TECHNOLOGICAL AND SOCIAL DIMENSION ON ACCEPTANCE OF SOCIAL NETWORKING SITES AMONG STUDENTS IN HIGHER LEARNING INSTITUTIONS

YAZRIWATI BINTI YAHYA

A thesis submitted in fulfillment of the requirements for the award of the degree of Doctor of Philosophy

Razak Faculty of Technology and Informatics Universiti Teknologi Malaysia

NOVEMBER 2022

DEDICATION

First and foremost, Alhamdulillah. All praise to Allah swt for giving me the opportunity to gain more knowledge via this valuable experience.

This thesis is dedicated to my parents, who taught me never to stop seeking knowledge even if I failed hundreds of times. I love both of you and pray hard that we will be together again in Jannah. This thesis is also dedicated to my beloved husband Azman Mohamed Ibrahim, who taught me that if you stop now, you would never know the ending of the story. Thank you for all your love, advice, support, and always be by my side even if I fall for a thousand time. To my beloved sons Muhammad Aqil, Muhammad Azim, Muhammad Alif and to my special son Muhammad Aziz, who have taught me that family always give their unconditional love to get through all the hurdles no matter what happens and they are the ones who will always be there for me especially during hard times. Finally, to my sister Yazrina Yahya who always comfort me and be there for me, keep on giving positive vibes and wise advice.

Thank you for being my pillar of strength when I feel like giving up, and please remember that I will always love all of you unconditionally.

ACKNOWLEDGEMENT

All praise to Allah swt, the Almighty for giving me the opportunity to embark in this meaningful journey, for the strength to carry on, and for the joy of coming to its end. Throughout this knowledge odyssey, I owe a lot of gratitude to many people, which is impossible for me to name them all within the limitation of space here. However, there are a few special names that deserved to be mentioned.

In particular, I wish to express my sincere appreciation to my main thesis supervisor, Associate Professor Dr. Nor Zairah Ab Rahim and co-supervisor Dr. Roslina Ibrahim, for their encouragement, guidance, critics, friendship, patience and endless encouragement, which have helped me immeasurably in the process of completing this piece of work. Without their continued support, interest and supervision, this thesis would not have been the same as presented here.

I would also like to acknowledge the fellow academicians, staffs and the colleagues in the Razak Faculty of Technology and Informatics, UTM for their valuable assistance and advice in my study. Their views and tips are useful indeed.

I also would like to thank my fellow postgraduate students especially to Siti Isnaine Haini and Rohaizan Daud for their constant encouragement and aspiration in achieving this PhD. My next appreciation goes to my soulmate sisters 'geng makan', a dedication to Haslina Md Sarkan, Suriayati Chuprat, Nurulhuda Firdaus Mohd. Azmi and Nilam Nur Amir Sjarif who always stood by me and encouraged me to finish this journey. Not forgetting all my other friends, thank you so much for your support. Last, but definitely not the least, my deepest appreciation goes to my beloved husband and children and my mother for the limitless understanding and patience, countless encouragement and support, and endless faith and inspiration; and finally, to all my family members for their prayers and their infinite encouragement in this lifelong learning experience.

ABSTRACT

One of the purposes students in higher learning institutions use social networking sites (SNS) is to communicate with one another. This purpose is significant, especially during the Covid-19 pandemic, which recently spread worldwide. Most research on SNS acceptance in higher education used the same Information System (IS) theories (such as Technological Acceptance Model), focusing more on the technological side. Thus, there is a lack of research on students' SNS acceptance, focusing on the technological and social dimensions using other IS theories. This study aims to identify the technological and social factors affecting SNS acceptance among students in Malaysia's higher learning institutions. A conceptual model was developed based on the identified potential factors and the underpinning theory of Unified Theory of Acceptance and Use of Technology 2 (UTAUT2). The UTAUT2 was chosen to fill in the research gap because it was related to the use of other IS theories in SNS acceptance studies. The data collection was conducted at various Malaysia Higher Learning Institutions using the survey form, and 498 responses were recorded. The data were analysed using SPSS 26.0 for descriptive analysis of demographic data and Partial Least Square-Structured Equation Modelling for validating the conceptual model. The model validation revealed that Effort Expectancy, Habit, Hedonic Motivation, Privacy Concern, Social Value, and Trust affected SNS Behavioral Intention significantly. Whereas Facilitating Conditions, Habit, Social Value, Technology Cluster, and Behavioral Intention had significant effects on SNS Use Behavior. The R² value of endogenous constructs in this study is 0.558 for SNS Use Behavior. The identified factors in this study explained that 55 % of the variance accepted the use behaviour of SNS among the students, showing a good explanatory power of the model. In addition, SNS Behavioral Intention also acted as a mediator between Effort Expectancy, Hedonic Motivation, Trust, Privacy Concern and Habit with SNS Use Behavior. Apart from that, the moderator effect analysis showed that gender, education level and personality traits acted as positive moderators between the factors and SNS Behavioral Intention and SNS Use Behavior. This research contributed to the theoretical knowledge of SNS technology acceptance in the context of technological and social context measurements. In addition, the research outcome will benefit the Malaysia Ministry of Higher Education, the higher education student administrator, lecturers and the SNS service providers. The research outcome will contribute to the development of creating an atmosphere of new and innovative ways to communicate fast and easily with the students. This will nurture students' moral beliefs and principles that are accepted by society.

ABSTRAK

Salah satu tujuan pelajar di institusi pengajian tinggi menggunakan laman rangkaian sosial (SNS) adalah untuk berkomunikasi antara satu sama lain. Tujuan ini penting, terutamanya semasa pandemik Covid-19, yang baru-baru ini merebak ke seluruh dunia. Kebanyakan penyelidikan tentang penerimaan SNS dalam pendidikan tinggi menggunakan teori Sistem Maklumat (SM) yang sama (seperti Technology Acceptance Model) yang lebih memfokuskan pada sisi teknologi. Oleh itu, terdapat kurang penyelidikan mengenai penerimaan SNS pelajar, yang memberi tumpuan kepada dimensi teknologi dan sosial menggunakan teori SM yang lain. Kajian ini bertujuan untuk mengenal pasti faktor teknologi dan sosial yang mempengaruhi penerimaan SNS di kalangan pelajar di institusi pengajian tinggi Malaysia. Model konseptual dibangunkan berdasarkan faktor potensi yang dikenal pasti dan teori asas Unified Theory of Acceptance and Use of Technology 2 (UTAUT2). UTAUT2 dipilih untuk mengisi jurang penyelidikan kerana ia berkaitan dengan penggunaan teori SM lain dalam kajian penerimaan SNS. Pengumpulan data telah dijalankan di pelbagai Institusi Pengajian Tinggi Malaysia menggunakan borang kaji selidik, dan 498 maklum balas telah direkodkan. Data dianalisis menggunakan SPSS 26.0 untuk analisis deskriptif data demografi dan Pemodelan Persamaan Berstruktur Separa Kuasa Dua Terkecil untuk mengesahkan model konseptual. Pengesahan model mendedahkan bahawa Jangkaan Usaha, Tabiat, Motivasi Hedonik, Keprihatinan Privasi, Nilai Sosial dan Kepercayaan secara signifikan mempengaruhi Niat Tingkah Laku SNS. Manakala Kemudahan Keadaan, Tabiat, Nilai Sosial, Kluster Teknologi, dan Niat Tingkah Laku mempunyai kesan yang ketara terhadap Tingkah Laku Penggunaan SNS. Nilai R² bagi konstruk endogen dalam kajian ini ialah 0.558 untuk Tingkah Laku Penggunaan SNS. Faktor-faktor yang dikenal pasti dalam kajian ini menjelaskan bahawa 55% daripada varians menerima tingkah laku penggunaan SNS dalam kalangan pelajar, menunjukkan kekuatan penjelasan model yang baik. Selain itu, Niat Tingkah Laku SNS juga bertindak sebagai pengantara antara Jangkaan Usaha, Motivasi Hedonik, Kepercayaan, Prihatin Privasi dan Tabiat dengan Tingkah Laku Penggunaan SNS. Selain itu, analisis kesan moderator menunjukkan jantina, tahap pendidikan dan ciri personaliti bertindak sebagai moderator positif antara faktor dengan Niat Tingkah Laku SNS dan Tingkah Laku Penggunaan SNS. Penyelidikan ini menyumbang kepada pengetahuan teori penerimaan teknologi SNS dalam konteks pengukuran konteks teknologi dan sosial. Di samping itu, hasil penyelidikan ini akan memberi manfaat kepada Kementerian Pengajian Tinggi Malaysia, pentadbir pelajar pengajian tinggi, para pensyarah dan para pembekal perkhidmatan SNS. Hasil penyelidikan akan menyumbang kepada kewujudan suasana cara baharu dan berinovatif untuk berkomunikasi dengan cepat dan mudah dengan pelajar pelajar. Ini dapat memupuk pegangan dan prinsip moral pelajar yang diterima oleh masyarakat.

TABLE OF CONTENTS

TITLE

DECI	LARATION	iii
DEDI	ICATION	iv
ACK	NOWLEDGEMENT	v
ABST	TRACT	vi
ABST	FRAK	viii
TABI	LE OF CONTENTS	ix
LIST	OF TABLES	xvi
LIST	OF FIGURES	xix
LIST	OF ABBREVIATIONS	xxi
LIST	OF APPENDICES	xxii
CHAPTER 1	INTRODUCTION	1
1.1	Overview	1
1.2	Research Background	7
1.3	Problem Statement	11
1.4	Research Questions	12
1.5	Research Objectives	13
1.6	Research Significance	13
1.7	Research Scope	14
1.8	Organization of the Thesis	14
CHAPTER 2	LITERATURE REVIEW	17
2.1	Introduction	17
2.2	Background of Social Networking Sites (SNS)	19
	2.2.1 Definition Social Networking Sites (SNS)	21
	2.2.2 Characteristic of SNS	23
	2.2.3 Benefits and Drawbacks of SNS	26
2.3	Acceptance Theories/Models	28

	2.3.1	Unified Technolo	Theory of Acceptance and Use of ogy (UTAUT)	28
	2.3.2	Unified Technolo	Theory of Acceptance and Use of ogy 2 (UTAUT2)	30
	2.3.3	Innovatio	on of Diffusion Theory (IDT)	32
2.4	Past S	tudies on	User Acceptance of SNS	34
2.5	Matrix	x Analysis	of Literature Review	40
2.6	Resea	rch Model	and Hypothesis	58
	2.6.1	Technolo	ogical Dimension	58
		2.6.1.1	Performance Expectancy	59
		2.6.1.2	Effort Expectancy	60
		2.6.1.3	Hedonic Motivation	61
		2.6.1.4	Facilitating Conditions	63
		2.6.1.5	Trust	64
		2.6.1.6	Privacy Concern	67
		2.6.1.7	Technology Cluster	70
	2.6.2	Social D	imension	71
		2.6.2.1	Habit	72
		2.6.2.2	Social Influence	73
		2.6.2.3	Social Value	74
		2.6.2.4	Self-Esteem	75
		2.6.2.5	SNS Behavioral Intention	77
		2.6.2.6	SNS Use Behavior	78
	2.6.3	Moderati	ing Effects	79
		2.6.3.1	Gender	79
		2.6.3.2	Education Level	80
		2.6.3.3	Personality Traits	80
	2.6.4	The Con	ceptual Model	82
2.7	Know	ledge Gap	S	85
2.8	Chapt	er Summa	ry	89

CHAPTER 3	RESEARCH METHODOLOGY	91
3.1	Introduction	91
3.2	Research Paradigm	93
	3.2.1 Positivism and Interpretivism	94
	3.2.2 The Chosen Paradigm	94
3.3	Research Design	95
3.4	Operational Framework	97
3.5	Phase 1: Theoretical Foundation	97
	3.5.1 Step 1: Identify Research Background & Problem	98
	3.5.2 Step 2: Formulate Research Questions and Research Objectives	99
	3.5.3 Step 3: Literature Review	99
3.6	Phase 2: Conceptual Model and Instrument Development	101
	3.6.1 Step 4: Develop Conceptual Model	102
	3.6.1.1 UTAUT2 As A Basis Conceptual Model	107
	3.6.1.2 Technological Dimension	109
	3.6.1.3 Social Dimension	110
	3.6.2 Step 5: Research Hypothesis Development	110
	3.6.3 Step 6: Instrument Development	111
	3.6.3.1 Operational Definition of the Measurement Terms	111
	3.6.3.2 Development of Measurement Scale	113
3.7	Phase 3: Instrument Validation	119
	3.7.1 Step 7: Instrument Validity	120
	3.7.1.1 Content Validity	120
	3.7.1.2 Construct Validity	123
	3.7.2 Step 8: Pilot Study	123
	3.7.2.1 Step 9: Instrument Reliability	124
3.8	Phase 4: Main Study and Model Validation	126
	3.8.1 Step 10: Data Collection	127

			3.8.1.1	Sampling Strategy	127
		3.8.2	Step 11:]	Data Analysis	130
			3.8.2.1	Descriptive and Inference Analysis	130
			3.8.2.2	Partial Least Structured Equation Modelling (PLS-SEM) Analysis	131
			3.8.2.3	Justification of PLS-SEM over CB- SEM	132
			3.8.2.4	Measurement Model	134
			3.8.2.5	Structural Model	135
			3.8.2.6	Mediator and Moderators	137
	3.9	Phase	5: Researc	h Completion	138
	3.10	Chapte	er Summai	У	141
СНАРТЕ	R 4	DATA	ANALY	SIS AND FINDINGS	143
	4.1	Introd	uction		143
	4.2	Initial	Data Prep	aration	145
		4.2.1	Missing I	Data and Suspicious Response Pattern	145
		4.2.2	Outlier S	creening	146
		4.2.3	Normalit	y Assessment	146
		4.2.4	Common	Method Bias	149
	4.3	Descri	ptive Anal	ysis	152
		4.3.1	Demogra	phic Profile	152
		4.3.2	SNS Usa	ge	154
		4.3.3	Descripti	ve Analysis of Research Constructs	159
	4.4	Result Equati	s from on Modell	Partial Least Square – Structure ing (PLS-SEM)	174
		4.4.1	Stage 1: S	Specifying the Structural Model	176
		4.4.2	Stage 2: S	Specifying the Measurement Model	178
		4.4.3	Stage 3: I	Data Collection and Examination	179
		4.4.4	Stage 4: I	PLS Path Model Estimation	179
		4.4.5	Stage 5: Reflectiv	Assessing PLS-SEM Results of the eMeasurement Model	181
			4.4.5.1	Internal Consistency Reliability	182

		4.4.5.2	Convergent Validity	183
		4.4.5.3	Discriminant Validity	185
	4.4.6	Stage 6: Structura	Assessing PLS-SEM Results of the al Model	193
		4.4.6.1	Collinearity Assessment	194
		4.4.6.2	Assessment of Significant Level of Path Coefficient	195
		4.4.6.3	Assessment of Coefficient of Determination (R ² values)	200
		4.4.6.4	Effect Size (f^2)	201
		4.4.6.5	The Predictive Relevance (Q^2)	202
		4.4.6.6	Goodness of Fit Index (GoF)	203
	4.4.7	Stage 7:	Advanced PLS-SEM Analysis	204
		4.4.7.1	Mediation Analysis	204
		4.4.7.2	Moderator Analysis	206
4.5	Summ	nary of Hy	pothesis	211
4.6	Chapt	er Summa	ıry	213
CHAPTER 5	DISC	USSION	S & CONCLUSION	215
5.1	Introd	uction		215
5.2	Fulfilı	ment of R	esearch Objectives	217
5.3	Discu	ssion of R	esearch Hypothesis and Model	218
	5.3.1	Technol	ogical Dimension	220
		5.3.1.1	The Relationship between Performance Expectancy with SNS Behavioral Intention	220
		5.3.1.2	The Relationship between Effort Expectancy with SNS Behavioral Intention	221
		5.3.1.3	The Relationship between Hedonic Motivation with SNS Behavioral Intention	223
		5.3.1.4	The Relationship between Facilitating Conditions with SNS Behavioral Intention	224

5.3.1.5	The Relationship between Facilitating Conditions with SNS Use Behavior	225
5.3.1.6	The Relationship between Trust with SNS Behavioral Intention	227
5.3.1.7	The Relationship between Trust with SNS Use Behavior	228
5.3.1.8	The Relationship between Privacy Concern with SNS Behavioral Intention	229
5.3.1.9	The Relationship between Privacy Concern with SNS Use Behavior	230
5.3.1.10	The Relationship between Technology Cluster with SNS Behavioral Intention	230
5.3.1.11	The Relationship between Technology Cluster with SNS Use Behavior	231
Social Di	imension	233
5.3.2.1	The Relationship between Habit with SNS Behavioral Intention	233
5.3.2.2	The Relationship between Habit with SNS Use Behavior	234
5.3.2.3	The Relationship between Social Influence with SNS Behavioral Intention	236
5.3.2.4	The Relationship between Social Value with SNS Behavioral Intention	237
5.3.2.5	The Relationship between Social Value with SNS Use Behavior	238
5.3.2.6	The Relationship between Self- Esteem with SNS Behavioral Intention	239
5.3.2.7	The Relationship between Self- Esteem with SNS Use Behavior	240
The Rel Intention	ationship Between SNS Behavioral and SNS Use Behavior	241
Final SN	S Acceptance Model	242
	5.3.1.5 5.3.1.6 5.3.1.7 5.3.1.7 5.3.1.8 5.3.1.9 5.3.1.10 5.3.1.10 5.3.1.10 5.3.1.10 5.3.2.1 5.3.2.1 5.3.2.2 5.3.2.3 5.3.2.4 5.3.2.5 5.3.2.5 5.3.2.6 5.3.2.7 The Rel Intention Final SN	 5.3.1.5 The Relationship between Facilitating Conditions with SNS Use Behavior 5.3.1.6 The Relationship between Trust with SNS Behavioral Intention 5.3.1.7 The Relationship between Trust with SNS Use Behavior 5.3.1.8 The Relationship between Privacy Concern with SNS Behavioral Intention 5.3.1.9 The Relationship between Privacy Concern with SNS Use Behavior 5.3.1.10 The Relationship between Privacy Concern with SNS Use Behavior 5.3.1.10 The Relationship between Privacy Concern with SNS Use Behavior 5.3.1.11 The Relationship between Technology Cluster with SNS Behavioral Intention 5.3.2.1 The Relationship between Habit with SNS Behavioral Intention 5.3.2.2 The Relationship between Habit with SNS Use Behavior 5.3.2.3 The Relationship between Social Influence with SNS Behavioral Intention 5.3.2.4 The Relationship between Social Value with SNS Use Behavior 5.3.2.5 The Relationship between Social Value with SNS Use Behavior 5.3.2.6 The Relationship between Self-Esteem with SNS Use Behavior 5.3.2.7 The Relationship between Self-Esteem with SNS Use Behavior 5.3.2.7 The Relationship between Self-Esteem with SNS Use Behavior

5.4	SNS Acceptance Recommendations	245
	5.4.1 Technological Dimension	245
	5.4.2 Social Dimension	249
5.5	Theoretical Contribution	250
5.6	Practical Contribution	253
5.7	Limitations and Recommendations for Future Research	255
5.8	Chapter Summary	256
REFERENCES		259
LIST OF PUBLI	CATIONS	335

LIST OF TABLES

TABLE NO.	TITLE	PAGE
Table 2.1	List of articles on SNS acceptance/adoption	42
Table 2.2	Analysis matrix of literature review	52
Table 2.3	Constructs selected for the proposed model	57
Table 2.4	List of articles based on construct chosen	59
Table 2.5	Definitions of Trust in Technology (Harrison McKnight et al., 2009)	65
Table 2.6	List of articles based on constructs for Social dimension	71
Table 2.7	Overall Hypothesis	84
Table 3.1	Positivism paradigm and Interpretivism paradigm	94
Table 3.2	Operational research framework for Phase 1	98
Table 3.3	List of keywords	100
Table 3.4	Operational research framework for Phase 2	102
Table 3.5	Theoretical foundation of the conceptual model	103
Table 3.6	Operational Definitions of the measurement terms	112
Table 3.7	Measures for the Initial Draft of the Questionnaire	114
Table 3.8	Operational research framework for Phase 3	120
Table 3.9	Expert's Profile	121
Table 3.10	The Pilot Study's Reliability using Cronbach's Alpha	125
Table 3.11	Operational research framework for Phase 4	126
Table 3.12	Table for determining sample size from a given population	129
Table 3.13	PLS-SEM vs. CB-SEM (Urbach and Ahlemann, 2010)	133
Table 3.14	Measurement model assessment criteria (Hair et al, 2017)	135
Table 3.15	Structural model assessment criteria (Hair et al., 2017)	136
Table 3.16	PLS-SEM Stages (Hair et al., 2017)	136
Table 3.17	Operational research framework for Phase 5	139
Table 3.18	The profiles of experts review for the final model	139

Table 4.1	Balance data after each process	145
Table 4.2	Normality of data distribution	147
Table 4.3	Common method biased	150
Table 4.4	Respondent's Profile	153
Table 4.5	SNS Usage	155
Table 4.6	Description for each item for Performance Expectancy	159
Table 4.7	Descriptive analysis of scales for each item of measurement in Performance Expectancy	160
Table 4.8	Description for each item in Effort Expectancy	161
Table 4.9	Descriptive analysis of scales for each item of measurement in Effort Expectancy	161
Table 4.10	Description for each item in Hedonic Motivation	162
Table 4.11	Descriptive analysis of scales for each item of measurement in Hedonic Motivation	162
Table 4.12	Description for each item in Facilitating Conditions	163
Table 4.13	Descriptive analysis of scales for each item of measurement in Facilitating Conditions	163
Table 4.14	Description for each item in Trust	164
Table 4.15	Descriptive analysis of scales for each item of measurement in Trust	164
Table 4.16	Description for each item in Privacy Concern	165
Table 4.17	Descriptive analysis of scales for each item of measurement in Privacy Concern	166
Table 4.18	Description for each item in Technology Cluster	167
Table 4.19	Descriptive analysis of scales for each item of measurement in Technology Cluster	167
Table 4.20	Description for each item in Habit	168
Table 4.21	Descriptive analysis of scales for each item of measurement in Habit	168
Table 4.22	Description for each item in Social Influence	169
Table 4.23	Descriptive analysis of scales for each item of measurement in Social Influence	169
Table 4.24	Description for each item in Social Value	170

Table 4.25	Descriptive analysis of scales for each item of measurement in Social Value	170
Table 4.26	Description for each item in Self-Esteem	171
Table 4.27	Descriptive analysis of scales for each item of measurement in Self-Esteem	171
Table 4.28	Description for each item in SNS Behavioral Intention	172
Table 4.29	Descriptive analysis of scales for each item of measurement in SNS Behavioral Intention	172
Table 4.30	Description for each item in SNS Use Behavior	173
Table 4.31	Descriptive analysis of scales for each item of measurement in SNS Use Behavior	173
Table 4.32	SmartPLS construct validity and reliability results	182
Table 4.33	Assessment of Measurement Model	183
Table 4.34	HTMT values exceeded threshold value	186
Table 4.35	Discriminant Validity Using Fornell-Lacker Criterion	187
Table 4.36	Discriminant Validity Using Cross Loadings	188
Table 4.37	Discriminant Validity Using HTMT	191
Table 4.38	Value limit for structural model evaluation	193
Table 4.39	Inner VIF (Collinearity)	195
Table 4.40	Structural Model Estimation Results for Direct Effect	198
Table 4.41	Level of R ²	200
Table 4.42	Effect Size (f^2)	201
Table 4.43	Predictive Relevance (Q^2)	203
Table 4.44	Results for Mediating Effects	205
Table 4.45	PLS-MGA Results for Gender's Moderating Effect	206
Table 4.46	PLS-MGA Results for Education Level Moderating Effect	208
Table 4.47	PLS-MGA Results for Personality Traits Moderating Effect	210
Table 4.48	Results of the Hypothesis	211

LIST OF FIGURES

FIGURE NO	. TITLE	PAGE
Figure 1.1	Social Media Users by Age and Gender (Hootsuite, 2021)	2
Figure 1.2	Social Networking Applications by Popularity Ranking	3
Figure 1.3	Communication applications by popularity ranking	4
Figure 1.4	Structure of Chapter 1	6
Figure 2.1	Structure of Chapter 2	18
Figure 2.2	Chronology of the release dates of SNSs (D. M. Boyd & Ellison, 2007)	20
Figure 2.3	UTAUT Model	29
Figure 2.4	UTAUT2 Model	31
Figure 2.5	Classification of users of a new technology (IDT)	33
Figure 2.6	The approaches and concept matrix in writing a literature review	41
Figure 2.7	The Conceptual Model	83
Figure 2.8	Research gaps summary	88
Figure 3.1	Structure of Chapter 3	92
Figure 3.2	Research Onion (Saunders et al., 2019)	93
Figure 3.3	Research Framework	97
Figure 3.4	Questionnaire formation process	113
Figure 3.5	Content Validity guidelines (Ali et al., 2014)	121
Figure 3.6	General mediator model	138
Figure 4.1	Data analysis steps	143
Figure 4.2	Structure of Chapter 4	144
Figure 4.3	Outliers screening using Mahalanobis distance	146
Figure 4.4	Percentages of SNS Platform used by the respondents	156
Figure 4.5	Percentages of SNS Activities of the Respondents	157
Figure 4.6	SNS News Authenticity	158

Figure 4.7	Percentages of Types of Newsfeed Preferred by the Respondents	158
Figure 4.8	Systematic Process of PLS-SEM approach (Hair et al., 2017)	175
Figure 4.9	Inner and Outer Model	176
Figure 4.10	Inner and Outer Model (Hair et al., 2017)	177
Figure 4.11	Reflective and formative measurement model	178
Figure 4.12	First round measurement model for PLS-SEM analysis	180
Figure 4.13	The measurement model after items with loading below <0.5 deleted	181
Figure 4.14	PLS Path Model After PLS Algorithm Calculation	192
Figure 4.15	Results of Structural Model	199
Figure 5.1	Structure of Chapter 5	216
Figure 5.2	The hypothesized relationship of the developed model	219
Figure 5.3	The Final SNS Acceptance Model	243

LIST OF ABBREVIATIONS

AVE	-	Average Variance Extracted
C-TAM_TPB	-	Combine TAM and TPB
CB-SEM	-	Covariance-based-Structural Equation Modelling
CVI	-	Content Validity Index
CVR	-	Content Validity Ratio
IS	-	Information System
IDT	-	Innovation of Diffusion Theory
MM	-	Motivational Model
MPCU	-	Model of PC Utilization
PLS-SEM	-	Partial Least Squares-Structural Equation Modelling
SCT	-	Social Cognitive Theory
SEM	-	Structured Equation Modelling
SNS	-	Social Networking Sites
SPSS	-	Statistical Package for the Social Sciences
TAM	-	Technology Acceptance Model
TPB	-	Theory of Planned Behavior
TRA	-	Theory of Reasoned Action
UTAUT	-	Unified Theory of Acceptance and Use of Technology
VIF	-	Variance Inflation Factor

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
Appendix A	Invitation letter for construct validity test	291
Appendix B	Sample of Cover Letter to Expert Reviewers	292
Appendix C	Sample of Expert Reviewer Consent Form	293
Appendix D	The Expert's Content Validity Survey Form	294
Appendix E	Content Validity Result	312
Appendix F	The modified Items based on expert comments	314
Appendix G	Survey Form for Main Study	315
Appendix H	Experts invitation letter and interview questions	331

CHAPTER 1

INTRODUCTION

1.1 Overview

Since social networking sites (SNS) were launched, their existence has proliferated and been recognized by society, particularly among young people. SNS has become an essential platform for people to communicate, get the latest information, share information, and be entertained. SNS such as Facebook, Instagram, Twitter, and Snapchat have grown in popularity among teenagers and young adults. Figure 1.1 displays the world statistic of social media users according to age and gender. Based on the statistic, users aged 25 to 34, categorized as adults, were the highest SNS users (36.4%), followed by the youth aged 18 to 24 (23.2%). Even though adults have the highest SNS user percentage, more studies on SNS use should be focused on youth aged 18 to 24. This is because they were born to live in a millennium full of gadgets and online platforms. Students in higher learning institutions fall under the second-largest SNS users category. They use SNS for several reasons, such as virtual communities, interacting with their friends and families, and staying connected (Brailovskaia, Ströse, Schillack, & Margraf, 2020). Hence, these activities attracted youngsters, especially students (Kokkinos & Saripanidis, 2017), and spent up to four hours daily using SNS.



Figure 1.1 Social Media Users by Age and Gender (Hootsuite, 2021)

Even though SNS use has been widely used among the users and although Facebook is still the most popular social media site in Malaysia, however, the percentage of Internet users who use Facebook has decreased from 97.3% in 2018 to 91.7% in 2020, according to a report by the Malaysian Communications and Multimedia Commission (2020) (See Figure 1.2). Meanwhile, other sites such as YouTube, Instagram, and Twitter have grown in popularity. YouTube, for instance, has seen the most gain, rising from 48.3% in 2018 to 80.6% in 2020. Instagram's user base increased from 57% in 2018 to 63.1% in 2020, whereas Twitter's user base increased from 23.8% to 37.1% within the same time. The development is consistent with changes in the world's social media landscape.



Figure 1.2 Social Networking Applications by Popularity Ranking

Since 2018, Facebook usage has decreased in the United States. Another apparent trend is the age-based segmentation of social media users; younger users identify more with Instagram and Snapchat. In the future, we can anticipate a similar trend in Malaysia, as the younger generation's identification with emerging social media platforms gradually erodes Facebook's lead. For instance, 88% of Instagram users in this survey are aged 39 and under, indicating that this platform is extremely popular among young people. Regarding communication applications, the Internet User Survey 2020 (Malaysian Communications and Multimedia Commission, 2020) found that Whatsapp grew slowly from 98.1% in 2018 to 98.7% in 2020, as seen in Figure 1.3. Meanwhile, Facebook Messenger's market share fell from 55.6% in 2018 to 53.9% in 2020. There has been a noticeable increase in Telegram users, from 25.0% in 2018 to 40.10% in 2020. During the MCO, Telegram became a popular means for disseminating official government information in Malaysia. Additionally,

Telegram is popular among parents and school-aged children as a means of communication and education. Telegram's feature of unlimited member groups contributes to the platform's growing popularity among Internet users. From the trending, we can see that SNS in Malaysia has become part of the lifestyle, which has set the trends of widespread technological use.



Figure 1.3 Communication applications by popularity ranking

Today, the use of SNS is essential for everyone. In the COVID-19 era, SNS provide the enormous benefit of quickly disseminating educational content (González-Padilla & Tortolero-Blanco, 2020). SNS are changing, particularly in their ability to be customized to meet the demands of their users. SNS may provide various needs for its users; for example, people may arrange a meeting with available connections or meet new ones. They may connect virtually at different locations and times to share or discuss their related goals or similar views. Even now, the use of SNSs is spreading across many industries, including education (Ainin, Naqshbandi, Moghavveni, & Jaafar, 2015; Froment, García González, & Bohórquez, 2017;

Ghareb, Ahmed, & Ameen, 2018; Wong, Wei-Han, Loke, & Ooi, 2015) and many others. Scholars from a wide range of disciplines have begun to explore the influence of social networking sites and observe how people integrate this technology into their daily lives.

This chapter describes the research and is explained in several sections. It begins with the overview of the research (Section 1.1) followed by the research background in Section 1.2, where the problem statement in Section 1.3 summarizes it. Research questions (Section 1.4) and research objectives (Section 1.5) are then proposed based on the problem statement. Later in Section 1.6, the chapter then describes the research's significance. Subsequently, it describes the scope of the research in Section 1.7. Finally, it will conclude the organization of the entire thesis in Section 1.8. The general structure for Chapter 1 is shown in Figure 1.4.



Figure 1.4 Structure of Chapter 1

1.2 Research Background

Most of the studies on SNS use among students have focused more on measuring the students' acceptance of SNS in an educational setting. According to Manca and Ranieri (2016), there has been a considerable increase in SNS use in education research. The SNS acceptance studies among the students in higher learning institutions mainly focused on educational purposes (Akçayir, 2017; Arteaga Sánchez, Cortijo, & Javed, 2019; Eteokleous, Ktoridou, & Stavrides, 2012; Sharma, Joshi, & Sharma, 2016; Tiruwa, Yadav, & Suri, 2018) and also academic performance (Ainin et al., 2015; Lambić, 2016). However, some studies have discussed the limitation of the acceptance theories in the context of the use of SNS in general (Dhir, Kaur, & Rajala, 2018; Gruzd, Staves, & Wilk, 2012; Praveena & Thomas, 2018), but fewer studies were discussed SNS acceptance theory among students in higher learning institutions (Zaineldeen, Hongbo, Koffi, & Hassan, 2020). The study of information systems for the past 20 years has mainly focused on the cognitive behavioral models, including the Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), and Technology Acceptance Model (TAM) and their variants (S. C. Chen & Lin, 2019). In fact, some of the reviews were focused on analysing the SNS studies concerning TAM only (Weerasinghe & Hindagolla, 2018; Wirtz & Göttel, 2016). These reviews demonstrated that the TAM was successfully employed to explain user adoption and acceptance of social networking sites through its extension and modification. Although the reviews provided a better knowledge of the TAM application in the social media setting, they were limited in their aims and objectives (Weerasinghe & Hindagolla, 2018; Wirtz & Göttel, 2016). Even though there are numerous studies focus on SNS acceptance among students in higher learning institutions, it can be seen that most of the studies use TAM as a theoretical model to analyse the acceptance of SNS (Al-Ghaith, 2015; Al-Rahmi, Alias, Othman, Marin, & Tur, 2018; Raza, Qazi, & Umer, 2017; Sledgianowski & Kulviwat, 2008; Tantiponganant & Laksitamas, 2014).

According to a systematic review of students' behavior in the online network by Masrom, Busalim, Abuhassna, and Mahmood (2021), they have recommended other theories besides the commonly used in the SNS student behavior studies should also be implemented. Their review includes determining the factors studied in the existing literature. According to the review analysis, stimulus elements comprised of social, personal, and SNS website stimuli. The majority of studies make use of social and personal factors. However, a limited number of studies have attempted to conceptualise the characteristics of SNS websites in terms of students' views on the effect of SNS features and functions (such as perceived ease of use and user friendliness) on students' stimuli. Their reviews showed that among the theoretical foundations found in the investigated primary studies, the most cited was Use and Gravitation Theory (UGT), followed by TAM, Unified Theory of Acceptance and Use of Technology (UTAUT) and other related theories as well. Another review done by Al-Qaysi, Mohamad-Nordin, and Al-Emran (2020) on social media acceptance from the perspectives of educational and information system (IS) theories and models have shown that SNS use in the educational context has used several IS models to investigate the SNS acceptance and adoption. Among the IS model that was frequently used is TAM and UTAUT. They have recommended that due to the popularity and applicability of these two models in this type of study, it is strongly recommended to employ the TAM and UTAUT to examine students' and educators' acceptance or adoption of social media. Many researchers have adopted TAM because it is regarded as a valid, reliable, and user-friendly model (Marangunić & Granić, 2015). However, it was also found that TAM cannot be used in its current form since it does not take into account the nature of the knowledge that has been shared (Dulipovici & Vieru, 2015), and the results of TAM have not been validated mainly because of the lack of important aspects associated to human and social processes (Legris, Ingham, & Collerette, 2003). According to Kaba and Touré (2014), research has demonstrated that people's views of information systems vary. Their perceptions of the systems are critical in understanding why they choose to use the information provided by these systems. People who utilise SNS technology, on the other hand, are more concerned with social interaction and human needs to communicate rather than focus on the technological side. The usage of SNS increased social relationships.

In a review done by Ismail (2006) regarding Diffusion of Innovation theory. (DOI) by Roger Everett (1995), mentioned that Rogers' diffusion of innovations theory is most suited to examining technology adoption in higher education and educational settings (Medlin, 2001; Parisot, 1995). Rogers usually used the words "technology" and "innovation" interchangeably. For Rogers, "a technology is a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving the desired outcome" (Rogers, 2003). In the case of SNS, many studies on SNS acceptance focus on technology perspectives (Naqvi, Li, Jiang, & Naqvi, 2019; Rad, Dahlan, Iahad, & Nilashi, 2017; Tiruwa et al., 2018). Nevertheless, previous research typically only investigated the technological dimension without incorporating other dimensions that may lead to a better perspective (Praveena & Thomas, 2018). Praveena and Thomas (2018) have mentioned that SNS are entirely personal choices, and various people utilise them for different reasons. Most of the acceptance theories are focused on the technological dimension. However, many factors other than technology (e.g., personality traits, social, psychology) are associated with SNS use. Even some established IS theories like UTAUT were said to ignore the impact of social support on human intention and behavior (Al-Azawei, 2018). In addition, according to Dhir et al. (2018), scholars have argued that UTAUT2 lacks accurate and relevant insights to describe human behavior like other technological acceptance theories. Furthermore, UTAUT2 focuses on consumers' technology acceptance and use context. This makes this study take a step forward to investigate whether UTAUT2 is relevant enough to see the acceptance of technology categorised under voluntariness use technology such as SNS, compared to mandatory use for another Information System. For this reason, because UTAUT2 gives little actionable information and does not consider the adopter's skills, it risks overlooking specific expectations for a given activity or behavior. Thus, other important factors that may influence SNS acceptance must be considered to compensate for this constraint, such as social factors.

According to Lemay, Doleck, and Bazelais (2019), given that SNS technology is already embedded in a wide variety of social engagements, social factors outside normative ideas can serve as useful predictors of SNS use. Understanding the social factor is required for modelling user technology acceptance and assisting implementation initiatives and educational technology life cycle

management (Lemay et al., 2019). On this basis, it is recommended that the social dimension should be explored along with the technological dimension to enrich the SNS acceptance perspectives among the students. The social dimension included engaging in dialogue, communicating, collaborating, networking, building community, gaining company pulse, gaining perspective, and developing reputation and self-expression (Smith, 2009). This dimension concerns the values, norms, rules, and roles, one of the most significant sources of influence on human behavior, emanating from the cultural dimension (Normore, Javidi, & Long, 2019). Even in the academic context that uses constructivist theories, scholars have taken a massive toll on the cognitive and social dimensions of learning critical for success. The cognitive dimension concerns mental efforts to make sense of newly acquired knowledge, closely tied to metacognitive regulation during collaboration. When students use various learning strategies to accomplish various learning goals, a qualitative distinction in cognitive engagement is observed. Students who are driven to interpret their learning are more cognitively engaged, as meaning-making entails the intellectual processes of assessing, evaluating, and synthesising data received or generated during the learning process. The social dimension encompasses both engagements in social interactions and socio-emotional aspects associated with a learning community. Participation is critical for collaborative learning because the dialectic character of the process necessitates extensive information exchange and joint efforts to resolve cognitive conflicts within a group (J. Lu & Churchill, 2014).

Nonetheless, recent investigations have demonstrated the perceived value that has been retrieved while using SNS but mainly from the consumer's point of view (Chun Ming Chang, Hsu, & Lee, 2016; Jiao, Jo, & Sarigöllü, 2017). There is a lack of evidence from previous studies on the social value proposed while using SNS, especially in students' points of view (Aljehani, 2019; Gulzar, Ahmad, Hassan, & Rasheed, 2021; Kolhar, Kazi, & Alameen, 2021). Moreover, most SNS studies in the context of student point of view are in a specific area. For example, either solely based on an academic setting (Al-Rahmi et al., 2018) or solely on a psychological setting (S. B. Choi & Lim, 2016). Minimal studies were seen to have the combination of different settings. Students can switch the use of SNS back and forth when they use it in an academic setting and for entertainment (Masrom et al., 2021). Thus, this problem has received limited attention in the literature examining the different purposes of SNS use, whether for academic purposes, entertainment, socializing, or merely for communication. On top of that, numerous research on SNS adoption has centred on developed and western countries (Arteaga Sánchez et al., 2019; Doleck, Bazelais, & Lemay, 2017a; Qin, Kim, Hsu, & Tan, 2011; Rauniar, Rawski, Yang, & Johnson, 2014; Wenninger, Cheung, & Krasnova, 2019). Despite a small number of studies looking at the prevalence of SNS use in developing countries (Abbas Naqvi, Jiang, Miao, & Naqvi, 2020; Kaba & Touré, 2014; Owusu, Bekoe, Otoo, & Koli, 2019; Siew & Lee, 2019), there is a dearth of research that breaks down SNS adoption on both technological and social dimension. According to Tamilmani, Rana, Wamba, and Dwivedi (2021), UTAUT2 was used in a wealthy countries like the United States and a few emerging countries like Brazil, China, and South Africa, leaving behind the use of UTAUT2 in an Asian country like Malaysia. Malaysia uses SNS widely, and university students are the second-largest users, which makes it relevant enough that this study should be conducted accordingly.

The discussion above has shown the importance of the social dimension to be incorporated with the technological dimension as part of SNS acceptance. Therefore, upon establishing trust in using SNS, there is a need to find factors that influence the SNS intention and use. The factors should combine technological and social elements, with a strong emphasis on both sides. Thus, this is the focus of this thesis.

1.3 Problem Statement

People who utilise SNS technology are related not just on a technological level but also to social engagement and human communication needs. The majority of acceptance theories concentrate on the aspect of the technical dimension. Social networking services are influenced by a wide variety of other factors besides technology. Any technology could only offer value to a person, institution, or country if the user accepts the system. The technological dimension, which consists of the SNS characteristics and other related technology factors (e.g., fun to use and trust in technology), is insufficient to evaluate SNS acceptance. Other crucial aspects, such as social factors, must be taken into account to compensate for this. The social dimension involves not only participation in social interactions but also the socio-emotional factors that come along with being part of a learning community. Previous research on the social factors proposed when utilising SNS has shown a lack of evidence. The technological factors need to be integrated with other dimensions that promote social factors to assist the students with better usage and help them improve their learning, socializing, or even for enjoyment. The social factors are significant because they can help customize not only educational offerings but other benefits as well in order to meet students' needs and maximize students' experiences in using SNS technology. Apart from that, the studies in SNS acceptance have explored the same IS theories, and researchers have encouraged future SNS acceptance studies to explore other IS theories. Therefore, this research plans to fill the gap by identifying the technological-based and social-based factors related to SNS acceptance. It will also examine the relationship between the factors with behavioral intention and use behavior. By identifying the relevant factors for the technological and social dimensions, it is hoped to strengthen the SNS engagement and maximise SNS usage. Thus, there is a need to establish a user acceptance model for SNS among the students to maximise SNS use.

1.4 Research Questions

Main Research Question:

"What is the model for SNS acceptance among the students in higher learning institutions?"

The sub research questions of the research are:

- 1. What are the factors that influenced the SNS acceptance among the students?
- 2. What is the relationship between technological and social factors with the SNS acceptance among the students?
- 3. How to develop and evaluate an SNS acceptance model among students of higher learning institutions in Malaysia based on the identified factors?

1.5 Research Objectives

The overall objective of this study is to discover the factors of acceptance and use of SNS by students in higher learning institutions. In order to accomplish this, the following objectives shall be fulfilled:

- 1. To identify the factors that influenced SNS acceptance among the students.
- 2. To identify the relationship between technological factors and social factors with the SNS acceptance among the students.
- 3. To develop and evaluate an SNS acceptance model among students of higher learning institutions in Malaysia.

1.6 Research Significance

This study contributes to the body of knowledge by exploring the technological and social dimensions of using SNS among students in higher learning institutions. An integrated model is also developed to provide a holistic view of factors influencing SNS use among the students and the impact of technological and social dimensions on their intention to use SNS.

The research outcome will benefit the Malaysia Ministry of Higher Education, the higher education student administrator, and lecturers to create new and innovative ways to communicate with the students. Apart from that, it will also benefit the SNS service providers and developers to improve the SNS functionalities that will benefit them, the students, and the institutions. Henceforth, the finding of this study will be able to cultivate social values among the students to gain social benefits when they are connected to others.

1.7 Research Scope

This study's key objective is to identify the factors responsible for SNS usage among students at higher learning institutions in Malaysia. This study also investigates the relationship between the factors and the intention to use social networking sites. The scope of this research does not confine itself to any particular form of SNS, such as Facebook, Twitter, YouTube, Instagram, or any other type of SNS service. In essence, this study explores factors associated with using any SNS platform, with a particular emphasis on the students' daily usage, whether for academic purposes, entertainment, or just as a method of communication.

Using a quantitative method through online survey, this study evaluates the model developed in Malaysia's context. The respondents were chosen from among students at Malaysian higher learning institutions. For data analysis, SPSS 26 and Smart PLS 3.3 were used to evaluate the model and interpret the survey findings, respectively.

1.8 Organization of the Thesis

This thesis consists of five chapters.

Chapter 1 provides an overview and the background of the study. It also comprises the problem statement, research questions, research objectives, research scope, and significant study contributions.

Chapter 2 describes a review of the literature in the research area. The chapter defined the key concepts of SNS usage and the background of the SNS. It also describes the previous research related to user acceptance on SNS using acceptance theory. It also highlighted the acceptance theories or models related to the research context.

Chapter 3 portrays the research design selected for this study, followed by the operational framework used throughout the study.

Chapter 4 portrays the findings based on the data analysis from the quantitative survey. This chapter presents the activities conducted in multiple stages using the PLS-SEM approach. The results of the data analysis are reported.

Chapter 5 discusses this study's results based on the hypothesis testing results. This chapter describes how the results have achieved the study's objectives and conclude by summarizing the findings. In addition, it also presents conclusions, contributions, and recommendations. It consists of the list of theoretical and practical contributions, recommendations, and limitations of this study.

REFERENCES

- Abbas Naqvi, M. H., Jiang, Y., Miao, M., & Naqvi, M. H. (2020). The effect of social influence, trust, and entertainment value on social media use: Evidence from Pakistan. *Cogent Business and Management*, 7(1). Retrieved from https://doi.org/10.1080/23311975.2020.1723825
- Abdullah, M., & Freewan, Y. (2019). Negative Effects of Using the Social Network (Facebook) on Secondary School Students in Al-Yarmouk Area of Bani Kinana District, Jordan, 2665, 91–103.
- Abu-Shanab, E. A. (2011). Education level as a technology adoption moderator. ICCRD2011 - 2011 3rd International Conference on Computer Research and Development, 1, 324–328.
- Adigun, O. T. (2020). Self-esteem, self-efficacy, self-concept and intimate image diffusion among deaf adolescents: A structural equation model analysis. *Heliyon*, 6(8), e04742. Retrieved from https://doi.org/10.1016/j.heliyon.2020.e04742
- Ahn, H., Kwolek, E. A., & Bowman, N. D. (2015). Two faces of narcissism on SNS: The distinct effects of vulnerable and grandiose narcissism on SNS privacy control. *Computers in Human Behavior*, 45, 375–381. Retrieved from http://dx.doi.org/10.1016/j.chb.2014.12.032
- Ain, N. U., Kaur, K., & Waheed, M. (2016). The influence of learning value on learning management system use: An extension of UTAUT2. *Information Development*, 32(5), 1306–1321.
- Ainin, S., Naqshbandi, M. M., Moghavvemi, S., & Jaafar, N. I. (2015). Facebook usage, socialization and academic performance. *Computers and Education*, 83(April), 64–73.
- Ajzen, I. (1991). The Theory of Planned Behavior. Organizational Behavior and Human Decisian Processes, 50(JANUARY 1991), 179–211.
- Akçayir, M. (2017). What do students think about SNSs in education? University students' perceptions, expectations and concerns regarding educational uses of SNSs. *Australasian Journal of Educational Technology*, 33(5), 91–106.
- Akter, S., d'Ambra, J., & Ray, P. (2013). Development and validation of an

instrument to measure user perceived service quality of mHealth. *Faculty of Business - Papers (Archive)*. 109. Retrieved from https://ro.uow.edu.au/buspapers/109

- Al-Azawei, A. (2018). Predicting The Adoption Of Social Media: An Integrated Model And Empirical Study On Facebook Usage. *Interdisciplinary Journal* of Information, Knowledge, and Management, 13, 233–238.
- Al-Debei, M. M., Al-Lozi, E., & Papazafeiropoulou, A. (2013). Why people keep coming back to Facebook: Explaining and predicting continuance participation from an extended theory of planned behaviour perspective. *Decision Support Systems*, 55(1), 43–54. Retrieved from http://dx.doi.org/10.1016/j.dss.2012.12.032
- Al-Ghaith, W. (2015). Applying the Technology Acceptance Model to Understand Social Networking Sites (SNS) Usage: Impact of Perceived Social Capital. *International Journal of Computer Science and Information Technology*, 7(4), 105–117.
- Al-Qaysi, N., Mohamad-Nordin, N., & Al-Emran, M. (2020). A Systematic Review of Social Media Acceptance From the Perspective of Educational and Information Systems Theories and Models. *Journal of Educational Computing Research*, 57(8), 2085–2109.
- Al-Rahmi, W. M., Alias, N., Othman, M. S., Marin, V. I., & Tur, G. (2018). A model of factors affecting learning performance through the use of social media in Malaysian higher education. *Computers and Education*, *121*(April 2017), 59–72. Retrieved from https://doi.org/10.1016/j.compedu.2018.02.010
- Alalwan, Ali A., Dwivedi, Y. K., Rana, N. P., Lal, B., & Williams, M. D. (2015).
 Consumer adoption of Internet banking in Jordan: Examining the role of hedonic motivation, habit, self-efficacy and trust. *Journal of Financial Services Marketing*, 20(2), 145–157. Retrieved from http://dx.doi.org/10.1057/fsm.2015.5
- Alalwan, Ali Abdallah, Dwivedi, Y. K., & Rana, N. P. (2017). Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. *International Journal of Information Management*, 37(3), 99–110. Retrieved from http://dx.doi.org/10.1016/j.ijinfomgt.2017.01.002

Alayis, M. M. H., Abdelwahed, N. A. A., & Atteya, N. (2018). Impact of social

networking sites' use on entrepreneurial intention among undergraduate business students: The case of Saudi Arabia. *Journal of Legal, Ethical and Regulatory Issues, 22*(4).

- Alexander, B. (2006). Use of Web 2.0 Technologies for Library and Information Science Education. *Educase Review*, (March/April), 33–44. Retrieved from http://net.educause.edu/ir/library/pdf/ERM0621.pdf
- Ali, N., Tretiakov, A., & Whiddett, D. (2014). A Content Validity Study for a Knowledge Management System Success Model in Healthcare. *Journal of Information Technology Theory and Application (JITTA)*, 15(2).
- Aljehani, H. A. (2019). Impact of social media on social value systems among university students in Saudi Arabia. *International Journal of Education and Practice*.
- Alshurideh, M., Salloum, S. A., Al Kurdi, B., & Al-Emran, M. (2019). Factors affecting the social networks acceptance: An empirical study using PLS-SEM approach. ACM International Conference Proceeding Series, Part F1479, 414–418.
- Altman, I. (1975). Privacy: Definitions and properties. In I. Altman (Ed.), The environment and social behavior: Privacy, personal space, territory, crowding. Brooks/Cole Publishing Company.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin*, 103(3), 411–423.
- Anderson, J. E., Schwager, P. H., & Kerns, R. L. (2006). The Drivers for Acceptance of Tablet PCs by Faculty in a College of Business. *Journal of Information Systems Education*, 17(4), 429–440.
- Arenas-Gaitán, J., Peral-Peral, B., & Ramón-Jerónimo, M. A. (2015). Elderly and internet banking: An application of UTAUT2. *Journal of Internet Banking and Commerce*.
- Arteaga Sánchez, R., Cortijo, V., & Javed, U. (2019). Factors driving the adoption of Facebook in higher education. *E-Learning and Digital Media*, 16(6), 455– 474.
- Astrachan, C. B., Patel, V. K., & Wanzenried, G. (2014). A comparative study of CB-SEM and PLS-SEM for theory development in family firm research. *Journal of Family Business Strategy*, 5(1), 116–128. Retrieved from

http://dx.doi.org/10.1016/j.jfbs.2013.12.002

- Atkin, D. J., Hunt, D. S., & Lin, C. A. (2015). Diffusion Theory in the New Media Environment: Toward an Integrated Technology Adoption Model. *Mass Communication and Society*, 18(5), 623–650.
- Ayaburi, E. W., & Treku, D. N. (2020). Effect of penitence on social media trust and privacy concerns: The case of Facebook. *International Journal of Information Management*, 50, 171–181.
- Baker, E. W., Al-Gahtani, S. S., & Hubona, G. S. (2007). The effects of gender and age on new technology implementation in a developing country: Testing the theory of planned behavior (TPB). *Information Technology and People*, 20(4), 352–375.
- Baker, R. K., & White, K. M. (2010). Predicting adolescents' use of social networking sites from an extended theory of planned behaviour perspective. *Computers in Human Behavior*, 26(6), 1591–1597. Retrieved from http://dx.doi.org/10.1016/j.chb.2010.06.006
- Baron, R. M., & Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research. Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51(6), 1173– 1182.
- Barth, S., & de Jong, M. D. T. (2017). The privacy paradox Investigating discrepancies between expressed privacy concerns and actual online behavior A systematic literature review. *Telematics and Informatics*, 34(7), 1038–1058. Retrieved from https://doi.org/10.1016/j.tele.2017.04.013
- Basak, E., & Calisir, F. (2015). An empirical study on factors affecting continuance intention of using Facebook. *Computers in Human Behavior*, 48, 181–189. Retrieved from http://dx.doi.org/10.1016/j.chb.2015.01.055
- Becker, L., & Pousttchi, K. (2012). Social networks: The role of users' privacy concerns. ACM International Conference Proceeding Series, 49(821), 187– 195.
- Bergagna, E., & Tartaglia, S. (2018). Self-esteem, social comparison, and facebook use. *Europe's Journal of Psychology*, *14*(4), 831–845.
- Binyamin, S. S., Rutter, M. J., & Smith, S. (2019). The moderating effect of education and experience on the use of learning management systems. ACM International Conference Proceeding Series, Part F1481(March), 293–300.

- Binyamin, S. S., Rutter, M. J., & Smith, S. (2020). The moderating effect of gender and age on the students' acceptance of learning management systems in Saudi higher education. *Knowledge Management and E-Learning*, 12(1), 30–62.
- Błachnio, A., Przepiorka, A., & Rudnicka, P. (2016). Narcissism and self-esteem as predictors of dimensions of Facebook use. *Personality and Individual Differences*, 90, 296–301.
- Bostrom, R. P., & Heinen, J. S. (1977). STS Perspective MIS Problems and Failures : A Socio- Technical Perspective PART I: THE CAUSES. *MIS Quarterly*, 1(3), 17–32.
- Bourgonjon, J., Valcke, M., Soetaert, R., & Schellens, T. (2010). Students' perceptions about the use of video games in the classroom. *Computers and Education*, 54(4), 1145–1156. Retrieved from http://dx.doi.org/10.1016/j.compedu.2009.10.022
- Boyd, D. (2011). Taken Out of Context: American Teen Sociality in Networked Publics. SSRN Electronic Journal.
- Boyd, D. M., & Ellison, N. B. (2007). Social Network Sites: Definition, History, and Scholarship. *Journal of Computer-Mediated Communication*, *13*, 210–230.
- Brailovskaia, J., Ströse, F., Schillack, H., & Margraf, J. (2020). Less Facebook use More well-being and a healthier lifestyle? An experimental intervention study. *Computers in Human Behavior*, 108(November 2019).
- Bristy, J. F. (2016). Factors Affecting the Adoption of Social Network: A Study of Facebook Users in Bangladesh. *The Journal of Social Media in Society*, 5(1), 137–159. Retrieved from http://thejsms.org/index.php/TSMRI/article/view/128/68
- Brown, S. A., & Venkatesh, V. (2005). Model of adoption of technology in households: A baseline model test and extension incorporating household life cycle. *MIS Quarterly: Management Information Systems*, 29(3), 399–426.
- Bryman, A. (2016). *Social Research Methods* (5th ed.). London: Oxford University Press.
- Campbell, A. J. (1997). Relationship marketing in consumer markets: A comparison of managerial and consumer attitudes about information privacy. *Journal of Direct Marketing*, *11*(3), 44–57. Retrieved from https://www.sciencedirect.com/science/article/pii/S1094996897707485
- Carroll, J. M., & Thomas, J. C. (1988). Fun. SIGCHI Bulletin, 19(3), 21-24.

- Cast, A. D., & Burke, P. J. (2002). A Theory of Self-Esteem*. *Social Forces*, 80(3), 1041–1068. Retrieved from https://doi.org/10.1353/sof.2002.0003
- Chan, K. Y., Gong, M., Xu, Y., & Thong, J. Y. L. (2008). Examining user acceptance of SMS: An empirical study in China and Hong Kong. PACIS 2008 - 12th Pacific Asia Conference on Information Systems: Leveraging ICT for Resilient Organizations and Sustainable Growth in the Asia Pacific Region.
- Chang, B. H., Lee, S. E., & Kim, B. S. (2006). Exploring factors affecting the adoption and continuance of online games among college students in South Korea: Integrating uses and gratification and diffusion of innovation approaches. *New Media and Society*, 8(2), 295–319.
- Chang, Chia Ming, Liu, L. W., Huang, H. C., & Hsieh, H. H. (2019). Factors influencing Online Hotel Booking: Extending UTAUT2 with age, gender, and experience as moderators. *Information (Switzerland)*, 10(9).
- Chang, Chun Ming, Hsu, M. H., & Lee, Y. J. (2016). How can social networking sites help build customer loyalty? An empirical investigation. *Total Quality Management and Business Excellence*, 27(1–2), 111–123.
- Chang, S. E., Liu, A. Y., & Shen, W. C. (2017). User trust in social networking services: A comparison of Facebook and LinkedIn. *Computers in Human Behavior*, 69, 207–217. Retrieved from http://dx.doi.org/10.1016/j.chb.2016.12.013
- Chang, S. E., Shen, W. C., & Liu, A. Y. (2016). Why mobile users trust smartphone social networking services? A PLS-SEM approach. *Journal of Business Research*, 69(11), 4890–4895. Retrieved from http://dx.doi.org/10.1016/j.jbusres.2016.04.048
- Chaouali, W., Ben Yahia, I., & Souiden, N. (2016). The interplay of counterconformity motivation, social influence, and trust in customers' intention to adopt Internet banking services: The case of an emerging country. *Journal of Retailing and Consumer Services*, 28, 209–218. Retrieved from http://dx.doi.org/10.1016/j.jretconser.2015.10.007
- Check, J., & Schutt, R. K. (2017). Conceptualization and Measurement. *Research Methods in Education*, 65–90.
- Chen, S. C., & Lin, C. P. (2019). Understanding the effect of social media marketing activities: The mediation of social identification, perceived value, and

satisfaction. *Technological Forecasting and Social Change*, *140*(July 2018), 22–32. Retrieved from https://doi.org/10.1016/j.techfore.2018.11.025

- Chen, W., & R Hirschheim. (2004). A paradigmatic and methodological examination of information systems research from 1991 to 2001.pdf. *Wiley Online Library*, 197–235. Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2575.2004.00173.x/full
- Chiu, C. M., Hsu, M. H., Lai, H., & Chang, C. M. (2012). Re-examining the influence of trust on online repeat purchase intention: The moderating role of habit and its antecedents. *Decision Support Systems*, 53(4), 835–845. Retrieved from http://dx.doi.org/10.1016/j.dss.2012.05.021
- Choi, G., & Chung, H. (2012). Elaborating the Technology Acceptance Model with Social Pressure and Social Benefits for Social Networking Sites (SNSs). In ASIST 2012.
- Choi, G., & Chung, H. (2013). Applying the Technology Acceptance Model to Social Networking Sites (SNS): Impact of Subjective Norm and Social Capital on the Acceptance of SNS. *International Journal of Human-Computer Interaction*, 29(10), 619–628.
- Choi, S. B., & Lim, M. S. (2016). Effects of social and technology overload on psychological well-being in young South Korean adults: The mediatory role of social network service addiction. *Computers in Human Behavior*, 61, 245– 254.
- Chu, S. K. W., & Du, H. S. (2013). Social networking tools for academic libraries. *Journal of Librarianship and Information Science*, 45(1), 64–75.
- Chua, P. Y., Rezaei, S., Gu, M.-L., Oh, Y., & Jambulingam, M. (2018). Elucidating social networking apps decisions. *Nankai Business Review International*, 9(2), 118–142.
- Chua, Y. P. (2013). *Mastering research statistics*. Shah Alam, Malaysia: McGraw-Hill Education.
- Cocosila, M., & Igonor, A. (2015). How important is the "social" in social networking? A perceived value empirical investigation. *Information Technology and People*, 28(2), 366–382.
- Coenen, T. (2006). Knowledge sharing over social networking systems.
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research Methods in Education*. *Research Methods in Education* (6th ed.). Routledge.

- Collis, J., & Hussey, R. (2009). Business research: A practical guide for undergraduate & postgraduate students (6th ed.). Basingstoke, Hampshire [UK]: Palgrave Macmillan.
- Corley, K., & Gioia, D. (2011). Building theory about theory building: What constitutes a theoretical contribution? Academy of Management Review, 36(1), 12–32.
- Creswell, J. W. (2013). Research design: Qualitative, quantitative, and mixed methods approaches. SAGE. Retrieved from http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Research+ Design+-+Qualitative,+Quantitative+and+Mixed+Methods+Approaches#0
- Creswell, J. W. (2014). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (4th ed.). Sage Publications.
- Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2003). Advanced mixed methods research designs. Handbook of mixed methods in social and behavioral research. SAGE Publication, Inc.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35(8), 982–1003.
- Debatin, B., Lovejoy, J. P., Horn, A. K., & Hughes, B. N. (2009). Facebook and online privacy: Attitudes, behaviors, and unintended consequences. *Journal* of Computer-Mediated Communication, 15(1), 83–108.
- Deng, Z., Lu, Y., Wei, K. K., & Zhang, J. (2010). Understanding customer satisfaction and loyalty: An empirical study of mobile instant messages in China. *International Journal of Information Management*, 30(4), 289–300. Retrieved from http://dx.doi.org/10.1016/j.ijinfomgt.2009.10.001
- Denyer, D., & Tranfield, D. (2009). Producing a Systematic Review. The SAGE Handbook of Organizational Research Methods.
- Denzin, N. K., & Lincoln, Y. S. (2011). *The Sage handbook of qualitative research*. SAGE.
- Dhami, A., Agarwal, N., Chakraborty, T. K., Singh, B. P., & Minj, J. (2013). Impact of trust, security and privacy concerns in social networking: An exploratory study to understand the pattern of information revelation in Facebook. *Proceedings of the 2013 3rd IEEE International Advance Computing Conference, IACC 2013*, 465–469.

- Dhir, A., Kaur, P., & Rajala, R. (2018). Why do young people tag photos on social networking sites? Explaining user intentions. *International Journal of Information Management*, 38(1), 117–127. Retrieved from http://dx.doi.org/10.1016/j.ijinfomgt.2017.07.004
- Dinev, T., & Hart, P. (2006). An extended privacy calculus model for e-commerce transactions. *Information Systems Research*, 17(1), 61–80.
- Dixit, R. V., & Prakash, G. (2018). Intentions to Use Social Networking Sites (SNS) Using Technology Acceptance Model (TAM). *Paradigm*, 22(1), 65–79.
- Doleck, T., Bazelais, P., & Lemay, D. J. (2017a). Examining the antecedents of Facebook acceptance via structural equation modeling: A case of CEGEP students. *Knowledge Management and E-Learning*, 9(1), 69–89.
- Doleck, T., Bazelais, P., & Lemay, D. J. (2017b). Examining the antecedents of social networking sites use among CEGEP students. *Education and Information Technologies*, 22(5), 2103–2123. Retrieved from http://dx.doi.org/10.1007/s10639-016-9535-4
- Dulipovici, A., & Vieru, D. (2015). Exploring collaboration technology use: How users' perceptions twist and amend reality. *Journal of Knowledge Management*, 19(4), 661–681.
- Edwin R., V. T., & Venora, H. (2001). The Importance Of Pilot Study. Social Research, (winter)(35), 1–7.
- Escobar-Rodríguez, T., Carvajal-Trujillo, E., & Monge-Lozano, P. (2014). Factors that influence the perceived advantages and relevance of Facebook as a learning tool: An extension of the UTAUT. *Australasian Journal of Educational Technology*, 30(2), 136–151.
- Eteokleous, N., Ktoridou, D., & Stavrides, L. (2012). Facebook A Social Networking Tool For Educational Purposes : Developing Special Interest Groups. In *ICICTE 2012 Proceedings* (pp. 363–375).
- Flanagin, A. J., & Metzger, M. J. (2001). Internet use in the contemporary media environment. *Human Communication Research*, 27(1), 153–181.
- Friedman, B., Kahn, P. H., & Howe, D. C. (2000). Trust online. Communications of the ACM, 43(12), 34–40.
- Froment, F., García González, A. J., & Bohórquez, M. R. (2017). The use of social networks as a communication tool between teachers and students: A literature review. *Turkish Online Journal of Educational Technology*, 16(4), 126–144.

- Gee, J. P., & Green, J. L. (1998). Discourse Analysis, Learning, and Social Practice: A Methodological Study. *Review of Research in Education*, 23(1998), 119.
- Gefen, D., Straub, D., & Boudreau, M.-C. (2000). Structural Equation Modeling and Regression: Guidelines for Research Practice. Communications of the Association for Information Systems, 4(October).
- Ghareb, M. I., Ahmed, Z. A., & Ameen, A. A. (2018). The role of learning through social network in higher education in krg. *International Journal of Scientific* and Technology Research, 7(5), 20–27.
- Goh, S. L., Muhammad, M. Z., Lada, S., & Amboala, T. (2011). An Exploration of Social Networking Sites (SNS) Adoption in Malaysia Using Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB) And Intrinsic Motivation Article. *Journal of Internet Banking and Commerce*, 16(2), 1–27.
- González-Padilla, D. A., & Tortolero-Blanco, L. (2020). Social media influence in the COVID-19 pandemic. *International Braz J Urol*, *46*(Suppl 1), 120–124.
- Gosling, S. D., Augustine, A. A., Vazire, S., Holtzman, N., & Gaddis, S. (2011).
 Manifestations of personality in online social networks: Self-reported facebook-related behaviors and observable profile information.
 Cyberpsychology, Behavior, and Social Networking, 14(9), 483–488.
- Gosling, S. D., Rentfrow, P. J., & Swann, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality*, 37(6), 504–528.
- Griffiths, M. D., Kuss, D. J., & Demetrovics, Z. (2014). Social Networking Addiction: An Overview of Preliminary Findings. *Behavioral Addictions: Criteria, Evidence, and Treatment*, (April 2016), 119–141.
- Gruzd, A., Staves, K., & Wilk, A. (2012). Connected scholars: Examining the role of social media in research practices of faculty using the UTAUT model. *Computers in Human Behavior*, 28(6), 2340–2350. Retrieved from http://dx.doi.org/10.1016/j.chb.2012.07.004
- Gulzar, M. A., Ahmad, M., Hassan, M., & Rasheed, M. I. (2021). How social media use is related to student engagement and creativity: investigating through the lens of intrinsic motivation. *Behaviour and Information Technology*.
- Guo, C., Shim, J. P., & Otondo, R. (2010). Social network services in china: An integrated model of centrality, trust, and technology acceptance. *Journal of Global Information Technology Management*, 13(2), 76–99.

- Guo, Y. (2014). Moderating effects of gender in the acceptance of mobile SNS-Based on UTAUT model. Proceedings - 2014 International Conference on Management of e-Commerce and e-Government, ICMeCG 2014, 163–167.
- Guo, Z., Cho, J. H., Chen, I. R., Sengupta, S., Hong, M., & Mitra, T. (2021). Online Social Deception and Its Countermeasures: A Survey. *IEEE Access*, 9, 1770– 1806.
- Gupta, S., & Bashir, L. (2018). Social networking usage questionnaire: Development and validation. *Turkish Online Journal of Distance Education*, 19(4), 214– 227.
- Haenlein, M., & Kaplan, A. (2004). A Beginner's Guide to Partial Least Squares Analysis, Understanding Statistics, 3(4), 283–297.
- Hair, J. F., Hult, T. M., Ringe, C. M., & Sarstedt, M. (2014). A Primer In Partial Least Squares Structural Equation Modeling (PLS-SEM).
- Hair, J. F., Hult, T. M., Ringle, C. M., & Sarstedt, M. (2017). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM) (2nd ed.). SAGE Publications.
- Hair Jr., J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, 1(2), 107.
- Hamid, S., Waycott, J., Kurnia, S., & Chang, S. (2015). Understanding students' perceptions of the benefits of online social networking use for teaching and learning. *Internet and Higher Education*, 26, 1–9. Retrieved from http://dx.doi.org/10.1016/j.iheduc.2015.02.004
- Harden, G., Beayeyz, A. A., & Visinescu, L. (2012). Concerning SNS use: How do issues of privacy and trust concern users? 18th Americas Conference on Information Systems 2012, AMCIS 2012, 2, 1552–1559. Retrieved from https://www.scopus.com/inward/record.uri?eid=2-s2.0-

84877915415&partnerID=40&md5=13dc67baeeb06dc4058e18dd0b3408c4

- Haynes, S. N., Richard, D. C., & Kubany, E. (1995). Content validity in psychosocial assessmen: A functional approach to concept and method. *Psychological Assessment*, 7(3), 238–247.
- Heijden, H. van der. (2004). User Acceptance of Hedonic Information Systems. *MIS Quarterly*, 28(4), 695–704.
- Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new

technology research: Updated guidelines. *Industrial Management and Data Systems*, 116(1), 2–20.

- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal* of the Academy of Marketing Science, 43(1), 115–135.
- Herrero, A., San Martín, H., & Garcia-De los Salmones, M. del M. (2017). Explaining the adoption of social networks sites for sharing user-generated content: A revision of the UTAUT2. *Computers in Human Behavior*, 71, 209–217.
- Hew, J. J., Lee, V. H., Ooi, K. B., & Wei, J. (2015). What catalyses mobile apps usage intention: An empirical analysis. *Industrial Management and Data Systems*, 115(7), 1269–1291.
- Hina, S., & Dominic, D. D. (2017). Digital connectivity and sharing at school: Opportunities and security challenges of using social networking sites. 2017 5th International Conference on Information and Communication Technology, ICoIC7 2017, 0(c), 1–6.
- Hina, S., & Dominic, P. D. D. (2016). Gauging the school-based acceptability of Web 2.0 collaborative tools. *International Journal of Business Information Systems*, 21(3), 321.
- Hinton, P., Brownlow, C., Mcmurray, I., & Cozens, B. (2004). SPSS Explained.
- Ho, S. S., Lwin, M. O., & Lee, E. W. J. (2017). Till logout do us part? Comparison of factors predicting excessive social network sites use and addiction between Singaporean adolescents and adults. *Computers in Human Behavior*, 75, 632–642. Retrieved from http://dx.doi.org/10.1016/j.chb.2017.06.002
- Hong, I. B. (2018). Social and personal dimensions as predictors of sustainable intention to use facebook in Korea: An empirical analysis. *Sustainability* (Switzerland), 10(8).
- Hsiao, C. H., Chang, J. J., & Tang, K. Y. (2016). Exploring the influential factors in continuance usage of mobile social Apps: Satisfaction, habit, and customer value perspectives. *Telematics and Informatics*, 33(2), 342–355. Retrieved from http://dx.doi.org/10.1016/j.tele.2015.08.014
- Huang, C.-Y., & Kao, Y.-S. (2015). UTAUT2 Based Predictions of Factors Influencing the Technology Acceptance of Phablets by DNP. *Mathematical Problems in Engineering*, 2015.

- Huang, C. (2019). Social network site use and Big Five personality traits: A metaanalysis. *Computers in Human Behavior*, 97(January), 280–290. Retrieved from https://doi.org/10.1016/j.chb.2019.03.009
- Huang, C. H., & Hsu, M. C. (2013). Acceptance of location-based service technology - The Facebook Check-in function. 2013 10th International Conference on Service Systems and Service Management - Proceedings of ICSSSM 2013, 809–812.
- Hulland, J., Baumgartner, H., & Smith, K. (2017). Marketing survey research best practices: evidence and recommendations from a review of JAMS articles. *Journal of the Academy of Marketing Science*, 46.
- Hunt, D. S., Lin, C. A., & Atkin, D. J. (2014a). Communicating Social Relationships via the Use of Photo-Messaging. *Journal of Broadcasting and Electronic Media*, 58(2), 234–252.
- Hunt, D. S., Lin, C. A., & Atkin, D. J. (2014b). Photo-messaging: Adopter attributes, technology factors and use motives. *Computers in Human Behavior*, 40, 171– 179. Retrieved from http://dx.doi.org/10.1016/j.chb.2014.07.030
- Hutchinson, A. (2021). Facebook's Daily Active Usage Has Stalled in the US A Sign of Concern for The Social Network? Retrieved from https://www.socialmediatoday.com/news/facebooks-daily-active-usage-hasstalled-in-the-us-a-sign-of-concern-for/594253/
- Hwang, H. S., & Cho, J. (2018). Why instagram? Intention to continue using instagram among Korean college students. Social Behavior and Personality, 46(8), 1305–1315.
- Ismail, S. (2006). Detailed review of Roger's Diffusion of innovations theory and educational technology. *The Turkish Online Journal of Educational Technology*, 5(2), 14–23. Retrieved from https://files.eric.ed.gov/fulltext/ED501453.pdf
- Jaafar, N. I., Darmawan, B., & Ariffin, M. Y. M. (2018). Social networking site adoption in Malaysia and Indonesia. Jurnal Komunikasi: Malaysian Journal of Communication, 34(1), 115–134.
- Jessica Van Lier. (2019). The Evolution of Social Networking. Retrieved from https://medium.com/@4king/the-evolution-of-social-networkingbab2497c0733
- Jiao, Y., Jo, M. S., & Sarigöllü, E. (2017). Social value and content value in social

media: Two paths to psychological well-being. Journal of Organizational Computing and Electronic Commerce (Vol. 27).

- Johanson, G. A., & Brooks, G. P. (2010). Initial scale development: Sample size for pilot studies. *Educational and Psychological Measurement*, *70*(3), 394–400.
- Kaba, B., & Touré, B. (2014). Understanding Information and Communication Technology Behavioral Intention to Use: Applying the UTAUT Model to Social Networking Site Adoption by Young People in a Least Developed Country. *Journal of the Association for Information Science and Technology*, 65(8), 1662–1674.
- Khairi, S. S. M., & Ghani, R. A. M. (2019). Analysis of social networking sites on academic performance among university students: A PLS-SEM approach. In *AIP Conference Proceedings* (Vol. 2138).
- Kim, E., Lee, J. A., Sung, Y., & Choi, S. M. (2016). Predicting selfie-posting behavior on social networking sites: An extension of theory of planned behavior. *Computers in Human Behavior*, 62, 116–123. Retrieved from http://dx.doi.org/10.1016/j.chb.2016.03.078
- Kim, H. S. (2016). What drives you to check in on Facebook? Motivations, privacy concerns, and mobile phone involvement for location-based information sharing. *Computers in Human Behavior*, 54, 397–406. Retrieved from http://dx.doi.org/10.1016/j.chb.2015.08.016
- Kim, S. S., & Malhotra, N. K. (2005). A longitudinal model of continued IS use: An integrative view of four mechanisms underlying postadoption phenomena. *Management Science*, 51(5), 741–755.
- Kim, S. S., Malhotra, N. K., & Narasimhan, S. (2005). Two competing perspectives on automatic use: A theoretical and empirical comparison. *Information Systems Research*, 16(4), 418–432.
- Kim, W., Jeong, O. R., & Lee, S. W. (2010). On social Web sites. *Information Systems*, *35*(2), 215–236. Retrieved from http://dx.doi.org/10.1016/j.is.2009.08.003
- Kim, Y. A., & Ahmad, M. A. (2013). Trust, distrust and lack of confidence of users in online social media-sharing communities. *Knowledge-Based Systems*, 37, 438–450. Retrieved from http://dx.doi.org/10.1016/j.knosys.2012.09.002
- Kingsley Arthur, J., Sarpong Adu-Manu, K., & Yeboah, C. (2013). A conceptual framework for the Adoption of Social Network Technologies (SNTs) in

Teaching – case of Ghana. International Journal of Computer Science Issues, 10(5).

- Kitchenham, B., & Brereton, P. (2013). A systematic review of systematic review process research in software engineering. *Information and Software Technology*, 55(12), 2049–2075. Retrieved from https://www.sciencedirect.com/science/article/pii/S0950584913001560
- Kitchenham, B., & Pfleeger, S. L. (2002). Principles of survey research part 4. ACM SIGSOFT Software Engineering Notes, 27(3), 20–23.
- Kline, R. B. (2010). *Principles and Practice of Structural Equation Modeling* (3rd ed.). Guilford Press.
- Klopper, R., Lubbe, S., & Rugbeer, H. (2007). The Matrix Method of literature reviews. *Alternation*, 14(1), 262–276.
- Kolhar, M., Kazi, R. N. A., & Alameen, A. (2021). Effect of social media use on learning, social interactions, and sleep duration among university students. *Saudi Journal of Biological Sciences*, 28(4), 2216–2222. Retrieved from https://doi.org/10.1016/j.sjbs.2021.01.010
- Koranteng, F. N., Wiafe, I., Katsriku, F. A., & Apau, R. (2019). Understanding trust on social networking sites among tertiary students: An empirical study in Ghana. *Applied Computing and Informatics*, (xxxx). Retrieved from https://doi.org/10.1016/j.aci.2019.07.003
- Krejcie, R. V, & Morgan, D. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30, 607–610.
- Kumar, R. (2014). Research Methodology: A Step-By-Step Guide for Beginners (4th ed.). SAGE Publications.
- Kumar, S., Kumar, P., & Bhasker, B. (2018). Interplay between trust, information privacy concerns and behavioural intention of users on online social networks. *Behaviour and Information Technology*, 37(6), 622–633. Retrieved from https://doi.org/10.1080/0144929X.2018.1470671
- Kwon, S. J., Park, E., & Kim, K. J. (2014). What drives successful social networking services? A comparative analysis of user acceptance of Facebook and Twitter. *Social Science Journal*, 51(4), 534–544.
- Lambić, D. (2016). Correlation between Facebook use for educational purposes and academic performance of students. *Computers in Human Behavior*, 61, 313– 320.

- Lankton, N. K., & McKnight, D. H. (2011). What does it mean to trust facebook? Examining Technology and Interpersonal Trust Beliefs. ACM SIGMIS Database, 42(2), 32.
- Lee, J.-E. R., Moore, D. C., Park, E.-A., & Park, S. G. (2012). Who wants to be "friend-rich"? Social compensatory friending on Facebook and the moderating role of public self-consciousness. *Computers in Human Behavior*, 28(3), 1036–1043. Retrieved from https://www.sciencedirect.com/science/article/pii/S0747563212000088
- Lee, M. R., Yen, D. C., & Hsiao, C. Y. (2014). Understanding the perceived community value of Facebook users. *Computers in Human Behavior*, 35(February), 350–358. Retrieved from http://dx.doi.org/10.1016/j.chb.2014.03.018
- Lee, W., & Paris, C. M. (2013). Knowledge Sharing and Social Technology Acceptance Model: Promoting Local Events and Festivals Through Facebook. *Tourism Analysis*, 18(4), 457–469.
- Legris, P., Ingham, J., & Collerette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information and Management*, 40(3), 191–204.
- Lemay, D. J., Doleck, T., & Bazelais, P. (2019). Context and technology use: Opportunities and challenges of the situated perspective in technology acceptance research. *British Journal of Educational Technology*, 50(5), 2450–2465.
- Leng, G. S., Lada, S., Muhammad, M. Z., & Ag Ibrahim, A. A. (2011). An Exploration of Social Networking Sites (SNS) Adoption in Malaysia Using Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB) And Intrinsic Motivation. *Journal of Internet Banking and Commerce*, 16(2).
- Li, D. C. (2011). Online social network acceptance: A social perspective. *Internet Research*, 21(5), 562–580.
- Liao, C., Palvia, P., & Lin, H. N. (2006). The roles of habit and web site quality in ecommerce. *International Journal of Information Management*, 26(6), 469– 483.
- Limayem, M., Hirt, S. G., & Cheung, C. M. K. (2007). How Habit Limits the Predictive Power of Intention: The Case of Information Systems Continuance. *MIS Quarterly*, 31(4), 705–737.

- Lin, C. A. (1998). Exploring personal computer adoption dynamics. *Journal of Broadcasting and Electronic Media*, 42(1), 95–112.
- Lin, C. P., & Bhattacherjee, A. (2010). Extending technology usage models to interactive hedonic technologies: A theoretical model and empirical test. *Information Systems Journal*, 20(2), 163–181.
- Lin, K.-Y., & Lu, H.-P. (2015). Predicting mobile social network acceptance based on mobile value and social influence. *Internet Research*, 25(1), 107–130. Retrieved from http://dx.doi.org/10.1108/IntR-01-2014-0018%0Ahttp://dx.doi.org/10.1108/%0Ahttp://%0Ahttp://dx.doi.org/10.1108/ IntR-09-2013-0199
- Lin, T. T. C., Chiu, V. C. H., & Lim, W. (2011). Factors affecting the adoption of social network sites: Examining four adopter categories of Singapore's working adults. *Asian Journal of Communication*, 21(3), 221–242.
- Liu, L. W., Chang, C. M., Huang, H. C., & Chang, Y. L. A. (2016). Verification of social network site use behavior of the university physical education students. *Eurasia Journal of Mathematics, Science and Technology Education*, 12(4), 793–805.
- Lu, H. P., & Hsiao, K. L. (2010). The influence of extro/introversion on the intention to pay for social networking sites. *Information and Management*, 47(3), 150– 157.
- Lu, H. P., & Yang, Y. W. (2014). Toward an understanding of the behavioral intention to use a social networking site: An extension of task-technology fit to social-technology fit. *Computers in Human Behavior*, 34, 323–332. Retrieved from http://dx.doi.org/10.1016/j.chb.2013.10.020
- Lu, J., & Churchill, D. (2014). The effect of social interaction on learning engagement in a social networking environment. *Interactive Learning Environments*, 22(4), 401–417.
- Lynn M. R. (1986). Determination and quantification of content validity. *Nursing Research*. Retrieved from http://ijoh.tums.ac.ir/index.php/ijoh/article/view/26
- MacKenzie, S. B., Podsakoff, P. M., & Podsakoff, N. P. (2011). Construct measurement and validation procedures in MIS and behavioral research: Integrating new and existing techniques. *MIS Quarterly: Management Information Systems*, 35(2), 293–334.
- Makki, T. W., DeCook, J. R., Kadylak, T., & Lee, O. J. Y. (2018). The Social Value

of Snapchat: An Exploration of Affiliation Motivation, the Technology Acceptance Model, and Relational Maintenance in Snapchat Use. *International Journal of Human-Computer Interaction*, *34*(5), 410–420.

- Malaysian Communications and Multimedia Commission. (2020). Internet Users Survey 2020. *The Internet Users Survey*, 160.
- Malik, A., Hiekkanen, K., Dhir, A., & Nieminen, M. (2016). Impact of privacy, trust and user activity on intentions to share Facebook photos. *Journal of Information, Communication and Ethics in Society*, 14(4), 364–382.
- Manca, S., & Ranieri, M. (2016). "yes for sharing, no for teaching!": Social Media in academic practices. *Internet and Higher Education*, 29, 63–74.
- Marangunić, N., & Granić, A. (2015). A. Technology acceptance model: a literature review from 1986 to 2013. Univ Access Inf Soc, 14(March 2015), 81–95.
- Masrom, M. B., Busalim, A. H., Abuhassna, H., & Mahmood, N. H. N. (2021). Understanding students' behavior in online social networks: a systematic literature review. *International Journal of Educational Technology in Higher Education*, 18(1). Retrieved from https://doi.org/10.1186/s41239-021-00240-7
- Mat, C. C., Mohammad, I., Wahat, H., & Khan, N. W. A. (2019). Integrating Altruism and Technology Acceptance to Use Social Media among Preservice Teachers. *International Journal of Education*, 4(28), 18–27. Retrieved from www.ijepc.com
- Mathur, G., Nathani, N., Sharma, A., Modi, D., & Arora, G. (2019). Impact of Facebook Usage on Students' Involvement in Studies. *SSRN Electronic Journal*.
- Mayer, R. C., Davis, J. H., Schoorman, F. D., Mayer, R. C., & Davis, J. H. (1995). An Integrative Model of Organizational Trust. Academy of Management Review, 20(3), 709–734.
- McKnight, D. H. (2005). Trust in Information Technology. In *The Blackwell* Encyclopedia of Management.
- McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). Developing and validating trust measures for e-commerce: An integrative typology. *Information Systems Research*, 13(3), 334–359.
- McKnight, D. H., Cummings, L. L., & Chervany, N. L. (1998). Initial Trust Formation in New Organizational Relationships. *The Academy of*

Management Review.

- McKnight, H., & Chervany, N. L. (2002). What Trust Means in E-Commerce Customer Relationship. *International Journal of Electronic Commerce*, 6(2), 35–59.
- McKnight, Harrison, Carter, M., & Clay, P. (2009). Trust in Technology: Development of a Set of Constructs and Measures. *DIGIT 2009 Proceedings* - *Diffusion Interest Group in Information Technology*, 12.
- Medaglia, R., Rose, J., Nyvang, T., & Sæbø, Ø. (2009). Characteristics Of Social Networking Services. *Mediterranean Conference on Information Systems*, (May 2014), 1–14.
- Medlin, B. D. (2001). The factors that may influnce a faculty member's decision to adopt electronic technologies in instruction. *Virginia Tech*, 112.
- Mehdizadeh, S. (2010). Self-Presentation 2.0: Narcissism and Self-Esteem on Facebook. *Cyberpsychology, Behavior, and Social Networking*, 13(4), 357– 364. Retrieved from https://doi.org/10.1089/cyber.2009.0257
- Mensah, I. K. (2019). Factors Influencing the Intention of University Students to Adopt and Use E-Government Services: An Empirical Evidence in China. SAGE Open, 9(2).
- MIDA. (2021). MIDA-Education Services.pdf. Retrieved from https://www.mida.gov.my/industries/services/education-services
- Moghavvemi, S., Paramanathan, T., Rahin, N. M., & Sharabati, M. (2017). Student's perceptions towards using e-learning via Facebook. *Behaviour and Information Technology*, 36(10), 1081–1100. Retrieved from https://doi.org/10.1080/0144929X.2017.1347201
- Momani, A. M. (2021). A modified technology acceptance theory to assess social commerce technology adoption. *Information Resources Management Journal*, *34*(2), 43–62.
- Morosan, C., & DeFranco, A. (2016). It's about time: Revisiting UTAUT2 to examine consumers' intentions to use NFC mobile payments in hotels. *International Journal of Hospitality Management*, 53, 17–29. Retrieved from http://dx.doi.org/10.1016/j.ijhm.2015.11.003
- Mouakket, S. (2015). Factors influencing continuance intention to use social network sites: The Facebook case. *Computers in Human Behavior*, *53*, 102–110.
- Muck, P. M., Hell, B., & Gosling, S. D. (2007). Construct validation of a short five-

factor model instrument: A self-peer study on the German adaptation of the Ten-Item Personality Inventory (TIPI-G). *European Journal of Psychological Assessment*, 23(3), 166–175.

- Nair, P. K., Ali, F., & Leong, L. C. (2015). Factors affecting acceptance & use of ReWIND: Validating the extended unified theory of acceptance and use of technology. Interactive Technology and Smart Education (Vol. 12).
- Naqvi, M., Li, S., Jiang, Y., & Naqvi, M. H. A. (2019). The rise of social networking sites: An empirical investigation applying demographic differences and the technology acceptance model. *Asia Pacific Journal of Marketing and Logistics*, 32(1), 232–252.
- Naseri, S. (2017). Online Social Network Sites and Social Capital: A Case of Facebook. *International Journal of Applied Sociology*, 2017(1), 13–19. Retrieved from http://journal.sapub.org/ijas
- Nedra, B. A., Hadhri, W., & Mezrani, M. (2019). Determinants of customers' intentions to use hedonic networks: The case of Instagram. *Journal of Retailing and Consumer Services*, 46(May 2018), 21–32. Retrieved from https://doi.org/10.1016/j.jretconser.2018.09.001
- Ngai, E. W. T., Poon, J. K. L., & Chan, Y. H. C. (2007). Empirical examination of the adoption of WebCT using TAM. *Computers and Education*, 48(2), 250– 267.
- Nielsen, J. (1995). How to Conduct a Heuristic Evaluation. Nielson Norman GroupNorman, (Nielsen 1992), 1–11. Retrieved from http://www.nngroup.com/articles/how-to-conduct-a-heuristic-evaluation/
- Normore, A., Javidi, M., & Long, L. (2019). Handbook of Research on Strategic Communication, Leadership, and Conflict Management in Modern Organizations.
- Odewumi, M. O., Yusuf, M. O., & Oputa, G. (2018). UTAUT Model: Intention to Use Social Media for Learning Interactive Effect of Postgraduate Gender in South-West Nigeria. *International Journal of Education and Development* Using Information and Communication Technology, 14(3), 239–251.
- Oliver, G., Liehr-gobbers, K., & Krafft, M. (2010). Evaluation of Structural Equation Models Using the Partial Least Squares (PLS) Approach. Handbook of Partial Least Squares, 691–711.

Orlikowski, W. J., & Baroudi, J. J. (1991). Studying information technology in

organizations: Research approaches and assumptions. *Information Systems Research*, 2(1), 1–28.

- Örs Özdil, S., & Kutlu, Ö. (2019). Investigation of the Mediator Variable Effect Using BK, Sobel and Bootstrap Methods (Mathematical Literacy Case). *International Journal of Progressive Education*, 15(2), 30–43.
- Ortiz De Guinea, A., & Markus, M. L. (2009). Why break the habit of a lifetime?Rethinking the roles of intention, habit, and emotion in continuing information technology use. *MIS Quarterly*, *33*(3), 433–444.
- Othman, N. F., Ahmad, R., & Sedek, M. (2016). Factors of Concerning Privacy-Protection Social Networking Sites. *International Business Management*.
- Owusu, G. M. Y., Bekoe, R. A., Otoo, D. S., & Koli, A. P. E. (2019). Adoption of social networking sites for educational use. *Journal of Applied Research in Higher Education*, 11(1), 2–19.
- Pai, P., & Arnott, D. C. (2013). User adoption of social networking sites: Eliciting uses and gratifications through a means-end approach. *Computers in Human Behavior*, 29(3), 1039–1053. Retrieved from http://dx.doi.org/10.1016/j.chb.2012.06.025
- Pallant, J. (2016). SPSS Survival Manual: A Step By Step Guide To Data Analysis Using SPSS. Journal of Advanced Nursing (Vol. 3rd). Open University Press.
- Parisot, A. H. (1995). Technology and teaching: the adoption and diffusion of technological innovations by a community college faculty, 1–158. Retrieved from

https://www.google.ca/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad =rja&uact=8&ved=0CB4QFjAAahUKEwizgOj-

lY7HAhVPG5IKHaUyBtI&url=http://scholarworks.montana.edu/xmlui/bitstr eam/handle/1/7545/31762102468715.pdf?sequence=1&isAllowed=

- Peterson, R. A., & Merunka, D. R. (2014). Convenience samples of college students and research reproducibility. *Journal of Business Research*, 67(5), 1035– 1041. Retrieved from http://dx.doi.org/10.1016/j.jbusres.2013.08.010
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. *Journal of Applied Psychology*, 88(5), 879– 903.

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method

bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539–569.

- Polit, D. F., & Beck, C. T. (2010). Generalization in quantitative and qualitative research: Myths and strategies. *International Journal of Nursing Studies*, 47(11), 1451–1458. Retrieved from http://dx.doi.org/10.1016/j.ijnurstu.2010.06.004
- Praveena, K., & Thomas, S. (2018). Explaining user acceptance and usage of social networking sites: the role of trust, social connectedness and visibility in extending UTAUT2. *International Journal of Management Practice*, 11(3), 318.
- Pynoo, B., Devolder, P., Tondeur, J., Van Braak, J., Duyck, W., & Duyck, P. (2011).
 Predicting secondary school teachers' acceptance and use of a digital learning environment: A cross-sectional study. *Computers in Human Behavior*, 27(1), 568–575. Retrieved from http://dx.doi.org/10.1016/j.chb.2010.10.005
- Qin, L., Kim, Y., Hsu, J., & Tan, X. (2011). The effects of social influence on user acceptance of online social networks. *International Journal of Human-Computer Interaction*, 27(9), 885–899.
- Quach, S., Thaichon, P., Martin, K. D., Weaven, S., & Palmatier, R. W. (2022). Digital technologies: tensions in privacy and data. *Journal of the Academy of Marketing Science*.
- R. Watermeyer. (2012). Social Networking Sites. In *Encyclopedia of Applied Ethics* (2nd ed., pp. 152–159).
- Rabaa'i, A. A., Zogheib, B., & AlJamal, E. (2015). Personality traits as predictors of social networks addiction among university students. *Journal of Emerging Trends in Engineering and Applied Sciences*, 6(3), 182–195. Retrieved from https://journals.co.za/content/sl_jeteas/6/3/EJC175660
- Rad, M. S., Dahlan, H. M., Iahad, N. A., & Nilashi, M. (2017). The Role of Demographic Factors on Academic Social Networking Sites Use Behaviour from Academic Researchers Perspective. *Journal of Soft Computing and Decision Support Systems*, 4(4), 11–16. Retrieved from http://www.jscdss.com
- Rahilah Ahmad, Nor Azilili Hassan, Jaslina Mohd Tajuddin, & Yollanda Tan Wimpi. (2018). A study on social media usage among private university students in Klang Valley. Jurnal Sultan Alauddin Sulaiman Shah, 5, 257–

268.

- Raman, A., & Lateh, H. (2015). Using Facebook as a Collaborative and Communicative Tool. *Mediterranean Journal of Social Sciences*, 6(1), 286– 292.
- Raman, A., Sani, R. M., & Kaur, P. (2014). Facebook as a Collaborative and Communication Tool: A Study of Secondary School Students in Malaysia. *Procedia - Social and Behavioral Sciences*, 155(October), 141–146.
 Retrieved from

https://linkinghub.elsevier.com/retrieve/pii/S187704281405736X

- Ramírez-Correa, P., Grandón, E. E., Alfaro-Pérez, J., & Painén-Aravena, G. (2019).
 Personality types as moderators of the acceptance of information technologies in organizations: A multi-group analysis in PLS-SEM. *Sustainability* (Switzerland), 11(14).
- Rauniar, R., Rawski, G., Yang, J., & Johnson, B. (2014). Technology acceptance model (TAM) and social media usage: an empirical study on Facebook. *Journal of Enterprise Information Management*, 27(1), 6–30.
- Raza, S. A., Qazi, W., & Umer, A. (2017). Facebook Is a Source of Social Capital Building among University Students: Evidence from a Developing Country. *Journal of Educational Computing Research*, 55(3), 295–322.
- Roberts, N., & Grover, V. (2009). Theory development in information systems research using structural equation modeling: Evaluation and recommendations. In *Handbook of research on contemporary theoretical models in information systems* (pp. 77–94). IGI Global.
- Rogers, E. M. (1995). Diffusion of Innovations (5th ed.). New York: Free Press.
- Rogers, E. M. (2003). Diffusion of Innovations (5th ed.). New York: Free Press.
- Rosenberg, M. (1965). Society and the adolescent self-image. Princeton university press.
- Rosenberg, M., Schooler, C., & Schoenbach, C. (1989). Self-Esteem and Adolescent Problems: Modeling Reciprocal Effects. *American Sociological Review*, 54(6), 1004.
- Ross, C., Orr, E. S., Sisic, M., Arseneault, J. M., Simmering, M. G., & Orr, R. R. (2009). Personality and motivations associated with Facebook use. *Computers in Human Behavior*, 25(2), 578–586. Retrieved from http://dx.doi.org/10.1016/j.chb.2008.12.024

- Saiphoo, A. N., Dahoah Halevi, L., & Vahedi, Z. (2020). Social networking site use and self-esteem: A meta-analytic review. *Personality and Individual Differences*, 153(September 2019), 109639. Retrieved from https://doi.org/10.1016/j.paid.2019.109639
- Santhanamery, T., & Ramayah, T. (2015). Understanding the Effect of Demographic and Personality Traits on the E-Filing Continuance Usage Intention in Malaysia. *Global Business Review*, 16(1), 1–20.
- Saprikis, V. (2018). Examining behavioral intention towards social commerce: An empirical investigation in university students. Proceedings of the 32nd International Business Information Management Association Conference, IBIMA 2018 - Vision 2020: Sustainable Economic Development and Application of Innovation Management from Regional Expansion to Global Growth, (November), 831–843.
- Saunders, M. N. K., Lewis, P., & Thornhill, A. (2019). "Research Methods for Business Students" Chapter 4: Understanding research philosophy and approaches to theory development. Researchgate.Net. Retrieved from www.pearson.com/uk
- Sawhney, H. (2007). Strategies for increasing the conceptual yield of new technologies research. *Communication Monographs*, 74(3), 395–401.
- Schrock, A. (2009). Examining Social Media Uage-Technology Cluster and Social Network Site Membership. *First Monday*, 14(1), 1–7.
- Sekaran, U., & Roger, B. (2016). Research Methods for Business: A Skill Building Approach. John Wiley & Sons.
- Shao, Z., Zhang, L., Li, X., & Guo, Y. (2019). Antecedents of trust and continuance intention in mobile payment platforms: The moderating effect of gender. *Electronic Commerce Research and Applications*, 33.
- Sharma, S. K., Joshi, A., & Sharma, H. (2016). A multi-analytical approach to predict the Facebook usage in higher education. *Computers in Human Behavior*, 55, 340–353.
- Shaw, N., & Sergueeva, K. (2019). The non-monetary benefits of mobile commerce: Extending UTAUT2 with perceived value. *International Journal of Information Management*, 45(November 2018), 44–55.
- Shen, K., & Khalifa, M. (2010). A Research Framework on Social Networking Sites Usage: Critical Review and Theoretical Extension Software Services for e-

World, *341*, 173–181. Retrieved from http://dx.doi.org/10.1007/978-3-642-16283-1 21

- Shin, D. H. (2009). Towards an understanding of the consumer acceptance of mobile wallet. *Computers in Human Behavior*, 25(6), 1343–1354. Retrieved from http://dx.doi.org/10.1016/j.chb.2009.06.001
- Shin, D. H. (2010). The effects of trust, security and privacy in social networking: A security-based approach to understand the pattern of adoption. *Interacting with Computers*, 22(5), 428–438. Retrieved from http://dx.doi.org/10.1016/j.intcom.2010.05.001
- Siew, E. T. F., & Lee, C. E. (2019). The adoption of Facebook mobile application for managing learning. ICCE 2019 - 27th International Conference on Computers in Education, Proceedings, 1(December 2019), 484–486.
- Sinha, S. K., & Verma, P. (2018). Examining the Moderating Role of Gender on the Relationship between the Benefits of Sales Promotion and Consumer Perception. *Iranian Journal of Management Studies*, 11(4), 795–830.
- Slade, E. L., Dwivedi, Y. K., Piercy, N. C., & Williams, M. D. (2015). Modeling Consumers' Adoption Intentions of Remote Mobile Payments in the United Kingdom: Extending UTAUT with Innovativeness, Risk, and Trust. *Psychology & Marketing*, 32(8), 860–873. Retrieved from http://eprints.lancs.ac.uk/23431/
- Sledgianowski, D., & Kulviwat, S. (2008). Social Network Sites: Antecedents of User Adoption and Usage SOCIAL NETWORK SITES: ANTECEDENTS OF USER ADOPTION AND USAGE. In Americas Conference on Infofrmation System. Retrieved from http://aisel.aisnet.org/amcis2008%5Cnhttp://aisel.aisnet.org/amcis2008/83
- Smith Haralambos, Michael., Holborn, Martin., F. (2000). *Haralambos and Holborn* Sociology: themes and perspectives. London: CollinsEducational.
- Smith, D. C. (2009). Social media correlates of organizational climate.
- Sponcil, M., & Gitimu, P. (2013). Use of social media by college students: Relationship to communication and self-concept, 4(1), 37–49.
- Sweeney, J. C., & Soutar, G. N. (2001). Consumer perceived value: The development of a multiple item scale. *Journal of Retailing*, 77(2), 203–220.
- Tabachnick, B., & Fidell, L. (2007). Using Multivariate Statistics (5th ed.). Boston: Pearson Education, Inc.

- Taherdoost, H. (2018). A review of technology acceptance and adoption models and theories. *Procedia Manufacturing*, 22, 960–967. Retrieved from https://doi.org/10.1016/j.promfg.2018.03.137
- Tamilmani, K., Rana, N. P., Prakasam, N., & Dwivedi, Y. K. (2019). The battle of Brain vs. Heart: A literature review and meta-analysis of "hedonic motivation" use in UTAUT2. *International Journal of Information Management*, 46(January), 222–235. Retrieved from https://doi.org/10.1016/j.ijinfomgt.2019.01.008
- Tamilmani, K., Rana, N. P., Wamba, S. F., & Dwivedi, R. (2021). The extended Unified Theory of Acceptance and Use of Technology (UTAUT2): A systematic literature review and theory evaluation. *International Journal of Information Management*, 57(April 2020), 102269. Retrieved from https://doi.org/10.1016/j.ijinfomgt.2020.102269
- Tan, K. S., Chong, S. C., & Lin, B. (2013). Intention to use internet marketing: A comparative study between Malaysians and South Koreans. *Kybernetes*, 42(6), 888–905.
- Tan, X., Qin, L., Kim, Y., & Hsu, J. (2012). Impact of privacy concern in social networking web sites. *Internet Research*, 22(2), 211–233.
- Tantiponganant, P., & Laksitamas, P. (2014). An analysis of the technology acceptance model in understanding students' behavioral intention to use university's social media. *Proceedings - 2014 IIAI 3rd International Conference on Advanced Applied Informatics, IIAI-AAI 2014*, 8–12.
- Tarhini, A., Alalwan, A. A., Cao, D., & Al-Qirim, N. (2021). Integrating emotional attachment, resource sharing, communication and collaboration into UTAUT2 to examine students' behavioural intention to adopt social media networks in education. *International Journal of Technology Enhanced Learning*, 13(1), 1–23.
- Tarhini, A., Hone, K., & Liu, X. (2014). Measuring the moderating effect of gender and age on E-learning acceptance in England: A structural equation modeling approach for an extended Technology Acceptance Model. *Journal of Educational Computing Research*, 51(2), 163–184.
- Tariq, J., Sajjad, A., Usman, A., & Amjad, A. (2017). The role of intentions in facebook usage among educated youth in Pakistan: An extension of the theory of planned behavior. *Computers in Human Behavior*, 74, 188–195.

Retrieved from http://dx.doi.org/10.1016/j.chb.2017.04.045

- Tazghini, S., & Siedlecki, K. L. (2013). A mixed method approach to examining Facebook use and its relationship to self-esteem. *Computers in Human Behavior*, 29(3), 827–832. Retrieved from http://dx.doi.org/10.1016/j.chb.2012.11.010
- Tehseen, S., Ramayah, T., & Sajilan, S. (2017). Testing and Controlling for Common Method Variance: A Review of Available Methods. *Journal of Management Sciences*, 4(2), 142–168.
- Tesser, A. (1988). Toward a Self-Evaluation Maintenance Model of Social Behavior.
 In L. B. T.-A. in E. S. P. Berkowitz (Ed.) (Vol. 21, pp. 181–227). Academic
 Press. Retrieved from
 https://www.sciencedirect.com/science/article/pii/S0065260108602270
- Tiruwa, A., Yadav, R., & Suri, P. K. (2018). Modelling Facebook usage for collaborative learning in higher education. *Journal of Applied Research in Higher Education*, 10(3), 357–379.
- Tornazsky, L. G., Eveland, J. D., & Fleischer, M. (1990). Technological Innovation as a Process. In *The processes of technological innovation* (pp. 28–49). Lexington Books.
- Triandis, H. C. (1971). Attitude and Attitude Change (Foundations of Social Psychology). Hoboken, NJ: John Wileys & Sons Inc.
- Tsai, T. H., Chang, H. T., Chen, Y. J., & Chang, Y. S. (2017). Determinants of user acceptance of a specific social platform for older adults: An empirical examination of user interface characteristics and behavioral intention. *PLoS ONE*, 12(8), 1–23.
- Tsao, C. C., Shieh, J. T., & Jan, Y. L. (2009). The study on usage intentions of property service providers for property management system: Application of UTAUT model. J. Bus. Adm, 80, 33–66.
- Tseng, T. H., Lin, S., Wang, Y. S., & Liu, H. X. (2019). Investigating teachers' adoption of MOOCs: the perspective of UTAUT2. *Interactive Learning Environments*, 0(0), 1–16. Retrieved from https://doi.org/10.1080/10494820.2019.1674888
- Turel, O., & Serenko, A. (2012). The benefits and dangers of enjoyment with social networking websites. *European Journal of Information Systems*, 21(5), 512–528. Retrieved from http://www.scopus.com/inward/record.url?eid=2-s2.0-

84865840716&partnerID=tZOtx3y1

- Turel, O., Serenko, A., & Bontis, N. (2007). User acceptance of wireless short messaging services: Deconstructing perceived value. *Information and Management*, 44(1), 63–73.
- Urbach, N., & Ahlemann, F. (2010). Structural Equation Modeling in Information Systems Research Using Partial Least Squares. *Journal of Cleaner Productionurnal of Information Technology Theory and Application*, 11(2), 5–40.
- Valkenburg, P. M., Koutamanis, M., & Vossen, H. G. M. (2017). The concurrent and longitudinal relationships between adolescents' use of social network sites and their social self-esteem. *Computers in Human Behavior*, 76, 35–41. Retrieved from https://doi.org/10.1016/j.chb.2017.07.008
- Valkenburg, P. M., & Peter, J. (2011). Online communication among adolescents: An integrated model of its attraction, opportunities, and risks. *Journal of Adolescent Health*, 48(2), 121–127. Retrieved from http://dx.doi.org/10.1016/j.jadohealth.2010.08.020
- Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006). Friend Networking Sites and Their Relationship to Adolescents' Well-Being and Social Self-Esteem. *CyberPsychology & Behavior*, 9(5), 584–590. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/17034326
- van Raaij, E. M., & Schepers, J. J. L. (2008). The acceptance and use of a virtual learning environment in China. *Computers and Education*, *50*(3), 838–852.
- Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences*, *39*(2), 273–315.
- Venkatesh, V., Brown, S. A., Maruping, L. M., & Bala, H. (2008). Predicting Different Conceptualizations of System Use: The Competing Roles of Behavioral INtention, Facilitating Conditions, and Behavioral Expectation. *MIS*, 32(3), 483–502.
- Venkatesh, V., & Davis, F. D. (2000). A Theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science*, 46(2), 186–204.
- Venkatesh, V., Morris, M. G. ., Gordon B., D., & Davis, F. D. . (2003). User Acceptance of Information Technology: Toward a Unified View. *Management Information Systems*, 27(3), 425–478.

- Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly: Management Information Systems*, 36(1), 157–178.
- Vishwanath, A., & Goldhaber, G. M. (2003). An examination of the factors contributing to adoption decisions among late-diffused technology products. *New Media and Society*, 5(4), 547–572.
- Waltz, C., Strickland, O., & Lenz, E. (2016). Measurement in Nursing and Health Research.
- Warshaw, P. R., & Davis, F. D. (1985). Disentangling behavioral intention and behavioral expectation. *Journal of Experimental Social Psychology*, 21(3), 213–228.
- Webster, J., & Watson, R. T. (2002). Analysing the Past for Prepare the Future : Writing a Review. *MIS Quarterly*, 26(2).
- Weerasinghe, S., & Hindagolla, M. C. B. (2018). Technology acceptance model and social network sites (SNS): A selected review of literature. *Global Knowledge, Memory and Communication*, 67(3), 142–153.
- Wenninger, H., Cheung, C. M., & Krasnova, H. (2019). College-aged users behavioral strategies to reduce envy on social networking sites: A crosscultural investigation. *Computers in Human Behavior*, 97(April 2018), 10– 23.
- Westin, A. F. (1968). Privacy And Freedom. Washington and Lee Law Review, 25(1). Retrieved from http://scholarlycommons.law.wlu.edu/wlulr%5Cnhttp://scholarlycommons.la w.wlu.edu/wlulr/vol25/iss1/20
- Williams, M. D., Rana, N. P., Dwivedi, Y. K., & Lal, B. (2011). Is UTAUT Really Used Or Just Cited For The Sake Of It? A Systematic Review Of Citations Of UTAUT's Originating Article. 19th European Conference on Information Systems, ECIS 2011, (January).
- Wirtz, B. W., & Göttel, V. (2016). Technology acceptance in social media: Review, synthesis and directions for future empirical research. *Journal of Electronic Commerce Research*, 17(2), 97–115.
- Wohlin, C., & Aurum, A. (2015). Towards a decision-making structure for selecting a research design in empirical software engineering. *Empirical Software*

Engineering.

- Wong, C.-H., Wei-Han, T. G., Loke, S.-P., & Ooi, K.-B. (2015). Adoption of mobile social networking sites for learning? *Online Information Review*, 39(6), 762– 778.
- Yap, S.-F., & Gaur, S. S. (2015). Integrating functional, social, and psychological determinants to explain online social networking usage. *Behaviour & Information Technology*.
- Yen, Y.-S. (2013). Exploring Perceived Value in Social Networking Sites: The Mediation of Customer Satisfaction. *International Journal of Computer and Information Technology*, 02(03), 2279–764. Retrieved from www.ijcit.com
- Yen, Y. (2011). The Impact of Perceived Value on Continued usage Intention in Social Networking Sites. 2nd International Conference on Networking and Information Technology IPCSIT, 17, 217–223.
- Yen, Y. S. (2013). The relationship among social influence, perceived value, and usage intention in social networking sites. 2013 3rd International Conference on Consumer Electronics, Communications and Networks, CECNet 2013 -Proceedings, 699–702.
- Yoo, S. J., Han, S. H., & Huang, W. (2012). The roles of intrinsic motivators and extrinsic motivators in promoting e-learning in the workplace: A case from South Korea. *Computers in Human Behavior*, 28(3), 942–950. Retrieved from http://dx.doi.org/10.1016/j.chb.2011.12.015
- Yu, J., Zo, H., Kee Choi, M., & P. Ciganek, A. (2013). User acceptance of locationbased social networking services. *Online Information Review*, 37(5), 711– 730.
- Yusuf, S., Idris, K., Samah, A. A., Ibrahim, A., Ibrahim, S. M., & A Rahman, N. A. (2020). Keyboard Warrior, Online Predator or Cyber Bully? The Growing Menace of Child Exposure to Internet Harm based on Research Evidence. *Social Sciences & Humanities*, 28(2).
- Zahra, F., Alexandri, M. B., Purnomo, M., Arifianti, R., Muftiadi, A., Herawati, T.,
 ... Ruslan, B. (2019). User Behaviour Intention Using UTAUT2 Model: A
 Systematic Literature Review. *Russian Journal of Agricultural and Socio-Economic Sciences*, 92(8), 265–273.
- Zaineldeen, S., Hongbo, L., Koffi, A. L., & Hassan, B. M. A. (2020). Technology acceptance model' concepts, contribution, limitation, and adoption in

education. Universal Journal of Educational Research, 8(11), 5061–5071.

- Zhao, S., Grasmuck, S., & Martin, J. (2008). Identity construction on Facebook: Digital empowerment in anchored relationships. *Computers in Human Behavior*, 24(5), 1816–1836.
- Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37(2), 197–206.
- Zhou, T., & Li, H. (2014). Understanding mobile SNS continuance usage in China from the perspectives of social influence and privacy concern. *Computers in Human Behavior*, 37, 283–289. Retrieved from http://dx.doi.org/10.1016/j.chb.2014.05.008

Zikmund, W. (2013). Business research method (9th ed.). Cengage Unlimited.

 Zywica, J., & Danowski, J. (2008). The Faces of Facebookers: Investigating Social Enhancement and Social Compensation Hypotheses; Predicting FacebookTM and Offline Popularity from Sociability and Self-Esteem, and Mapping the Meanings of Popularity with Semantic Networks. *Journal of Computer-Mediated Communication*, 14(1), 1–34. Retrieved from https://doi.org/10.1111/j.1083-6101.2008.01429.x

LIST OF PUBLICATIONS

Indexed Journal

 Yahya, Y., Ab Rahim, N. Z., Ibrahim, R., Maarop, N., Sarkan, H. M., & Chuprat, S. (2018). Social Networking Sites Habits and Addiction Among Adolescents in Klang Valley. *International Journal Of Advanced Computer Science And Applications*, 9(11), 571-578. (Indexed by Web of Science and SCOPUS)

Indexed Conference Proceedings

 Yahya, Y., Rahim, N. Z. A., Ibrahim, R., Azmi, N. F., Sjarif, N. N. A., & Sarkan, H. M. (2019). Between habit and addiction: an overview of preliminary finding on social networking sites usage among teenagers. In *Proceedings of the 2019 5th International Conference on Computer and Technology Applications* (pp. 112-116). (Indexed by SCOPUS)

Non-Indexed Journal

 Yahya, Y., Ab Rahim, N. Z., & Ibrahim, R. (2018). Social Networking Sites Use Behaviour among Adolescents: A Quantitative Approach. Open International Journal of Informatics (OIJI), 81-88.

Book Chapter

 Yahya, Y., Ab Rahim, N. Z., & Ibrahim, R. (2020), Factors Influence Social Networking Sites Use Behavior among Undergraduates in Malaysia In Book Chapter - Exploring Information Systems Research Boundaries (Eisrb) -Series 2 (pp. 89-99)