Relationship between Motivation and Satisfaction of Online Computer Games: Evidence from Adolescent Players Using Wireless Service in Taiwan

Lily Shui-Lien Chen, Michael Chih-Hung Wang, and Yung-Hsin Lee[*]

Associate Professor, Business Administration Dept., Hsing Wu College
Business Administration Dept., National Central University
Graduate Institute of Finance, National Taiwan University of Science and Technology
tzjunltk@yahoo.com.tw

Abstract. This study provides insight into the relationship between leisure motivation and leisure satisfaction with wireless service among teenage online gamers. A systematic sampling produced 134 usable questionnaires for the final data analysis. Findings revealed that teenagers playing online games with wireless service for intellectual motivations report educational leisure satisfaction. With wireless service, online game players with social motivations report educational, social and relaxation leisure satisfaction. Players with stimulus-avoidance motivation report greater psychological, educational, relaxation, physiological and aesthetic leisure satisfaction. Finally, this work discusses implications for leisure practice and further research**.**

Keywords: Leisure motivation, leisure satisfaction, adolescent, online computer game.

1   Introduction

Online computer gaming in Taiwan accounts for 40% of all Internet use and exceeds three million people, according to the Institute for Information Industry. Over 450,000 users play online computer games in Taiwan during peak hours, making online gaming the most popular pastime. Online computer gaming in Taiwan is growing at a rapid pace (Wang, *et al*., 2008).

For adolescents who use the Internet primarily for entertainment (Bayraktar & Gun, 2007), online gaming is a popular activity and the primary means of entertainment (Steinkuehler, 2004) and leisure activity that merits study (Chou & Tsai, 2007). The Fubon Cultural and Educational Foundation's (2004) research reports showed of the 34.26 hours of leisure time senior and junior high school students in Taiwan have each week, 12.27 hours are used for "online activities" or "playing video games and using the computer."

---

[*] Corresponding author.

Motivation and satisfaction are two important factors in understanding people's choice of leisure activities (Beard & Ragheb, 1983, 1980). Leisure motivation assists in understanding the consequences of leisure engagements (Manfredo & Driver, 1996, p.188) and leisure satisfaction can be a direct indicator of leisure effects (Lu & Hu, 2005, p.329). The behavior of young computer gamers has received considerable attention in recent years (Griffiths *et al.,* 2003; Shieh & Cheng, 2007). Researchers have argued that adolescents and adults interact with games in entirely different ways (Griffiths *et al.*, 2004; Yee, 2006).

Players of online computer game possess different leisure motivations and different leisure satisfactions. The purpose of this study is to gain further insight into teenage online gamers' effect by understanding their motivations and how they achieve satisfaction in Taiwan to fulfill this gap.

2   Literature Review and Conceptual Framework

There are two kinds of online computer gaming: multiplayer (MOGs) and massively multiplayer (MMOGs) based on the maximum number of simultaneous players (Ye & Cheng, 2006). The first and more popular type is the massively multiplayer online role-playing game (MMORPGs) genre, characterized by large, sophisticated, detailed, and evolving worlds based in different narrative environments (Griffiths *et al.,* 2004). This study focuses on the MMORPGs.

People engage in leisure activities, for intellectual, social, competence-mastery and stimulus-avoidance reasons, these leisure motivations explain why people engage in leisure activities to meet their social needs, to achieve, master, challenge and compete, and escape (Beard & Ragheb, 1983). These components of leisure satisfaction are psychological, educational, social, relaxational, physiological and aesthetic (Beard & Ragheb, 1980). People engage in leisure activities to obtain satisfaction.

2.1   Leisure Motivation and Psychological Satisfaction

Psychological satisfaction refers to the sense of accomplishment (Beard & Ragheb, 1980). Online game adolescent players can represent them and that explores this virtual world; this results in feelings of achievement (Choi *et al.*, 2007). Adolescent players with social motivation would chat with other players (Yee, 2006) to share their experiences to find an efficient way to "level up" character's abilities or skills by training or by mastering certain situations (Choi *et al.,* 2007). During these "level-up" processes, adolescent players with competence-mastery motivation may control their online personae to compete with other players to optimize their own character's performance (Yee, 2006). If adolescent players use less time to "level up" their characters than other online players, they may have a sense of achievement. Gradually, they can attract other players' attention, which gives adolescent players a sense of accomplishment.

H1: Online computer gaming adolescent players' through wireless service (a) intellectual motivation (b) social motivation (c) competence-mastery motivation (d) stimulus avoidance motivation is positively related to their psychological satisfaction.

2.2   Leisure Motivation and Education Satisfaction

Education satisfaction refers to intellectual stimulation and the opportunity to learn new things (Beard and Ragheb, 1980). Different online computer games have tasks that different characters with different skills must complete (Dickey, 2007). This competitive process makes them learn how to clear different stages may create their satisfaction on learn new things. During game play, adolescent players have opportunity to cooperate with other group members. Via on-screen text messages with other players, they can provide instructions, advice and encouragement (Dickey, 2007). As the quests are completed, adolescent players come to understand teamwork (Helena & Griffiths, 2007) and derive satisfaction from being part of a group effort (Yee, 2006).

H2: Online computer gaming adolescent players' through wireless service (a) intellectual motivation (b) social motivation (c) competence-mastery motivation (d) stimulus avoidance motivation is positively related to education satisfaction.

2.3   Leisure Motivation and Social Satisfaction

Social satisfaction means that by participating leisure activities, people can form relationships with others (Beard & Ragheb, 1980). Most online computer games are structured; the "quests" are deliberately too difficult for a single character, so they need the help of other players (Ducheneaut & Moore, 2004). Adolescent players with intellectual motivation would like to interact with and form interpersonal relationships with then. Online computer gamers form two types of group: the party, which comes together only long enough to complete a particular task (Choi *et al.,* 2007), and the guild, a longer-standing community that has other objectives, for instance, to assist to lower-level members (Humphreys, 2003).

After specific adventure or battle, adolescent players who have social motivation belong to a party would cooperate with and create close relationships with other members. Adolescent players who have competence-mastery motivation and belong to a guild may foster interdependency among members. This interdependency rewards participation in those collaborative activities (Choi *et al.,* 2007), and results in significant friendships (Krotoski, 2004) in the virtual world.

H3: Online computer gaming adolescent players' through wireless service (a) intellectual motivation (b) social motivation (c) competence-mastery motivation (d) stimulus avoidance motivation is positively related to social satisfaction.

2.4   Leisure Motivation and Relaxational Satisfaction

Relaxational satisfaction refers to through leisure activity individual can take rest and relief the stress from life or work (Beard & Ragheb, 1980). Online games can be seen as a type of contemporary adolescent pop culture (Steinkuehler, 2004). Adolescent players with intellectual motivation who join online games can understand the "up to date" game terminology or game-related information such as the strategy of accumulating

wealth in the form of money and weapons (Humphreys, 2003). The information makes them enjoy virtual world and relieve their stress from school. During game play, the interactions make online adolescent players seek pleasure (Wu & Liu, 2007) and enjoy it. As they enjoy, adolescent players who have competence-mastery motivation want to play more (Huang & Cappel 2005), and the more time they play the less stress they feel. Additionally, this behavior will make adolescent players feel safer and happier in the virtual world than they feel in the real world (Kelly2, 2004.)

H4: Online computer gaming adolescent players' through wireless service (a) intellectual motivation (b) social motivation (c) competence-mastery motivation (d) stimulus avoidance motivation is positively related to relaxational satisfaction.

2.5   Leisure Motivation and Physiological Satisfaction

Physiological satisfaction is the development of physical fitness and the promotion of well being (Beard & Ragheb, 1980), where well being is a subjective, overall and comprehensive evaluation towards feeling of the self with life status quo (Shichman & Cooper, 1984). There are many kinds of online games. Adolescent players may try to understand the differences among these games and may learn the characters' actions. Moreover, if adolescent players try to attract the attention of other adolescents, they may need to practice more. As they become more familiar with the actions of the characters, they may become more physically fit. Besides, adolescent players whose physical disabilities limit their activity (Burns & Graefe, 2007) or who are recuperating from serious illnesses can run, jump, and race in online computer games (Kelly2, 2004). In this way, playing can give them happiness and physical satisfaction.

H5: Online computer gaming adolescent players' through wireless service (a) intellectual motivation (b) social motivation (c) competence-mastery motivation (d) stimulus avoidance motivation is positively related to physiological satisfaction.

2.6   Leisure Motivation and Aesthetic Satisfaction

Aesthetic satisfaction refers to leisure activity as being pleasing, interesting, beautiful, and well-designed (Beard & Ragheb, 1980). Most of the activities offered by online computer games are represented by large, sophisticated, detailed and evolving worlds based in different narrative environments (Griffiths *et al.,* 2003). Online computer games adopted 2D/3D graphics for both draft and photo-realistic representation of images (Kerbs, 2005) and make adolescent players who with intellectual motivation learn appreciate beautiful frame and foster feeling of pleasing during game play.

Because each of online computer game features a unique combination of landscapes, challenges, players and emotional climates (Kelly2, 2004), adolescent players with social motivation via online or offline discussion can share their preference frames or visual aesthetics (Humphreys, 2003). During discussion their favorite frame may also create adolescent players with components-mastery motivation imitate these frames and improve their sense of aesthetics.

H6: Online computer gaming adolescent players' through wireless service (a) intellectual motivation (b) social motivation (c) competence-mastery motivation (d) stimulus avoidance motivation is positively related to aesthetic satisfaction.

3   Methods

3.1   Data Collection

This study used a street survey interview, gathering research samples in the public in Taipei, Taiwan. We had two reasons for conducting the survey in Taipei. First, Taipei is a densely populated city of 2,600,000 people, many of whom come from other parts of Taiwan. Second, Taipei is the first wireless city in the world. This study adopted adolescent players enter into the entrances of the railway and MRT were chosen for participation. Adolescent players were asked their willingness to participate in the survey. Interviewers were then stood by for answering any question when the participants suffered. Participants were required to read the questionnaire instructions carefully before completing them and were confirmed they had the experience using the wireless service to play the online game. A total of 134 useful questionnaires were collected for final data analysis.

3.2   Research Instruments

Leisure Motivation Scale (LMS). This study adopted the Leisure Motivation Scale designed by Beard and Ragheb (1983). Leisure motivation consists of four dimensions: intellectual (e.g., increase knowledge, discover new places and things, and use imagination), social (e.g., interaction with others, good time with friends, building and developing close friendships, and gain a feeling of belonging), competence-mastery (e.g., use physical abilities, increase abilities, and avoid the hustle and bustle of life), and stimulus-avoidance (e.g., relax mentally and physically, calm atmosphere).

Leisure Satisfaction Scale (LSS). Leisure Satisfaction Scale (LSS) was adopted by Beard and Ragheb (1980). Leisure motivation consists of six dimensions: psychological, educational, social, relaxational, physiological, and aesthetic. These dimensions are measured with 24 items: four items measured psychological satisfaction, four items measured educational satisfaction four items measured social satisfaction, four items measured relaxational satisfaction four items measured physiological satisfaction and four items measured aesthetic satisfaction.

3.3   Data Analysis

Cronbach's α (internal consistency coefficient) was used to determine reliability of the leisure motivation and leisure satisfaction scales. Exploratory factor analysis (EFA) was used to determine the validity of dimensions. Finally, regression analysis was used to determine the significant and relative coefficients of leisure motivation dimensions in predicting each leisure satisfactions. In each regression model, independent variables included four dimensions of leisure motivation and the dependent variables are six dimensions of leisure satisfaction.

4   Results

The reliability and validity of leisure motivation scale and leisure satisfaction scale are tested before the final regression analysis. Cronbach α and corrected item-to-total correlations are adopted to measure scale reliability. Originally, there are 14 items of leisure motivation scales and 24 items of leisure satisfaction. Item-to-total correlation was used to delete non-correlate item for leisure motivation scale, all items are kept, but one item was omitted from the physiological dimension of leisure satisfaction. Therefore, leisure satisfaction left 23 items for final analysis.

The final Cronbach α for dimensions of leisure motivation are: intellectual (α=0.842), social (α=0.817), competence-mastery (α=0.832), stimulus-avoidance (α=0.846); for dimensions of leisure satisfaction are: psychological (α=0.880), educational (α=0.874), social (α=0.807), relaxational (α=0.878), physiological (α=0.852), aesthetic (α=0.888). All dimensions of the Cronbach α greater than 0.8 threshold reflected strong internal consistency for the measurements (see Table 1). Therefore, scale internal consistency and homogeneity are very good in this study.

Table 1. The reliability of the measurement

Construct	Measurement Items		Cronbach α
	Initial	Final	
Leisure Motivation			
Intellectual	3	3	0.842
Social	5	5	0.817
Competence-mastery	2	2	0.832
Stimulus-avoidance	4	4	0.846
Leisure Satisfaction			
Psychological	4	4	0.880
Educational	4	4	0.874
Social	4	4	0.807
Relaxational	4	4	0.878
Physiological	4	3	0.852
Aesthetic	4	4	0.888

Although the authors made a theoretical assumption about a four-dimensional and a six-dimensional structure, exploratory factor analysis was performed on the initial scales to check item loadings and to allow the data to drive the number of dimensions in the initial exploratory phase. Since the data appeared to possess construct validity, a principal component analysis with varimax rotation was undertaken, assuming unrelated factors. All factors that were extracted with eigenvalues greater than 1, expect aesthetic satisfaction. However, the cumulative explanation of these six factors is 75.246%. Five factors emerged with construct loadings equal to or exceeding 0.5, suggesting discriminant and convergent validity. The items formed the expected factors.

The results of OLS regression estimates are presented in Table 2. Each of the six columns contains estimation results obtained using different dimensions of leisure satisfaction as dependent variable and leisure motivation as independent variable. All six regression models exhibited reasonable fit with the values of Adj-R^2 ranging from 0.212 to 0.389, except for Column 5 (leisure motivation and physiological satisfaction), the Adj-R^2 is 0.136.

The results in Model 1 indicated that two leisure motivation dimensions (competence-mastery and stimulus-avoidance) predicted a significant contribution to psychological satisfaction. As expect, adolescent players who have competence-mastery motivation and stimulus-avoidance motivation with higher psychological satisfaction. Coefficients of these two motivations are statistical significance for competence-mastery motivation (β=0.213, p<0.05), stimulus-avoidance motivation (β=0.277, p<0.01), respectively, therefore, H1 (c) and H1 (d) are supported. Intellectual and social are not statistical significance, therefore, the results do not support H1 (a) and H1 (b).

Coefficients in Model 2 showed all leisure motivation dimensions as expectations are positive and statistical significance to predict educational satisfaction: intellectual motivation (β=0.161, p<0.05), social motivation (β=0.248, p<0.05), competence-mastery motivation (β=0.263, p<0.01), and stimulus-avoidance motivation (β=0.175, p<0.05). The results shows adolescent gamers with these motivations cause higher educational satisfaction, therefore, H2 are all supported.

In Model 3, the results showed one leisure motivation dimension (social) with positive significant influence on social satisfaction. As expect, adolescent players who have social motivation with higher social satisfaction. The coefficient is statistical significant (β=0.608, p<0.001), showed support H3 (b). The other leisure motivation dimensions, intellectual, competence-mastery do not have statistical significant; stimulus-avoidance are not statistically significant. H3 (a), H3(c), and H3 (d) are not supported.

Coefficients in Model 4 showed that two leisure motivation dimensions (social and stimulus-avoidance) predicted a significant contribution to relaxational satisfaction: social motivation (β=0.268, p<0.05) and stimulus-avoidance motivation (β=0.418, p<0.001), therefore, H4 (b) and H4 (d) are supported. Intellectual motivation and competence-mastery motivation are not statistically significance, thus, H4 (a) and H4 (c) are not supported.

The results in Model 5 showed one leisure motivation dimension (stimulus-avoidance) with a positive significant influence on social satisfaction. As expect, adolescent players who have stimulus-avoidance motivation with higher physiological satisfaction. Coefficient (β=0.347, p<0.01) showed support H5 (d). The other leisure motivation, intellectual, competence-mastery, stimulus-avoidance without statistically significance. According to these results, H5 (a), H5 (b), and H5 (c) are not supported.

Similarly, results in Model 6 also showed one leisure motivation dimension (stimulus-avoidance) with positive significant influence aesthetic satisfaction. As expected, adolescent players who have stimulus-avoidance motivation with higher aesthetic satisfaction, (β=0.396, p<0.001) support H6 (d). The other leisure motivation, intellectual, competence-mastery, stimulus-avoidance were not statistically significance. According to these results, H6 (a), H6 (b), and H6 (c) are not supported.

Table 2. Regression Analysis for leisure motivation on leisure satisfaction

Model	Psychological (Model 1)	Educational (Model 2)	Social (Model 3)	Relaxation (Model 4)	Physiological (Model 5)	Aesthetic (Model 6)
	β	β	β	β	β	β
(Constant)	0.988[*]	.642	1.355[**]	1.045[*]	1.162[*]	1.499[**]
Intellectual	0.087	.161[*]	-.032	-.010	.043	-.100
Social	0.179	.248[*]	.608[***]	.268[*]	.127	.160
Competence-mastery	0.213[*]	.263[**]	-.056	.059	.029	.130
Stimulus-avoidance	0.277[**]	.175[*]	.138	.418[***]	.347[**]	.396[***]
R^2	0.320	0.407	0.345	0.326	0.162	0.236
Adj-R^2	0.299	0.389	0.325	0.305	0.136	0.212

*p<0.05; **p<0.01; ***p<0.001.

5   Conclusions

5.1   Discussion

The objective of the present study was to test the relationship between leisure motivation and leisure satisfaction in the online computer gaming with wireless service context. Results of regression analysis revealed that leisure motivation could be a predictor of leisure satisfaction among adolescents. Results also contributed to existing leisure research and to our understanding of leisure motivation's (Beard & Ragheb, 1983) influence on leisure satisfaction (Beard & Ragheb, 1980) in the online computer gaming context. Although results suggested that adolescent players have various leisure motivations are more likely to foster leisure satisfaction, not all leisure motivations influence leisure satisfaction.

Adolescent online gamers with intellectual motivation will report educational leisure satisfaction, but not psychological, social, relational, physiological, or aesthetic satisfaction. According to Beard and Ragheb (1983), intellectual motivation assesses the extent to which people are motivated to engage in leisure activities which involve substantial mental activities such as learning, exploring, discovering, creating or imaging. Thus, perhaps online computer games contain many types of content, and adolescent players who have intellectual motivation would like to learn while playing online computer games, only achieve educational satisfaction.

Adolescent gamers with social motivation will cause educational, social and relaxational satisfaction, but this motivation does not influence psychological satisfaction, physiological satisfaction, and aesthetic satisfaction. Previous researchers have argued that playing online computer games fosters collaboration (Choi et al., 2007) and eventually results in significant friendships (Krotoski, 2004). Perhaps adolescents like to make friends with others, rather than find achievement in playing online games keep physically fit, find online computer gaming well-designed or not.

Additionally, adolescent online gamers with competence-mastery motivation view online gaming as a leisure activity that brings psychological and educational

satisfaction. This is because during gameplay, adolescent players can experience accumulated after complete a task (Dickey, 2007) and compete with other online players in order to optimize their own character performance (Yee, 2006).

The results showed that the stimulus-avoidance motivation of online computer gaming has positive effect on all except the social dimensions of leisure satisfaction. In this virtual world, adolescents can escape their failures in the real world and fulfillment or satisfaction via playing online computer gaming. The managers of online computer gaming could adopt the results of this study to design online games that cater to the adolescents' leisure motivations. Facing the strong suspicions about negative effects of parents, the managers have to develop the approval to parents. The key points managers can emphasize are not only the psychological and physiological attractions of the activity, but also their educational advantages.

5.2   Limitations and Future Research Directions

This study was limited to a sample of Taipei adolescents. The study may not be representative of all adolescent online gamers in Taiwan, although Taipei is a famous wireless city. In addition, the scale used in this study may not have been suitable for adolescents, because previous leisure motivation scale (LMS) in Beard and Ragheb (1983) and leisure satisfaction scale (LSS) in Beard and Ragheb (1980) studies measured adults' motivation and satisfaction.

Although the results of the study confirmed the relationship between leisure motivation and leisure satisfaction by survey adolescent players of online computer games, several issues should be further investigated. First, more variables should be incorporated into future models in order to predict adolescent leisure satisfaction in online computer gaming. Another issue is related to the best way to measure adolescent motivation and satisfaction in leisure activities. Since online computer gaming is popular among adolescents, measurements should factor the characteristics of online computer gaming into the scale.

References

1. Bayraktar, F., Gun, Z.: Incidence and correlates of Internet usage among adolescents in North Cyprus. Cyber Psychology & Behavior 10, 191–197 (2007)
2. Beard, J.G., Ragheb, M.G.: Measuring leisure satisfaction. Journal of Leisure Research 12, 20–33 (1980)
3. Beard, J.G., Ragheb, M.G.: Measuring leisure motivation. Journal of Leisure Research 15, 219–228 (1983)
4. Burns, R.C., Graefe, A.R.: Constraints to Outdoor Recreation: Exploring the Effects of Disabilities on Perceptions and Participation. Journal of Leisure Research 39, 156–181 (2007)
5. Choi, B., Lee, I., Choi, D., Kim, J.: Collaborate and share: an experimental study of the effects of task and reward interdependencies in online games. CyberPsychology & Behavior 10, 591–595 (2007)
6. Chou, C., Tsai, M.J.: Gender differences in Taiwan high school students' computer game playing. Computers in Human Behavior 23(1), 812–824 (2007)

7. Dickey, M.D.: Game design and learning: a conjectural analysis of how massively multiple online role-playing games (MMORPGs) foster intrinsic motivation. Educational Technology, Research and Development 55, 253–273 (2007)
8. Ducheneaut, N., Moore, R.J.: The social side of gaming: a study of interaction patterns in a massively multiplayer online game. In: Proceedings of the ACM conference on Computer supported cooperative work, vol. 6, pp. 360–369 (2004)
9. Fubon Cultural & Educational Foundation: Online activities of Taiwan teenagers (2004), `http://www.eshare.org.tw/eshare_response_Text.asp?Txt_ID=634` (Derived, March 8, 2007)
10. Griffiths, M.D., Davies, M.N.O., Chappell, D.: Breaking the Stereotype: The Case of Online Gaming. CyberPsychology & Behavior 6, 81–91 (2003)
11. Griffiths, M.D., Davies, M.N.O., Chappell, D.: Online computer gaming: A comparison of adolescent and adult gamers. Journal of Adolescence 27, 87–96 (2004)
12. Helena, C., Griffiths, M.D.: Social Interactions in Massively Multiplayer Online Role-Playing Gamers. CyberPsychology & Behavior 10, 575–583 (2007)
13. Huang, Z., Cappel, J.J.: Assessment of a Web-Based Learning Game in an Information Systems Course. Journal of Computer Information Systems 45, 42–50 (2005)
14. Humphreys, S.: Online Multiuser games: Playing for real. Australian Journal of Communication 30, 79–91 (2003)
15. Kelly, R.V.: Massively multiplayer online role-playing games: the people, the addiction and the playing experience. McFarland & Co, Jefferson, N.C (2004)
16. Kerbs, R.W.: Social and ethical considerations in virtual worlds. The Electronic Library 23, 539–546 (2005)
17. Krotoski, A.: Chicks and joysticks: an exploration of women and gaming. Entertainment and Leisure Software Publishers Association, London (2004)
18. Lu, L., Hu, C.H.: Personality, leisure experiences and happiness. Journal of Happiness Studies 6, 325–342 (2005)
19. Manfredo, M.J., Driver, B.L., Tarrant, M.A.: Measuring leisure motivation: A meta-analysis of the recreation experience preference scales. Journal of Leisure Research 28, 188–213 (1996)
20. Shieh, K.F., Cheng, M.S.: An empirical study of experiential value and lifestyles and their effects on satisfaction in adolescents: an example using online gaming. Adolescence 42, 199–215 (2007)
21. Shichman, S., Cooper, E.: Life satisfaction and sex role concept. Sex Role 11, 227–240 (1984)
22. Steinkuehler, C.A.: Learning in massively multiplayer online games. In: Proceedings of the 6th international conference on Learning sciences, Santa Monica, California, pp. 521–528 (2004)
23. Wang, E.S.T., Chen, L.S.L., Lin, J.Y.C., Wang, M.C.H.: The Relationship between leisure satisfaction and life satisfaction of adolescents concerning online games. Adolescence 13, 177–184 (2008)
24. Wu, J., Liu, D.: The effects of Trust and enjoyment on intention to play online games. Journal of Electronic Commerce Research 8, 128–140 (2007)
25. Yee, N.: Motivations for Play in Online Games. CyberPsychology & Behavior 9, 772–775 (2006)
26. Ye, M., Cheng, L.: System-performance modeling for massively multiplayer online role-playing games. IBM Systems Journal 45, 45–58 (2006)