

## APPENDIX A

### SURVEY

#### A QUESTIONNAIRE ON ACCEPTANCE MODEL FOR M-LEARNING SERVICES: A CASE STUDY AT IIUM AND USIM

Dear Sir/ Madam,

Please read this information sheet carefully before deciding whether or not you wish to participate in this research. Participation is entirely voluntary. You may be assured of complete confidentiality if you choose to participate.

**Purpose:** I am conducting a survey as partial fulfillment of the requirements for the degree of Doctor of Philosophy in Science and Technology at the Universiti Sains Islam Malaysia (USIM) .

**Definition:** Mobile learning services (m-learning services), for this research project, refers to anywhere, anytime access to educational and university services such as course registration, result, timetable and my courses through the use of mobile technology (eg. Smartphone, Tablet, PDA), whether connected or disconnected from the network.

**Instructions:**

Please read the information sheet before completing survey.

Select the answer that best reflects your views. Answer all questions as honestly as possible. There is no correct or best answer.



**SECTION ONE : General Information**

This section is about background information. Please fill up the blanks and mark {✓} the most appropriate (please tick one only).

1. What is your gender: 1. { } Male 2. { } Female
2. What is your age \_\_\_\_\_ Years.

1. Under 20 { }  
2. 20 – 25 { }  
3. 26 – 30 { }  
4. Above 30 { }
3. Your Education background (Please Tick one only):

1. { } Arts studies (e.g. Language, Law, History)  
2. { } Sciences (e.g. IT, ICT, Math, Engineering, Medical)  
3. { } Business (e.g. Accounting, Finance, Management)  
4. { } Other (Please identify) .....
4. Your current study program :

1. Bachelor { } 2. Master { } 3. PhD { }
5. Do you own a mobile Device

1. Yes { } 2. No { }
6. What type of mobile devices you own?  
Currently own

1. { } Normal phone  
2. { } Smartphone  
3. { } Tablets  
4. { } Other .....
7. Your mobile applications experience.

1. { } Less than 1 year  
2. { } 1-3 years  
3. { } 4-6 years  
4. { } More than 6 years
8. Wireless connections used

1. Wi-Fi { } 2. 2G { } 3. 3G { } 4. { } None
9. Your mobile service provider 1. { } CELCOM 2. { } MAXIS 3. DIGI  
5. { } others (please Identify) \_\_\_\_\_.



SECTION TWO:

Dimension A) **Your Awareness of the Following Mobile Technology devices.** For each device, please circle the appropriate number based on the given scale below. Circle only ONE option.  
1= not Aware, 2= Somewhat Aware, 3=Not Sure, 4= Aware, 5= very Aware

1	Mobile phone	1	2	3	4	5
2	Smart phone	1	2	3	4	5
3	Laptop/Notebook	1	2	3	4	5
4	Tablet PC	1	2	3	4	5
5	Personal Digital Assistant (PDA)	1	2	3	4	5
6	Wireless connections such as Wi-Fi and GPRS	1	2	3	4	5

Dimension B) **Your access to Learning Resources (online learning care).** For each statement, please circle the appropriate number based on the given scale below. Circle only ONE option.

1= Strongly Disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly Agree

1	Having access to learning resources during placement is important to me	1	2	3	4	5
2	Having distance access to the University learning resources is important for my studies. (e.g., Course Registration, Library services, Exam results...).	1	2	3	4	5
3	It is difficult for me to visit the University learning resources	1	2	3	4	5
4	I am not aware of how to access the University learning resources using the distance devices	1	2	3	4	5
5	It is difficult for me to electronically access the University learning resources from my workplace	1	2	3	4	5
6	There is no distance access to University academic service	1	2	3	4	5

Dimension C) **Using Mobile technologies for Learning service, I will:** For each statement, please circle the appropriate number based on the scale provided below. Circle only ONE option.  
1= Strongly Disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly Agree

1	Receive the latest information	1	2	3	4	5
2	Increase my contact with my learning place	1	2	3	4	5
3	Increase my contact with other learners	1	2	3	4	5
4	Increase my contact with my instructors/lecturers	1	2	3	4	5
5	Have quick access to information	1	2	3	4	5
6	Improve my study ability	1	2	3	4	5



Dimension D) **Your Perception on Mobile Technologies Limitations:** For each statement, please circle the appropriate number based on the given scale below. Circle only ONE option.

1= Strongly Disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly Agree

1	I need training to use this device	1	2	3	4	5
2	There is problem with the physical security (e.g. Loss of device)	1	2	3	4	5
3	I am worried about my personal information's confidentiality	1	2	3	4	5
4	Connection to networks is poor	1	2	3	4	5
5	Data exchange with networks is slow	1	2	3	4	5
6	Transaction and connection is costly (e.g. GPRS download per Bytes)	1	2	3	4	5
7	Laptop – the device is heavy	1	2	3	4	5
8	Laptop – the device has poor portability	1	2	3	4	5
9	Mobile phone or PDA: the screen is small	1	2	3	4	5
10	Mobile phone or PDA: the keyboard is small	1	2	3	4	5
11	Mobile phone or PDA: keyboard has limited use	1	2	3	4	5
12	Mobile phone or PDA: memory is limited	1	2	3	4	5
13	Mobile phone or PDA: battery life is limited	1	2	3	4	5

Dimension E) **How frequently do you use the mobile learning services available at your university (e.g., using SMS, MMS or WAP (Wireless Application Protocol)?**

For each service below, please circle the most appropriate number based on the given scale below. Circle only ONE option.

1= Never 2= seldom 3= sometimes, 4= often 5= always.

1	Admission status	1	2	3	4	5
2	Course Registration	1	2	3	4	5
3	Calendar, Timetable or Schedule Services	1	2	3	4	5
4	Library Services (e.g. loans and searches)	1	2	3	4	5
5	Exam or test results	1	2	3	4	5
6	Campus Facilities	1	2	3	4	5
7	Treasury (e.g. financial statement and balance)	1	2	3	4	5
8	International students' services	1	2	3	4	5
9	Others (Please specify).....	1	2	3	4	5



SECTION THREE:

Subsection 1) The aim of this section is to understand the **Service Quality (SQ)** factor of mobile learning services.  
For each statement given, please indicate your level of agreement based on the given scale below. Circle only ONE option.

1= Strongly Disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly Agree

		SD	D	N	A	SA
1	M-learning services will be effective if I could accomplish my studies at my own convenient time (quickly).	1	2	3	4	5
2	M-learning services will be effective if I could do my studies anywhere (whenever I need).	1	2	3	4	5
3	M-learning services will be effective if I could do my studies conveniently (does not crash with other tasks)	1	2	3	4	5
4	M-learning services will be effective if they could increase access to learning and education.	1	2	3	4	5
5	M-learning system will be effective if the interface design provides me with visually appealing features.	1	2	3	4	5
6	M-learning services will be effective if interface design provides site colors, graphics, and fonts.	1	2	3	4	5
7	M-learning services will be effective if the interface design provides a good page layout.	1	2	3	4	5
8	M-learning services will be effective if the interface design provides well-designed site menus.	1	2	3	4	5
9	M-learning services will be effective if it is accurate (error free).	1	2	3	4	5
10	M-learning services will be effective if it is reliable.	1	2	3	4	5
11	M-learning services will be effective if the content is easy to navigate.	1	2	3	4	5
12	M-learning services will be effective if the content can be understood	1	2	3	4	5
13	M-learning services will be effective if the content is current (up to date).	1	2	3	4	5
14	M-learning services should be personalized to control my learning progress	1	2	3	4	5
15	M-learning services should be personalized so I could choose what I want to learn.	1	2	3	4	5
16	M-learning services should be personalized so I could record my learning progress and performance.	1	2	3	4	5
17	M-learning services should be personalized to provide learning support.	1	2	3	4	5
18	M-learning services should be personalized to understand my needs.	1	2	3	4	5
19	I would not likely to worry about security when using m-learning services.	1	2	3	4	5
20	I trust that the university could protect my privacy.	1	2	3	4	5



Subsection 2) The aim of this section is to understand the **Social Influence (SI)** factor of mobile learning services.  
For each statement below, indicate the level of your agreement based on the scale provided below. Circle only ONE option.

1= Strongly Disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly Agree

		SD	D	N	A	SA
1	People who influence my behavior believe that I should use m-learning services in my studies.	1	2	3	4	5
2	People who are important to me believe that I should use m-learning services in my studies.	1	2	3	4	5
3	Students in my university who use the m-learning services are more successful than those who do not.	1	2	3	4	5
4	Students in my university who use the m-learning services have a high profile.	1	2	3	4	5
5	The m-learning method is a symbol of status in my university.	1	2	3	4	5

Subsection 3) The aim of this section is to understand the **Culture Factors (CF)** of mobile learning services.  
For each of the statement given, please indicate your level of agreement based on the scale provided below. Circle only ONE option.

1= Strongly Disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly Agree

		SD	D	N	A	SA
1	When I use the m-learning services, I prefer to use it just like the way I make changes in my study.	1	2	3	4	5
2	When I am using the m-learning services, I depend on someone who is well-versed about the services if I am in a situation where I don't know how to use it.	1	2	3	4	5
3	When I use the m-learning services, I tend to avoid the functions that I am not familiar with.	1	2	3	4	5
4	I think that using m-learning services will upgrade my study status.	1	2	3	4	5
5	Using the m-learning services that are similar to those used by the seniors makes me feel that my study status is enhanced.	1	2	3	4	5
6	I am not willing to use the m-learning services that are not better than those offered by my university.	1	2	3	4	5
7	In my opinion, unlike female, male prefer using m-learning services that have better functions and specifications.	1	2	3	4	5
8	In my opinion, male are more capable in using the functions of the m-learning services compared to female.	1	2	3	4	5
9	In my opinion, compared to female, male prefer the m-learning services that have professional functions.	1	2	3	4	5
10	In my opinion, the benefits that I individually gained from the m-learning services use are more important than the benefits that are gained in groups.	1	2	3	4	5
11	In the use of m-learning services, I am not affected by the opinion of other students.	1	2	3	4	5



12	I often use the m-learning services in my own way and I don't depend on other students' opinion.	1	2	3	4	5
13	M-learning services are important to learning conscience.	1	2	3	4	5
14	The success of m-learning services is critically affected by personal stability.	1	2	3	4	5
15	Reverence for tradition impedes the m-learning services performance.	1	2	3	4	5

Subsection 4) The aim of this section is to understand the **Compatibility (C)** factor of mobile learning services  
For each statement below, please indicate your level of agreement based on the scale given below.  
Circle only ONE option.

1= Strongly Disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly Agree

		SD	D	N	A	SA
1	The use of m-learning services is well-matched with most factors of my educations environment.	1	2	3	4	5
2	The use of m-learning services is compatible my lifestyle.	1	2	3	4	5
3	The use of m-learning services matches well with the way I like to engage in education environment.	1	2	3	4	5

Subsection 5) The aim of this section is to understand the **Perceived Usefulness (PU)** factor of mobile learning services  
For each of the statements below, please indicate your level of agreement based on the scale provided below. Circle only ONE option.

1= Strongly Disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly Agree

		SD	D	N	A	SA
1	I could complete my tasks more quickly with m-learning services	1	2	3	4	5
2	I could improve my performance in education environment with m-learning services	1	2	3	4	5
3	I could engage in education environment easier with m-learning services	1	2	3	4	5
4	M-learning services are useful in my education environment.	1	2	3	4	5
5	I could improve my effectiveness in education environment with m-learning services	1	2	3	4	5



Subsection 6) The aim of this section is to understand the **Perceived Ease Of Use (PEoU)** factor of mobile learning services.

For each of the statements below, please indicate your level of agreement based on the scale given below. Circle only ONE option.

1= Strongly Disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly Agree

		SD	D	N	A	SA
1	I find it easy to get what I want with the m-learning services	1	2	3	4	5
2	I find the m-learning services to be a flexible system to interact with.	1	2	3	4	5
3	It is easy for me to be the m-learning services expert.	1	2	3	4	5
4	It is easy for me to learn how to use the m-learning services.	1	2	3	4	5
5	Overall, I find that m-learning services are easy to use.	1	2	3	4	5

Subsection 7) The aim of this section is to understand the **Behavioral Intention (BI)** factor of mobile learning services.

For the statement below, please indicate your level of agreement on each of the options given based on the scale provided. Circle only ONE option.

**In the next semester:**

1= Strongly Disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly Agree

		SD	D	N	A	SA
1	I intend to use the m-learning services	1	2	3	4	5
2	I plan to use the m-learning services	1	2	3	4	5
3	I think I would use the m-learning services	1	2	3	4	5
4	I will definitely use the m-learning services	1	2	3	4	5

Subsection 8) The aim of this section is to understand the **Use Behavior (UB)** factor of mobile learning services.

For question 1, please indicate your level of agreement based on the scale provided below. For question 2, please tick (✓) where appropriate.

1= Strongly Disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly Agree

		SD	D	N	A	SA
1	I frequently use the m-learning services	1	2	3	4	5
2	I use the m-learning services... 1. { } A few times per semester      2. { } Monthly 3. { } Weekly                                      4. { } Daily					

Thank you



APPENDIX B

Descriptive Statistics (Skewness and Kurtosis)

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
P1	381	-.400	.125	-.241	.249
P2	381	-.365	.125	-.169	.249
P3	381	-.397	.125	-.382	.249
P4	381	-.928	.125	.864	.249
P5	381	-1.041	.125	.957	.249
AC1	381	-.122	.125	-.702	.249
AC2	381	-.484	.125	-.458	.249
AC3	381	-.480	.125	-.152	.249
AC4	381	-.488	.125	.226	.249
ID1	381	.102	.125	-.369	.249
ID2	381	-.037	.125	-.098	.249
ID3	381	-.317	.125	.243	.249
ID4	381	-.794	.125	.770	.249
CQ1	381	-1.358	.125	2.048	.249
CQ2	381	-.726	.125	.030	.249
CQ3	381	-.172	.125	-.292	.249
RS1	381	-.289	.125	.656	.249
RS2	381	-.295	.125	.364	.249
PS1	381	-.773	.125	1.184	.249
PS2	381	-.753	.125	-.034	.249
IM1	381	-.179	.125	-.006	.249
IM2	381	-.592	.125	.154	.249
IM3	381	-.798	.125	.552	.249
SN1	381	-.402	.125	.355	.249
SN2	381	-.499	.125	.913	.249
UA1	381	-.550	.125	-.126	.249
UA2	381	-.476	.125	-.215	.249
UA3	381	-.862	.125	.629	.249
LST1	381	-1.105	.125	1.283	.249
LST2	381	-.361	.125	-.283	.249
LST3	381	-.470	.125	-.002	.249
MF1	381	-.679	.125	-.098	.249
MF2	381	-.128	.125	-.476	.249
MF3	381	-1.313	.125	2.195	.249
IC1	381	.084	.125	-.423	.249
IC2	381	-.385	.125	.314	.249
IC3	381	-.791	.125	.740	.249
PD1	381	-1.154	.125	1.131	.249
PD2	381	-.727	.125	.355	.249
PD3	381	-.880	.125	.672	.249
C1	381	-.345	.125	-.561	.249
C2	381	-.068	.125	-.321	.249
C3	381	-.524	.125	-.068	.249
PU1	381	-.338	.125	-.172	.249
PU2	381	-.510	.125	.812	.249



PU3	381	-.712	.125	.495	.249
PU4	381	-.852	.125	.939	.249
PU5	381	-.710	.125	.032	.249
PEoU1	381	-.347	.125	-.469	.249
PEoU2	381	-.386	.125	-.286	.249
PEoU3	381	-.578	.125	.319	.249
PEoU4	381	-.628	.125	.544	.249
PEoU5	381	.031	.125	-.150	.249
BI1	381	-.066	.125	-.028	.249
BI2	381	-.336	.125	-.166	.249
BI3	381	-.676	.125	.712	.249
BI4	381	-.348	.125	-.103	.249
AU1	381	-.342	.125	.141	.249
AU2	381	-.878	.125	1.447	.249
Valid N (listwise)	381				

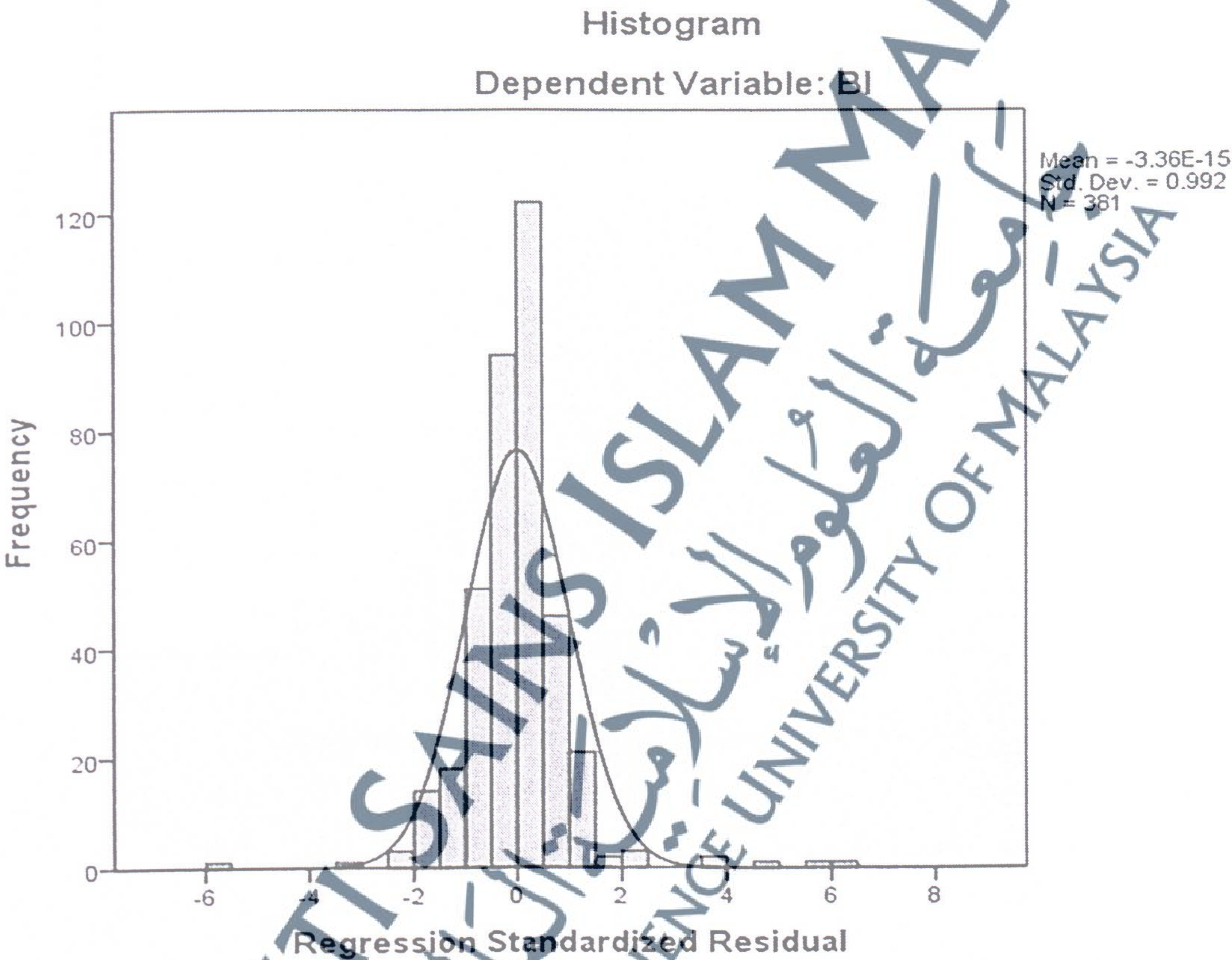


APPENDIX C

Regression Analysis Assumption Tests

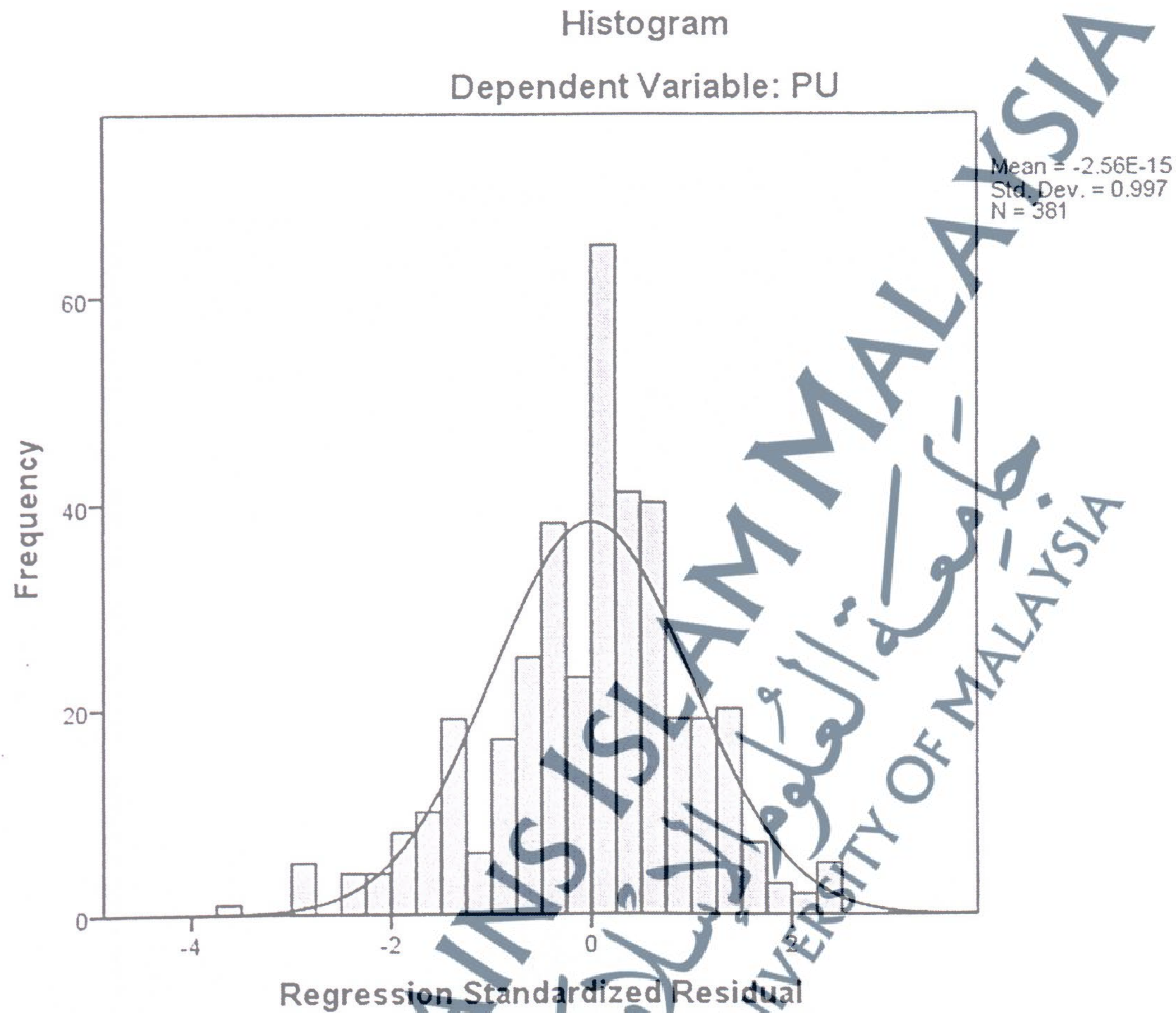
Appendix C.1: Normality assumption

Dependent Variable behavioral Intention (BI)



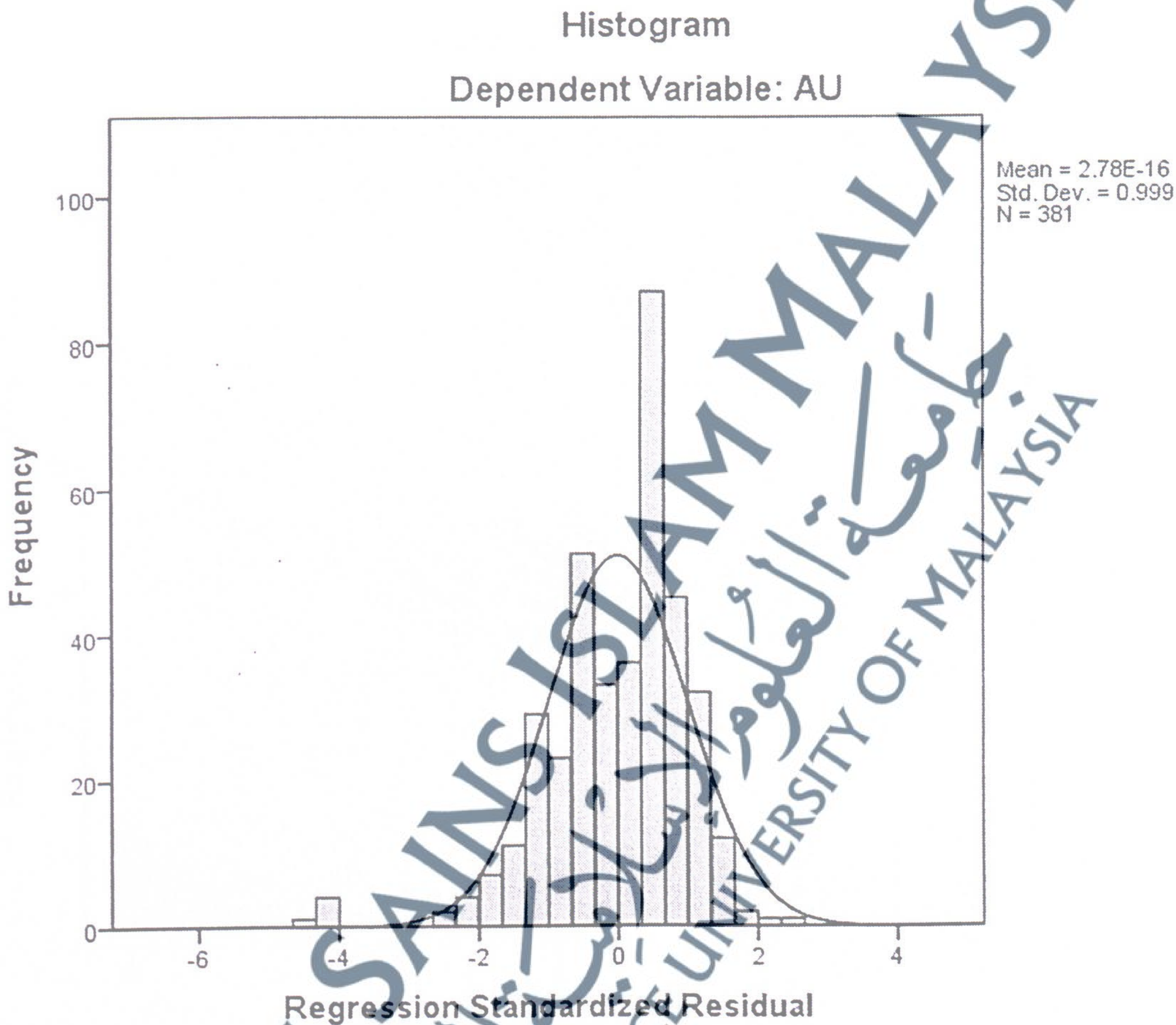


Dependent Variable perceived usefulness (PU)





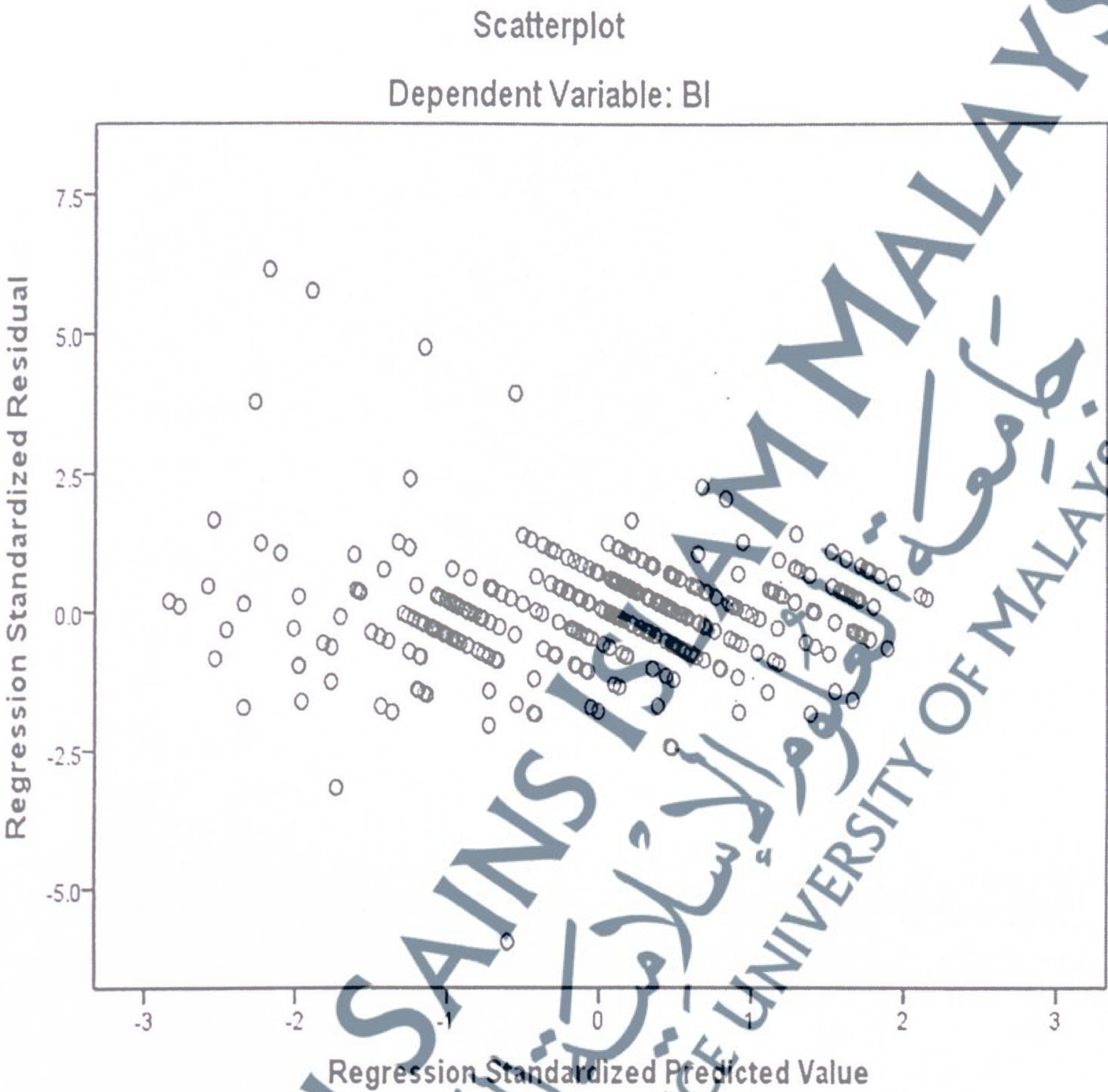
Dependent Variable Actual use (AU)





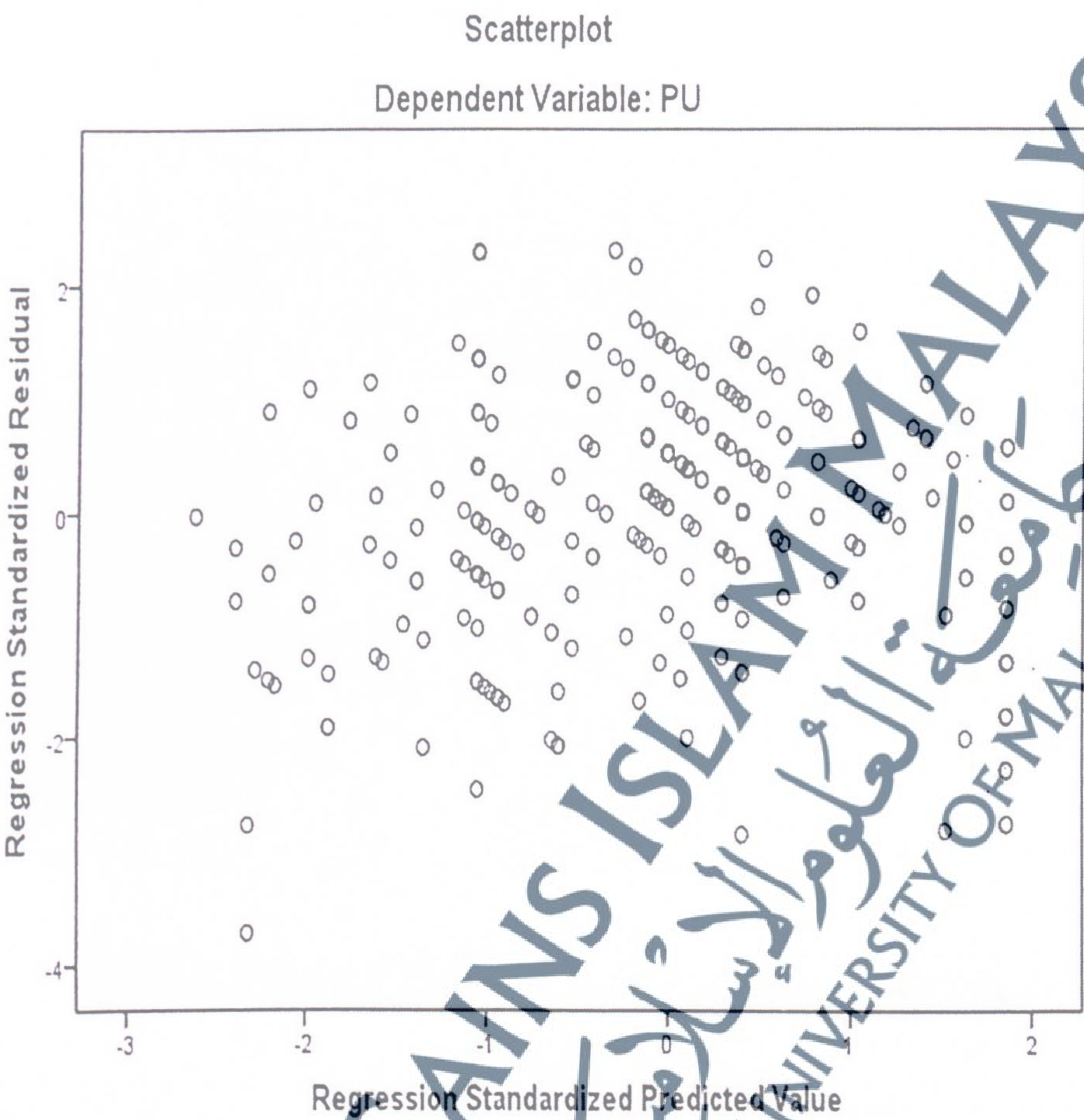
Appendix C.2 Homoscedasticity Assumption

Dependent Variable behavioral Intention (BI)



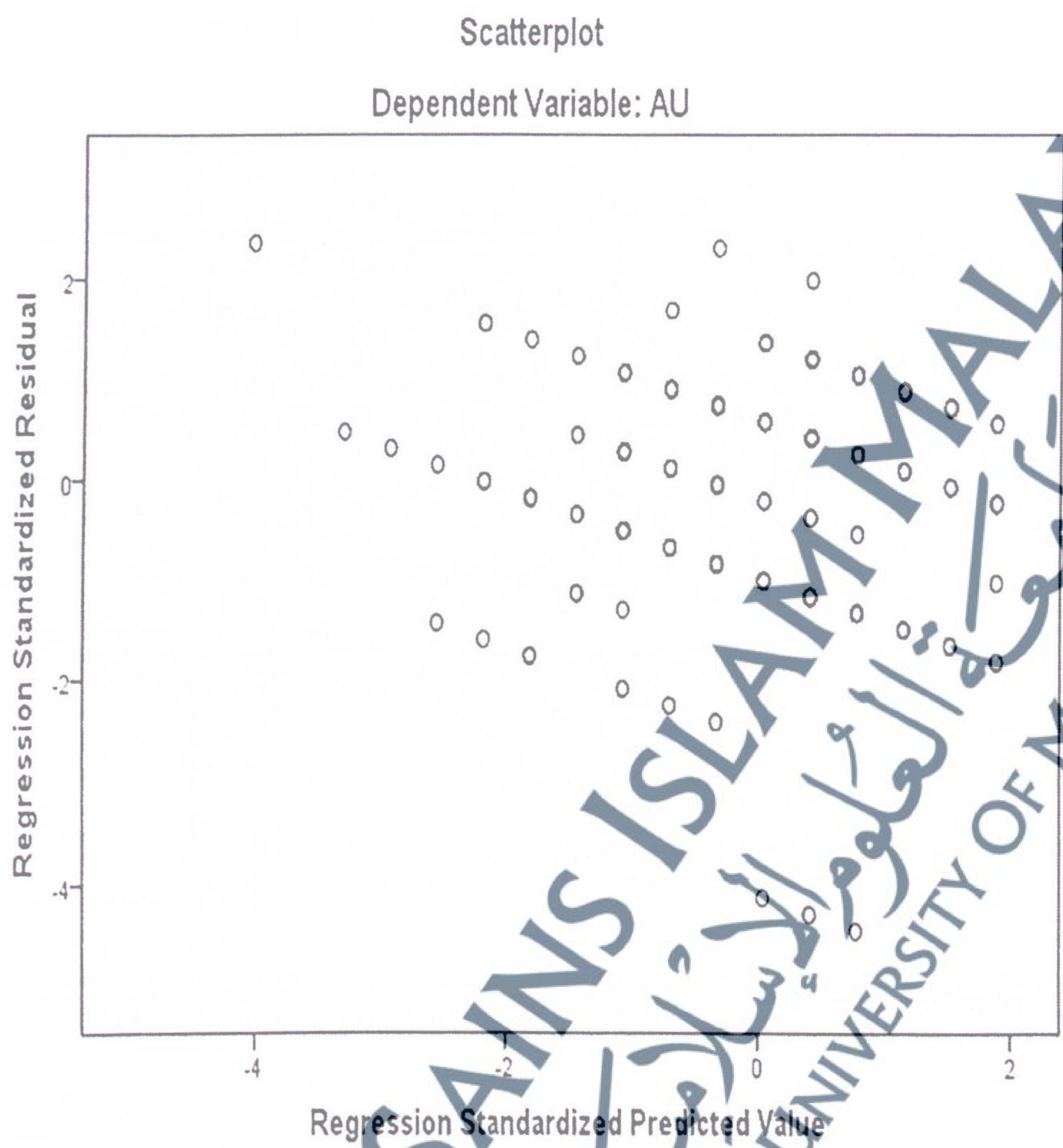


Dependent Variable perceived usefulness (PU)





Dependent Variable Use behavior (UB)





Appendix C.3: Multicollinearity tests

Dependent Variable behavioral Intention (BI)

Coefficients <sup>a</sup>									
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)	.928	.243		3.820	.000	.450	1.406		
SI	.140	.039	.132	3.582	.000	.217	.063	.686	1.457
SQ	.163	.070	.085	2.322	.021	.301	.025	.691	1.448
CF	.160	.055	.101	2.883	.004	.051	.269	.749	1.335
C	.307	.056	.331	5.499	.000	.197	.417	.256	3.908
PU	.137	.050	.136	2.732	.007	.038	.235	.375	2.666
PEOU	.445	.056	.456	7.914	.000	.334	.555	.279	3.585

a. Dependent Variable: BI

Tolerance and VIF values are within the specified limits. No collinearity exits.

Collinearity Diagnostics <sup>a</sup>										
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions						
				(Constant)	SI	SQ	CF	C	PU	PEOU
1	1	6.922	1.000	.00	.00	.00	.00	.00	.00	.00
	2	.034	14.251	.05	.00	.02	.04	.06	.03	.05
	3	.018	19.744	.00	.94	.00	.04	.02	.01	.01
	4	.009	27.485	.00	.00	.01	.00	.05	.87	.23
	5	.007	32.386	.23	.06	.10	.86	.03	.03	.03
	6	.006	34.452	.01	.00	.02	.05	.80	.04	.68
	7	.004	40.820	.71	.00	.84	.00	.02	.02	.01

a. Dependent Variable: BI



Dependent Variable perceived usefulness (PU)

Coefficients <sup>a</sup>									
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)	.943	.121		7.825	.000	.706	1.180		
C	.469	.053	.509	8.865	.000	.365	.573	.314	3.188
PEOU	.294	.056	.304	5.295	.000	.185	.403	.314	3.188

a. Dependent Variable: PU

Tolerance and VIF values are within the specified limits. No collinearity exits.

Collinearity Diagnostics <sup>a</sup>						
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	C	PEOU
1	1	2.972	1.000	.00	.00	.00
	2	.022	11.697	.98	.11	.06
	3	.006	22.216	.01	.89	.93

a. Dependent Variable: PU



Dependent Variable Use behavior (UB)

Coefficients <sup>a</sup>										
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF	
1	(Constant)	2.082	.183		11.372	.000	1.722	2.442		
	BI	.411	.048	.400	8.506	.000	.316	.507	1.000	1.000

a. Dependent Variable: AU

Tolerance and VIF values are within the specified limits. No collinearity exists.

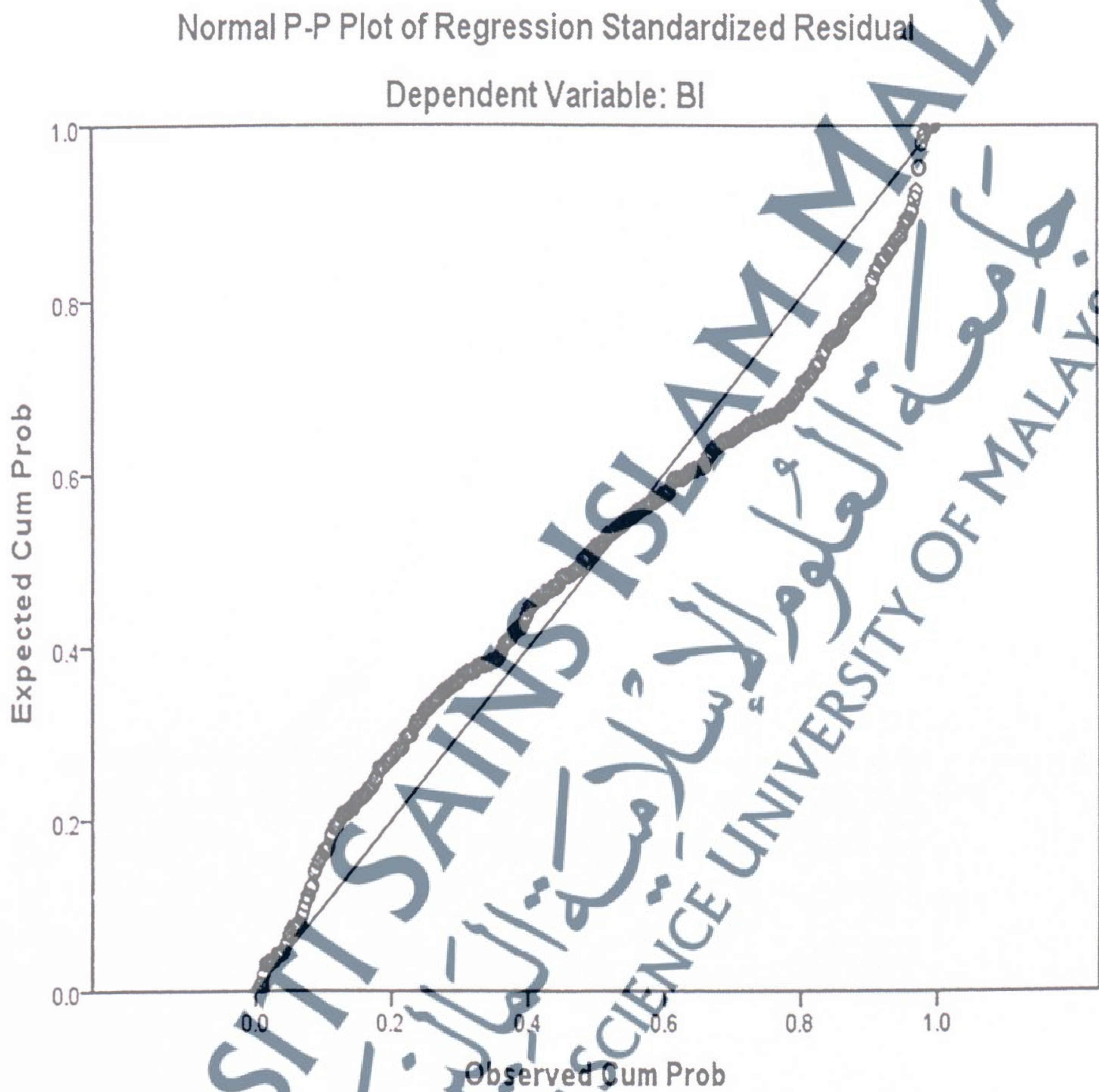
Collinearity Diagnostics <sup>a</sup>					
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	BI
1	1	1.984	1.000	.01	.01
	2	.016	11.110	.99	.99

a. Dependent Variable: AU



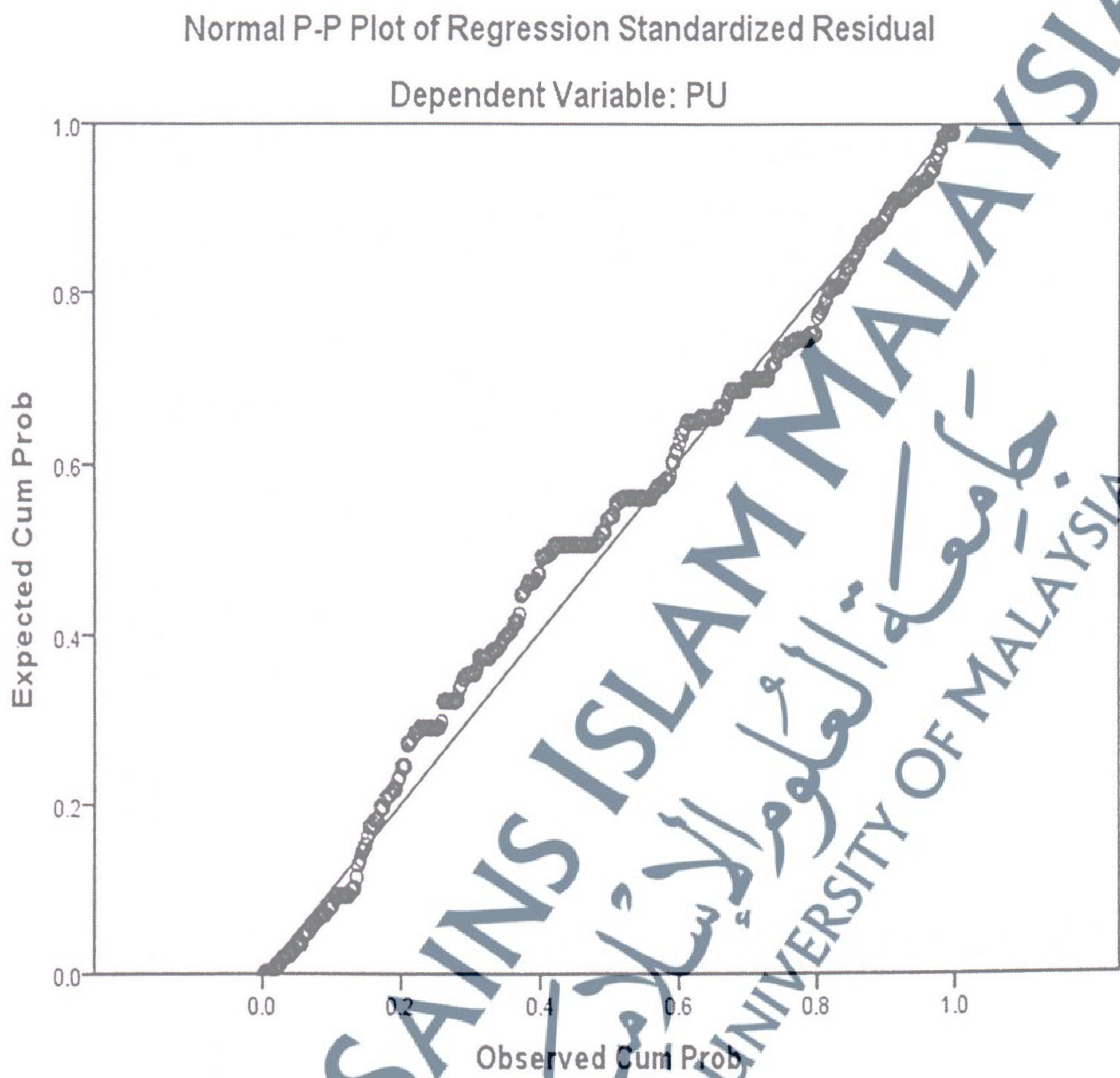
Appendix C.4: Linearity Tests

Dependent Variable behavioral Intention (BI)





Dependent Variable perceived usefulness (PU)





Dependent Variable Use behavior (UB)

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: AU

