The Relationships among Brand Image, Brand Trust, and Online Word-of-Mouth: an Example of Online Gaming

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Abstract - **This study mainly investigates the relationships among brand image, brand trust, and online word-of-mouth. The present study collects 317 players of the online game "World of Warcraft" to empirically investigate the relationships among brand image, brand trust, and online word-of-mouth, and examines the moderating effect of experience. By manipulating structural equation modeling (SEM), the research results indicate that brand trust serves as a partial mediator between brand image and online word-of-mouth. The other findings specify the substantial moderating effect of experience in brand image, brand trust, and online word-of-mouth.**

Keywords - **Brand image, brand trust, online word-of-mouth, structural equation modeling, moderating effect**

I. INTRODUCTION

With the development of broadband, the online game market grows rapidly. IDC (internet data center) estimated total revenue of the online game will continue to increase until 2009. The "World of Warcraft" not only has remained unabated since its introduction, but also been one of the fastest selling games in the history of the game.

This study adopts players of the online game "World of Warcraft" as subjects, and verifies the relationship that both brand image and brand trust affect online word-of-mouth positively. On the other hand, this study confers game qualifications' influence on the relationships among brand image, brand trust, and online word-of-mouth.

II. LITERATURE REVIEW AND HYPOTHESES

A. Brand Image and Online Word-of-Mouth

Brand image will reduce perceived risk brought from its invisible service, maintain customers' trust and the goodwill of good quality, thereby affect customers' purchase decisions, and can induce customers to develop and maintain their loyal relations to business [1, 2]. Reference [3] also pointed out that customer loyalty not only expressed a high degree of repurchase intention, but also made customers willing to recommend service providers to others on the Internet. In addition, without time and space constraints, as well as the characteristics

of low-cost, the Internet can increase the spread will of consumers [4], and make the spread of word-of-mouth become more quickly in the network environment. Thus, according to the above findings, this study established the following hypothesis:

H1. Brand image has a positively significant impact on online word-of-mouth.

B. Brand Image and Brand Trust

Reference [5] thought brand image was composed by a series of brand association, which was individed into the functional concept, the symbol concept, and the empirical concept of brand image by consumers' personal value of product or service. Brand is the concept of consumers, existing in the memory network, and affects consumers' decision-making and potential favorite feelings of this brand (as brand trust). Therefore, brand image and brand trust of consumers are linked to each other, and the reason is that brand image is regarded as a perceived effect of consumers for brand tangible and intangible association, and both consumers' perception of the brand and brand trust belong to psychological feeling, which means identification of brand value in a psychological sense, thereby believe and accept such connotation of brand image. Thus, brand image will affect brand trust of consumers.

On the other hand, scholars [6] thought brand image was often regarded as the external clue of product quality's evaluation for consumers, and consumers will use brand image of the product to infer or maintain their perceived quality of products. Based on consumers' tendency to trust higher qualified products, we can say that the relationship between brand image and brand trust of consumers is inseparable. Thus, this study made the following hypothesis:

H2. Brand image has a positively significant impact on brand trust.

C. Brand Trust and Online Word-of-Mouth

The establishment and linking process of the relationship to the customer will enable customers to have friendship, comfort, and trust [7], and such relations can increase the probability of customers' recommend and positive word-of-mouth. Satisfaction and trust are very closely related, but they are still different in the concept, and each has its special pre-factors. Evidence further finds

that satisfaction and trust have different impacts on how to retain customers [8]. Trust means that one party is willing to believe that the other party is trustworthy and has a high degree of honesty, integrity. Compared to satisfaction, trust has a stronger emotional link in the commitment of relations [9]. If the enterprise and customers establish the relationship of mutual trust, it will reduce the uncertainty and risk of fear to injury [10], which can increase the commitment of the parties and create real customer loyalty. Reference [9, 11] found a high degree of customer loyalty helped to convey positive word-of-mouth effect. Therefore, this study made the following hypothesis:

H3. Brand trust has a positively significant impact on online word-of-mouth.

D. Brand Image, Brand Trust, and Online Word-of-Mouth

Reference [12, 13, 14, 15] used brand trust as a mediator for research. Reference [12] thought perceived service quality affected customer loyalty and perceived switching cost. Reference [13] thought that perceived service quality affected overall satisfaction and online word-of-mouth through brand trust. Reference [14] thought overall satisfaction affected brand loyalty through brand trust. In addition, [15] thought brand image affected brand attachment through brand trust. For brand image and online word-of-mouth, in comparison to the direct impact, perhaps the indirect effect will be more significant. Thus, this study took brand trust as a mediator and conferred the relationship between brand image and online word-of-mouth. Therefore, this study established the following hypothesis:

H4. Brand image increases online word-of-mouth through the mediator of brand trust.

E. Moderating Effect of Game Qualifications

This study investigated the objects' experience of playing "World of Warcraft" in the questionaire, divided into four categories: less than 1 year, 1-2 years, 2-3 years, and more than 3 years. We took more than 2 years as high qualifications, and less than 2 years as low qualifications. In order to understand whether the game qualification has a moderating effect in the relationships among brand image, brand trust, and online word-of-mouth, this study established the following hypotheses:

H5. Game qualifications have a moderating effect in the relationships among brand image, brand trust, and online word-of-mouth.

H5a. Game qualifications have a moderating effect in the relationship between brand image and online word-of-mouth.

H5b. Game qualifications have a moderating effect in the relationship between brand image and brand trust.

H5c. Game qualifications have a moderating effect in the relationship between brand trust and online word-of-mouth.

Integrating literature review, this study draws the research map as shown in Fig. 1. From Fig. 1, it is clear to see not only the relationships among brand image, brand trust, and online word-of-mouth, but also other extending variables, such as brand loyalty, brand equity, and purchase intention. Having these in mind, this study develops the research framework and hypotheses, and then verifies them.
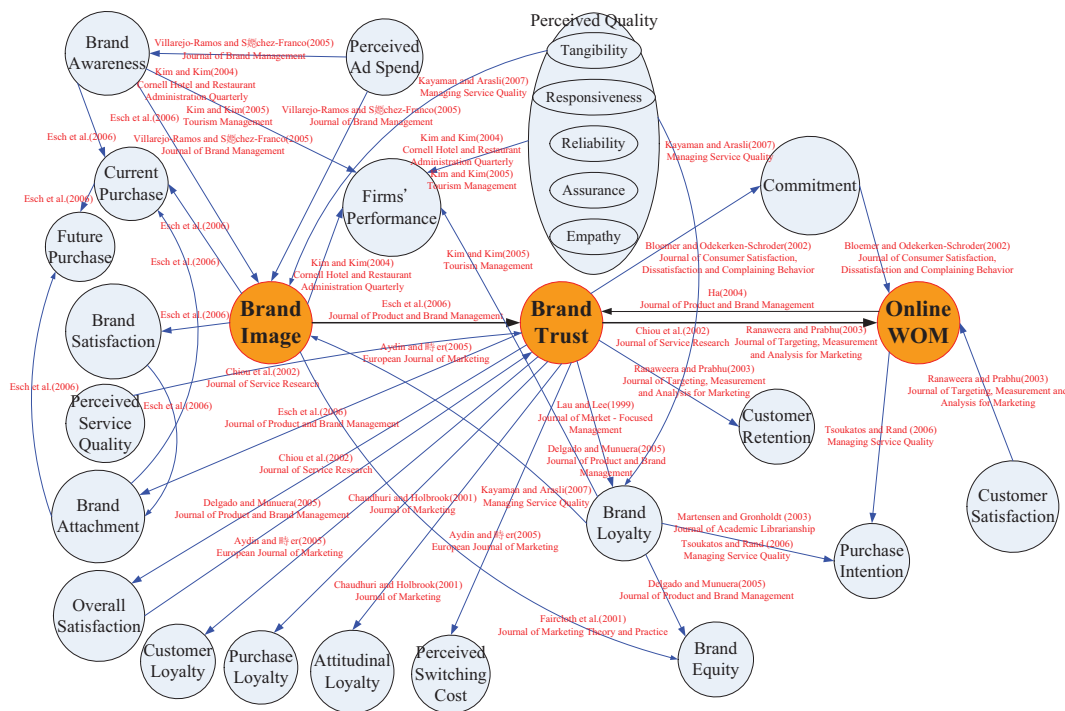

Fig. 1. Research map

III. METHODOLOGY

A. Research Framework

The purposes of this study are to investigate the relationship between brand image and online word-of-mouth, and further take brand trust as a mediator to understand the relationships among brand image, brand trust, and online word-of-mouth. Based on literature, this study builds up the research framework as shown in Fig. 2.
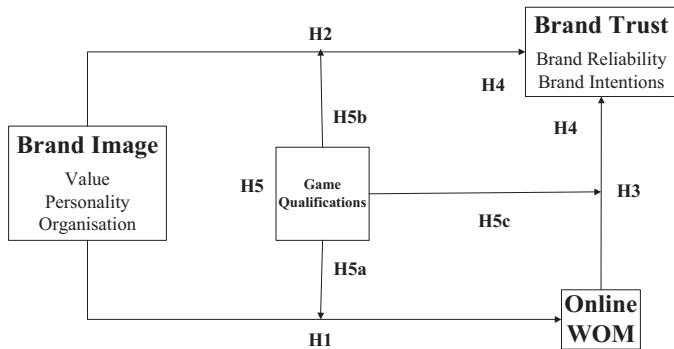

Fig. 2. Research framework

B. Measures

This study used [16] questionnaire amended from [17] developed by three dimensions of brand image as a measured criteria, including value, personality, and organisation, and took "perceptions about a brand reflected as associations existing in the memory of the consumer [5]" as the operational definition of brand image.

This study used [14] questionnaire amended from [18] developed by two dimensions of brand trust as a measure of criteria, including brand reliability and brand intentions, and took "the confident expectations of the brand's reliability and intentions [18]" as the operational definition of brand trust.

This study used [19] questionnaire amended from [20] and took "a kind of customer behavior that display one's own or others' experience of consuming products and the perceptions of interacting actively and positively with firms via electronic media [20]" as the operational definition of online word-of-mouth.

In this study, basic information includes: gender, education level, age, occupation, living area, frequency on the Internet, average time on the Internet each time, purposes on the Internet in addition to online gaming, experience on the Internet, and experience of playing "World of Warcraft". This study uses the experience of playing "World of Warcraft" to confer the moderating effect of game qualifications.

All items were measured on 5-point Likert-type scales, with anchors of 1=strongly disagree and 5=strongly agree.

C. Sampling

Our samples are players who play the online game "World of Warcraft". The questionnaire was set up in the my3q free website (http://www.my3q.com/). We also posted it on telnet://ptt.cc and advertised it on http://www.gamer.com.tw, which were two well-known "World of Warcraft" boards in Taiwan. We received 527 responses from Dec. 2007 to Feb. 2008. After deleting invalid ones, there were a total of 317 valid samples.

IV. RESULTS

This study modifies the initial model because of incomplete model fits based on modification indices (MI) values. Lower item standard solution value means lower explanation of variables, and over MI means mixed identification of items. Finally, this study deletes 3 items of brand image, and 2 items of brand trust in order to achieve good model fits.
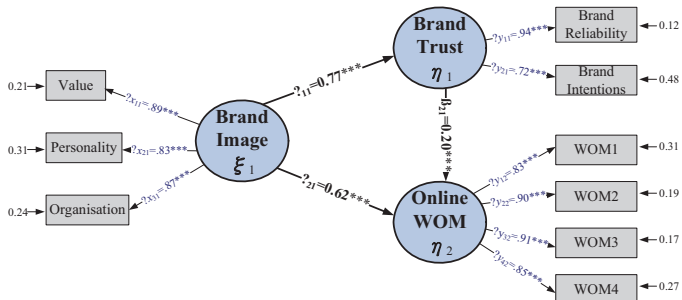
Thus, the measurement model of this study has good model fits, such as GFI, NNFI > 0.9 [21], and CFI > 0.95 [22]; SRMR < 0.08, between 0.013 and 0.024 [21]. RMSEA is between 0.034 and 0.099 [23, 24]. Normed Chi-Square is between 1.370 and 4.130 [25].

The reliabilities (Cronbach's α) for all measures are above the recommended limits 0.7 (Variables: 0.910~0.928; Dimensions: 0.704~0.891), which indicate high reliabilities [26].

All of the measurement t-values are between 13.84 and 20.70 (all larger than 1.96), which show good convergent validity in brand image, brand trust, and online word-of-mouth.

In this study, the discriminant validity shows good fit indices. All $\Delta\chi2$ are larger than 3.84, which are between 69.17 and 283.63. This shows a good discriminant validity of the measurement model [25].

In this study, the theoretical model is as shown in Fig. 3. In the relationships among brand image, brand trust, and online word-of-mouth, t-values are all significant. Fig. 3 presents the overall model fits and the results of path analysis which indicate an adequate fit: $\chi2$=45.63, p=0.00491, and RMSEA=0.053. The significant standard solution of each path is 0.62, 0.77, and 0.20 respectively.

Chi-Square=45.63, df=24, P-value=0.00491, RMSEA=0.053

Fig. 3. Theoretical model

V. DISCUSSION

The result of this study confirms that brand image has a positive influence on online word-of-mouth. Therefore, this study suggests that operating in the game, in addition to the game itself and the system, information, and services, online game companies should also pay attention to its own brand image. With good brand image, online game companies can attract more new users to join, and increase customer loyalty. The favorable brand image can also indirectly advertise for its next online game, and create good online word-of-mouth.

The analysis results of data show that brand image has a positive impact on brand trust. In other words, good brand image leads to good brand trust of consumers. It is the same as the empirical study of [15]. Therefore, this study suggests that online game companies should work to promote brand image, so as to enhance brand trust. For example, eye-catching display, design to highlight products' personality, corporate social responsibility to fulfill a positive influence, and so on.

The result from this study finds that brand trust has a positive impact on online word-of-mouth. That is to say good brand trust leads to consumers' spreading positive online word-of-mouth. This result is the same as some scholars [13, 9], but disagrees with [27]. It means that online word-of-mouth may not be a dependent variable. Online word-of-mouth could have another direction with the relation to brand trust. Therefore, there is follow-up research space to further innovate and amend for this study.

The result from this study finds that brand trust plays an intermediary role between brand image and online word-of-mouth. Therefore, this study suggests that online game companies who wish to upgrade positive online word-of-mouth, brand reliability and brand intentions will proceed. Good brand trust is the prerequisite for positive online word-of-mouth, which not only relates to whether the brand meets customers' demands, that is personally believe that the brand can realize the value of commitments (brand reliability), but also for the personal and emotional security of the brand (brand intentions).

In previous studies about the relationships among brand image, brand trust, and online word-of-mouth, few

researchers paid attention to the moderating effect of qualifications. According to the moderating effect analysis of this study, whether game qualifications of players are deep or shallow, both brand image and brand trust have positive effects on online word-of-mouth. And the correlation between brand trust and online word-of-mouth of highly qualified players is obviously stronger than that of lowly qualified players. Therefore, online game companies should not ignore the possible impact of game qualifications.

Through this study's findings, we find that brand image and brand trust have a significant impact on online word-of-mouth of online games. For online game companies, the effect of effectively enhancing brand image and brand trust may be larger than putting capital in other marketing tools. Therefore, marketing sales of online game companies should seek and build up the network hub, and effectively spread favorable brand image and brand trust. At the same time, we also should think about the possibility of the initiative to establish good brand image and brand trust. Through the force of brand image and brand trust, for online game companies, it will be more powerful in marketing. In other words, online game companies should not ignore the possible impact of brand image and brand trust, and should emphasize.

In the past research about the relationships among brand image, brand trust, and online word-of-mouth, very few studies took online gamers as subjects. This study adopts players of the online game "World of Warcraft" as subjects for analysis, verifies the relationships among brand image, brand trust, and online word-of-mouth, and connects executive phenomenon with theoretical content. This is a contribution of the study.

VI. CONCLUSION

This study verifies that brand trust has a positive impact on online word-of-mouth. However, past research indicated that online word-of-mouth may not be a dependent variable [27]. It may have another directional relation to brand trust. Therefore, this study suggests that future research can take brand trust as a dependent variable to analyze.

In the past research, relationship quality was an important indicator to measure the relationship between business and customers all the time [28]. Overall, trust, satisfaction, and commitment are not only the most dimensions mentioned by researchers, but also the major research trends of relationship quality [29, 30, 31]. Nevertheless, this study only considers brand trust. Thus, this study suggests that future research can conduct relationship quality to analyze.

The linear structural equation modeling focuses on testing the whole model. This study only considers the effects of brand image, brand trust, and online word-of-mouth, and doesn't consider the effects of other variables. It will reduce the effectiveness of research. To enhance

internal validity, this study recommends future research can bring personal demographic variables into the statistical model based on the literature.

This study mainly takes online game players as subjects. In the future, researchers can confer different commercial services on the Internet, such as timely-media software and online selling, and clarify similarities and differences of factors affecting consumer behavior between online and entities commodity.

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REFERENCES

[1] E. R. Gray, and J. M. T. Balmer, "Managing Corporate Image and Corporate Reputation", *Long Range Planning*, vol. 31, no. 5, pp. 695-702, 1998.

[2] N. Nguyen, and G. Leblanc, "Corporate image and corporate reputation in customers' retention decisions in services", *Journal of Retailing and Consumer Services*, vol. 8, no. 4, pp. 227-236, 2001.

[3] V. Shankar, A. K. Smith, and A. Rangaswamy, "Customer satisfaction and loyalty in online and offline environments", *International Journal of Research in Marketing*, vol. 20, no. 2, pp. 153-175, 2003.

[4] B. Bickart, and R. M. Schindler, "Internet forums as influential sources of consumer information", *Journal of Interactive Marketing*, vol. 15, no. 3, pp. 31-40, 2001.

[5] K. L. Keller, "Conceptualizing, Measuring, and Managing Customer-Based Brand Equity", *Journal of Marketing*, vol. 57, no. 1, pp. 1-22, 1993.

[6] P. S. Richardson, A. S. Dick, and A. K. Jain, "Extrinsic and Intrinsic Cue Effect on Perceptions of Store Brand Quality", *Journal of Marketing Research*, vol. 58, no. 4, pp. 28-36, 1994.

[7] K. P. Gwinner, D. Gremler, and M. J. Bitner, "Relationship Benefits in Services Industries: The Customer's Perspective", *Journal of the Academy of Marketing Science*, vol. 26, no. 2, pp. 101-114, 1998.

[8] D. M. Szymanski, and D. H. Henard, "Customer Satisfaction: A Meta-Analysis of the Empirical Evidence", *Journal of the Academy of Marketing Science*, vol. 29, no. 1, pp. 16-35, 2001.

[9] C. Ranaweera, and J. Prabhu, "On the relative importance of customer satisfaction and trust as determinants of customer retention and positive word of mouth", *Journal of Targeting, Measurement and Analysis for Marketing*, vol. 12, no. 1, pp. 82-90, 2003.

[10] L. L. Berry, "Relationship Marketing of Services—Growing Interest, Emerging Perspectives", *Journal of the Academy of Marketing Science*, vol. 23, no. 4, pp. 236-245, 1995.

[11] J. E. Swan, and R. L. Oliver, "Postpurchase communications by consumers", *Journal of Retailing*, vol. 65, no. 4, pp. 516-533, 1989.

[12] S. Aydin, and G. Ozer, "The analysis (1995)of antecedents of customer loyalty in the Turkish mobile telecommunication market", *European Journal of Marketing*, vol. 39, no. 7/8, pp. 910-925, 2005.

[13] J.-S. Chiou, C. Droge, and S. Hanvanich, "Does customer knowledge affect how loyalty is formed?", *Journal of Service Research*, vol. 5, no. 2, pp. 113-124, 2002.

[14] E. Delgado, and J. L. Munuera, "Does brand trust matter to brand equity?", *Journal of Product and Brand Management*, vol. 14, no. 3, pp. 187-196, 2005.

[15] F.-R. Esch, T. Langner, B. H. Schmitt, and P. Geus, "Are brands forever? How brand knowledge and relationships affect current and future purchases", *Journal of Product and Brand Management*, vol. 15, no. 2, pp. 98-105, 2006.

[16] E. Martinez, and J. M. Pina, "The negative impact of brand extensions on parent brand image / Executive summary", *Journal of Product and Brand Management*, vol. 12, no. 6/7, pp. 432-448, 2003.

[17] D. Aaker, and R. Alvarez del Blanco, "Estatura de la marca: medir el valor por productos y mercados", *Harvard Deusto business review*, no. 69, pp. 74-87, 1995.

[18] E. Delgado, J. L. Munuera, and M. J. Yague, "Development an d validation of a brand trust scale", *International Journal of Market Research*, vol. 45, no. 1, pp. 35-54, 2003.

[19] J. Bloemer, and G. Odekerken-Schroder, "Store satisfaction and store loyalty explained by customer- and store-related factors", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, no. 15, pp. 68-80, 2002.

[20] V. A. Zeithaml, L. L. Berry, and A. Parasuraman, "The Behavioral Consequences of Service Quality", *Journal of Marketing*, vol. 60, no. 2, pp. 31-46, 1996.

[21] L. Hu, and P. M. Bentler, "Cutoff criteria for fit indexes in covariance", *Structural Equation Modeling*, vol. 6, no. 1, pp. 1-55, 1999.

[22] P. M. Bentler, "*EQS structural equations program manual*", Encino, CA: Multivariate Software, 1995.

[23] M. W. Brown, and R. Cudeck, "*Alternatives ways of assessing model fit*", New York: McGraw-Hill, 1993.

[24] R. P. McDonald, and M. R. Ho, "Principles and practice in reporting structural equation analyses", *Psychological Methods*, vol. 7, no. 1, pp. 64-82, 2002.

[25] J. C. Anderson, and D. W. Gerbing, "Structural equation modeling in practice: A review and recommended two-step approach", *Psychological Bulletin*, vol. 103, no. 3, pp. 411-423, 1988.

[26] J. C. Nunnally, "Psychometric theory", (2nd ed.). New York, NY: McGraw-Hall, Inc., 1978.

[27] H.-Y. Ha, "Factors influencing consumer perceptions of brand trust online", *Journal of Product and Brand Management*, vol. 13, no. 5, pp. 329-342, 2004.

[28] N. Kumar, L. K. Scheer, and J.-B. E. M. Steenkamp, "The Effects of Perceived Interdependence on Dealer Attitudes", *Journal of Marketing Research*, vol. 32, no. 3, pp. 348-356, 1995.

[29] H. H. Bauer, M. Grether, and M. Leach, "Building customer relations over the Internet", *Industrial Marketing Management*, vol. 31, no. 2, pp. 155-163, 2002.

[30] T. Henning-Thurau, M. F. Langer, and U. Hansen, "Modeling and managing student loyalty: an approach based on the concept of relationship quality", *Journal of Service Research*, vol. 3, no. 4, pp. 331-344, 2001.

[31] K. D. Wulf, G. Odekerken-Schroder, and D. Lacobucci, "Investments in Consumer Relationships: A Cross-Country and Cross-Industry Exporation", *Journal of Marketing*, vol. 65, pp. 33-50, 2001.