Beli
Pria	> 40 Tahun	Pegawai Negeri Sipil	Ya	5-7 kali	Transfer
Pria	20-30 Tahun	Pelajar	Ya	3-5 kali	Beli
Pria	> 40 Tahun	Wiraswasta	Ya	3-5 kali	Beli
Wanita	20-30 Tahun	Wiraswasta	Ya	5-7 kali	Bayar
Wanita	20-30 Tahun	Pegawai Swasta	Ya	1-3 kali	E-money
Wanita	20-30 Tahun	Pelajar	Ya	3-5 kali	Transfer
Wanita	31-40 Tahun	Pegawai Swasta	Ya	1-3 kali	E-cash
Pria	20-30 Tahun	Pegawai Negeri Sipil	Ya	3-5 kali	Beli
Wanita	20-30 Tahun	Wiraswasta	Ya	1-3 kali	Beli
Pria	20-30 Tahun	Wiraswasta	Ya	5-7 kali	Transfer
Wanita	20-30 Tahun	Pegawai Negeri Sipil	Ya	3-5 kali	Bayar
Wanita	> 40 Tahun	Wiraswasta	Ya	5-7 kali	Transfer
Pria	31-40 Tahun	Pegawai Negeri Sipil	Ya	3-5 kali	Beli
Pria	20-30 Tahun	Pegawai Negeri Sipil	Ya	3-5 kali	Bayar
Wanita	< 20 Tahun	Pelajar	Ya	3-5 kali	E-money
Pria	20-30 Tahun	Seniman	Ya	5-7 kali	Transfer

Pria	20-30 Tahun	Pelajar	Ya	1-3 kali	E-money
Pria	< 20 Tahun	Pelajar	Ya	1-3 kali	E-money
Wanita	31-40 Tahun	Wiraswasta	Ya	5-7 kali	Transfer
Wanita	20-30 Tahun	Pelajar	Ya	3-5 kali	E-money
Pria	31-40 Tahun	Wiraswasta	Ya	5-7 kali	Transfer
Pria	31-40 Tahun	Wiraswasta	Ya	5-7 kali	Transfer
Pria	31-40 Tahun	Pegawai Swasta	Ya	5-7 kali	E-money
Wanita	31-40 Tahun	Wiraswasta	Ya	1-3 kali	Transfer
Pria	< 20 Tahun	Pelajar	Ya	1-3 kali	Bayar
Pria	< 20 Tahun	Pelajar	Ya	3-5 kali	Bayar
Wanita	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Transfer
Pria	> 40 Tahun	Wiraswasta	Ya	5-7 kali	Transfer
Pria	20-30 Tahun	Pegawai Negeri Sipil	Ya	1-3 kali	Transfer
Wanita	< 20 Tahun	Pelajar	Ya	1-3 kali	Transfer
Pria	20-30 Tahun	Pelajar	Ya	3-5 kali	Bayar
Pria	31-40 Tahun	Pegawai Swasta	Ya	1-3 kali	Bayar
Pria	20-30 Tahun	Wiraswasta	Ya	5-7 kali	Transfer
Wanita	31-40 Tahun	Pegawai Negeri Sipil	Ya	1-3 kali	Bayar
Pria	< 20 Tahun	Wiraswasta	Ya	3-5 kali	Transfer
Pria	31-40 Tahun	Wiraswasta	Ya	3-5 kali	Beli
Wanita	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Transfer
Wanita	< 20 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Bayar

Pria	31-40 Tahun	Pegawai Negeri Sipil	Ya	5-7 kali	E-money
Pria	20-30 Tahun	Pelajar	Ya	3-5 kali	E-money
Pria	31-40 Tahun	Pegawai Swasta	Ya	5-7 kali	Transfer
Wanita	< 20 Tahun	Pelajar	Ya	5-7 kali	E-money
Wanita	< 20 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	31-40 Tahun	Wiraswasta	Ya	5-7 kali	Transfer
Pria	20-30 Tahun	Pegawai Swasta	Ya	3-5 kali	E-money
Pria	< 20 Tahun	Pelajar	Ya	1-3 kali	Transfer
Pria	< 20 Tahun	Pelajar	Ya	3-5 kali	Transfer
Pria	< 20 Tahun	Pelajar	Ya	3-5 kali	Bayar
Pria	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	< 20 Tahun	Pelajar	Ya	3-5 kali	Bayar
Pria	31-40 Tahun	Wiraswasta	Ya	3-5 kali	E-cash
Pria	< 20 Tahun	Pelajar	Ya	1-3 kali	Beli
Pria	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Transfer
Wanita	20-30 Tahun	Pelajar	Ya	3-5 kali	E-money
Wanita	31-40 Tahun	Pegawai Swasta	Ya	1-3 kali	Beli
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Pria	20-30 Tahun	Pegawai Negeri Sipil	Ya	1-3 kali	Bayar
Pria	20-30 Tahun	Pelajar	Ya	1-3 kali	E-cash
Wanita	< 20 Tahun	Pelajar	Ya	1-3 kali	Transfer
Pria	< 20 Tahun	Pelajar	Ya	1-3 kali	Beli
Pria	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Transfer

Wanita	20-30 Tahun	Pegawai Negeri Sipil	Ya	1-3 kali	Beli
Wanita	31-40 Tahun	Pegawai Negeri Sipil	Ya	3-5 kali	Transfer
Pria	< 20 Tahun	Pelajar	Ya	3-5 kali	Bayar
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Wanita	20-30 Tahun	Pelajar	Ya	1-3 kali	Bayar
Wanita	> 40 Tahun	Wiraswasta	Ya	3-5 kali	Transfer
Pria	< 20 Tahun	Wiraswasta	Ya	3-5 kali	Transfer
Wanita	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Bayar
Wanita	31-40 Tahun	Pegawai Negeri Sipil	Ya	1-3 kali	E-money
Pria	< 20 Tahun	Pelajar	Ya	1-3 kali	Bayar
Pria	20-30 Tahun	Pegawai Negeri Sipil	Ya	3-5 kali	Transfer
Wanita	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Beli
Pria	> 40 Tahun	Pegawai Swasta	Ya	3-5 kali	Beli
Pria	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Transfer
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Pria	< 20 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	< 20 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	20-30 Tahun	Pegawai Swasta	Ya	1-3 kali	Bayar
Pria	< 20 Tahun	Pelajar	Ya	1-3 kali	Transfer
Pria	> 40 Tahun	Pegawai Negeri Sipil	Ya	1-3 kali	Bayar
Pria	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Beli
Wanita	20-30 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	20-30 Tahun	Pelajar	Ya	1-3 kali	Bayar

Pria	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Transfer
Wanita	20-30 Tahun	Wiraswasta	Ya	1-3 kali	Beli
Pria	20-30 Tahun	Wiraswasta	Ya	1-3 kali	Bayar
Wanita	20-30 Tahun	Pegawai Swasta	Ya	1-3 kali	Transfer
Wanita	20-30 Tahun	Wiraswasta	Ya	1-3 kali	Transfer
Wanita	< 20 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	20-30 Tahun	Pegawai Negeri Sipil	Ya	1-3 kali	Beli
Wanita	31-40 Tahun	Wiraswasta	Ya	3-5 kali	Transfer
Pria	20-30 Tahun	Wiraswasta	Ya	1-3 kali	Transfer
Wanita	< 20 Tahun	Pelajar	Ya	1-3 kali	Beli
Pria	31-40 Tahun	Wiraswasta	Ya	1-3 kali	Transfer
Pria	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Bayar
Pria	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Beli
Wanita	< 20 Tahun	Pelajar	Ya	1-3 kali	Transfer
Wanita	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Transfer
Wanita	> 40 Tahun	Pegawai Swasta	Ya	1-3 kali	Bayar
Pria	> 40 Tahun	Pegawai Negeri Sipil	Ya	1-3 kali	Transfer
Wanita	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Beli
Pria	20-30 Tahun	Pegawai Negeri Sipil	Ya	3-5 kali	Beli
Wanita	< 20 Tahun	Pelajar	Ya	3-5 kali	Bayar
Pria	31-40 Tahun	Pegawai Swasta	Ya	3-5 kali	Transfer
Wanita	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Transfer
Wanita	< 20 Tahun	Pelajar	Ya	1-3 kali	Beli

Pria	31-40 Tahun	Pegawai Negeri Sipil	Ya	1-3 kali	Transfer
Wanita	20-30 Tahun	Pelajar	Ya	3-5 kali	Transfer
Pria	20-30 Tahun	Pegawai Swasta	Ya	1-3 kali	Bayar
Wanita	20-30 Tahun	Pelajar	Ya	5-7 kali	Transfer
Pria	20-30 Tahun	Pegawai Swasta	Ya	3-5 kali	Transfer
Wanita	31-40 Tahun	Wiraswasta	Ya	5-7 kali	Transfer
Wanita	20-30 Tahun	Pegawai Swasta	Ya	1-3 kali	Bayar
Wanita	31-40 Tahun	Pegawai Swasta	Ya	3-5 kali	Bayar
Wanita	20-30 Tahun	Pegawai Negeri Sipil	Ya	3-5 kali	E-cash
Pria	20-30 Tahun	Pegawai Swasta	Ya	3-5 kali	Transfer
Wanita	20-30 Tahun	Pegawai Negeri Sipil	Ya	5-7 kali	E-money
Wanita	20-30 Tahun	Wiraswasta	Ya	3-5 kali	Transfer
Pria	< 20 Tahun	Pelajar	Ya	1-3 kali	Transfer
Pria	20-30 Tahun	Wiraswasta	Ya	1-3 kali	Transfer
Pria	20-30 Tahun	Pegawai Negeri Sipil	Ya	3-5 kali	Bayar
Pria	31-40 Tahun	Pegawai Negeri Sipil	Ya	1-3 kali	E-money
Wanita	20-30 Tahun	Pegawai Negeri Sipil	Ya	3-5 kali	E-cash

APPENDIX 2: RESPONDENT DATA (RESEARCH INSTRUMENT VARIABLE)

Mobile Banking Service Quality															E-Customer Satisfaction					E-Customer Loyalty					
Personal Needs				Site Organization				User-Friendliness				Efficiency													
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3	4	5	2	5	3	4	2	5	3	4	2	4	2	3	5	3	4	3	4	5	3	4	2	3
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4	3	5	3	5	3	4	2	4	3	4	5	4	4	3	5	3	4	3	4	1	3	4	3	3
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3	2	4	3	4	3	4	2	4	2	3	4	4	2	3	5	2	3	4	2	4	3	2	3	2

APPENDIX 3: VALIDITY AND RELIABILITY RESULT

VALIDITY RESULT

PERSONAL NEEDS

		itemx1.1	itemx1.2	itemx1.3	itemx1.4	PN
itemx1.1	Pearson Correlation	1	.573**	.558**	.463*	.710**
	Sig. (2-tailed)		,001	,001	,011	,000
	N	30	30	30	29	29
itemx1.2	Pearson Correlation	.573**	1	.698**	.744**	.891**
	Sig. (2-tailed)	,001		,000	,000	,000
	N	30	30	30	29	29
itemx1.3	Pearson Correlation	.558**	.698**	1	.683**	.866**
	Sig. (2-tailed)	,001	,000		,000	,000
	N	30	30	30	29	29
itemx1.4	Pearson Correlation	.463*	.744**	.683**	1	.883**
	Sig. (2-tailed)	,011	,000	,000		,000
	N	29	29	29	29	29
PN	Pearson Correlation	.710**	.891**	.866**	.883**	1
	Sig. (2-tailed)	,000	,000	,000	,000	
	N	29	29	29	29	29

SITE ORGANIZATION

		itemx2.1	itemx2.2	itemx2.3	itemx2.4	SO
itemx2.1	Pearson Correlation	1	.715**	.468**	.597**	.605**
	Sig. (2-tailed)		,000	,009	,001	,001
	N	30	30	30	30	30
itemx2.2	Pearson Correlation	.715**	1	.608**	.479**	.710**
	Sig. (2-tailed)	,000		,000	,007	,000
	N	30	30	30	30	30
itemx2.3	Pearson Correlation	.468**	.608**	1	.546**	.794**
	Sig. (2-tailed)	,009	,000		,002	,000
	N	30	30	30	30	30
itemx2.4	Pearson Correlation	.597**	.479**	.546**	1	.778**
	Sig. (2-tailed)	,001	,007	,002		,000
	N	30	30	30	30	30
SO	Pearson Correlation	.605**	.710**	.794**	.778**	1
	Sig. (2-tailed)	,001	,000	,000	,000	
	N	30	30	30	30	30

USER-FRIENDLINESS

		itemx3.1	itemx3.2	itemx3.3	itemx3.4	UF
itemx3.1	Pearson Correlation	1	.732**	.734**	.338	.751**
	Sig. (2-tailed)		,000	,000	,067	,000
	N	30	30	30	30	30
itemx3.2	Pearson Correlation	.732**	1	.608**	.556**	.752**
	Sig. (2-tailed)	,000		,000	,001	,000
	N	30	30	30	30	30
itemx3.3	Pearson Correlation	.734**	.608**	1	.529**	.666**
	Sig. (2-tailed)	,000	,000		,003	,000
	N	30	30	30	30	30
itemx3.4	Pearson Correlation	.338	.556**	.529**	1	.518**
	Sig. (2-tailed)	,067	,001	,003		,003
	N	30	30	30	30	30
UF	Pearson Correlation	.751**	.752**	.666**	.518**	1
	Sig. (2-tailed)	,000	,000	,000	,003	
	N	30	30	30	30	30

EFFICIENCY

		itemx4.1	itemx4.2	itemx4.3	EFF
itemx4.1	Pearson Correlation	1	.691**	.614**	.907**
	Sig. (2-tailed)		,000	,000	,000
	N	30	30	30	30
itemx4.2	Pearson Correlation	.691**	1	.440*	.852**
	Sig. (2-tailed)	,000		,015	,000
	N	30	30	30	30
itemx4.3	Pearson Correlation	.614**	.440*	1	.787**
	Sig. (2-tailed)	,000	,015		,000
	N	30	30	30	30
EFF	Pearson Correlation	.907**	.852**	.787**	1
	Sig. (2-tailed)	,000	,000	,000	
	N	30	30	30	30

E-CUSTOMER SATISFACTION

		itemx5.1	itemx5.2	itemx5.3	itemx5.4	itemx5.5	ECS
itemx5.1	Pearson Correlation	1	.862**	.727**	.487**	.714**	.932**
	Sig. (2-tailed)		,000	,000	,006	,000	,000
	N	30	30	30	30	30	30
itemx5.2	Pearson Correlation	.862**	1	.700**	,308	.606**	.899**
	Sig. (2-tailed)	,000		,000	,098	,000	,000
	N	30	30	30	30	30	30
itemx5.3	Pearson Correlation	.727**	.700**	1	.619**	.651**	.875**
	Sig. (2-tailed)	,000	,000		,000	,000	,000
	N	30	30	30	30	30	30
itemx5.4	Pearson Correlation	.487**	,308	.619**	1	.757**	.609**
	Sig. (2-tailed)	,006	,098	,000		,000	,000
	N	30	30	30	30	30	30
itemx5.5	Pearson Correlation	.714**	.606**	.651**	.757**	1	.832**
	Sig. (2-tailed)	,000	,000	,000	,000		,000
	N	30	30	30	30	30	30
ECS	Pearson Correlation	.932**	.899**	.875**	.609**	.832**	1
	Sig. (2-tailed)	,000	,000	,000	,000	,000	
	N	30	30	30	30	30	30

E-CUSTOMER LOYALTY

		itemx6.1	itemx6.2	itemx6.3	itemx6.4	itemx6.5	ECL
itemx6.1	Pearson Correlation	1	.564**	.657**	.729**	.570**	.815**
	Sig. (2-tailed)		,001	,000	,000	,001	,000
	N	30	30	30	30	30	30
itemx6.2	Pearson Correlation	.564**	1	.723**	.710**	.656**	.874**
	Sig. (2-tailed)	,001		,000	,000	,000	,000
	N	30	30	30	30	30	30
itemx6.3	Pearson Correlation	.657**	.723**	1	.678**	.671**	.877**
	Sig. (2-tailed)	,000	,000		,000	,000	,000
	N	30	30	30	30	30	30
itemx6.4	Pearson Correlation	.729**	.710**	.678**	1	.592**	.866**
	Sig. (2-tailed)	,000	,000	,000		,001	,000
	N	30	30	30	30	30	30
itemx6.5	Pearson Correlation	.570**	.656**	.671**	.592**	1	.820**
	Sig. (2-tailed)	,001	,000	,000	,001		,000
	N	30	30	30	30	30	30
ECL	Pearson Correlation	.815**	.874**	.877**	.866**	.820**	1
	Sig. (2-tailed)	,000	,000	,000	,000	,000	
	N	30	30	30	30	30	30

RELIABILITY RESULT

PERSONAL NEEDS

Reliability Statistics

Cronbach's Alpha	N of Items
,860	4

Item Statistics

	Mean	Std. Deviation	N
itemx1.1	4,1667	,53067	30
itemx1.2	4,1667	,69893	30
itemx1.3	3,9667	,71840	30
itemx1.4	4,2000	,76112	30

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
itemx1.1	12,3333	3,747	,582	,866
itemx1.2	12,3333	2,851	,799	,775
itemx1.3	12,5333	2,878	,751	,797
itemx1.4	12,3000	2,838	,705	,820

SITE ORGANIZATION

Reliability Statistics

Cronbach's Alpha	N of Items
,837	4

Item Statistics

	Mean	Std. Deviation	N
itemx2.1	4,3333	,60648	30
itemx2.2	4,2667	,58329	30
itemx2.3	4,1667	,64772	30
itemx2.4	4,1667	,69893	30

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
itemx2.1	12,6000	2,593	,706	,778
itemx2.2	12,6667	2,644	,715	,776
itemx2.3	12,7667	2,599	,633	,809
itemx2.4	12,7667	2,461	,634	,813

USER-FRIENDLINESS

Reliability Statistics

Cronbach's Alpha	N of Items
,844	4

Item Statistics

	Mean	Std. Deviation	N
itemx3.1	4,4000	,56324	30
itemx3.2	4,3000	,53498	30
itemx3.3	4,2000	,55086	30
itemx3.4	3,9667	,61495	30

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
itemx3.1	12,4667	2,051	,701	,792
itemx3.2	12,5667	2,047	,761	,768
itemx3.3	12,6667	2,023	,748	,772
itemx3.4	12,9000	2,162	,530	,871

EFFICIENCY

Reliability Statistics

Cronbach's Alpha	N of Items
,806	3

Item Statistics

	Mean	Std. Deviation	N
itemx4.1	4,2333	,67891	30
itemx4.2	4,0333	,71840	30
itemx4.3	4,3667	,61495	30

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
itemx4.1	8,4000	1,283	,771	,606
itemx4.2	8,6000	1,352	,636	,759
itemx4.3	8,2667	1,651	,570	,816

E-CUSTOMER SATISFACTION

Reliability Statistics

Cronbach's Alpha	N of Items
,899	5

Item Statistics

	Mean	Std. Deviation	N
itemx5.1	4,2667	,58329	30
itemx5.2	4,2333	,62606	30
itemx5.3	4,2667	,63968	30
itemx5.4	4,3667	,61495	30
itemx5.5	4,4000	,56324	30

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
itemx5.1	17,2667	4,202	,832	,858
itemx5.2	17,3000	4,286	,716	,884
itemx5.3	17,2667	4,064	,799	,865
itemx5.4	17,1667	4,557	,609	,907
itemx5.5	17,1333	4,326	,806	,865

E-CUSTOMER LOYALTY

Reliability Statistics

Cronbach's Alpha	N of Items
,902	5

Item Statistics

	Mean	Std. Deviation	N
itemx6.1	4,1000	,60743	30
itemx6.2	4,0667	,78492	30
itemx6.3	4,1667	,64772	30
itemx6.4	4,0333	,61495	30
itemx6.5	4,1667	,64772	30

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
itemx6.1	16,4333	5,495	,719	,889
itemx6.2	16,4667	4,671	,774	,881
itemx6.3	16,3667	5,137	,803	,871
itemx6.4	16,5000	5,293	,792	,874
itemx6.5	16,3667	5,344	,718	,889

APPENDIX 4: REGRESSION ANALYSIS RESULT

SIMPLE REGRESSION ANALYSIS RESULT

E-SERVICE QUALITY TOWARD E-CUSTOMER SATISFACTION

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	ESQ ^a	.	Enter

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.861 ^a	,741	,739	1,58617

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1243,923	1	1243,923	494,420	.000 ^a
	Residual	435,254	173	2,516		
	Total	1679,177	174			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,498	,787		,633	,527
	ESQ	,326	,015	,861	22,236	,000

E-SERVICE QUALITY TOWARD E-CUSTOMER SATISFACTION

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	ESQ ^a	.	Enter

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.800 ^a	,641	,639	1,67925

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	869,554	1	869,554	308,365	.000 ^a
	Residual	487,841	173	2,820		
	Total	1357,394	174			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,350	,833		4,021	,000
	ESQ	,273	,016	,800	17,560	,000

E-CUSTOMER SATISFACTION TOWARD E-CUSTOMER LOYALTY

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	ECS ^a	.	Enter

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.748 ^a	,559	,556	1,86008

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	758,833	1	758,833	219,323	.000 ^a
	Residual	598,561	173	3,460		
	Total	1357,394	174			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5,848	,820		7,134	,000
	ECS	,672	,045	,748	14,810	,000

MULTIPLE REGRESSION ANALYSIS

E-SERVICE QUALITY AND E-CUSTOMER SATISFACTION TOWARD E-CUSTOMER LOYALTY

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	ECS, ESQ ^a	.	Enter

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.816 ^a	,666	,662	1,62394

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	903,801	2	451,901	171,358	.000 ^a
	Residual	453,593	172	2,637		
	Total	1357,394	174			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,996	,811		3,693	,000
	ESQ	,187	,028	,549	6,665	,000
	ECS	,273	,076	,297	3,604	,000



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Internet banking service quality and its implication on e-customer satisfaction and e-customer loyalty

1 Introduction

Internet banking has customers who interact through network technology, whereas traditional banking interacts with customers on non-website based settings. However, internet banking services have unique characteristics that traditional banking services do not possess. For example, internet banking provides the customers to carry out a range of banking activities electronically at any time and place with low handling cost (Angelakopoulos & Mihiotis, 2011; Narayanasamy, Rasiah, & Tan, 2011; Nor & Pearson, 2008; Weir, Anderson, & Jack, 2006; Yoon & Steege, 2013). In this way, internet banking plays an important role in reducing operating and fixed costs (Chen, Hsiao, & Hwang, 2012; Fonseca, 2014; Zhao, Koenig-Lewis, Hanmer-Lloyd, & Ward, 2010) and helps the bank in building better relationship with their customers (DeYoung, Lang, & Nolle, 2007; Ribbink, Van Riel, Liljander, & Streukens, 2004; Rod & Ashill, 2010; Rod, Ashill, Shao, & Carruthers, 2009). In Malaysia, the development of internet banking has a great potential and has grown significantly along with the use of smart phones and tablets; and the penetration rate of internet is half of the country's population. As per March 2014, the number of internet banking subscribers is 52.9% over the 15.9 million (Bank Negara Malaysia Report, 2014). Despite the increasing number of internet banking users, the customer adoption of internet banking has not yet reached the expected levels. One of the common concerns that have been emphasized about the adoption of internet banking is poor service quality and customer dissatisfaction (Calisir & Gumussoy, 2008; Li-hua, 2012; Zhao et al., 2010). In fact, the main barrier for customer intention to use internet banking services is relate to the user habits.. Additionally, customers are struggling to change their habits, behaviors, the way they interact with its internet banking services offer (Alsajjan & Dennis, 2010; Chemingui, 2013; Chen & Teng, 2013; Hanafizadeh, Keating, & Khedmatgozar, 2014; Khalil, Nor, Sutanonpaiboon, & Mastor, 2010; Nor & Pearson, 2008). The potential customers' readiness to adopt the technology is also a significant factor (Al-Ajam & Md Nor, 2015; Al-alak, 2014; Chiou & Shen, 2012; Giordani, Floros, & Judge, 2014; Harrison, Onyia, & Tagg, 2014; Rezaei, Amin, & Wan Ismail, 2014). Interestingly, (Karjaluoto, Mattila, & Pento, 2002) found lack of consumer skills and experience with computers and technologies, which influence the consumer attitude toward internet banking. In addition, interpersonal, social network, security concerns (Hasim & Salman, 2010), habit and personality traits (McNeish, 2015) are the main criteria which influence customers to use internet banking. In fact, the lack of awareness and understanding of the benefits of internet banking services is also a notable issue (Guriting & Ndubisi, 2006; Harrison et al., 2014; Laforet & Li, 2005; Liu, Jing, & Huang, 2005; Suzanne Harrison, Peter Onyia, & K. Tagg, 2014; Thakur, 2014; Wu, Tao, & Yang, 2012; Zhao, Hanmer-Lloyd, Ward, & Goode, 2008).

The way customer perceives the service quality of a website-based settings is different from that of traditional services. Thus, investigating the service quality in the internet banking industry is important (Choudhury, 2013; George & Kumar, 2014; Ho & Lin, 2010; Kaura, Prasad, & Sharma, 2015; Ranaweera & Sigala, 2015; Singh & Kaur, 2013). It is important not only to understand how customers evaluate the integrated internet banking service processes, but

also to identify the main dimensions which measures integrated service quality in internet banking. Previous research on service quality mostly have been validated in Europe and North America using SERVQUAL or SERVPERF measurement scales; it is likely that the cultural difference of customers will influence its applicability in Malaysia context. For example, (Karatepe, Yavas, & Babakus, 2005) suggested that service quality scales developed in one culture may capture service quality sentiments in another culture. In addition, the different interpersonal designs of different industry may also differ from one country to another (Black, Childers, & Vincent, 2014; Brady & Robertson, 2001; Chen et al., 2012). To accomplish this gap, relevant items from internet banking service quality scales (Herington & Weaven, 2009; Ho & Lin, 2010) are adapted and incorporated. This approach is more appropriate and emphasizes on technical aspects of web site rather than traditional service quality dimensions. Moreover, bank customers are becoming more open to competitive advancements, thus internet service quality alone may not be sufficient to ensure long-term relationship between the customers and the banks (Brun, Rajaobelina, & Ricard, 2014). Consequently, customer satisfaction and loyalty have been identified as an important factor in building and maintaining the relationship with their customer in order to reduce the perceived risk of using internet banking (Aldas-Manzano, Ruiz-Mafe, Sanz-Blas, & Lassala-Navarré, 2011; Chen, 2013; Chen et al., 2012; Dahlstrom, Nygaard, Kimasheva, & Ulvnes, 2014). Additionally, (Black et al., 2014) explain that service quality has a stronger relationship with customer outcomes when services are inseparable or relational. This situation has directed many banks to undertake high levels of marketing effort and upgrading of internet banking technology in order to increase the relationship with their customers. Although previous research has attempted to investigate the relationship between customer satisfaction and customer loyalty across several industries, there is lack of research in this area in relation to Malaysian internet banking context. In fact, overall results can be different from one researcher to another depending on measurement scales used in their study. This study attempts to investigate the structural relationship between internet banking service quality, e-customer satisfaction, and e-loyalty based on distinct constructs. In this study, the construct and model of e-satisfaction developed by (Herington & Weaven, 2009; Ribbink et al., 2004) and e-customer loyalty by (Ramseook-Munhurrin & Naidoo, 2011; Zeithaml, Berry, & Parasuraman, 1996) are applied to the context of internet banking industry. e-Customer satisfaction is measured as a multi-items measure to specify customer satisfaction and will be defined to transaction-specific judgments from internet banking perspectives (Bodet, 2008; Bressolles, Durrieu, & Senecal, 2014; Cronin Jr & Taylor, 1992; Herington & Weaven, 2009). Thus, customer loyalty is defined as consumer's intention to revisit the web site of internet banking in the future (Amin, Isa, & Fontaine, 2013; Ramseook-Munhurrin & Naidoo, 2011; Zeithaml et al., 1996). This research study makes a significant contribution to literature of bank marketing and academicians by explaining how internet banking service quality dimensions are used as a predictor of e-customer satisfaction and consequently increase e-customer loyalty. In this study, four key dimensions of internet banking service quality (personal need, site organization, user friendliness and efficiency of web sites), have been found as the main factors influencing e-customer satisfaction and loyalty. Therefore, a better understanding of these relationships will help the internet banking industry in developing the marketing strategies, maintaining long-term the relationship with their customers, and achieving competitive advantages in the global market.

2 Literature Review

2.1 Internet banking service quality

In the context of the internet, e-service quality is defined as a consumer's overall evaluation and judgment on the quality of the services that is delivered through the internet (Bauer, Falk, & Hammerschmidt, 2006; Liao, Yen, & Li, 2011; Parasuraman, Zeithaml, & Malhotra, 2005; Santos, 2003; Zeithaml, Parasuraman, & Malhotra, 2002). Based on this, e-service quality has been conceptualized as a base for interactive information service (Ghosh, Surjadja, & Antony, 2004). For this reason, (Rolland & Freeman, 2010) suggested that the conceptualizations of e-service quality must be expanded to the global level and e-service quality needs consideration on all aspect of the transaction, including service delivery, customer service and support.

Until today, numerous researchers have developed service quality concepts across different industries and countries (Aagja, 2010; Akram & Sultan, 2014; Angur, Natarajan, & Jahera Jr, 1999; Arasli, Katircioglu, & Mehtap-Smadi, 2005; Arasli, Mehtap-Smadi, & Katircioglu, 2005; Collier & Bienstock, 2006; George & Kumar, 2014; Gounaris, Dimitriadis, & Stathakopoulos, 2010; Guo, Duff, & Hair, 2008; Karatepe et al., 2005; Ladhari, Ladhari, & Morales, 2011; Raza, Jawaid, Hassan, & Burton, 2015). For example, (Carlson & O'Cass, 2011) highlight that consumers evaluate different dimensions of e-service delivered in order to form an overall evaluation of e-service quality. The findings conclude that the dimensions of e-service quality, i.e. environment quality, delivery quality and outcome quality are antecedents to global e-service quality measurement. In online banking industry, (Herington & Weaven, 2009) found four dimensions of E-ServQual: personal needs, site organization, user-friendliness, and efficiency; and all factors are rated as an important factor to determine the e-service quality. Similarly, (Jayawardhena, 2004) proposed five dimensions to measure e-service quality: access, web interface, trust, attention, and credibility, and concluded that customers specified the notion that service quality in e-banking is largely determined by web elements. Additionally, (Rod et al., 2009) explored three dimensions of service quality that influence overall internet banking service quality: customer service quality, online information system quality, banking service product quality. In Greece, (Santouridis, Trivellas, & Reklitis, 2009) investigated internet service quality and its impact on customer satisfaction in the banking context by adopting an instrument, which is based on SERVQUAL and found that e-service quality are consists of six dimensions: assurance, quality of information, responsiveness, web assistance, empathy and reliability. The findings confirm that familiarization-related dimensions, such as empathy and web assistance, play an important role in customers' willingness to recommend the service to other people. In Taiwan, (Ho & Lin, 2010) found five dimensions for measuring e-service quality of internet banking, namely: customer service, web design, assurance, preferential treatment, and information provision. In Hong Kong, (Siu & Mou, 2005) attempted to examine customers' service quality perceptions in internet banking and four analytical dimensions are identified: credibility, efficiency, problem handling and security. In Thailand, (Thaichon, Lobo, & Mitsis, 2014) reveal that service quality is influenced by network quality, customer service, information support, privacy and security. In Malaysia, (Poon, 2008) explored the determinants of users' adoption of e-banking services and found ten attributes: convenience of usage, accessibility, features availability, bank management and image, security, privacy, design, content, speed, and fees and charges.

However, there are some criteria that have not been elaborately emphasized yet, such as performance and security of banking transactions, as well as the confidentiality of personal account data (Aladwani, 2001; Aldás-Manzano, Lassala-Navarré, Ruiz-Mafé, & Sanz-Blas, 2009; Hanafizadeh & Khedmatgozar, 2012; Zhao et al., 2010). For example, (Zeithaml et al., 2002) explained that typically customers evaluate web sites and service quality delivery in terms

of information availability and content, ease of use or usability, privacy/security, graphic style, and fulfilment of purpose. Interestingly, (Zeithaml, Parasuraman, & Malhotra, 2000) suggest that personal service is not a critical element in e-SQ, except the situation when problems occur or where the customers adopt complex decisions. In this sense, customers do not necessarily expect to come across much empathy in an online setting, except when they have queries or problems (Barrutia & Gilsanz, 2009). Although, research on e-service quality (Bauer et al., 2006; Bressolles et al., 2014; Clemes, Gan, & Ren, 2010; Herington & Weaven, 2009; Jiang, Jun, & Yang, 2015; Kuo & Tang, 2013; Parasuraman et al., 2005; Wu & Ko, 2013; Zeithaml et al., 2002) has grown extensively and applied substantively through these instrument in variety of settings, still it been criticized. Generally, critics have questioned the multidimensional nature of the instruments, measurement scales, psychometric properties, and the feasibility of e-SERVQUAL as a framework in measuring e-service quality. Several researchers suggest that service quality should be based on a hierarchical concept (Brady & Cronin Jr, 2001; Clemes et al., 2010; Dabholkar, 1996; Dabholkar & Bagozzi, 2002; Dabholkar, Shepherd, & Thorpe, 2000; Dabholkar, Thorpe, & Rentz, 1995; Fassnacht & Koesse, 2006; Martínez & Martínez, 2010; Wu & Cheng, 2013; Wu & Hsu, 2012). More recently, (Carlson & O'Cass, 2011) adapted (Dabholkar et al., 2000) model for measuring e-service quality using measurement approach. They concluded that environmental quality, delivery quality and outcome quality are dimensions to measure e-service quality. Thus, it is argued that the service quality framework introduced by (Parasuraman, Zeithaml, & Berry, 1985; Parasuraman et al., 2005) may not achieve the same level of validity in online case (Sahadev & Purani, 2008). Therefore in this study, perceptions and reasoned actions are used as the basis for measuring e-service quality. The attributes of e-banking service quality are defined as multidimensional construct and adapted from literature based on the perspective of (Herington & Weaven, 2009; Ho & Lin, 2010). The dimensions are putting more emphasis on the importance of technical aspects of web site delivery, in contrast to the traditional service quality instruments which focus on the human elements.

2.2 e-Customer satisfaction

(Oliver, 1980) explained that customer satisfaction refers to meeting the customer's expectation on the products and services. If the perceived performance matches or even exceeds the customers' expectations of services, they are satisfied. If it does not, the customers are dissatisfied (Fullerton & Taylor, 2015; Oliver, 1993; Rust & Zahorik, 1993; Sharifi & Esfidani, 2014). Under this theory, consumers obviously will prefer positive disconfirmation than negative disconfirmation. This conclusion is relative because the assessment is a comparative process between the subjective experience and an initial reference or standard of comparison (Bressolles et al., 2014). In particular, there is no consensus in marketing literature in defining customer satisfaction, whether it is transactional or cumulative (Boulding, Kalra, Staelin, & Zeithaml, 1993; Cronin Jr & Taylor, 1994; Liébana-Cabanillas, Muñoz-Leiva, & Rejón-Guardia, 2013; Mittal, Kumar, & Tsiros, 1999). In this definition, the cumulative satisfaction is determined by satisfying and dissatisfying the customer with a product or service over time (Brun et al., 2014; Parasuraman, Zeithaml, & Berry, 1994a; Parasuraman, Zeithaml, & Berry, 1994b; Sharma, Niedrich, & Dobbins, 1999; Zeithaml, Berry, & Parasuraman, 1993), and the transactional is defined with a product or service in a single transaction (Boshoff, 1999, 2005; Cronin Jr & Taylor, 1994; Homburg, Koschate, & Hoyer, 2006; Høst & Knie-Andersen, 2004; Oliver, 1993). In the online context, (Szymanski & Henard, 2001) conceptualized e-satisfaction as the consumers' judgment on their internet experience as compared to their experiences with

traditional way of dealing with customers. Similarly, (Anderson & Srinivasan, 2003) explained e-satisfaction as the contentment of the customer with respect to his or her prior purchasing experience with a given e-commerce firm. In this study, satisfaction will be viewed as a separate construct from service quality and will be restricted to transaction-specific judgments definition (Amin et al., 2013; Cronin Jr & Taylor, 1992; Herington & Weaven, 2009; Ribbink et al., 2004). Previous research has identified various factors that determine e-customer satisfaction in the online banking sector. Some authors suggests that e-customer satisfaction is driven by web site characteristics (Anderson & Swaminathan, 2011; Bansal, McDougall, Dikolli, & Sedatole, 2004; Liébana-Cabanillas et al., 2013), and quality attributes (Collier & Bienstock, 2006; Cristobal, Flavián, & Guinalíu, 2007; Moon, Philip, & Moon, 2011; Wolfinbarger & Gilly, 2003). In this perspective, (Jeong & Lee, 2010) explained that product diversity, tangibles, responsiveness, interaction, and stability have significant impact on internet customer satisfaction. This means, the way in which the service is delivered through a web site plays a critical role in driving e-consumer satisfaction. In this context, (Liébana-Cabanillas et al., 2013) emphasized that internet banking customers are mostly satisfied with the internet accessibility, ease of use, usefulness, and trust. Consequently, positive (or negative) consumer perceptions of the quality on the various e-service attributes will result in satisfaction (or dissatisfaction) with the e-service provided through the web site (Carlson & O'Cass, 2011). For this reason, meeting or exceeding customer satisfaction expectations is important for internet banking as customers are more demanding to determine their expectations.

2.3 e-Customer loyalty

In literature, there are two dimensions to measure customer loyalty, namely, behavioral and attitudinal loyalty (Ball, Coelho, & Machás, 2004; Jacoby & Kyner, 1973; Kandampully, Zhang, & Bilgihan, 2015; Piha & Avlonitis, 2015). Behavioral loyalty refers to a customer's behavior to repurchase, due to their liking of a particular brand or service (Cyr, 2008; Jacoby & Chestnut, 1978; Jiang et al., 2015; Zeithaml et al., 1996). Although, this definition offers a relatively objective measurement of customer loyalty, however, this approach does not provide any proper explanation of the existence of loyalty (Høst & Knie-Andersen, 2004). Attitudinal loyalty reflects the emotional and psychological state of the customer to repurchase and to recommend to other people (Baumann, Hamin, & Tung, 2012; Bowen & Shoemaker, 1998; Hennig-Thurau, Gwinner, & Gremler, 2002; Hennig-Thurau, Langer, & Hansen, 2001; Wong & Zhou, 2006). According to this approach, merely describing the actual behavior of the consumer does not suffice, but a proper analysis and description is clearly required to understand the structure of the customer preferences (Høst & Knie-Andersen, 2004). In this sense, a key challenge is to identify and understand how to manage and control the antecedent variables that will affect customer loyalty.

In internet banking industry, (Anderson & Srinivasan, 2003) defined e-customer loyalty as the tendency of customers to continue using specific web site, frequently visit it, and show high site adhesion with high detention time. For this reason, (Gera, 2011) highlighted that the interaction experience with the web site is most critical in influencing customer's decision to return to the site and make positive recommendations to others. Similarly, (Caruana, 2002) and (Baumann et al., 2012) suggested that customers often develop an attitude toward purchasing behavior based on past experience. Therefore, focusing on e-customer loyalty is important for internet banking in order to maintain the relationship with their customers. In this context, the customers with high loyalty will frequently visit and recommend to others (Amin et al., 2013; Jeong & Lee, 2010), and this leads to high commitment to repurchase of a services or products

consistently in the future (Anderson & Swaminathan, 2011; Fraering & Minor, 2013; Kandampully et al., 2015; Ladhari et al., 2011; Melnyk & Bijmolt, 2015), and prevent them to create negative word of mouth and convey their negative impression to other customers (Amin, Isa, & Fontaine, 2011; Caruana, 2002; Kaur, Sharma, & Mahajan, 2012). Consequently, (Haron, Ahmad, & Planisek, 1994; Ndubisi & Ling, 2006) pointed out that in Malaysian culture; friends, neighbors and family members have a great influence on prospective customers when it comes to making decisions to patronize a financial institution. Therefore, in this study, e-customer loyalty refers to a consumer's intention to revisit the website for internet banking and to consider repurchase of a preferred product and service consistently in the future (Amin et al., 2013; Ramseook-Munhurrin & Naidoo, 2011; Zeithaml et al., 1996).

3 Hypotheses Development

3.1 *Internet banking service quality and e-customer satisfaction*

In the service literature, the causal relationship between banking service quality and customer satisfaction is the subject of great academic debate and no consensus on this issue has been reached (Babakus & Boller, 1992; Bahia & Nantel, 2000). Some researchers and academicians describe customer satisfaction as an antecedent of service quality (Bitner, Booms, & Tetreault, 1990; Carman, 1990; Parasuraman et al., 1985), and others have argued that the service quality is an antecedent of customer satisfaction (Amin & Isa, 2008; Anderson & Sullivan, 1993; Cronin Jr, Brady, & Hult, 2000; Cronin Jr & Taylor, 1992; Kashif et al., 2015; Sheng & Liu, 2010; Yap, Ramayah, & Shahidan, 2012). In banking sector, (Joseph & Stone, 2003) have highlighted that the availability of internet banking services delivery and user friendliness appears to be correlated with high customer satisfaction and retention. Similarly, (Rod et al., 2009) found that when overall internet banking service quality is perceived to be high, customers are more likely to be satisfied with their online service and consequently will be more satisfied with their banks. For this reason, (Anderson & Srinivasan, 2003) suggests that e-customer satisfaction is likely to be driven by web site characteristics (e.g. ease of use), since the web site is the principle interface between the customer and the firm. Consequently, positive customer perceptions of the quality of the various e-service attributes will result in satisfaction with the e-service provided through the web site (Carlson & O'Cass, 2011; Cristobal et al., 2007; Kaura et al., 2015; Raza et al., 2015; Singh & Kaur, 2013). In addition, (Bressolles et al., 2014) suggest that although e-customer satisfaction is influenced by web site attributes, different consumers will be affected differently. Additionally, (Black et al., 2014) explain that relationship between service quality and customer satisfaction is stronger for those that are less technically complex of services. In this situation, customers who have information technology skills can easily use the internet banking service, and they will have higher-satisfaction levels than others (Herington & Weaven, 2009; Ho & Lin, 2010; Lang & Colgate, 2003; Li-hua, 2012). Consequently, internet service quality will also influence customers to revisiting the internet web site and deliver positive word-of-mouth to other customers (Carlson and O'Cass, 2010). Hence, the following research hypotheses are proposed:

H1 Internet banking service quality has a positive relationship with e-customer satisfaction

H3 Internet banking service quality has a positive relationship with e-customer loyalty

3.2 *e-Customer satisfaction and e-customer loyalty*

Many studies have provided empirical evidence to support the statement that customer satisfaction has positive relationship on repurchase intention and customer loyalty (Aksoy, 2014; Amin et al., 2013; Baumann, Elliott, & Hamin, 2011; Baumann et al., 2012; Bloemer, De Ruyter,

& Peeters, 1998; Cronin Jr et al., 2000; Kashif et al., 2015; Kassim & Abdullah, 2010; Nguyen & Leblanc, 2002; Sharifi & Esfidani, 2014; Thaichon et al., 2014; Zeithaml et al., 1996). For example, (Ramseook-Munhurrin & Naidoo, 2011) found that there is a significant relationship between e-customer satisfaction and e-customer loyalty in internet banking. Accessibility is the foremost important aspect in determining e-customer satisfaction, while security is also important determinant of behavioral intentions. Similarly, (Gera, 2011) found that e-customer satisfaction is a direct antecedent of positive recommendation intentions, and leads to positive word-of-mouth (Baumann et al., 2011; Kaura et al., 2015; Levy, 2014; Sotiriadis & van Zyl, 2013), and behavioral intention (Baumann et al., 2012; Cronin Jr et al., 2000; Szymanski & Henard, 2001; Zeithaml et al., 1996). It seems that consumers who are satisfied with internet banking are more likely to engage in a consistent relationship with internet banking in future and demonstrate a more loyal behavior (Al-alak, 2014; Gounaris et al., 2010; Levy, 2014; Martín-Consuegra, Molina, & Esteban, 2007; Wong & Zhou, 2006). However, when dissatisfaction is felt, customers are likely to complain about the service and engage in negative word-of-mouth (Caruana, 2002; Kandampully et al., 2015; Ryngelblum, Vianna, & Rimoli, 2013), and they will react negatively and switch to other service providers (Amin et al., 2011; Athanassopoulos, Gounaris, & Stathakopoulos, 2001; Laksamana, Wong, Kingshott, & Muchtar, 2013; Wirtz, Mattila, & Tan, 2007). In this sense, if the internet banking fails to provide channels which the customers need, they will find more difficulty in developing a relationship with their customers (Amin et al., 2013; Bloemer et al., 1998; Levy, 2014). -As a result, customer who satisfied with internet banking will exhibit high loyalty toward their bank. For this reason, e-customer satisfaction is considered as important determinant of e-customer loyalty. Thus, the following research hypothesis:

H2 e-Customer satisfaction has a positive relationship with e-customer loyalty

4 Methodology

4.1 Data collection process

Data was collected through a developed structured questionnaire as measurement tool. Since no sampling frame was available, samples could not be obtained through probability sampling method. A convenience sampling approach was used in this study. The interviewers visited and distributed the questionnaires by hand to the customers outside the bank counters. Respondents were selected among those customers who visited the sampled banks during day time and at various days for a week or a month. Respondents were customers visiting the counters of banks and had experienced with internet banking services prior to completing the survey. However, in answering the questions, various controls and filter questions were put in place to ensure the quality of the survey. The purpose of the filter questions was to make sure that the respondents fit the two basic restrictions, being 18 years old or over, and have experienced with internet banking transaction. The last filter question was to ensure that the respondents agreed to participate in this survey and respondents were assured of confidentiality. They were politely approached and the purpose of the study was explained. This study was conducted in four different cities in Malaysia by four trained interviewers during December 2012 to April 2013 period. In Malaysia, 31 local and international banks are offering internet banking services (Bank Negara Malaysia Report, 2013). In this study, ten commercial banks and forty branches were selected in four different cities in Peninsula Malaysia. Twenty five respondents from each

branch and city were involved. The ten commercial banks consisting of AmBank, Alliance Bank, Bank Muamalat, Bank Islam Malaysia Berhad, CIMB Bank, CIMB Islamic Bank, Hong Leong Bank, Maybank, Public Bank, and RHB Bank. Ten commercial banks were selected based on accessibility and have more branches across the country. Two cities represent levels of economic development in the southern area (Johor Bahru, and Melaka), one city represent the north area with developing economic growth (Pulau Pinang), one city represent the east coast area (Kuantan), and two cities represent the central areas where most commercial banks in Malaysia locate their head offices (Kuala Lumpur and Shah Alam). The selection of bank branches across a spread of different cities has the purpose of enhancing the generalizability of the findings and representation of internet banking customers. The banking sectors were chosen because they represent one of the typical service sectors involved in developing economic growth in Malaysia. In this study, online administration of the survey was not adopted due to low response rate (Herington & Weaven, 2009).

4.2 Questionnaires design

Internet banking service quality was measured using the items from (Herington & Weaven, 2009) and (Ho & Lin, 2010). e-Customer satisfaction was measured using a five-items previously used by (Herington & Weaven, 2009; Ramseook-Munhurrin & Naidoo, 2011; Ribbink et al., 2004) in their internet banking research. Five items to measure e-customer loyalty were adapted and modified from (Amin et al., 2013; Ramseook-Munhurrin & Naidoo, 2011; Ribbink et al., 2004; Zeithaml et al., 1996). The modifications consisted of substituting questionnaire items particularly suited to a specific service industry (internet banking) and context (Malaysia). The questionnaire was written in both Bahasa Malaysia and English language to ensure clarity, and their content validity (wording and meaning) was checked carefully by two Malaysians experts. A pre-test was then conducted to improve questionnaire structure and content. Fifty questionnaires were distributed to bank customers who have experienced using internet banking in Kuala Lumpur, and minor changes to the scales were made accordingly to ensure that the questions were not repetitive. Pilot test respondents were not used in the further analysis. A five-point Likert scale was used to measure internet banking service quality and e-customer loyalty from 'strongly disagree' (1) to 'strongly agree' (5). In addition, to measure e-customer satisfaction, a five-point scale was used, ranging from 'strongly dissatisfied' (1) to 'strongly satisfied' (5).

A total of 1000 questionnaires were distributed and 520 were returned (resulting 52 percentage of response rate). According to (Anderson & Gerbing, 1988; Hair, Black, Babin, & Anderson, 2010; Hair, Sarstedt, Ringle, & Mena, 2012b), this sample size should be sufficient to obtain a converged and proper AMOS solution for models with three or more indicators per factor. Five questionnaires were considered invalid because respondents did not completed the answer. Table 1 presents the demographics of the sample. Females account for 61.3 and males 38.7 percent of the internet banking customers. Interestingly, most of respondents were under 30 years of age and the majority was in the age group 20-30 years old (60.6% of total respondents). In this context, younger generation prefers to use internet banking services compared to older age groups (30 years old above). In addition, majority respondents claimed that they use internet for 1–3 hours daily (37.3%), followed by 2-5 hours (19%), below 1 hour (17%), 7 hours above with 15.2%, and 5-7 hours (11.5%).

5 Measurement Model

The purpose of a measurement model is to describe how well the observed indicators serve as a measurement instrument for the latent variables. To assess the measurement model, two step analysis processes were employed in this study. First, a confirmatory factor analysis was employed to specify the pattern by which each measure loads on a specific factor (Anderson & Gerbing, 1988; Byrne, 2013; Hair et al., 2010). Second, the squared multiple correlation was conducted to measure each indicator and how well an item measures a construct (Amin & Isa, 2008; Hair et al., 2010; Holmes-Smith, 2001). A first-order of CFA model for internet banking service quality was conducted to examine the measurement model using AMOS 19. The first order CFA result showed that the goodness-of fit was moderately satisfied. The results show that the chi square is significant ($\chi^2 = 161.269$, $\chi^2 / \text{degree of freedom}$ (χ^2 / df) ratio 2.273, $p = 0.000$). Meanwhile, the GFI value is 0.957, RMSEA value 0.05, and CFI value 0.982. By checking the squared multiple correlations for each measurement item, no items were deleted as the R^2 values were more than 0.5 (Holmes-Smith, 2001). As a result, the measurement model retained 14 observed indicators from the original that were derived to estimate the model fit. Accordingly, the second order CFA was run in order to examine the parameter. The measurement model result shows that the goodness-of fit was moderately satisfied. The chi-square shows is significant ($\chi^2 = 163.051$, $\chi^2 / \text{degree of freedom}$ (χ^2 / df) ratio 2.234, $p = 0.000$). Meanwhile, the GFI value is 0.956, RMSEA value 0.04, and CFI value 0.982. Table 2 shows the results of the first order and second order CFA for internet banking service quality. Thus, the results show that 14 items of the second-order CFA model of four dimensions fitted the sample data. Similarly, a CFA was employed to examine e-customer satisfaction and e-customer loyalty. The results of CFA show that the goodness-of-fit was moderately satisfied. The chi-square is significant ($\chi^2 = 276.388$, $\chi^2 / \text{degree of freedom}$ (χ^2 / df) ratio 6.428, $p = 0.000$). Meanwhile, the GFI value is 0.902, RMSEA value 0.10, and CFI value 0.942.

Insert Table 1 here

Insert Table 2 here

Table 3 shows the factor loadings, Cronbach's alpha, average variance extracted (AVE) for internet banking service quality, e-customer satisfaction, and e-customer loyalty. To test the reliability of internet banking service quality, e-customer satisfaction, and e-customer loyalty in instruments, the Cronbach's alpha coefficient was computed. The coefficient alpha exceeded the minimum standard of 0.70 (Nunnally, 1979), which indicates that it provides a good estimate of internal consistency. The coefficient alpha obtained greatly exceeded the minimum acceptable values 0.881, 0.916, 0.904, 0.851 for the internet banking service quality dimensions (personal need, site organization, user friendliness, and efficiency of website). Meanwhile, for e-customer satisfaction and e-customer loyalty, the coefficient alpha obtained values that exceed the maximum value suggested (0.915 and 0.906, respectively). The values indicate good reliability of the data set. To assess the convergent validity for each construct, the standardized factor loadings were used to determine the validity of the constructs (Anderson & Gerbing, 1988; Hair et al., 2010). Convergent validity can be ascertained if the loadings are greater than 0.5 (Bagozzi & Yi, 1988c, 1991; Fornell & Larcker, 1981), composite reliability greater than 0.7 (Hair et al., 2010) and the average variance extracted is greater than 0.5 (Fornell & Larcker, 1981). The findings indicate that each factor loading of the reflective indicators ranged from 0.699 to 0.957 and exceeded the recommended level of 0.50. As each factor loading on each construct was more

than 0.50, the convergent validity for each construct (internet banking service quality, e-customer satisfaction, and e-customer loyalty) were established, thereby providing evidence of construct validity for all the constructs in this study (Anderson & Gerbing, 1988; Hair et al., 2010). In addition, AVE was calculated for assessing discriminant validity for the constructs (Black et al., 1998; Hair et al., 2010), and the AVE ranged from 0.623 to 0.735. Table 4 shows the discriminant validity of the constructs, since the square root of the AVE between each pair of factors was higher than the correlation estimated between factors, thus ratifying its discriminant validity (Bagozzi & Yi, 1988a; Black et al., 1998; Hair et al., 2012b).

Insert Table 3 here

6 Structural Equation Modelling

A structure equation modelling of internet banking service quality, e-customer satisfaction, and e-customer loyalty were conducted to estimate the parameters. Figure 1 shows the effect structural model of internet banking service quality on e-customer satisfaction and e-loyalty ($p < 0.001$). This model starts from the first-order constructs of service quality measurement scale, consisting of four dimensional structures: personal need, site organization, user friendliness, and efficiency of web site to measure internet banking service quality. The dimension of personal need are measured by three indicators, site organization by four indicators, user friendliness by four indicators, and efficiency of web site by three indicators. Meanwhile, e-customer satisfaction and e-loyalty are measured by five indicators for each dimension. The findings suggest that the structure model of internet banking service quality dimensions is a good determinant of e-customer satisfaction and e-customer loyalty.

Insert Figure 1 here

Insert Table 5 here

Table 5 show the results, which indicate the acceptable goodness-of-fit model. The chi-square are significant ($\chi^2 = 884.001$, $\chi^2/\text{degree of freedom}$ (χ^2/df) ratio 3.286, $p = 0.000$). The model has a RMSEA value of 0.07, which is below range level and considered satisfactory. The CFI value of 0.936 and NFI of 0.925 indicated that the model is satisfactory, since the value is above 0.90 (Anderson & Gerbing, 1988; Hair et al., 2010; Hair, Sarstedt, Pieper, & Ringle, 2012a; Hair et al., 2012b). Overall, the values are close to the threshold, and, thus, they are represent an acceptable model fit.

The standardized parameter estimates and significant values for the hypothesis relationships are presented in Table 5. The significant path coefficient has shown that the efficiency of web site and site organization dimension had the most important impact on internet banking service quality, followed by user friendliness and personal need, respectively. The standardized path was 0.822 for efficiency of web site, 0.782 for site organization, 0.697 for user friendliness, and

0.487 for personal need, respectively. The results show that internet banking service quality has a positive relationship with e-customer satisfaction ($\beta = 0.810$; $p = 0.001$), thus *H1* is supported. However, there has no positive relationship between internet banking service quality on e-customer loyalty, thus, *H2* is not support. There is a positive relationship between e-customer satisfaction and e-loyalty ($\beta = 0.648$; $p = 0.001$), thus, *H3* is supported.

7 Discussions and managerial implications

The purpose of this study is to examine the internet banking service quality and its implication on e-customer satisfaction and e-customer loyalty in the context of Malaysia internet banking. The results confirm that the all four dimensions (personal need, site organization, user friendliness, and efficiency of web site) are distinct constructs. The results also indicate that internet banking service quality consisting of four dimensions has appropriate reliability and each dimension has a significant relationship with internet banking service quality. The internet banking service quality dimensions identified in this study are associated to technology based-banking industry. Therefore, in order to maintain a high level of internet banking service quality, the internet banks should pay attention to all four dimensions identified. In this study, the efficiency of web site is found to be the key driver of internet banking service quality, followed by site organization, user friendliness, and personal need, respectively. It means that customers are looking for banks that provide services that can complete a transaction quickly on web site, and easily accessible. In other words, customers are paying more emphasize on the efficiency of web site dimensions than other dimensions as key factor in establishing relationship with their banks. Therefore, internet banking is required to focus on strategic choice in increasing consumer awareness and acceptance of new technology (banking system) in order to gain competitive advantage. This finding was in consistent with (Herington & Weaven, 2009; Sohail & Shaikh, 2008) who stated that efficiency of web site is the most influencing factor in user's evaluation of internet banking service quality and the online banking customers are more focusing on download speed and completing a transaction quickly. Findings of the present study support the results of research by (Ho & Lin, 2010) on online banking, customers expect to complete their transactions correctly, on time, and have their e-mails response quickly. Similarly, (Thaichon et al., 2014) suggests that by enhancing service quality, firms can influence customers' satisfaction, value, trust and commitment, which are important for firms' long-term sustainability. Therefore, the internet banking has to make sure that these expectations are met accordingly. For example, if a customer has a bad experience in regards to the interactivity of functionality of the internet banking web site, then a customer might make overall internet banking service quality judgment before a transaction took place. In order to provide a good quality of internet services, internet banking should provide their customers with effective and efficient web site in a suitably presented environment and update the technology development (Chemingui, 2013; Chen & Teng, 2013; Collier & Bienstock, 2006; Herington & Weaven, 2009; Ho, Kuo, & Lin, 2012; Jayawardhena, 2004). For this reason, (Ho et al., 2012) emphasizes more the importance of physical (system functions and interface) and psychological attributes (services, information, attitudes) in understanding the dynamics of online customer behavior. Additionally, (Ho et al., 2012) discover that quality plays an important part on internet searching behavior in two ways: improving the effectiveness and efficiency of web sites, and users' acceptance of the web site systems. Nowadays, customers are easily to find a large number of alternative banking sites, therefore, the main drivers of internet banking are depend on banking

websites functionality and user interface (Vatanasombut, Igbaria, Stylianou, & Rodgers, 2008).

H1 indicating that internet banking service quality has a positive relationship with e-customer satisfaction. As a result supports that the higher levels of internet banking service quality will significant effect to have a high level of e-customer satisfaction. From four constructs of internet banking service quality, efficiency of web site is the most important predictor of e-customer satisfaction. In addition to relationships between internet banking service quality and e-customer satisfaction, prior research suggested that internet banking service quality has a positive relationship with e-customer satisfaction (Carlson & O'Cass, 2011; Herington & Weaven, 2009; Ho et al., 2012; Kaura et al., 2015). For example, (Herington & Weaven, 2009) highlights that internet banking service quality dimensions, such as efficiency of website is plays significant role in enhancing e-customer satisfaction. Additionally, (Bressolles et al., 2014) suggests that managers should pay attention in upgrading usability aspects of their navigation interface and focus on security or privacy aspects in order to maintain the relationship with their customers.

H2 and *H3* states that internet banking service quality has a positive relationship with e-customer loyalty, and e-customer satisfaction has positive relationship with e-customer loyalty. Although, the results support *H3*, however, internet banking service quality has no positive relationship with e-customer loyalty, thus *H2* is not supported. This finding is consistent with the results found in the previous study (Al-hawari, 2015; Al-Hawari, 2014; Casaló, Flavián, & Guinalíu, 2008; Ganguli & Roy, 2011; Kashif et al., 2015; Levy, 2014; Ranjan, Sugathan, Rossmann, & Martin, 2015). This may indicate that bank customers do not feel that having excellent internet bank service quality will not have positive impact on e-customer loyalty. However, the results report that internet service quality has an indirect effect on e-customer loyalty via e-customer satisfaction. This indirect effect of internet banking service quality on e-customer loyalty discloses a new contribution to the existing literature that internet banking service quality has not been measured as a predictor factor of e-customer loyalty. In this context, (Casaló et al., 2008) suggests that the ability of internet banking in terms of manageability of internet service quality will enhance e-customer satisfaction and e-loyalty. In fact, (Carlson & O'Cass, 2011) concluded that if e-service is delivered and evaluated as being of sufficient quality, then satisfaction with the service delivered will be a result. Similarly, (Casaló et al., 2008) shows that satisfaction with previous interactions with the bank's web site have a positive effect on customer loyalty and positive word-of-mouth (WOM). Additionally, (Baumann, Burton, Elliott, & Kehr, 2007) highlight that when customers are satisfied with a particular bank and they are willing to recommend their bank to others. As a result, the more satisfied customers with their banks, the more loyal and committed to the bank they developed. As a result, when customers are dissatisfied and they are willing to switch their banks to others (Amin et al., 2011; Collier & Bienstock, 2006; Fang, Chiu, & Wang, 2011; Laksamana et al., 2013; Ranaweera & Prabhu, 2003).

Although this study suggests that the higher level of e-customer satisfaction leads to a lower intention to leave the relationship and has the potential to increase e-customer loyalty, however, the intention of consumers to maintain the relationship with the internet banking largely depends on the satisfaction or dissatisfaction with their present services provider.

Therefore, internet banking needs to improve the relationship between bank and customers, and –will raise the customer trust towards internet banking transactions. However, the correlation between e-satisfaction and e-loyalty becomes less important as risk perception increased. For this reason, (Järvinen, 2014) highlights that bank managers should take actions by reducing the levels of perceived risk in high-complexity banking services and maintaining customer service at high priority. If internet banking successful in transmitting a low perceived risk image, a risk-averse consumer will prefer to stay loyal, and this situation, the relationship between e-customer satisfaction and e-customer loyalty is stronger when perceived risk is significantly reduced (Aldas-Manzano et al., 2011; Dahlstrom et al., 2014). For this reason, the customers should perceive a feeling that the operations of internet banking system are secured and the legitimate of internet banking operation are backed up by the Central Bank of Malaysia. Thus, it will create confidence that Malaysia government rules are sufficiently enough to monitor internet banking. This has significant impact on consumer behavior decisions and influences their perceptions towards internet banks. This are consistent with (Laforet & Li, 2005) and (Zhou, 2011) who highlighted that consumers emphasize more on security aspects, and customers will hesitate to deal with their banks if they do not trust the internet banking transactions (Kshetri, 2013). If trust for internet banking is established accordingly, then the customer is more likely to accept it as a complementary in doing their online transactions (Dahlstrom et al., 2014; McNeish, 2015; Yap, Wong, Loh, & Bak, 2010). In fact, if internet banking consumers sense that their transactions are unsafe, they will evacuate from the web site even before completing the transactions. Therefore, it is fundamental for internet banking to increase consumer trust, as the perceived risk is correlated to possible losses transaction is greater than in offline banking transactions (Aldas-Manzano et al., 2011; Mukherjee & Nath, 2003, 2007). For this reason, (Chemingui, 2013; Jan & Kalthom, 2014; Robert Hurley, Tahir Jan, & Abdullah, 2014; Yu, Balaji, & Khong, 2015; Zhao et al., 2010; Zhou, 2011) suggest that trust is plays important role in enhancing relationship between internet banks and customers. In addition, bank should proactively notify their customers that their personal data and all banking transactions are guarantee safely and kept confidentially. By providing numerous methods for customers to contact the online bank to get assistance is essential in improving the quality of the bank's online service operations. In fact, banks should provide online transaction procedures, information on how to deal with security problems, and instructions on how to use internet banking services securely. In addition, (Kassim & Abdullah, 2010; Rajaobelina, Ricard, Bergeron, & Toufaily, 2014; Yu et al., 2015) suggests that to encourage e-customer satisfaction and e-customer loyalty, the banks should develop online systems which are trustworthy, secured, responsive, personalized for their users, perceived security/privacy and information quality. In this context, banks should provide online transaction procedures, information on how to deal with security problems, and instructions on how to use internet banking services securely.

8 Limitations and future research

There are some limitations in this study. The total number of internet banking, sample size and covered areas of the study should be increased in order to achieve a proper result. For future research, additional internet service quality dimensions should be investigated such as interactivity and web site services ability. In addition, as suggested by (Dahlstrom et al., 2014; Yu et al., 2015) that perceived risk and trust constructs should be incorporated as determinant of e-customer satisfaction and loyalty for future research.

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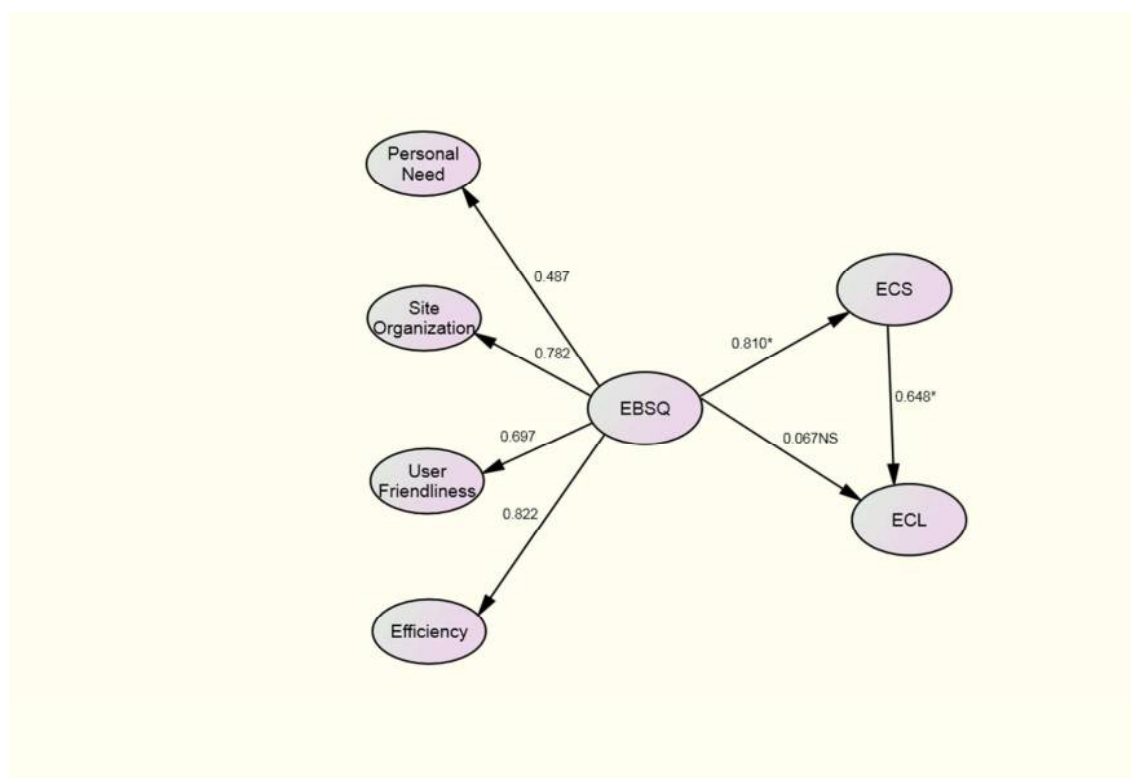


Figure 1. Research Model

Table 1
Sample characteristics (n = 520)

Construct	Classification	Number	Percentage (%)
Gender	Male	201	38.7
	Female	319	61.3
Age	18 – 24 year old	142	27.3
	25 – 34 year old	173	33.3
	35 – 44 year old	87	16.7
	45 – 54 year old	64	12.3
	55 and above	54	10.4
Occupation	Student	66	11.7
	Government employee	105	20.2
	Private employee	262	50.4
	Businessman	40	7.7
	Other	47	9.0
Education:	Certificate	61	11.7
	Diploma	186	35.8
	Degree	154	29.6
	Master	80	15.4
	PhD	25	4.8
	Others	14	2.7
Frequency used internet			
	1 hour below	89	17.0
	1-3 hours	194	37.3
	3-5 hours	99	19.0
	5-7 hours	60	11.5
	7 hours above	78	15.2

Table 2 Goodness-of-fit statistics for measurement model of internet banking service quality

Variable	GFI	CFI	χ^2 / df	RMSEA	Sig.
First-order CFA	0.957	0.982	2.273	0.05	0.000
Second-order CFA	0.956	0.982	2.234	0.04	0.000

Notes: First-order CFA = 14 items; Second-order CFA = 14 items

Table 3

Standardized factor loadings, average variance extracted (AVE) and composite reliability (CR).

Constructs	Items	Standardized Factor Loading	AVE	CR
Personal Need $\alpha = 0.881$	I feel completely safe when making transactions on the website of online banks	0.896	0.718	0.884
	I feel that my personal needs have been met when using the website of online banks	0.859		
	The website of online banks provides me with information and products according to my preferences	0.783		
Site Organization $\alpha = 0.916$	The website of online banks is simple to use	0.821	0.735	0.917
	The website of online banks is well organized	0.811		
	I can get on to the website of online banks quickly	0.876		
	Website of online banks design is user friendly	0.917		
User Friendliness $\alpha = 0.904$	The website of online banks is user-friendly	0.801	0.704	0.905
	Navigation on the website of online banks is easy	0.865		
	The website of online banks launches and runs right away	0.856		
	Pages at the website of online banks do not freeze	0.832		
Efficiency of Websites $\alpha = 0.851$	It is easy to find what I need on the website of online banks	0.770	0.657	0.852
	It is easy to get anywhere on the website of online banks	0.829		
	I can complete a transaction quickly on the website of online banks	0.831		
Customer Satisfaction $\alpha = 0.915$	I am generally pleased with this bank's online services	0.761	0.669	0.910
	I am very satisfied with these bank's online services	0.797		
	I am happy with this online bank	0.810		
	The website of online banks is simple to use	0.823		
Customer Loyalty $\alpha = 0.906$	I am satisfied with overall online bank's products and services	0.892	0.623	0.891
	I will recommend the online banking to other people	0.699		
	I prefer the online banking above others	0.745		
	I would like to say positive things about online banking to other people	0.831		
	I would recommend online banking to someone who seeks advice	0.875		
	I intend to continue using the online banking	0.784		

Table 4

Discriminant Validity

	Customer Satisfaction	Efficiency of Websites	User Friendliness	Site Organization	Personal Need	Customer Loyalty
Customer Satisfaction	0.818					
Efficiency	0.650	0.811				
User Friendliness	0.537	0.572	0.839			
Site Organization	0.607	0.649	0.587	0.857		
Personal Need	0.479	0.376	0.282	0.338	0.847	
Customer Loyalty	0.640	0.640	0.403	0.521	0.413	0.789

Below the diagonal: correlation estimated between the factors.

Diagonal: square root of AVE

Table 5. Standardized regression for research model

Description			Estimate	p-values
Personal Need	←	Internet banking service quality	0.487	0.000
Site Organization	←	Internet banking service quality	0.782	0.000
User Friendliness	←	Internet banking service quality	0.697	0.000
Efficiency of Web site	←	Internet banking service quality	0.822	0.000
e-Customer Satisfaction	←	Internet banking service quality	0.810	0.000
e-Customer Loyalty	←	e-Customer Satisfaction	0.648	0.000
e-Customer Loyalty	←	Internet banking service quality	0.067	0.475

$\chi^2 = 884.001$; $\chi^2 / \text{df ratio} = 3.286$; GFI = 0.894; CFI = 0.936; RMSEA = 0.06; PCFI = 0.905;
 PCLOSE = 0.000
Notes: significance at the 0.01 level