IN-GAME ADVERTISING: THE EFFECTS OF TELEPRESENCE ON THE ATTITUDE AND PURCHASE INTENTION

ZUHAL HUSSEIN

UNIVERSITI SAINS MALAYSIA

2011

IN-GAME ADVERTISING: THE EFFECTS OF TELEPRESENCE ON THE ATTITUDE AND PURCHASE INTENTION

by

ZUHAL HUSSEIN

Thesis submitted in fulfillment of the requirements
for the degree of
Doctor of Philosophy

November 2011

ACKNOWLEDGEMENT

First of all, I would like to pay my deepest respect and gratitude to the Allah (SWT), who truly knows the meaning of my life, and by Allah's guidance I can finally finish this whole thesis.

This research could not be possible without the help, and encouragement of many individuals. First and foremost I offer my sincerest gratitude to my principal supervisor, Assoc. Professor, Dr. Nabsiah Abdul Wahid, for her enthusiasm, inspiration, and her great efforts to explain things clearly and simply, throughout the exhaustive years of my Ph.D. journey. Dr. Norizan Saad, my co-supervisor, who has provided encouragement, sound advice, good company, and ideas, especially during my early stage of preparing my proposal.

I would like to express my sincere appreciation to the Dean, School of Management, Associate Professor Dato' Dr. Ishak Ismail as well as to Deputy Dean Research and Postgraduate Studies, Associate Professor Dr. Zamri Ahmad for their concerns and assistance. It is also an honor for me to thanks my internal examiners, Associate Professor Dato' Dr. Ishak Ismail and Dr. Azizah Omar, for their valuable comments which resulted in shaping and revising of the study. My sincere gratitude also extends to the staff of School of Management, and lab staff at PPBLT, of USM who provided me with assistance and support throughout the preparation of this thesis.

I am indebted to many of my colleagues to support me who have shared their time and knowledge with me during our study and work. Notwithstanding, there are many other people who have assisted me in one way or another but have not been mentioned here and I also wish to record my appreciation for their contributions.

I am most grateful to Universiti Teknologi MARA (UiTM) for granting me this precious opportunity to enhance my knowledge and professionalism. I honestly look forward to reciprocate by offering my utmost contribution to the university and the community at large.

Of course, there are no words to describe my gratitude and appreciation to my family. I am forever in debt to my beloved parents for their prayers, endless love, support, sacrifice, and encouragement. My father has instilled in me the value of education, and my mother has stressed in me the importance of kindness. Without their nurturing and upbringing, this present episode of searching for excellence would not have been a success. I am forever indebted to my brothers and sisters for love, kindness, and generosity; for without our close friendship and help, I could not have completed my Ph.D.

TABLE OF CONTENTS

		Page
ACKNOWLEDGEMENT		**ii**
TABLE OF CONTENTS		**iii**
LIST OF TABLES		**xiv**
LIST OF FIGURES		**xvi**
LIST OF ACRONYMS		**xvii**
LIST OF PUBLICATIONS		**xviii**
ABSTRAK		**xx**
ABSTRACT		**xxi**
CHAPTER 1 – INTRODUCTION		
1.0	Introduction	1
1.1	Background of the Study	1
1.2	Interactive Computer Games in Malaysia	6
1.3	Problem Identification	10
1.4	Statement of Problem	14
1.5	Research Questions	15
1.6	Research Objectives	16
1.7	Scope of the study	17
1.8	Significance of the study	19
1.9	Definition of Research Variables	22
CHAPTER 2 - LITERATURE REVIEW		
2.0	Introduction	24
2.1	Theoretical Background	25
	2.1.1 Belief-Attitude- Behavioral Intention Model	25
	2.1.1.1 Belief	28
	2.1.1.2 Attitude	31
	2.1.2 Elaboration Likelihood Model (ELM)	32
2.2	Conceptual Definition of Intention to Revisit the Game	34
	2.2.1 Antecedent to revisit the game	35
2.3	Conceptual Definition of Purchase Intention of the Product Brand	37
	2.3.1 Antecedents to Purchase Intention of the Product Brand	39

2.4	Attitude towards Telepresence	41
	2.4.1 Antecedents for User Attitudes towards Telepresence	42
2.5	Telepresence	46
	2.5.1 Telepresence: Conceptual Definition	47
	2.5.2 Telepresence: Persuasive Advertising	48
	2.5.3 Telepresence: Gaps in Persuasive Advertising	50
	2.5.4 Telepresence: Differ from Cognitive Theory (Contiguity)	53
	2.5.5 Telepresence: Product Type and Product Categories	54
	2.5.6 Components of Telepresence	55
	2.5.6.1 Vividness	56
	2.5.6.2 Interactivity	57
	2.5.6.3 Engagement	58
	2.5.6.4 Physical space	59
	2.5.6.5 Naturalness	61
	2.5.6.6 Brand exposure	62
	2.5.6.7 Product experience	63
2.6	Telepresence: Measurement Gaps	65
	2.6.1 Measurement Gaps: Imperative Needs for Telepresence With Persuasive Advertising	66
	2.6.2 Measurement gaps: Attitude Towards Telepresence as Mediator	67
2.7	The Effect of Perception of Telepresence on Attitude towards Telepresence	69
2.8	The Role of Attitude Towards Telepresence as Mediator Between Perception on Telepresence and Purchase Intention of the Brand	71
2.9	The Role of Users Experience as Moderator Between Perception towards Telepresence and Attitude Towards Telepresence	73
2.10	Game: Conceptual Definition	76
	2.10.1 Game: Persuasive Advertising	78
2.11	Potential Telepresence with Persuasive Advertising as an Independent Variable to Affect Attitude and Behavior Intention	80
2.12	Summary	82

CHAPTER 3 - RESEARCH FRAMEWORK

3.0	Introduction	83
3.1	The Proposed Framework	84
3.2	Hypothesis Development	84
	3.2.1 Hypothesis Developed To Identify the Relationship of the Variables	85
	3.2.2 Hypothesis Developed To Identify Differences from the Context of Experimental Designed in the Games.	91
3.3	Summary	93

CHAPTER 4 - RESEARCH METHODOLOGY

4.0	Introduction	94
4.1	Experimental Study	95
	4.1.1 Experimental Design	97
	4.1.2 Literature Survey	102
4.2	Sampling Design	104
	4.2.1 Sample Size	104
	4.2.2 Subjects Recruitment	106
4.3	Selection of Games	108
	4.3.1 Game Site Identification (Observations)	108
	4.3.2 Game Preferences Identification (Survey)	110
	4.3.3 Game Content Evaluation (Focus Group Discussion)	112
	4.3.3.1 Results of Game Content Analysis	116
4.4	Questionnaire Development	119
4.5	Pretest	122
	4.5.1 Game and Laboratory Pre Testing Process	122
	4.5.2 Questionnaire pre-testing	123
	4.5.3 Experimental Procedures	124
4.6	Statistical Analysis	129
	4.6.1 Descriptive Analysis	129
	4.6.2 Factor analysis	129
	4.6.3 Reliability analysis	130

4.6.4 Correlation analysis 130
4.6.5 Multiple Regression Analysis 131
4.6.6 Hierarchical regression 133
4.6.7 Analysis of Variance (ANOVA) 135
4.8 Summary 136

CHAPTER 5 - DATA ANALYSIS AND FINDINGS

5.0 Introduction 137
5.1 Response Rate 137
5.2 Profile of Respondents 138
5.3 Goodness of Measures 140
5.3.1 Factor and Reliability Analysis on Telepresence 142
5.3.2 Factor and Reliability Analysis for Moderating Variables 149
5.3.3 Factor and Reliability Analysis for Mediating Variables 150
5.3.4 Factor and Reliability Analysis on Users Intention 152
5.4 Descriptive Analysis of Main Variable 154
5.5 Correlation Analysis 157
5.6 Revised Conceptual Framework and Hypothesis 160
5.6.1 Revised Research Frameworks 160
5.6.2 Revised Hypothesis 160
5.6.3 Revised Definitions of Research Variables 162
5.7 Hypothesis Testing 163
5.7.1 The Experimental Control in the Hypothesis Testing 163
5.7.2 Multiple Regression Analysis 165
5.7.3 The Relationship between Perception of Telepresence and Intention 167
5.7.3.1 The Relationship between Perception of Telepresence and Intention to Revisit the Game (H1) 167
5.7.3.2 The Relationship between Perceptions of Telepresence and Intention to Purchase the Brand Advertised (H2) 169
5.7.4 The Relationship between Perception of Telepresence and Users Attitude (H3) 170

5.7.5 The Relationship between Users Attitude and Users Intention 172
5.7.5.1 The Relationship between Attitude towards Telepresence and Intention to Revisit the Game (H4) 172
5.7.5.2 The Relationship between Users Attitude and Intention to Purchase of the Brand Advertise (H5) 174
5.7.6 Testing For Mediating Effect of Users' Attitude on the Relationship between Perception of Telepresence and Users Intention (H6 and H7) 175
5.7.6.1 Testing for Mediating Effect of Users Attitude towards the Telepresence on the Relationship between Perception of Telepresence and Intention to Revisit the Game (H6) 176
5.7.6.2 Testing for Mediating Effect of Users Attitude on the Relationship between Perception of Telepresence and Users' Intention to Purchase the Brand Advertised (H7) 180
5.7.7 Testing For Moderating Effect of Users' Experience on the Relationship between Perception of Telepresence and Attitude towards Telepresence 183
5.8 General Summary of the Hypothesis Testing 190
5.9 Test for One-way ANOVA 192
5.9.1 One-way ANOVA Results for the Perception of Telepresence Based on the Level of Telepresence 192
5.9.1.1 One-Way ANOVA Results for Attitude towards Telepresence Based on the Level of Telepresence 196
5.9.1.2 One-Way ANOVA Results for the Users' Intention Based on the Level of Telepresence 197
5.9.2 One-Way ANOVA Results for the Perception towards Telepresence based on the Level of Frequency 198
5.9.2.1 One-Way ANOVA Results for the Attitude towards Telepresence based on Level of Frequency 201

5.9.2.2 One-Way ANOVA Results for the Intentions based on the Level of Frequency 202
5.10 General Summary of the ANOVA Hypothesis Testing 204

CHAPTER 6 - DISCUSSION AND CONCLUSION

6.0 Introduction 205
6.1 Recapitulation of the Study Findings 206
6.2 Overall View on Measurement of Telepresence: Factor Analysis 210
6.3 Discussion: Relationship between Variables 214
6.3.1 Overall view of Users' Perception of Telepresence on Intention to revisit the game. Hypothesis 1 (**H1 of Group 1- Telepresence Treatment Group**) 216
6.3.1.1 Overall View the Influence of Product Experience of Telepresence on Users' Intentions to Revisit the Game. (**H1a of Group 1**) 216
6.3.1.2 Overall View the Influence of Interactive Experience on Users' Intentions to Revisit the Game. **(H1b of Group 1)** 217
6.3.1.3 Overall View the Influence of Physical Space on Users' Intentions to Revisit the Game. **(H1c of Group 1)** 219
6.3.1.4 Overall View the Influence of Engagement on Users' Intentions to Revisit the Game. **(H1d of Group 1)** 220
6.3.1.5 Overall View the Influence of Brand Exposure on Users' Intentions to Revisit the Game. **(H1e of Group 1)** 221
6.3.2 Overall view the Perception of Telepresence on Users' Intention to Purchase the Brand Advertised. Hypothesis 2 **(H2 of Group 1)** 222
6.3.2.1 Overall View the Influence of Product Experience on Users' Intentions to Purchase the Brand Advertised. **(H2a of Group 1)** 222

6.3.2.2 Overall View the Influence of Interactive Experience on Users' Intentions to Purchase the Brand Advertised. **(H2b of Group 1)** 223

6.3.2.3 Overall View the Influence of Physical Space on Users' Intentions to Purchase the Brand Advertised. **(H2c of Group 1)** 224

6.3.2.4 Overall View the Influence of Engagement on Users' Intentions to Purchase the Brand Advertised. **(H2d of Group 1)** 225

6.3.2.5 Overall View the Influence of Brand Exposure on Users' Intentions to Purchase the Brand Advertised**. (H2e of Group 1)** 226

6.3.3 Overall View the Perception of Telepresence on Attitude towards Telepresence. Hypothesis 3 **(H3 of Group 1- Telepresence Treatment Group)** 228

6.3.3.1 Overall View the Influence of Product Experience on Attitude towards Telepresence.**(H3a of Group 1)** 228

6.3.3.2 Overall View the Influence of Interactive Experience on Attitude towards Telepresence. **(H3b of Group 1)** 230

6.3.3.3 Overall View the Influence of Influence of Physical Space on Attitude towards Telepresence. **(H3c of Group 1)** 231

6.3.3.4 Overall View othe Influence of Engagement on Attitude towards Telepresence. **(H3d of Group 1)** 232

6.3.3.5 Overall View the Influence of Brand Exposure on Attitude towards Telepresence. **(H3e of Group 1)** 233

6.3.4 Overall View the Effect of Attitude towards Telepresence on Intention to Revisit the Game. Hypothesis 4 **(H4 of Group 1)** 234

6.3.5 Overall View the Effect of Attitude towards Telepresence on Intention to Purchase the Brand Advertised. Hypothesis 5 **(H5 of Group 1)** 235

6.3.6 Overall View the Mediating Effect of Attitude towards Telepresence on the Relationship between Perception of Telepresence and Intention to Revisit the Game. Hypothesis 6 **(H6 of Group 1- Telepresence Treatment Group)** 236

6.3.7 Overall View the Mediating Effect of Attitude towards Telepresence on the Relationship Between Perception of Telepresence and Intention to Purchase the Brand Advertised. Hypothesis 7 **(H7 of Group 1- Telepresence Treatment Group)** 237

6.3.8 Overall View of the Moderating Effect of Users' Experience on the Relationship between Telepresence and Attitude towards Telepresence. Hypothesis 8 **(H8- Telepresence Treatment Group)** 238

6.4 Overall view on the relationship of Group 2 – Control Group 239

6.5 Overall view on the relationship of Group 3 – Combination of Group 1 and Group 2 243

6.6 Discussions of One-way ANOVA on different level of Telepresence Exposure. **(H9 - H12)** 244

6.6.1 Overall View the Differences in Users' Perception towards Telepresence from Different Level of Telepresence Exposure. Hypothesis 9 **(H9)** 245

6.6.2 Overall View the Differences in Users' Attitude towards Telepresence from Different Level of Telepresence Exposure. Hypothesis 10 **(H10)** 245

6.6.3 Overall View the Differences in Users' Intention to Revisit the Game from Different Level of Telepresence Exposure. Hypothesis 11 **(H11)** 246

6.6.4 Overall View the Differences in Users' Intention to Purchase the Brand Advertised from Different Level Of Telepresence Exposure. Hypothesis 12 **(H12)** 246

6.7 Discussions of One-Way ANOVA On Different Frequencies Of Playing Game **(H13 - H16)** 246
6.7.1 Overall View the Differences in Users' Perception towards Telepresence from Different Frequencies of Playing Game. Hypothesis 13 **(H13)** 247
6.7.2 Overall View the Differences in Users' Attitude towards Telepresence from Different Level of Frequencies Exposure. Hypothesis 14 **(H14)** 248
6.7.3 Overall View the Differences in Users' Intention to Revisit the Game from Different Level of Frequencies Exposure. Hypothesis 15 **(H15)** 248
6.7.4 Overall View the Differences in Users' Intention to Purchase the Brand Advertised from Different Level of Frequencies Exposure. Hypothesis 16 **(H16)** 249
6.8 Contribution of This Study 250
6.8.1 Enrichment of Theory 250
6.8.1.1 Perception of Telepresence and Users Intention 250
6.8.1.2 Perception of Telepresence and Attitude towards Telepresence. 252
6.8.1.3 Attitude towards Telepresence and Users' Intentions 253
6.8.1.4 The Moderating Effect of Game Users Experience 254
6.8.2 Enhancing the Concept of Telepresence 255
6.8.3 Managerial Implication 256
6.8.3.1 Perception of Telepresence 256
6.8.3.2 Attitude towards Telepresence 258
6.8.3.3 Perception of Telepresence and Attitude towards Telepresence 259
6.8.3.4 Game players factors 259
6.9 Limitations of the Present Study 260
6.10 Suggestion for Future Research 262
6.11 Conclusion 263

REFERENCES 265

APPENDICES 294

Appendix A **Telepresence Game** 294

Appendix A1 Computer and video game markets, 1999-2008 (estimates 2004-2008) million USD Translation Certificate of Questionnaire For Research Purposes 295

Appendix A2 Review Definitions on Telepresence 296

Appendix A3 A Model for Evaluating Player Enjoyment in Games 298

Appendix B 300

Appendix B1 Layout Questionnaire 301

Appendix B2 Questionnaire 303

Appendix B3 Game Scene of the Pizza Hot Game 314

Appendix B4 Approval Latter from the Dean of Pusat Pengajian Bahasa, Literasi dan Terjemahan, of Universiti Sains Malaysia 318

Appendix B5 Procedures for Three-Level block randomized designs based on statistical theory of Konstantopouls 319

Appendix C **SPSS Output** 320

Appendix C Factor Analysis 321

Appendix C1.1 Factor Analysis (Perception of Telepresence) 321

Appendix C1.2 Factor Analysis (Moderator – Users' Experience) 324

Appendix C1.3 Factor Analysis (Mediator – Attitude towards Telepresence) 325

Appendix C1.4 Factor Analysis (Users' Intention) 326

Appendix C2 Pearson's Correlation 327

Appendix C3 Regression (Group 1) 328

Appendix C3.1 (H1) – SPSS Results on Hierarchical Regression Analysis of Control Variables, Perception of Telepresence, and Intention to Revisit the Game 328

Appendix C3.2 (H2) – SPSS Results on Hierarchical Regression Analysis of Control Variables, Perception of Telepresence and Intention to Purchase the Brand Advertised 331

Appendix C3.3	(H3) – SPSS Results on Hierarchical Regression Analysis of Control Variables, Perception of Telepresence and Attitude towards Telepresence	335
Appendix C3.4	(H4) – SPSS Results on Hierarchical Regression Analysis of Attitude towards Telepresence, and Intention to Revisit the Game	337
Appendix C3.5	(H5) – SPSS Results on Hierarchical Regression Analysis of Attitude towards Telepresence, and Intention to Purchase the Brand Advertised	339
Appendix C3.6	(H6) – SPSS Results on Hierarchical Regression Analysis of Control Variables, Perception of Telepresence, and Attitude towards Telepresence, With Intention to Revisit the Game	341
Appendix C3.7	(H7) – SPSS Results on Hierarchical Regression Analysis of Control Variables, Perception of Telepresence, And Attitude towards Telepresence, With Intention to Purchase the Brand Advertised	346
Appendix C3.8	(H8) – SPSS Results on the Moderating Effect of Users' Experience on the Relationship between Perceptions of Telepresence and Attitude towards Telepresence	350

LIST OF TABLES

		Page
Table 1.1	Frequency of Use of the Internet by Malaysian Households (Average Hour per Week)	8
Table 1.2	Forecast of Retail Sales of Toys and Games by Sector in Malaysia: Value, 2006-2011	9
Table 2.1	Previous Literatures on Intention to Revisit	37
Table 2.2	Previous literature on Purchase Intention	41
Table 4.1	Telepresence Literature Survey	103
Table 4.2	Regional Breakdown of Top 10 Worldwide Gaming Properties Ranked by Worldwide Unique Visitors May 2007 vs. May 2006 Total Worldwide, Age 15+ – Home and Work Locations	109
Table 4.3	Game Preferences Selected From Top 20 Worldwide Gaming Properties	111
Table 4.4	Focus Groups Characteristics	113
Table 4.5	Results of Focus Group Discussion	116
Table 4.6	Focus Group Expectation from Game Content Analysis	118
Table 5.1	Responses Rate	137
Table 5.2	Profile of Respondents	139
Table 5.3	Factor and Reliability Analysis for Independent Variable	143
Table 5.4	Summary of the Items Dropped from Factor Analysis	145
Table 5.5	Factor and Reliability Analysis for User's Experience	150
Table 5.6	Factor and Reliability Analysis for User's Attitude	151
Table 5.7	Summary of the Items Dropped from Factor Analysis	152
Table 5.8	Factor and Reliability Analysis for User's Intention	153
Table 5.9	Descriptive Analysis	157
Table 5.10	Pearson's Correlation between Variables	158
Table 5.11	Restatement of the Hypothesis based on research objectives	161
Table 5.12	Restatement Definitions of Research Variables	162
Table 5.13	Results on Multiple Regression Analysis of Perception of Telepresence, and Intention to Revisit the Game (H1).	168
Table 5.14	Results on Multiple Regression Analysis of Perception of Telepresence and Intention to Purchase the Brand Advertised (H2)	169

Table 5.15	Results on Multiple Regression Analysis of Perception of Telepresence and Attitude towards Telepresence (H3)	171
Table 5.16	Results on Multiple Regression Analysis Analysis of Attitude towards Telepresence, and Intention to Revisit the Game (H4)	173
Table 5.17	Results on Multiple Regression Analysis of Attitude towards Telepresence, And Intention to Purchase the Brand Advertised (H5)	175
Table 5.18	Results on Hierarchical Regression Analysis of Perception of Telepresence, and Attitude towards Telepresence, With Intention to Revisit the Game (H6)	179
Table 5.19	Results on Hierarchical Regression Analysis of Perception of Telepresence, And Attitude towards Telepresence, With Intention to Purchase the Brand Advertised (H7)	182
Table 5.20	Results on the Moderating Effect of Users' Experience on the Relationship between Perceptions of Telepresence and Attitude towards Telepresence (H8)	184
Table 5.21	The Summary Results of Hypothesis Testing (H1 – H8)	190
Table 5.22	Results on Differences between Levels of Telepresence on Users' Perception of Telepresence	193
Table 5.23	Results on Differences between Levels of Telepresence on Users' Attitude towards Telepresence	196
Table 5.24	Results on Differences between Levels of Telepresence on Users' Intentions	197
Table 5.25	Results on Differences between Frequency Levels on Users' Perception of Telepresence	199
Table 5.26	Results on Differences between Levels of Frequency on Users' Attitude	201
Table 5.27	Results Differences between Frequency Levels on Users' Intention	202
Table 5.28	Summary Results of Hypothesis Testing (H9 – H16)	204

LIST OF FIGURES

		Page
Figure 2.1	Sheridan (1992)	66
Figure 2.2	Zeltzers Autonomy, Presence, and Interaction (Cube, 1992)	66
Figure 2.3	Schematic outline of teleoperator system (Held & Durlach, 1991)	78
Figure 3.1	Conceptual Framework	84
Figure 4.1	Research Methodology Flowcharts	94
Figure 4.2	Procedures Engaged to Undertake the Experiment.	95
Figure 4.3	Experimental Design of Telepresence and Frequency Exposure	97
Figure 4.4	Three-Level Randomized Designs	126
Figure 5.1	Revised Conceptual Framework	160
Figure 5.2	Testing For Mediating Effect of Attitude towards Telepresence on the Relationship between Perception of Telepresence and Users' Intentions	176
Figure 5.3	Mediation Structure of Users' Attitude on the Relationship between Perception of Telepresence and Users' Intention to revisit the game.	177
Figure 5.4	Mediation Structure of Users' Attitude on the Relationship between Perception of Telepresence and Users' Intention to purchase the brand advertised	180
Figure 5.5	Graph Moderating Effect of Users' Experience between Interactive Experience and Attitude towards Telepresence of Group 1	186
Figure 5.6	Graph Moderating Effect of Users' Experience between Engagement and Attitude towards Telepresence of Group 1	186
Figure 5.7	Graph Moderating Effect of Users' Experience between Physical Space and Attitude towards Telepresence of Group 2	187
Figure 5.8	Graph Moderating Effect of Users' Experience between Interactive Experience and Attitude towards Telepresence of Group 3	188
Figure 5.9	Graph Moderating Effect of Users' Experience between Engagement and Attitude towards Telepresence of Group 3	188

LIST OF ACRONYMS

ANOVA	Analysis Of Variance
CITM	Center For Instructional Technology And Multimedia
CAGR	Compound Annual Growth Rate
DW	Durbin-Watson
ECG	Educational Computer Games
ELM	Elaboration Likelihood Model
ESA	Entertainment Software Association
FGD	Focus Group Discussion
IT	Information Technology
IDC	International Data Corporation
ITC-SOPI	ITC-Sense Of Presence Inventory
MCMC	Malaysia Communication And Multimedia Commission
MMORPG	Massive Multiplayer Online Role-Playing Game
PC	Personal Computer
PWC	PricewaterhouseCoopers
PPBLT	Pusat Pengajian Bahasa, Literasi Dan Terjemahan
RPG	Role Playing Games
MOG	Multiplayer Online Games
SPSS	Statistical Package For Social Science
SIU	Student Internet Users
TAM	Technology Acceptance Model
ICT	The Information Communication Technology
USM	Universiti Sains Malaysia
UiTM	Universiti Teknologi MARA

LIST OF PUBLICATIONS

1. Zuhal Hussein, Nabsiah Abdul Wahid, and Norizan Saad. (2010a). Evaluating Telepresence Experience and Game Players' Intention to Purchase Product Advertised In Advergame. *World Academy of Science, Engineering and Technology* (66), 1925 - 1931.
2. Zuhal Hussein. (2010, 21 Mei). *The Roles Play of Gender on Game Knowledge and Experience: A Preliminary Study in Malaysia* Paper presented at the The 2nd National Conference on Administration and Management (NCAM 2010), Prince of Songkla University, Hat Yai, Songkhla
3. Zuhal Hussein, Nabsiah Abdul Wahid, and Norizan Saad. (2010b, 22 March). *Interactive Advertising to Reach Online Consumers: Prospect for the SMEs.* Paper presented at the SME and Marketing Mini Conference 2010, USM Penang.
4. Zuhal Hussein, Nabsiah Abdul Wahid, and Norizan Saad. (2009a, October 16-17). *Behavioral Study on Malaysian Game Player Experiences: How the Embedded Information Inside a Computer Game Affect Players' Behaviour.* Paper presented at the 9th Global Conference on Business & Economics 2009, Cambridge University, UK.
5. Zuhal Hussein, Nabsiah Abdul Wahid, and Norizan Saad. (2009b, 18-20 December 2009). *Case of Advergame: Factors Affecting the Differences of the Players' Experiences and Intentions to Product Purchase.* Paper presented at the 8th Asian Academy of Management Conference, AAMC 2009, Kuantan, Pahang, Malaysia, 18th - 20th December 2009.
6. Zuhal Hussein, Nabsiah Abdul Wahid, and Norizan Saad. (2008, 18-20 June 2008). *Game Content Factor Influencing the Player Enjoyment of Malaysian Online Game Players: A Proposition.* Paper presented at the The International

Conference on Social Sciences and Humanities 2008 (ICoSSH'08) Universiti Sains Malaysia, Pulau Pinang.

7. Amily Fikry @ Aziz, Zuhal Hussein, Nabsiah Abdul Wahid, Mahmod Sabri Haron, and Norizan Saad. (2007a, 14-16 June). *Bridging the Digital Divide in Malaysia: An Exploratory Analysis on Generation Y (Teenagers) Gender and Mobile Phone Usage.* Paper presented at the The 3rd AAAB International Conference 2007, Regency Hotel, Hat Yai, Thailand.
8. Amily Fikry @ Aziz, Zuhal Hussein, Nabsiah Abdul Wahid, Mahmod Sabri Haron, and Norizan Saad. (2007b, 21-25 May). *Reimagining The New Marketing Opportunities: A Review On Teenagers And Technological Market.* Paper presented at the 7th Asian Academy of Management Conference (AAMC 2007), Park Royal Hotel, Penang, Malaysia.
9. Ilhaamie binti Abdul Ghani Azmi, Zainal Ariffin Ahmad, Yuserrie Zainuddin, and Zuhal Hussein. (2007, 14-16 June). *Service Quality in Malaysian Public Service: A Pilot Study* Paper presented at the The 3rd International Conference of the Asian Academy of Applied Business, Regency Hotel, Hat Yai, Thailand.

PENGIKLANAN DALAM PERMAINAN: KESAN-KESAN 'TELEPRESENCE' TERHADAP SIKAP DAN NIAT KELAKUAN MEMBELI

ABSTRAK

Kajian ini menyelidik keupayaan sikap terhadap telehadir (telepresence) sebagai angkubah pengantara ke atas hubungan di antara telehadir dan keinginan pengguna mengulang-lawat (revisit) permainan komputer serta keinginan mereka membeli jenama produk yang diiklankan. Kesan pembolehubah pencelah pengalaman pengguna dalam perkaitan di antara telehadir dan sikap terhadap telehadir juga diselidik. Kajian ini menggunakan kerangka faktorial antara subjek. Eksperimen dilakukan ke atas 260 orang pelajar ijazah sarjana muda, Universiti Sains Malaysia (USM) yang secara sukarela menyertai aktiviti permainan Internet. Dapatan kajian menunjukkan bahawa elemen telehadir (pengalaman produk, pengalaman interaktif, ruang fizikal, penglibatan, dan pendedahan jenama) dan sikap terhadap telehadir adalah petunjuk jangkaan yang signifikan ke atas keinginan pengguna untuk mengulang-lawat permainan dan keinginan membeli jenama produk yang diiklankan. Dapatan juga menunjukkan wujudnya angkubah pengantara sikap terhadap telehadir ke atas hubungan di antara di antara telehadir (iaitu pengalaman produk dan penglibatan) dan keinginan pengguna mengulang-lawat permainan. Dapatan yang sama juga ditemui pada telehadir (pengalaman produk) dan keinginan pengguna membeli jenama produk yang diiklankan. Di samping itu, dapatan menunjukkan bahawa pengalaman pengguna sebagai pembolehubah pencelah mempunyai perkaitan di antara telehadir (pengalaman interaktif dan penglibatan) dan sikap terhadap telehadir. Kajian ini menyediakan pandangan mendalam yang berguna kepada para pemasar dan juga pembuat iklan tentang cara membangunkan pengiklanan permainan dalam talian berdasarkan kepada konsep telehadir yang menerapkan dimensi pengiklanan dalam latar permainan komputer. Kajian ini juga menyediakan suatu pemahaman yang jelas tentang keutamaan pilihan pengguna serta keberkesanan pengiklanan interaktif menggunakan latar permainan komputer. Perkara ini amat penting kepada kebolehuntungan serta kelangsungan perniagaan dalam era teknologi.

IN-GAME ADVERTISING: THE EFFECTS OF TELEPRESENCE ON THE ATTITUDE AND PURCHASE INTENTION

ABSTRACT

This study investigates the mediation impact of attitude towards telepresence on the relationship between telepresence and users' intentions to revisit computer games and their intention to purchase advertised product brand within the game played. Moderating effect of users' experiences on relationship between telepresence and attitude towards telepresence are also investigated. This study employs a factorial design between subjects. Experiment was carried out on 260 undergraduate students from Universiti Sains Malaysia (USM), who volunteered to participate in the Internet game playing activities. The results of the study indicate that the construct of telepresence (product experience, interactive experience, physical space, engagement, and brand exposure) and attitude towards telepresence are significant predictors of users' intentions to revisit the game and intention to purchase the advertised product brand. The results also indicate existence of the mediation effect of attitude towards telepresence on the relationship between telepresence (i.e. product experience and engagement) and users' intention to revisit the game. Similar results were found from telepresence (product experience) and users' intention to purchase the advertised product brand. In addition, the findings revealed that users' experience moderate the relationship between telepresence (interactive experience and engagement) and attitude towards telepresence. The study provide useful insights for marketers and practitioners on how to develop in-game advertising based on the concept of telepresence that embed persuasive advertising dimensions within a computer game setting. They provide clear understanding of game players' preferences and effectiveness of interactive advertising using computer game setting. These are critical for business profitability and survival in the age of technology.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This study aims to examine the effects of telepresence on computer game players/users attitude towards telepresence and their intentional behavior not only to purchase the product brand as advertised in the game they play (i.e. in-game advertising strategy) but also to revisit the game in the future. In this study, the computer game acts as an in-game advertisement medium (interactive advertising) for a make-believe product brand being used as the subject of play for the game users. So, the user's experience (high or low) plays a role as a moderating variable between telepresence and attitude towards telepresence. Telepresence is represented by vividness, interactivity, engagement, physical space, naturalness, brand exposure, and product experience. In investigating the effects of telepresence, this study employs a factorial design experiment (high and low telepresence, multiple and single frequency exposure).

This introduction chapter outlines the overview and direction of the study, providing the background, research problem, research questions, objectives, scope and significance of the study. The final part of the chapter describes the definition of the variables used in the study.

1.1 Background of the Study

With the advancement of the state-of-the-art of information technology, marketers are expected to change their advertising strategy from being 'ordinary', for example television advertisements which are mundane and not very exciting, to 'astounding' ones such as interactive advertisements incorporated in computer games. The latter is more

effective, as it allows interaction with potential and existing consumers. The need to expand from ordinary radio and televison advertising to other new platforms like online advertisement is quite obvious. Observed behavioral changes of modern consumers, in particular their life styles have been the reason behind the call for the advertising strategy change. As Molesworth (2003, p.2) argues, television programme ratings are continuously declining and audience is fragmented across various advertising platforms. In addition, the younger generation with access to the Internet is finding television contents less appealing and non-interactive especially in terms of entertainment values (Byte, 2008).

Realising the benefits provided through interactive advertising, where marketers can connect with their potential and existing consumers and expose them to their product brands, they have now thought about the potential use of games (e.g. computer games) as the new platform for interactive advertising. This realization resulted in many of the companies to start operating online (Olsen 2001; Chandon, Chtourou, & Fortin, 2003). As more companies are now looking at computer games advertisement to engage with their consumers, it is expected that the usage of computer games for advertising purposes will also grow in the digital content industry (Molesworth, 2003). For example, interactive advertising reached USD8.2 billion in revenue for the year 2000, which is equivalent to 78 percent growth in the 1999 revenue for the United States (Chandon, Chtourou, & Fortin, 2003). Thus, although computer gaming is still a young industry, rapid advancement in technology is accelerating its growth. PricewaterhouseCoopers (PWC) Entertainment & Media Outlook Consumer Report (2009) forecasted that the gaming industry will grow by 6.6 percent on a compound annual basis from USD17.7 billion in 2008 to USD24.5 billion in 2013. Video game advertising propelled by

dynamic online games is also expected to grow by 14.9 percent on a compound annual basis from USD400 million in 2008 to USD800 million in 2013. Broadband and Gaming at Parks Associates similarly reported a tremendous increase on the average forecast of the United States game advertising spending from USD370 million in 2006 to USD2,051 million in 2012 (Cai, 2007, p.1).

The gaming industry has valued the potential to using persuasive advertising as a value-added benefit to games, investing USD17.6 billion above any other entertainment forms (Spero & Stone, 2004). The worldwide game market was projected to achieve USD55.6 billion revenue by 2008; exhibiting a 20 percent growth rate (Nicovich, 2005); where most of the growth was to be in Asia, followed by Europe and America (Ulmer, 2004). The detail on online computer and video games markets from 1999 to 2008 is found in Appendix A1 (p.295).

There is an increasing trend in the usage of interactive entertainment application especially gaming, attributed to easy Internet access and rapid advancement in Broadband facilities. The Pew Internet Project survey (marketingcharts.com) reported that some 53 percent of adults aged 18 and above play video games every day or almost every day. This finding sends a positive signal for marketers to grab this opportunity to integrate their products and/or brands in the virtual gaming environment exposed to those potential customers or users. If they are able to create a real game environment with informative (product brand) advertisement, then a high traffic volume of users to visit and play the game may be assumed. This means that marketers should be targeting information technology savvy consumers, the game players or users and consider using interactive gaming as part of their marketing strategy for in-game advertising.

Today, companies selling product brands like Nike, McDonalds, Coke and Burger King are implementing interactive advertising or in-game advertising strategy in their product launch and promotional activities. They do so by engaging potential and existing consumers in various interactive game challenges. The strategy aims to attract users to browse the company web page to play the game while unconsciously these users are actually being captured by the marketers to take part in the introduction of the newly advertised product. Schwarz (2006) highlighted two high profile examples of in-game advertising, namely. Coca-Cola's Coke Studios and Disney's Virtual Magic Kingdom, each with different in-game advertising strategies applied. In Coca-Cola's Coke Studios, users were invited to play the game as a single player. This strategy attracted more than eight million users to register and play the game in its website. Likewise, Disney's Virtual Magic Kingdom offered users to be part of a multiplayer community, with the game based on Disney's popular theme park attractions. Irrespective of the approaches used, both of these new in-game advertising strategies can be seen to benefit the two companies. The game played by the users not only exposed them to the product brands, but also contributed to an increased level of product knowledge, leading to a positive attitude towards the product brands as compared to traditional and ordinary advertising medium mentioned earlier.

Although marketers are benefiting from the increased number of game players, it is imperative to investigate whether interactive advertising is really so effective in reaching customers and affecting their behavior (Venkatesh, Davis, & Morri, 2007). Existing literature and research calls for further investigation of the potential use and effect of in-game advertising in computer games, in which most users were said to prefer real object placement inside the game to make it more natural (see, among others, Molesworth,

2003; Grigorovici & Constantin, 2004). As Molesworth (2003, p.11) argues, brand realism can deliver persuasive messages within computer games to targeted user consumers. Similarly, Dickey (2005, p.78) suggests that game design takes into account game users' time and emotion as part of the in-game advertising approach.

Positive trends within the gaming industry spur in-depth examination of the potential of computer games as a new business opportunity from the marketing perspective. The example of interactive advertising highlighted above justifies the necessity of probing the specific role of telepresence in the game. On average, users spend five to seven minutes playing a game, which offers marketers and advertisers 14 times more the amount of exposure time of a television commercial (Fattah & Paul, 2002, p 42). As an Internet browser's main interest is to play games (Pastore, 2001; Technology, 1999), online games designed with reality elements in them may add to user's experience (Poster & Burrows, 1995), and create a sense of user's presence (telepresence).

Previous studies have supported that advertising inserted in game lead to increase companies' sales performance. Three popular cases have provided clear statistical evidence on the increase of companies' sales by using the in-game advertising strategy. First, case of Burger King that reported the statistical increase in revenue resulted from the usage of in-game advertising. In 2007, 'Burger King' has released three games to replace the ordinary toy in their 'happy meals' package and customers have to pay an extra $3.99 to purchase the game. Edery and Mollick, (2008, p.67) reported that the value of a game compared to a plastic toy introduced by Burger King was monumental to consumers as later 'Burger King' reported a 40% increase in profit due to the success of in-game advertising exposed to the consumers.

Second, example from a popular case of the Mr. Barack H. Obama, the President of the United States campaign in 2008. Oxfard (2008) from 360.kombo.com reported that Mr.Obama looked towards games as an advertising tool to approach the young adults to vote for him. A popular racing game known as 'Burnout paradise' was used while campaigning to gain votes for his presidency from October to November 2008. This advertisement proved to be obviously successful when Mr. Obama campaign decided to expand their reach and further advertised in 17 more games during the campaign period which spending a total of $44,465.78 (gamespot.com, 2008). Finally, Kim (2006, p. C1) has identified the advertisement inserted in game targeted the population game players' aged 18 to 34-years-old is to increase awareness of the advertised brands when game players' spend 12.5 hours a week playing video games, compared with 9.8 hours a week watching television. In short, the trends recognize the importance of telepresence in bringing realism to games, where it is expected to include real advertising information for users playing the games.

1.2 Interactive Computer Games in Malaysia

In Malaysia, although relatively young, the potential for the multimedia content industry to grow and develop in the near future is promising. Malaysian top leader, the Prime Minister Dato' Seri Mohd Najib bin Tun Abdul Razak has shown his interest in this industry. In the 1malaysia.com blog for instance, the Prime Minister calls for all Malaysians to "focus on this industry and nurture it well" because it "will catapult Malaysia to a higher standing in the digital content industry" (Razak, 2009, p.1). In this context, digital content refers to "many sounds, texts, still pictures, moving pictures or

other audio-visual representations, tactile representations or any combination of the preceding which is capable of being created, manipulated, stored, retrieved or communicated electronically" (The Malaysian Communications and Multimedia Act 1998, Act 588). At least RM150 million has been allocated to finance the digital multimedia content development between 2006 and 2010 (RMK-9, 2006, p.148).

Today, Malaysia emerges as one of the top 10 media consuming nation out of 52 countries surveyed by The Nielsen Company in 2009 to unearth the entertainment technology ownership and usage habits of global citizens. The survey results placed Malaysia fifth in terms of consuming the digital media, that is, involving any type of information stored in the computer, including data, voice and video, seventh for prolific and sophisticated users of the Internet, and ninth for the frequency of streaming or playing and downloading entertainment content from the Internet. As Paul Richmond, Managing Director, Consumer Group, Nielsen Malaysia concludes in the report,

> *"Malaysians are real entertainment and technology junkies. They consume copious amount of home entertainment, music, video games and digital media. These tech-savvy locals are also thoroughly hooked on the Internet, streaming and downloading digital media content on a regular basis."*
>
> (Nielson 2009 Survey, p.1)

The global behavior described above is in tandem with observations in the local scene. A 2006 survey by Malaysia Communication and Multimedia Commission (MCMC) on 'Households Use of the Internet' reports that the majority of Malaysian households spend between 4 and 28 hours a week accessing the Internet. The results of the survey are shown in detail in Table 1.1.

Table 1.1
Frequency of Use of the Internet by Malaysian Households (Average Hour per Week)

Access Internet from	Percentage (%)
Less than 4 hours / week	25.7
4 but less than 8	22.3
8 but less than 15	20.3
15 but less than 22	10.3
22 but less than 28	5.8
28 hours / week and above	15.7

Source: Malaysia Communication and Multimedia Commission (MCMC), 2006, p.14)

Another report by Nielsen Media Index (2008) describes the yearly increase of Malaysian's involvement in virtual environment activities. In 2008, the Index reported an increase in Malaysian Internet users from 18 reach percent in 2007 to 21 reach percent in 2008, with almost 4 out of 10 users spending 1-2 hours of their time on the Internet daily. For these Internet users, apart from accessing the more common activities such as emailing, surfing and information gathering, they also engage in other popular activities including online TV/music/games (47 percent), message/chat/blogging (45 percent) and reading newspaper/magazines (35 percent) (Nielson, 2008). In 2009, another Nielsen Company survey reported that at least 41 percent of Malaysians download a variety of contents from the Internet and they also spent over 20 hours a week watching streamed or downloaded content from the Internet. The International Data Corporation (IDC) (2006) forecasts that The Information Communication Technology (ICT) spending in Malaysia will hit RM22 billion by 2010. It is expected that the expansion of Internet access in Malaysia will lead to a higher demand for games, as most of the Internet users spend more of their time for entertainment applications such as playing games (Sachs, Interactive, & Nielsen/Netratings, 2003). Retail sales for toys and games sector for video games in Malaysia have also shown a gradual increase from 7.6 percent in 2001 to 16.5 percent in 2006 (Euromonitor, 2006). The retail sales

for toys and video games are also expected to achieve RM37.4 million for the 2006 to 2011 period (see Table 1.2). In addition, the percentage of Malaysian retail sales of video games by sector value is forecasted to grow from 2006 to 2011 with Compound Annual Growth Rate (CAGR) of 14.7 percent between those years and a total growth of 98.4 percent (Euromonitor, 2006).

Table 1.2
Forecast of Retail Sales of Toys and Games by Sector in Malaysia: Value, 2006-2011

RM million	2006	2007	2008	2009	2010	2011
Traditional toys and games	170.8	171.9	175.4	180.1	184.7	192.0
Video games	16.5	18.4	20.8	23.8	27.7	32.6
Toys and games	187.2	190.2	196.2	203.9	212.4	224.6

Source: Official statistics, trade associations, trade press, company research, trade interviews, Euromonitor International estimates (Euromonitor, 2006, p.6)

As for gross spending expenditure in advertising industry in Malaysia, it has grown by 8.6 percent to RM2.4 billion in the first half of 2007 compared to RM2.2 billion for the same period of the previous year (Nielsen Media Research, 2007). The International Data Corporation (IDC) (2005) Report on Asia/Pacific Wireless Gaming Revenues by Country, 2003 and 2008, identifies Malaysia at second place after India with Compound Annual Growth Rate (CAGR) of 107.2 percent.

Based on Nielson's 2009 survey, Malaysian consumers as 'technology junkies' are more likely to purchase advanced computer games. The survey result shows that personal computer (PC) usage exceeded television (TV) usage, 85 percent and 77 percent respectively, indicating pervasive penetration of PC into the modern life of Malaysian consumers. According to IDC's Asia Pacific Online Gaming Survey (2007), the majority of Malaysian game users by subscription spend more than USD30 a month on game.

The gaming industry in Malaysia will continue to see strong growth as most consumers are very enthusiastic and receptive towards this technology (Euromonitor, 2006). This parallels worldwide online gaming industry which has grown by 46 percent and generated about US$8 million (RM30 million) in subscription revenue in 2005, as compared to US$5.5 million in 2004 (International Data Corporation (IDC) cited in Leng, 2007, p.2).

1.3 Problem Identification

As mentioned above, Euromonitor (2006) is confident that the gaming industry in Malaysia will continue to grow since most of the country's consumers are enthusiastic users of technology. The statistics provided by survey groups like Nielson (2008; 2009) and Euromonitor (2006) concur with the view discussed in the previous sections. However, due to insufficient market information, the Malaysian gaming market in particular the student Internet users (SIU)) remain largely untapped and unexploited (Yeow, Khatibi and Kuppusamy, 2008).

A review of the literature shows that most studies on games and its users including the different user groups are conducted in the western countries. Studies on Malaysia generally focused on games from the educational perspective, often citing the educational use of the games only. For instance, Roslina and Noor Azli's (2008) review of available literature on games highlighted the potential for Educational Computer Games (ECG) to be used as an education tool. Another study by Noor Azli, Nor Azan and Shamsul Bahri (2008) focused on the role of digital games as effective educational tool to motivate learners to study certain subjects that might not otherwise be chosen by them in the first place. The researchers argued that digital games provide powerful

learning environments, especially for children. Teh Chiew Lan, and Chong (2007) study on the use of computer games concluded that games equipped with characteristics like fast, responsive, ability to handle huge amount of contents and can be instantly updated are potential learning tools.

Rubijesmin's (2007) study on 341 students from 16 primary and secondary schools found that a majority of them are familiar with playing computer games, have more experience in using computer as the main peripheral for playing games, familiar with most of the genres of computer games available, and that they have been adapting themselves with computer-based teaching-learning process introduced by the Malaysian Ministry of Education. This finding suggests the potential of computer games to be used as part of classroom learning process.

Despite the current economic growth in Malaysia, it is important to note that the marketing industry worldwide is shifting to an age of content creativity to engage with consumers. The content creativity is driven by innovativeness and fantastic content that stand out from others advertising medium with the aims of capturing users' attitude, intention and behavior towards the in-game advertising content via product, brand, persuasive messages and so on. Thus, marketers need to think like content producers (i.e. content is a task with engaging consumers around their brand) rather than to think like the traditional marketers (i.e. marketers act only as disseminators of product information, while consumers need to learn about the brand themselves). This new school of thought is important for marketers to develop and build on the new idea of interactive advertising.

Based on research in the Journal of Advertising, interactive advertising has been identified as one of the top three fastest growing areas of research venture that may serve

to highlight and illustrate some of the critical issues in future advertising research (Faber, 2002). One of the newly identified potential for upcoming research to venture is on the use of telepresence, as there is still a lack of research on the effect of telepresence on advertising effectiveness (Choi, Miracle, & Biocca, 2001). Previous studies on telepresence are limited only to the technological aspect like simulation (e.g. Minsky, 1980; Sheridan, 1992; Steuer, 1994; Slater, 1995; Coyle, 1997; Draper, Kaber, & Usher, 1999; Nowak, 2001; Keng & Lin, 2006) rather than the psychological aspect. Whether telepresence affects game user's attitude, intention and/or behavior, or whether it plays an important role in persuasive advertising (such as in-game advertising) are aspects that are lacking and need to be investigated by researchers (note: there have been calls to investigate these issues).

Increased use of interactive advertising by marketers and the rapid growth of the games industry suggest the importance and need for studies to be carried out to fill the gaps found in the area of behavioral psychology relating to persuasive advertising (Molesworth, 2003). The empirical study by Taylor and Thompson (1982) did not clearly present evidence of the effect of interaction from computer experiences on attitude change. Heeter (2000), for example, suggests that games to be studied as persuasive advertising medium, by utilizing the game content. Other suggestions include the study on the effect of telepresence on the game design and behavioral aspects (e.g., Minsky, 1980; Sheridan, 1992; Slater & Usoh, 1994; Slater, 1995; Coyle, 1997; Kaber & Usher, 1998; Keng & Lin, 2006). For example, Slater (1995) suggests for more research to be conducted on telepresence as the literature record no clear understanding on users' feeling of their presence in the mediated environment or telepresence. Coyle (1997) also calls for validation of the assumption that the manipulation of design

variable will lead to user's increased level of telepresence. Researchers like Molesworth (2003) and Grigorovici and Constantin (2004) suggest for studies to be carried out on the potential of product brand advertisement in computer games and in-game advertising.

There is also a lack of studies investigating the impact of users' experience as moderator on telepresence study. It is crucial to find out whether users' high game play experience or less game play experience may affect users' attitude towards telepresence and their intentional towards behavior. As Fenrich (2005) has highlighted, students are actively involved with simulation or educational games, utilizing their existing knowledge and experience in learning process. Lewandowski and Morehead (1998) also encountered major obstacles in students' learning process when he found students' experiences vary. Thus researchers debate whether users existing knowledge and experience influence students in decision making and question answering process. This raises many questions on how users' high game play experience or less game play experience moderate the perception of telepresence that was created through in-game advertising, which subsequently nurture the users' interest. In addition to finding out the users' telepresence in in-game advertising environment, this study investigates the moderating effect of users experience on the relationship between telepresence and attitude towards telepresence.

1.4 Statement of Problem

Based upon previous discussion, this study synthesis the problems identified through the preceding discussion and following considerations:

(a) The inadequacy of systematic and empirical researches that investigate the effect of telepresence on attitude towards the role of the telepresence in the game and on purchase intention (Choi et al., 2001).

(b) The lack of studies analyzing the measurement of presence (telepresence) from the marketing perspective. Thus this study introduced telepresence as brand exposure medium (Molesworth, 2003; Grigorovici & Constantin, 2004).

(c) The scarcity of research that investigates attitude towards telepresence as the mediator variable that will affect the purchase intention (Minsky, 1980; Taylor & Thompson 1982; Sheridan, 1992; Slater & Usoh, 1994; Slater, 1995; Draper, Coyle, 1997; Kaber & Usher, 1998; Keng & Lin, 2006).

(d) The lack of studies investigating the moderating effect of users' experience (advanced game and amateur players) on the relationship between the perceived telepresence and attitude towards telepresence (Lewandowski & Morehead, 1998).

It is clear that there are gaps within the literature on the issues of telepresence, user's attitude towards telepresence and their intention in terms of purchase and revisiting the game.

1.5 Research Questions

Based on the background of the study and the research problems identified above, this study in the context of the select Internet game play is guided by the following questions:

1. Does telepresence have influence on game users' intentions, especially to revisit the game and purchase advertised product brand?
2. Does telepresence influence users' attitude towards telepresence?
3. Is users' attitude towards telepresence persuading users' intentions to revisit the game and purchase advertised product brand?
4. Does users' attitude towards telepresence play a mediating role between telepresence and users' intentions to revisit the game and purchase advertised product brand?
5. Is users' experience moderating the relationship between telepresence and users' attitude towards telepresence?
6. To what extent do single and multiple exposures, and level of telepresence experience of the game play influence the users' perception towards telepresence, their attitude towards telepresence and their intention to purchase and revisit the game?

1.6 Research Objectives

This study has two objectives. The first objective is to understand the relationship of the variables with the focus on the following areas of investigation:

1. The influence of telepresence on users' intentions to revisit the game and purchase advertised product brand;
2. The influence of telepresence on users' attitude towards telepresence;
3. The role of users' attitude towards telepresence on users' intentions to revisit the game and purchase the brand advertised;
4. The moderating role of user experience levels on the relationship between telepresence and user attitude towards telepresence; and
5. The mediating effect of attitude towards telepresence on relationship between telepresence, purchase intention, and game revisit.

The second objective of this experimental study is to identify the differences in the games from the context of user experience with different of experimental treatments. As such, this research has to examine:

1. The differences between users' perception of telepresence from four different experimental treatments exposed to the users, with the four treatments being 1-single exposure, 2-multiple exposure 3-high telepresence, 4-low telepresence;
2. The differences between users attitude towards telepresence from the four different experimental treatments exposed to the users; and

3. The differences between users' intention from the different experimental treatments exposed to the users.

1.7 Scope of the study

This study is an exploratory research in nature and adopts an experimental approach, whereby the information are obtained from game players amongst undergraduate students of Universiti Sains Malaysia (USM), Pulau Pinang. A total of 260 respondents were invited on voluntarily basis to participate in the computer game experiment conducted at The School of Languages, Literacies and Translation (Pusat Pengajian Bahasa, Literasi dan Terjemahan (PPBLT)), at Makmal 4.

This study is an experimental base whereby a user that has high variability across subjects in the experiment is assumed to correlate more highly with the sum than one with a lower variance. In the experiment, a users' perception on (1) vividness, (2) interactivity, (3) engagement, (4) physical space, (5) naturalness, (6) brand exposure, and (7) product experience, and the likeliness of the user to revisit the game and purchase the product brand are examined using a questionnaire. The integration of both information technology and advertising concepts in this study, guided by the Beliefs-Attitude-Behavioral Intention Model of Fishbein and Ajzen (1967) and Elaboration Likelihood Model (ELM) of Petty and Cacioppo (1986).

To achieve the objectives and the game environment, this study chooses a fast food game (low involvement product) to be experimented upon. A total of 20 games were investigated to ensure all the elements of telepresence are fulfilled. To ensure the relevancy of the games, observation was conducted in 'Top 10 Worldwide Gaming Properties Ranked Game' and only games ranked for more than three months in the top-

10 poll were considered eligible. After the compilation of the games sites, the selected game was evaluated in respect to telepresence characteristics. In addition, a preliminary study was executed to identify one game representing telepresence characteristics. A total of 25 volunteer respondents from Universiti Teknologi MARA (UiTM), Shah Alam, were asked to rate all the 20 games on the basis of the game preferences.

Game experts from Universiti Teknologi MARA, Shah Alam, assisted the researcher to have a deeper understanding of the telepresence issues of the selected game. These included the elements of telepresence i.e.vividness, interactivity, engagement, physical space, and naturalness, whether audio and visual of the game is present to the users and persuasive advertising in that the product and brand used in a game did not distract users' enjoyment of playing the game. To achieve this, the researcher conducted focus group discussions with volunteer lecturers from the Faculty of Computer and Mathematical Sciences and Faculty of Business Management of UiTM. The use of focus group discussions were aimed at obtaining respondents' impression, interpretations, and opinions. This methid was particularly suited to the study of attitudes and experiences and for exploring people's knowledge and experiences on how those opinions were constructed. Finally, the one selected game was used in the actual questionnaires.

1.8 Significance of the study

This study is expected to contribute to both theoretical and practical perspectives of consumers' behavior study. This study will provide beneficial knowledge not only to the gaming industry in general but also to the marketing study, as discussed below:

A. Theoretical significance

Firstly, previous research on telepresence is limited only to create games users' enjoyment in the simulation world. However, there are no known studies that employ telepresence as part of the medium for persuasive advertising. Thus this study intends to introduce the brand exposure and product experience as a medium in the telepresence construct.

Secondly, it is crucial for this study to introduce attitude towards telepresence as a mediator variable between the relationship of telepresence and purchase intention. A study by Nelson (2002) has highlighted that there is no published study to date to examine how the game users feel about an advertisement in the game. This present study, therefore, aims to investigate whether the telepresence has a positive effect on attitude towards telepresence using the Belief-Attitude-Intention model (Fishbein & Ajzen, 1967). Dahlen, Rasch, and Rosengren (2003) pointed out that brand related communication effects for interactive advertising have yet to be uncovered. This research attempts to manipulate the nature of telepresence game together with persuasive advertising message to create users or game players' positive attitude towards telepresence.

Thirdly, this research examines the level of game players' experience (high experience and less experience) as a moderator between the telepresence and attitude towards the telepresence. One of the few studies on gaming encountered a range of students' experience in students learning process (Lewandowski & Morehead, 1998). However, there appears to be no studies that examine the impact of different users' experience including skills and knowledge on playing game on users' attitude. Although the role of users experience has been given considerable attention (Bettman & Park 1980; Punj & Staelin 1983; Johnson & Russo 1984; Alba & Hutchinson 1987; Haider & Frensch 1999), it has not been extensively studied in the context of telepresence.

The findings of this study will provide information for the gaming industry in general and those in developing creative content of in-game advertising in particular. For example, it will provide information on the game content evaluation for the development of a new game. Impact of telepresence to users or game players will be able to take these factors of telepresence used in the study in creating new games.

B. Practical significance

Firstly, this study is expected to benefit marketers in several aspects. For one, the use of computer game as an advertising medium when users experience of telepresence is expected to influence subjective mental states to process the advertising message inserted into the game. Attractive advertising message in the game is also expected to be an effective communication tool with its capability to persuade the viewers to spend more time playing the games as well as engaging in a favorable behavior through the development of a positive attitude. Another benefit is that understanding the game players' intention to revisit the game helps marketers save costs on retaining an existing

customer with the use game as advertising medium. Lastly, games require users' to provide the 'users' information' before or during playing. The process is an easy way for marketers to gather useful information of the players to build up their own customers database.

Secondly, from the users or game players perspective that plays an active role on playing game, this study is expected to generate at least two benefits. One, real product message that appears during the game play is expected to increase the quality of the users playing game experience. Two, users benefit in the form of education from the product information inserted into the game. This appearance of useful information that appears in game may help users to understand the product usage and/or making decisions to purchase.

Thirdly, this study aims to guide the game content developer on storing and providing useful information of advertisement message at the strategic position inside the game. This is important as in-game advertising differs from traditional mass media in terms of amount of information available, modes of presentation, modes of information organizations, information flexibility and information accessibility. These differences arise from the interactive game's unique features of telepresence.

With utilization of the telepresence in this study, it is expected to provide useful information not only from the technological perspective, but also from the psychological aspect. This unique characteristic of the telepresence will contribute to effectiveness of advertising strategy and extensive coverage of the wide market of customers as games can be easily accessed from the Internet and can be played using game consoles such as the computer.

1.9 Definition of Research Variables

There are several key terms used throughout this study and are operationally defined as follows:

- Revisit the game: The degree to which a user believes that he/she will re-participate in the online game (Lu & Lin, 2002; Hsu & Lu, 2005).
- Purchase Intention: Defined as the game player behavior response influences of attitude towards telepresence with respect to the intention to buy (or try to buy) the brand or product advertised in the future (Spears & Singh, 2004).
- Attitude towards telepresence: An individual's disposition to respond favorable or unfavorable to an object, person, institution, or event of game flow, or to any others discrimination aspects of sensed of "being there" or presence in a real time of the mediated environment (Ajzen, 1988; Reeves, 1991; Steuer, 1992).
- User experience: A consequence of a user's internal state (predispositions, expectations, needs, motivation, mood, etc.), the characteristics of the designed system (e.g, complexity, purpose, usability, functionality, etc.) and the context (or the environment) within which the interaction occurs (e.g, organizational/social setting, meaningfulness of the activity, voluntariness of use) (Hassenzahl & Tractinsky (2006).

- Telepresence

Game players sense of "being there" or the experience of presence in an environment by means of a communication medium (Reeves, 1991; Steuer, 1992). The telepresence dimensions are as below:

- *Vividness:* Representational richness of a mediated environment as defined by its formal features, that is, the way in which an environment presents information to the senses (Steuer, 1992. p11).
- *Interactivity:* The extent to which users can participate in modify the form and content of a mediated environment in real time (Steuer, 1992, p 84).
- *Engagement:* Engagement in telepresence refers to cognitive as well as affective aspect on the virtual stimuli that provide a means of identification and recognition to the users to enhance engagement in the environment (Benford, Greenhalgh, Rodden, & Pycock, 2001; Talamo & Ligorio, 2001; Taylor, 2002).
- *Physical space:* The user feels his/her phenomenal body spatially located in the virtual environment and he/she perceives him/herself to be enveloped by, included in, and interacting with the virtual environment and its elements (Jeandrain, 2004).
- *Naturalness:* The telepresence based on the reality judgment component when the user will perceive the environment as perceptually (photorealistic) and socially "true to life" realist to him/her (Schubert et al., 1999; Lessiter, Freeman, Keogh, & Davidoff, 2000).
- *Brand exposure:* To shape game users behavior via cognitive mechanisms based processes with brand representations as well as other kinds of mental representations (Anderson 1983; Rumelhart, Widrow, & Lehr, 1994).
- *Product experience:* The awareness of the psychological effects elicited by the interaction with a product, including the degree to which all our senses are stimulated, the meanings and values we attach to product, and the feeling and emotions that are elicited (Hekkert. 2006; Schifferstein & Cleiren, 2005).

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter first discusses the theories adopted for this study, namely the Belief-Attitude-Behavior Intention model and the Elaboration Likelihood Model (ELM). Next, the conceptualizations of users' intention to purchase the advertised brand and to revisit the game are elaborated. Brief discussion of antecedents of each mentioned variable is also highlighted. Then a brief history and conceptual definition of telepresence is given, particularly the potential of incorporating persuasive advertising. This leads to the discussion of relevancy of product experience and brand exposure used in gaming. This is followed by intensive details of telepresence variables, i.e. vividness, interactivity, engagement, physical space, naturalness, brand exposure, and product experience used in this study. Arguments on telepresence relevancy will lead to the important topic in this chapter, which is the identification of telepresence gaps that justifies the importance of persuasive advertising message in the game.

The variables used in this study derived from existing literature - independent variable (telepresence), the mediating variable (attitude towards telepresence), the moderating variable (users' experience i.e., high game play experience or less game play experience) - are also discussed and the relationships between these variables verified. The chapter concludes with a discussion on the game conceptual definition.