THE SPORT JOURNAL®
Quarterly refereed sports journal, published by the United States Sports Academy

Does Theory of Planned Behavior Explain Taiwan Teens' Viewing of Televised NY Games With Pitcher Chien-Ming Wang?

ISSN: 1543 - 9518

Submitted by: Chen-Yueh Chen - National Chung Cheng University (Taiwan) and Yi-Hsiu Lin - Aletheia University (Taiwan)

Abstract

Taiwan's Chien-Ming Wang pitches for MLB's Yankees, his performance drawing Taiwanese viewers to telecasts and making him renowned in Taiwan. The theory of planned behavior was employed to investigate why Taiwanese adolescents watch Wang's televised games. The proposed model was analyzed with LISREL. Path analysis was performed for five hypotheses, namely (a) belief will positively affect attitude toward the act of viewing a game; (b) attitude toward the act will positively influence intention to watch; (c) perceived norm will positively influence intention to watch; (d) perceived behavioral control will positively affect intention to watch; and (e) perceived norm will positively influence attitude toward the act. The adolescents' behavior was well explained by the theory, the data supporting all hypotheses.

Does Theory of Planned Behavior Explain Taiwan Teens' Viewing of Televised NY Games With Pitcher Chien-Ming Wang?

Chien-Ming Wang is a Taiwanese baseball player who currently pitches for the New York Yankees of Major League Baseball (MLB). Wang is one of the league's best, collecting 19 wins for the Yankees in the 2006 and 2007 seasons. Wang's spectacular performance with the Yankees has meant increasing numbers of Taiwanese viewers for televised Yankees games—more specifically, for televised Wang games. Games have been televised in Taiwan since 1992, via a satellite sports channel. Their ratings are much higher now than in 1992, especially when Wang is pitching (Hu & Tsai, 2008). In short, it appears that Chien-Ming Wang has taken a place as one of Taiwan's most famous sports celebrities.

Adoration of celebrities is particularly characteristic of adolescence (Lin & Lin, 2007). Reverence for sports celebrities is one of various forms of such adoration that adolescents often demonstrate (Greene & Adams-Price, 1990). In this study, we attempted to identify exactly what drives Taiwanese adolescents to watch the televised games in which Wang pitches. We used Ajzen's theory of planned behavior (1985) to try to explain the adolescents' behavior.

The theory of planned behavior (TPB) has been used in various domains (Chiou, Huang, & Chuang, 2005; Goby, 2006), for example in empirical studies from the field of marketing (Chiou, 2000; Taylor & Todd, 1995). TPB proposes three conceptually independent antecedents of intention: attitude toward the act, perceived norm, and perceived behavioral control (Ajzen, 1985). According to TPB, the attitude toward the act is the degree to which the individual evaluates the particular behavior favorably or unfavorably. The perceived norm describes the individual's perception of social pressure to perform the act or not perform it. Perceived behavioral control, finally, reflects the extent of the resources for controlling the behavior which the individual perceives him- or herself to have.

TPB is an extension of the earlier theory of reasoned action proposed by Ajzen and Fishbein (1980). The addition of perceived behavioral control distinguishes the two. Perceived behavioral control is a critical factor, because people's behaviors are strongly affected by how confident they are that they can perform those behaviors (Chiou et al., 2005). Generally speaking, the more favorable a person's attitude toward an act, and the more strongly the person perceives the act as normative, and the more perceived control over the act, the stronger will be the intention to perform the act.

In addition, the cognitive-affective-cognitive framework proposes that "attitude structure starts with beliefs and is followed by affective response (e.g., attitude) and then cognitive responses (i.e., purchase intention)" (Chiou et al., 2005, p. 319). From this it follows that belief is an antecedent of attitude toward an act. Research has also shown that perceived norm is very likely to affect the formation of attitude (Oliver & Bearden, 1985; Terry & Hogg, 1996). That is, people's attitudes may be influenced by their significant others.

Based on the literature, we proposed that attitude toward the act, perceived norm, and perceived behavioral control would positively influence Taiwanese adolescents' intention to watch Wang pitch in a televised game. Furthermore, we proposed that belief and perceived norm would positively affect their attitude toward this act. Our hypotheses were the following:

Hypothesis 1: Belief will positively influence attitude toward the act.

Hypothesis 2: Attitude toward the act will positively influence intention to watch Wang's game.

Hypothesis 3: Perceived norm will positively influence intention to watch Wang's game.

Hypothesis 4: Perceived behavioral control will positively influence intention to watch Wang's game.

Hypothesis 5: Perceived norm will positively influence attitude toward the act.

Method

Participants

Participants were students from two junior high schools, two senior high schools, and two universities (we limited participation at the latter to freshman students). They were sampled in April 2008. Participation was voluntary. The questionnaires were distributed by the participants' teachers during a regular class meeting. Of 650 questionnaires distributed, 521 usable questionnaires were collected and used for analysis. The age of the participants ranged from 12 years to 20 years, with a mean of 16.11 years and a standard deviation of 2.18 years. There were 278 male and 243 female participants.

Measures

The measures of attitude toward the act, perceived norm, and perceived behavioral control were developed from Ajzen and Fishbein (1980), Azjen (1985, 1991), and Taylor and Todd (1995). The measures of intention to watch Wang's game were modified from Chiou et al. (2005). Measures of belief were based on a focus group of 5 students; the participants were asked to reveal the most important attributes driving them to view televised games featuring Wang. The results showed that excitement, national pride, and the tension of the game were the most important such attributes. All measures employed a 7-point Likert-type scale.

Table 1

Items Measuring Latent Constructs Derived from Theory of Planned Behavior

Construct	Items
Perceived norm	1. Those who are important to me would consider my watching Wang's game to be wise. 2. Those who are important to me would consider my watching Wang's game to be useful. 3. Those who are important to me would consider my watching Wang's game to be valuable. 4. Those who are important to me would think I definitely should watch Wang's game.
Belief	1. To me, Wang's game is exciting. 2. To me, Wang's game is national pride. 3. To me, Wang's game is a tension game.
Perceived behavioral control	1. I have full control regarding watching Wang's game. 2. To me, to watch Wang's game is what I can decide on my own. 3. It is up to me whether I will watch Wang's game.
Attitude toward the act	1. My watching Wang's game in the future would be favorable. 2. My watching Wang's game in the future would be good. 3. My watching Wang's game in the future would be wise. 4. My watching Wang's game in the future would be useful.
Intention to watch Wang's Game	1. I would watch Wang's game in the future. 2. The probability that I would watch Wang's game is high. 3. To me, (continuing to) watch Wang's game is the best choice.

Data Analysis

The efficacy of the proposed model was analyzed using SPSS 14.0 and LISREL 8.51. Using LISREL with the maximum likelihood method, we tested the constructs and the measurement model for goodness of fit. A confirmatory factor analysis of the measurement model was conducted. The measurement model examined the relationships between 18 variables and 5 latent constructs (belief, perceived norm, attitude toward the act, perceived behavioral control, and intention to watch Wang's game). Then, a path analysis

was conducted to test whether identified antecedents of intention to watch a televised game featuring Wang reflected our hypotheses.

Results

Descriptive Statistics

The summated means for the constructs were 3.77 (perceived norm), 4.86 (belief), 4.97 (perceived behavioral control), 4.12 (attitude toward the act), and 3.81 (intention to watch Wang's game). The standard deviations ranged from 1.73 to 1.98 (see Table 2).

Table 2

Mean, Standard Deviation, and Reliability of Constructs

Construct	*M*	*SD*	Cronbach's α
Perceived norm	3.77	1.78	.93
Belief	4.86	1.73	.89
Perceived behavioral control	4.97	1.97	.91
Attitude toward the act	4.12	1.73	.91
Intention to watch Wang's game	3.81	1.98	.91

Proposed Measurement Model

Overall model fit. The overall fit of the measurement model was found to be good. The root mean square error of approximation (RMSEA) value was .072, which is lower than the suggested threshold of .08 (Hu & Bentler, 1999). Additionally, the normed fit index (NFI), non-normed fit index (NNFI), comparative fit index (CFI), goodness of fit index (GFI), and incremental fit index (IFI) scores were .96, .97, .97, .91, and .97, respectively. All were greater than the suggested threshold of .90 (Hair, Black, Babin, Anderson, & Tatham, 2006), and each criterion of fit thus indicated that the proposed measurement model's fit was acceptable.

Scale reliability. Cronbach's alpha was used to evaluate the reliability of the constructs. The obtained values were .93 (perceived norm), .89 (belief), .91 (perceived behavioral control), .91 (attitude toward the act), and .91 (intention to watch Wang's game) (see Table 2). Scale reliabilities for the constructs were acceptable according to the suggested threshold of .70 (Nunnally & Berstein, 1994, p. 265).

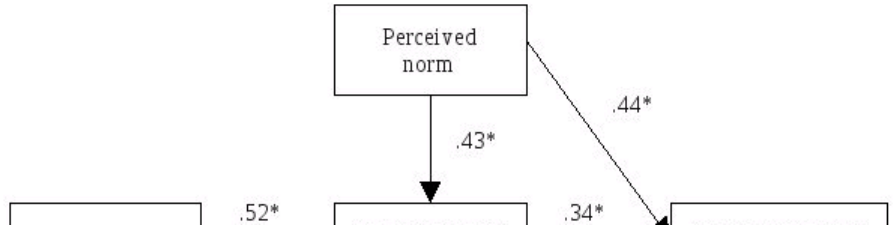
Construct validity. Construct validity refers to "the extent to which a set of measured items actually reflects the theoretical latent construct those items are designed to measure" (Hair et al., 2006, p. 776). Both convergent validity and discriminant validity should be achieved in order to fulfill construct validity (Hair et al., 2006). Convergent validity exists when "the items that are indicators of a specific construct . . . converge or share a high proportion variance in common" (p. 776), while discriminant validity indicates whether "a construct is truly distinct from other constructs" (p. 778). Standardized loading estimates above .5 indicate acceptable convergent validity, while evidence of discriminant validity is seen when the variance extracted for two factors is greater than the square of the correlation between the two factors (Hair et al., 2006).

In the present study, standardized loading estimates ranged from .80 to .97, indicating satisfactory convergent validity. In addition, the variance extracted for each construct ranged from .82 to .86, which was greater than the square of the correlation between two factors (which ranged from .30 to .79). Thus the study's construct validity was also ensured.

Test of the Structural Model

Path analysis was used to test the fit of the proposed paths between constructs. The model fit of the path model was found satisfactory, with the RMSEA measuring lower (.074) than the suggested threshold of .08. The NFI, NNFI, CFI, GFI, and IFI were .99, .99, .99, .98, and .99, respectively, all greater than the suggested threshold of .90. All of the criteria for adequate fit indicated that the fit of the proposed structural model was satisfactory.

Hypothesis Testing



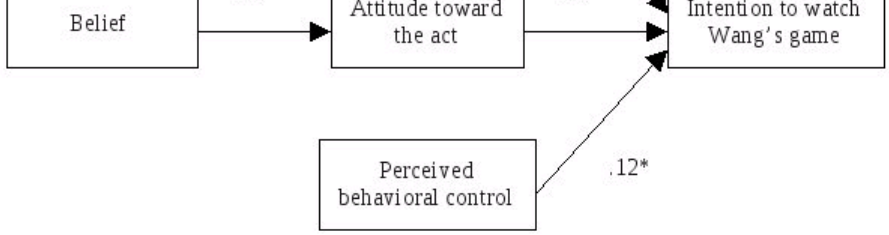


Figure 1. Path-analytic model: Influence on intention demonstrated by perceived norm, perceived behavioral control, and attitude toward act.

The results (see Figure 1) showed that perceived norm, attitude toward the act, and perceived behavioral control generated significant coefficients for intention to watch Wang's game and also that perceived norm and belief generated significant coefficients for attitude toward the act. The path analysis produced the following measures: $\beta_{at \rightarrow iw} = .34$, $t = 7.90$, $p < .001$; $\gamma_{pn \rightarrow iw} = .44$, $t = 10.21$, $p < .001$; $\gamma_{pbc \rightarrow iw} = .12$, $t = 4.29$, $p < .001$; $\gamma_{pn \rightarrow at} = .43$, $t = 15.01$, $p < .001$; and $\gamma_{be \rightarrow at} = .52$, $t = 17.93$, $p < .001$, where $\beta_{at \rightarrow iw}$ refers to the β coefficient between attitude toward the act and intention to watch Wang's game, $\gamma_{pn \rightarrow iw}$ stands for the γ coefficient between perceived norm and intention to watch Wang's game, $\gamma_{pbc \rightarrow iw}$ means the γ coefficient between perceived behavioral control and intention to watch Wang's game, $\gamma_{pn \rightarrow at}$ indicates the γ coefficient between perceived norm and attitude toward the act, and $\gamma_{be \rightarrow at}$ refers to the γcoefficient between belief and attitude toward the act.

Additionally, the square multiple correlations were .68 and .80, respectively, for intention to watch Wang's game and for attitude toward the act. The data analysis showed support for each of the study's hypotheses. That is, belief positively affected attitude toward the act (H1); attitude toward the act positively influenced intention to watch Wang's game (H2); perceived norm positively influenced intention to watch Wang's game (H3); perceived behavioral control positively affected intention to watch Wang's game (H4); and perceived norm positively influenced attitude toward the act (H5).

Discussion

Our study showed a goodness of fit for the proposed model that was satisfactory based on the various suggested criteria. All five hypotheses offered for the present study were supported by the data. A brief discussion of each path coefficient follows.

First, belief about the attributes of televised games featuring Wang's pitching was a positive antecedent of attitude toward the act of watching. Beliefs about game attributes were described in items such as "Wang's game is exciting," "Wang's game is national pride," and "Wang's game is a tension game." As an antecedent of attitude toward act, a relatively strong belief that Wang's performance was a source of national pride or that Wang's games were exciting was an indicator of a relatively positive attitude toward watching a televised game featuring Wang.

Second, a participant's attitude toward the act of viewing a televised game in which Wang will pitch positively influenced his or her intention to watch Wang's game. This result illustrates that behavior is strongly affected by attitude (Blackwell, Miniard, & Engel, 2006). It follows that the more favorable the attitude toward the act of viewing Wang's game, the stronger the intention to view it.

Third, perceived norm positively influenced the intention to watch Wang's game. This relationship implies that peer pressure has an influence on whether adolescents watch a televised game. Such a finding is supported by the concept of the collectivistic society (Hofstede, 1983). People in a collectivistic society usually belong to a few in-groups (Hofstede, 1983). Securing a place in a group is important to adolescents (Chiou et al., 2005), but to be accepted by an in-group's members (and to remain accepted by them), a would-be member must demonstrate his or her conformity to the in-group's norms. Thus if an adolescent's friends enthusiastically follow Wang's game, it becomes necessary for the adolescent to follow Wang's game as well, providing all in the group with common conversational themes, for instance. The idea applies similarly to the present finding of perceived norm's positive influence on attitude toward the act.

Moreover, perceived behavioral control positively affected the adolescents' intention to watch Wang's game. This is an indication that perceived behavioral control is a positive antecedent of intention to watch Wang's game, which is in line with Ajzen's argument that the individual can be expected to carry out an intention when he or she has sufficient control over the behavior involved (1985). To sum up, the findings of the present study of Taiwanese adolescents' behavior concerning the viewing of televised games featuring pitcher Chien-Ming Wang suggest that such behavior is well explained by Ajzen's theory of planned behavior.

An interesting topic for future study would be adolescents' adoration of sports celebrities. Specifically, researchers could investigate whether and how adoring a sports celebrity moderates the relationship of the variables included in the present study. They might ask, for example, whether the relationship between perceived norm and intention to watch Wang's game is relatively strong among a group of adolescents who strongly admire or adore Wang, as compared to a group exhibiting less admiration.

References

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), Action control: From cognition to behavior (pp.11-39). New York: Springer-Verlag.

Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50, 179-211.

Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ: Prentice Hall.

Blackwell, R. D., Miniard, P. W., & Engel, J. F. (2006). Consumer behavior (10th ed.). Mason, OH: Thomson Higher Education.

Chiou, J. (2000). Antecedents and moderators of behavioral intention: Differences between the United States and Taiwanese students. Genetic, Social, and General Psychology Monographs, 126(1), 105-124.

Chiou, J. S., Huang, C. Y., & Chuang, M. C. (2005). Antecedents of Taiwanese adolescents' purchase intention towards the merchandise of a celebrity: The moderating effect of celebrity adoration. Journal of Social Psychology, 145(3), 317-332.

Goby, V. P. (2006). Online purchase in an infocomm sophisticated society. Cyberpsychology and Behavior, 9(4), 423-431.

Greene, A. L., & Adams-Price, C. (1990). Adolescents' secondary attachment to celebrity figures. Sex Roles, 23, 335-347.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). Multivariate data analysis (6th ed.). Upper Saddle River, NJ: Prentice Hall.

Hofstede, G. (1983). The cultural relativity of organizational practices and theories. Journal of International Business Studies, 14, 75-89.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling: A Multidisciplinary Journal, 6, 1-55.

Hu, W. L., & Tsai, M. H. (2008). The influence of sports-fan ethnocentrism on viewing motivations and behavior of sport broadcast. Physical Education Journal, 41(1), 51-68.

Lin, Y. C., & Lin, C. H. (2007). Impetus for worship: An exploratory study of adolescents' idol adoration behaviors. Adolescence, 42, 576-588.

Nunnally, J. C., & Berstein, I. H. (1994). Psychometric theory (3rd ed.). New York: McGraw-Hill.

Oliver, R. L., & Bearden, W. O. (1985). Crossover effects in the theory of reasoned action: A moderating influence attempt. Journal of Consumer Research, 12, 324-340.

Taylor, S., & Todd, P. (1995). Decomposition and crossover effects in the theory of planned behavior: A study of consumer adoption intentions. International Journal of Research in Marketing, 12(2), 137-156.

Terry, D. J., & Hogg, M. A. (1996). Group norms and the attitude-behavior relationship: A role for group identification. Personality and Social Psychology Bulletin, 22(8), 776-793.