

Using Rogers's Diffusion of Innovation Model to Examine the Willingness to Pay for Public Television in Taiwan

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This study adopts Rogers's diffusion of innovation model to examine the factors affecting the willingness of the Taiwanese to pay a license fee to watch public television. A telephone survey was used, and 506 valid questionnaires were obtained, representing a response rate of 58.6%. The data analysis showed that most findings of this study were not congruent with the prediction of Rogers's model, indicating that the Taiwanese do not consider paying a license fee a feasible means to support public television. However, this study found that the frequency of public television viewing was the most powerful factor positively affecting people's intention to pay for public television.

The Taiwanese government first considered the necessity of establishing a public television (public service broadcasting [PSB]) station in the early 1980s. At that time, however, Taiwan was under martial law, and the government strictly regulated its only three TV stations. Therefore, most scholars and policymakers did not see a strong need for a public television station in Taiwan. Taiwan's TV market was under rigid regulation from the 1970s until 1993, when cable TV was legalized. With the lifting of martial law in

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1988 and the legalization of cable TV, Taiwan's TV market underwent a dramatic transformation. Satellite signals could now legally enter homes by way of cable. These satellite TV channels not only ended Taiwan's TV market oligopoly, but they also brought strong competition into the market. More than 60 channels were operating in Taiwan after 1993. Most of these channels resorted to sensationalism to counter the fierce competition in Taiwan's market; thus, violence, sex, and trivialization became prevalent television content. Under such circumstances, some scholars and policymakers consider public television a cure for this sensationalism, and they have proposed establishing a powerful group with many public television channels (Brain Magazine, 2004; Chang, 2003; Ku, Liu, & Li, 2010).

The first public television station in Taiwan began operation in July of 1998, with most of its funding coming from the government. Three more public television channels were established in the following 10 years, and the public television group now has five channels, the fifth one having been converted from a commercial television station. With more than 80% of the public television group's funding coming from the government, the Taiwan's need for so many public television channels has been controversial. The controversy arises from the following factors: (a) There are more than 100 television channels available in Taiwan's market, whose population is approximately 23 million, and the ratings of public television channels have been very low. Therefore, critics believe that public television channels are not able to cure the sensationalism in Taiwan's television market; (b) the government has digitalized all television channels in 2012; and, after the switchover, Taiwan's public television group has expanded its current channels to nine, which will require more government funding; and (c) with the government's budget becoming more limited in recent years, this issue has gained more attention from scholars and policymakers. Under such circumstances, supporters of Taiwan's public television realize that searching for alternative revenue sources is essential for public television to obtain a legitimate position in Taiwan, and they consider asking the public to pay a license fee to be one possible alternative revenue source (Ku et al., 2010; Tsai, 2010).

Unlike the British, or the South Koreans, the Taiwanese are not familiar with the license fee concept because the government has never used this system to support public television. Thus, it would represent a social innovation for Taiwan's people to adopt. Rogers (1995) defined the diffusion of innovations as "the process by which an innovation is communicated through certain channels over time among the members of a social system" (p. 10). According to this definition, an innovation can be a new technology, a new idea, or a new policy. This study adopts Rogers's (1995) diffusion of innovation model to examine the factors affecting the intention of Taiwan's people to adopt this innovation, the public television license fee.

LITERATURE REVIEW

Taiwan's Television Market and Public Television System

Taiwan's television market was heavily regulated by the government from the 1970s to the early 1990s, and a great transformation of the market occurred with the legalization of cable television in 1993. With more than 60 television channels in the package, the penetration rate of cable television rapidly increased from 20% in 1993 to > 70% in 2011 (National Communications Commission, 2012). Taiwan's cable television industry is heavily integrated both horizontally and vertically. Five multiple-system operators of cable television have dominated the market and accounted for approximately 73% of cable television households. Taiwan's cable television has become a strong competitor of the four terrestrial television stations since 1993 and has captured a large share of advertising income from terrestrial television (80% vs. 20%). In the early 21st century, the market has become more competitive because several Internet service providers have been granted a license to offer video services to their subscribers. The largest telecommunications company, Chunghwa Telecommunications, has offered video services to its Internet subscribers since 2003, and its penetration rate has reached 14% of Taiwan's households (Chunghwa Telecommunications Co., Ltd, 2012; Li, Liu, & Chen, 2007).

When the first PSB station was established in 1998, the government followed the U.S. model to operate the PSB in Taiwan. A nonprofit organization known as the Taiwan Public Television Service Foundation (PSB-SF) was established for the operation of PSB. In the first year, the operation of Taiwan's PSB was fully supported by the budget that was appropriated by the government; but, according to Taiwan's Public Television Act, the government would gradually reduce the amount on the budget, and PSB-SF would need to seek various revenue sources, including donations and sponsorships, to support the operation of PSB. In 2001, the supporters of PSB mobilized various protest activities to promote the U.K. model or the Japanese model; as a consequence, a revision of the act was passed in the Legislature Yuan to allow for more funding from the government. Since 2007, more than 80% of Taiwan's PSB revenue has come from government funding. Every year, the government will appropriate a certain amount of a budget for PSB channels, but this budget has to be agreed by the legislators in the Legislature Yuan. In 2010, the PSB group received approximately two billion in Taiwanese dollars from government funding (about 60 million U.S. dollars; Ku et al., 2010).

The government recently completed its digitalization of all terrestrial television channels in July 2012, and, consequently, Taiwan's PSB group has been able to increase its channels from five to nine channels. These nine channels include the following: (a) Public Television Service, which is the original PSB channel; (b) DIMO TV, which is derived from the PSB after

digitalization and especially designed for mobile receivers; (c) HiHD, which is also derived from the PSB after digitalization, and provides programs with high-definition quality; (d) Chinese Television System (CTS), which was converted from a commercial television and is supported by both advertising and government funding; (e) CTS Education and Culture, which is derived from the CTS after digitalization, and provides educational and cultural programs; (f) CTS Recreation, which is derived from the CTS after digitalization and focuses on leisure programs; (g) Hakka TV, which is designed to promote the Hakka language and culture. (The Hakka people are one of the minority groups in Taiwan.); (h) Taiwan Indigenous TV, which is designed to promote Taiwan's Aboriginal languages and cultures. (There are 13–15 tribes of Aborigines in Taiwan, who speak different languages and have different traditions.); and (i) Taiwan Microview TV, which is designed for overseas Taiwanese (Taiwan Broadcasting System, 2012).

According to the data in the Web site of Taiwan's Public Television Group, the HiHD and the Public Television Service have 75% of their programs overlapped. Furthermore, the data in the Web site show that the self-produced program rates for the Public Television Service were in a stable increase from 40% in 1998 to 77% in 2007.

Diffusion of Innovation Model

Based on Rogers's (1995, 2003) model, three elements—innovation attributes, communication channels, and time—significantly affect innovation adoption.

Innovation Attributes: Lifestyles

Rogers's (1995, 2003) model predicts that innovation attributes are the most powerful predictors among the three elements, and they are able to account for almost 50% of the variance for innovation adoption. Social rewards belong to one of the innovation attributes—relative advantage (Rogers, 1995, 2003). The literature on innovation adoption shows that people rarely adopt innovations merely for their practical advantages. More often than not, people adopt innovations for their social rewards because the possession of a given innovation allows people to show their way of life and their identity to others. When people adopt an innovation because of its social rewards, lifestyles become a key indicator because lifestyles are usually used by people to communicate social differentiation to others (Lekakos, 2009; Lorenzo-Dus, 2006).

Lifestyles have been defined as the ways people think of themselves, and by using symbols connected with specific lifestyles, people are able to actively express their identities to others. Lifestyles have been extensively researched by marketing scholars because lifestyles allow them to

obtain an understanding of consumer needs and desires that relate to consumption patterns and purchase behaviors. By offering a means of assessing people's attitudes, interests, and activities, lifestyles research gives access to human psychological preferences, knowledge of which is much more useful than the mere demographic information traditional marketing research reveals. Furthermore, consumers' research consistently finds relations between lifestyles and brands consumed (Chan & Leung, 2005; Leung, 1998).

By measuring people's attitudes, interests, and activities, lifestyle studies reflect their psychological preferences because people develop different types of lifestyles to express parts of themselves. Among several approaches for lifestyles, the A.I.O. approach is the most widely adopted method for lifestyles analysis. It measures people's activities (A), interests (I), and opinions (O) to classify the people into different lifestyle groups. A.I.O. inventories allow researchers to measure lifestyles that are associated with different behavioral patterns. Lifestyles are also found to be a powerful predictor of innovation adoption (Chan & Leung, 2005; Hawkins, Best, & Coney, 1998; Lekakos, 2009; Leung, 1998; Li, 2004; Schwartz, 1992). For example, Mazzoni, Castaldia, and Addeob (2007) showed that lifestyles were able to predict motivations for adopting cell phones in Italy. Their study also found that a so-called connected lifestyle was associated with the motivation of entertainment, a committed lifestyle with the motivation of efficient communication, and a traditional lifestyle with the motivation of relationship maintenance. Chan and Leung (2005) and Leung (1998) both found that lifestyle orientation was a significant predictor of technology adoption. In particular, Chan and Leung's study showed that lifestyles were able to predict which type of online news Hong Kongese would read. Li's (2004) study also found that Taiwanese with a lifestyle in which foreign products were preferred were more likely to adopt Internet shopping, whereas those people with a so-called fashionable lifestyle were more likely to adopt cable television shopping. Television viewing is a type of values consumption. Thus, this study predicts that people who prefer public television will differ from those who do not in their lifestyles, which, in turn, affect people's intention to pay for public television. Based on this reasoning, this study develops its first hypothesis:

H1: Lifestyles will significantly affect people's intentions to pay for public television in Taiwan.

Communication Channels: Mass Media Use

Rogers's (1995) model basically regards innovation diffusion as a communication process in which mass media play the role of informing, whereas interpersonal communication plays the role of persuading. Mass media

strongly affect adoption when an innovation is in its early stages of diffusion because mass media exposure makes the public aware of an innovation. Empirical studies confirm that early adopters of an innovation tend to be heavy mass media users. However, when an innovation passes through its early stages of diffusion, mass media use loses its ability to differentiate adopters from non-adopters (Chan-Olmsted & Chang, 2006; Leung & Wei, 1998, 1999; C. A. Lin, 2004; Rogers, 1995). For example, Li and Huang (2011) examined people's intentions to adopt digital terrestrial television and digital cable in Taiwan and found that Internet use and cable subscription were significant predictors of the adoption for the two technologies. However, Chan-Olmsted and Chang investigated peoples' intentions to adopt digital television in the United States and found that, except for Internet tenure, most mass media use was not related to the adoption intention. Similarly, Garitaonandia and Garmendia (2009) found that most mass media use was not related to the adoption of e-commerce in Spain. The existing literature has not conclusively established the relevance of mass media use to innovation adoption; hence, a research question is used to explore this issue:

RQ1: What is the relation between mass media use and the intention to pay for public television in Taiwan?

Furthermore, the degree to which people are satisfied with public television programming should be closely related with their willingness to pay for public television because satisfaction with programs leads people to recognize the value of public television in Taiwan. Based on this reasoning, this study proposes its second hypothesis:

H2: People who are more satisfied with Taiwan's public television are more willing to pay for it.

Time: Demographics

According to how early individuals in a society adopt an innovation, Rogers' (1995) model divides all members of a society into five types: innovators, early adopters, the early majority, the late majority, and laggards. This model predicts that demographics and personalities will differentiate the five types of individuals from one another (Rogers, 1995, 2003). Empirical studies show that when an innovation is in its early stages of diffusion, demographics are able to differentiate adopters from non-adopters, with early adopters tending to be younger, better educated, and more affluent than non-adopters. However, when an innovation reaches its critical mass, demographics no longer work well in discriminating adopters from non-adopters (Atkin, Neuendorf, Jeffres, & Skalski, 2003; Kang, 2002; Leung, 1998; Leung & Wei, 1998; C. A. Lin, 1998; Wei, 2001, 2006). For example, Li (2011) found that

digital cable was still in its early stage of diffusion in Taiwan, and that residence area was able to significantly predict the adoption intention. Similarly, Zhu and He (2002) showed that age, gender, and education were significant predictors of Internet adoption, when China's Internet adoption was still at its early stages of diffusion. In contrast, when cable television penetration had passed its early stages of diffusion in the United States, both Atkin (1993) and LaRose and Atkin (1988) discovered that most demographic variables were not able to predict subscription intention.

As previously stated, the Taiwanese are not familiar with the idea of a television license fee because the government has never used this system to support public television in Taiwan. According to Rogers' (1995) model, this innovation is still in its very early stages of diffusion, and demographics should, therefore, still be able to predict people's intention to pay for public television. Based on this reasoning, this study proposes the third hypothesis:

H3: Demographic variables will reveal people's intentions to pay for public television in Taiwan.

Time: Innovativeness

In addition to demographics, Rogers' (1995) model predicts that the five types of adopters will significantly differ from one another in personality. One personality characteristic researchers frequently use to predict innovation adoption is an adopter's innovativeness. This is the degree to which individuals accept new ideas or new technologies (Atkin et al., 2003; Li, 2004; C. A. Lin, 2004; Rogers, 2003). Empirical studies have found that people's innovativeness positively associates with the intention to adopt new technologies. For example, Chan-Olmsted and Chang (2006) examined among Americans the intention to adopt digital television and found that respondents' innovativeness and adventurousness were significant predictors of the adoption intention. Similarly, Li (2004) investigated people's intentions to adopt Internet shopping and cable television shopping in Taiwan and found that innovativeness was a significant predictor of the intent to adopt. Based on the literature review, this study develops its fourth hypothesis as follows:

H4: People who are more innovative are more willing to pay for public television in Taiwan.

RESEARCH METHODOLOGY

Lifestyles

Twenty-two items with a 7-point Likert scale were used to measure lifestyles. These items, which we adapted from Leung's (1998) study, were originally used in the 1995 Institute of Market Information Consumer Surveys that were

conducted in three Chinese cities: Beijing, Shanghai, and Guangzhou. The 22 items proved applicable in the Chinese population in that five lifestyle types consistently emerged from these items in different studies (Leung, 1998; Li, 2004, 2011).

This study performed a factor analysis on the responses to the 22 items using the Statistical Package for the Social Sciences (SPSS, Inc., Chicago, IL). By applying the principal components and varimax rotation methods, the factor analysis resulted in five factors (see Table 1).

The first factor contained seven items that were concerned with leading a fashionable life. This factor can be called the *fashionable life factor*. The

TABLE 1 Factor Analysis on Lifestyles

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1: Being fashionable					
Fashionable in the eyes of others	.750	.068	.059	-.045	-.021
Enjoy owning new & fashionable things	.794	.098	.069	.159	.083
Attending to trends in fashion	.764	.122	.123	.102	.088
Like a fancy and distinctive lifestyle	.743	.150	.104	.154	.102
Dress up to express my personality	.627	.290	.087	.110	.061
Enjoy a romantic lifestyle	.691	.148	.150	.168	.126
Enjoy stylistic dresses	.580	.087	.202	.358	-.101
Factor 2: Life expansionists					
Taking on challenges and risk in one's Life	.341	.615	.095	.121	-.186
Take some courses to brighten my future	.232	.728	-.068	.008	.146
Like to learn more new knowledge and technology	.118	.789	-.030	-.010	.171
Don't like to do nothing in my life	.042	.641	.005	.021	.082
Have high expectations about what I can achieve	.119	.690	.131	.012	.002
Factor 3: Enjoying life					
Like to do nothing but relax during holidays	.127	-.072	.526	.207	.083
Be happy if I can live a leisurely life	.152	.039	.808	-.013	-.002
Prefer stable and secure jobs	-.065	.025	.734	-.022	.046
Like to have my own living space	.071	.261	.727	.003	-.116
A house by the lake or up in the hills is perfect for vacations	-.029	.266	.418	.385	.041
Factor 4: Preference for foreign products					
Although expensive, I prefer foreign products	.316	.008	.117	.825	.069
Foreign products make me more satisfied	.267	.007	.150	.806	.096
Factor 5: Trust in mass media					
Trust in advertising	.148	.000	-.024	.206	.754
Trust what newspapers say	.164	.045	-.032	.052	.743
Advertised products are more reliable	.130	.041	.095	.026	.743
Eigenvalue	4.020	2.732	1.868	1.813	2.344
Variance explained (%)	18.272	12.417	8.493	8.241	10.653
Cronbach's alpha	.869	.764	.659	.821	.669

Note. Boldface values indicate the factor loading for that factor.

second factor had five items that were related to being energetic and active in life; thus, this factor was named the *active life factor*. The third factor had three items, all of which were related to credibility in the mass media; hence, this factor was named *trust in mass media*. The fourth factor contained five items that stressed the importance of seeking pleasure and relaxation; thus, this factor was referred to as the *hedonistic life factor*. The fifth factor had two items that stressed the strengths of foreign products, and this factor was referred to as *a preference for foreign products*. A reliability analysis was performed on each of the five factors. The results showed that three factors had Cronbach's alphas $> .75$, indicating a high level of internal consistency. For the third and fifth factors, the Cronbach's alphas were $> .65$, which were acceptable. The Cronbach's alphas of the five factors are reported in the bottom row of Table 1.

Satisfaction With Public Television

This study used three methods to develop 21 items regarding people's satisfaction with public television. The first method was to interview 15 board directors and managers in public television stations (7 managers, 6 board directors, and 2 employees), asking them what characterized Taiwan's public television programs. The second method was to analyze Taiwan public television's Web site in which, by stating its mission, Taiwan's public television emphasizes how it differs from commercial television in program content, quality, and type. The PSB Website contains a section in which PSB specifies its mission, short- and long-term goals, and its operational situations. These data are also examined by the legislators in Taiwan to decide the amount of a budget to appropriate for PSB. The third method was to examine several studies on Taiwan's public television to ascertain the features characterizing it (Ku et al., 2010; C. W. Lin, 2008; Y. P. Lin, 2005; Yeh, 2009).

The responses to the 21 items were factor analyzed with the principle component and varimax rotation methods, and five factors were extracted from the 21 items (see Table 2). The first factor contained six items, all of which were concerned with the quality of public television news programs. Thus, it was named the *fair and credible news factor*. The second factor had six items, and was named the *concerned for minorities and local affairs factor* because these items had to do with how public television treats minorities and localism. The third factor contained five items, all of which related to the diversity and interest of public television programs. Hence, this factor was named the *program diversity and interest factor*. The fourth factor had three items, and is referred to as the *efficiency and independence factor* in that these items concerned the operation of the public television station. The last factor contained only one item, and was, thus, omitted from further analysis. A reliability analysis was performed on each of the four factors. All factors had Cronbach's alphas $> .80$, indicating a high degree of internal

TABLE 2 Factor Analysis on Satisfaction With Pay TV

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1: Fair and credible news					
News programs are credible	.777	.146	.144	.205	.140
Information is accurate	.760	.110	.182	.219	.145
Programs are unique	.545	.319	.436	.048	-.129
Programs are educational	.648	.404	.159	.159	-.135
Quality is high	.556	.495	.339	.035	-.045
News reports are fair and objective	.793	.067	.043	.228	.193
Factor 2: Concern for minorities and local issues					
Attention paid to minorities	.346	.634	.068	.348	-.077
Content is full of localism	.066	.633	.105	.211	.208
Actively involved with local affairs	.077	.699	.043	.478	.064
Actively participates in community services	.024	.693	.063	.468	.075
A reliable company	.432	.629	.256	-.053	.046
A company with a conscience	.387	.625	.204	-.002	.108
Factor 3: Program diversity					
Programs are innovative	.318	.259	.636	.172	.055
Programs are diverse	.112	.181	.616	.268	.226
Programs are entertaining	.060	-.029	.781	.096	.141
Programs are influential	.344	.391	.561	.142	-.086
Programs are interesting	.108	.060	.786	.222	-.045
Factor 4: Efficient and independent					
Operations are efficient	.200	.264	.306	.736	.040
Operations are independent	.254	.216	.155	.720	.003
Finance is transparent	.203	.143	.277	.715	-.031
Factor 5					
Screen pictures are clear	.266	.262	.357	-.029	.512
Eigenvalue	3.769	3.572	3.171	2.539	1.281
Variance explained (%)	17.134	16.237	14.414	11.539	5.822
Cronbach's alpha	.873	.849	.815	.826	—

Note. Boldface values indicate the factor loading for that factor.

consistency. The Cronbach's alphas of the four factors are reported in the bottom row of Table 2.

Demographics and Mass Media Use

This study measured six demographic variables including age, gender, education, family size, personal income, and family income. Age was measured using nine groups, the youngest being those aged 16 to 20 and the oldest being those > 56. Seven types of mass media use were examined, including television viewing, newspaper reading, magazine reading, radio listening, movie going, Internet use, and frequency of viewing public television.

Innovativeness

Innovativeness is defined as an individual's tendency to be accepting of new ideas, which is congruent with C. A. Lin's (1998) scale of need for innovativeness. Therefore, this study used C. A. Lin's (1998) scale, which includes four items to measure innovativeness.

Adoption

This study used the following method to operationalize people's intention to pay for public television. The respondents were first asked whether they were willing to pay for public television. If they said "yes," the interviewers would ask the respondents to indicate how much they were willing to pay monthly for public television. In the telephone survey, the interviewers did not mention a license fee to the respondents; instead, they asked the respondents if public television had to ask for a viewing fee, then how much they were willing to pay for public television. The respondents had to choose 1 from 11 levels to indicate the amount they were willing to pay. The levels ranged from about \$0.30 to > \$3.00. The reason for this study to choose this range is that Taiwan's cable operators offer 90 TV channels to subscribers, and they charged subscribers approximately \$20.00 for one month. This study assigned a value of zero to those respondents who indicated that they were not willing to pay in order to establish a 12-variable numerical scale of willingness to pay.

Telephone Survey

A telephone survey using a computer-assisted telephone interview (CATI) system was conducted in March, 2010 to collect data for this study. To ensure that our sample was representative of Taiwan's population, we adopted the proportionate stratified random sampling method and used the population percentage of each county or city in Taiwan as sampling bases. For example, the population in great Taipei area is approximately 28% of Taiwan's population, and to have 500 valid questionnaires, this study had to obtain 140 valid questionnaires from the Taipei area. Within the Taipei area, this study used a random sampling method to collect these 140 valid questionnaires. The most recent database of telephone numbers was used for random sampling, and a "one" was added to the number that was selected by the CATI system to avoid any biases existing in the telephone database (Chyu, 2000; Wimmer & Dominick, 2010). The telephone survey lasted one week. Twelve trained telephone interviewers conducted the interviews. They made a total of 863 calls and obtained 506 valid questionnaires, which represented a response rate of 58.6%.

RESEARCH FINDINGS

The Sample Profile

In our survey, more than one-half of the 506 respondents were women (56.6%), 31% had finished college, 30.5% had concluded their education with senior high school graduation, 11.9% had concluded with junior high school

graduation, and 5.7% had completed graduate education. Approximately 34% of the respondents had four members in their families, 23.6% had five members, 14.7% had three members, and 10% had more than seven members in their families. The respondents were almost equally distributed into the nine age groups (about 12% for each level), except for two groups (ages 21–25 and 26–30), which both had a share of < 10%. This sample profile was relatively congruent with that of the general Taiwanese population, except that more female respondents were represented in this sample (Executive Yuan of Taiwan, 2010). According to this study's data, only 122 (24%) of the 505 respondents were willing to pay for public television, and 60% of the 122 respondents were willing to pay < \$1.50 for one month.

Predictors for the Intention to Pay

To understand the factors affecting the intention to pay for public television, this study conducted a multiple regression analysis using the intention to pay as the dependent variable and six sets of independent variables including demographics, mass media use, satisfaction with public television (PSB), lifestyles, innovativeness, and the frequency of public television viewing. The results from the regression analysis are summarized in Table 3.

Table 3 shows that among the 23 variables entered into the regression analysis, only 3—personal income ($\beta = .135$, $p < .05$), magazine reading ($\beta = .100$, $p < .05$), and frequency of public television viewing ($\beta = .228$, $p < .001$)—significantly affect the intention to pay for public television. Therefore, this study found that the respondents who had a higher personal income, read more magazines, and watched public television more frequently were more willing to pay for public television. Among the three variables, the frequency of public television viewing was the most significant predictor because it had the highest beta weight. Personal income had the second highest beta weight, whereas magazine reading had the third highest beta weight. Furthermore, these variables explained almost 11% of the variance for the intention to pay for public television.

This study found that the frequency of public television viewing was the most important factor affecting the willingness to pay for public television. To better understand the factors influencing the respondents' intentions to pay for public television, this study conducted another multiple regression analysis using the frequency of public television viewing as the dependent variable and five sets of independent variables, which included demographics, mass media use, satisfaction with public television, innovativeness, and lifestyles. The results from the regression analysis are summarized in Table 3.

Table 3 demonstrates that among the 22 variables entered into the regression analysis, 4—education, satisfaction that PSB news is fair and

TABLE 3 Multiple Regression Analysis for Intention to Adopt and Pay TV Viewing

Predictor Variable	Intention to Adopt	Pay TV Viewing
	Standardized β	Standardized β
Demographics		
Age	.037	.012
Education	.049	.103*
Family size	.010	.066
Personal income	.122*	.023
Family income	.010	-.043
Gender	.051	.010
Adjusted R^2	.017	.021
Increased R^2	.017	.021
Mass media use		
TV viewing	.026	.025
Radio listening	-.007	.027
Newspaper reading	.017	.073
Magazine reading	.102*	-.016
Movie going	.015	-.022
Internet use	-.058	.018
Pay TV viewing	.227***	.020
Adjusted R^2	.091	-.001
Increased R^2	.074	
Satisfaction with pay TV		
Fair and credible news	.012	.202***
Caring for minority	.069	-.032
Diversity	.048	.210***
Efficient and independent	.104	.080
Adjusted R^2	.110	.160
Increased R^2	.019	.140
Lifestyle		
Being fashionable	-.093	-.018
Life expansionists	-.020	.102*
Trust in mass media	.004	.022
Enjoying life	.039	-.065
Prefer for foreign products	.035	-.079
Adjusted R^2	.108	.171
Increased R^2	-.002	.011
Innovativeness	-.001	-.011
Adjusted R^2	.106	.170
Increased R^2	-.002	-.001

* $p < .05$. ** $p < .01$. *** $p < .001$.

credible, satisfaction that PSB programs are diverse and interesting, and a lifestyle of active life—significantly correlated with the frequency of public television viewing. Moreover, the 22 variables were able to account for approximately 17% of the variance of the public television viewing frequency. Therefore, this study found that the respondents who were more educated, felt more strongly that public television news was fair and credible, were more satisfied that PSB programs were diverse and interesting, and had an active lifestyle watched public television more frequently.

DISCUSSION

Lifestyles and the Intention to Pay

H1 predicts that lifestyles will significantly affect a person's intention to pay for public television. Our data analysis showed that lifestyles did not have any significant relation with the intention to pay for public television. However, this study found that the lifestyle of active life did have a positive relation with the frequency of public television viewing that, in turn, significantly correlated with the intention to pay for public television. Therefore, the findings of this study partially and indirectly supported the prediction of H1.

This study found that the respondents with a lifestyle of active life watched more public television. According to Leung's (1998) study, the lifestyle of active life assesses the activity dimension of A.I.O. People with this lifestyle are eager to learn new information and like to take on challenges and risks. Furthermore, people with this lifestyle tend to be confident and hopeful about the future. To better understand the characteristics of this lifestyle, this study performed a multiple regression analysis using it as the dependent variable and three sets of independent variables that included demographics, mass media use, and the remaining four lifestyle types. The data analysis showed that people with this lifestyle were younger, had a higher personal income, watched less television, and were more innovative than people of a different lifestyle. Moreover, the lifestyle of active life had a negative relation with the lifestyle of hedonistic life, indicating that the respondents with a lifestyle of active life did not like a relaxed, stable, and secure lifestyle. In general, this study found that the lifestyle of active life had an indirect effect on people's intentions to pay for public television.

Mass Media Use and Intention to Pay

RQ1 explores the relation between mass media use and people's intentions to pay for public television. The data analysis showed that two types of mass media use—magazine reading and frequency of public television viewing—significantly affected people's intention to pay for public television. Furthermore, among the five sets of variables, mass media use accounted for the highest amount of variance in the intention to pay (7.4%). Hence, this study found that the respondents who read more magazines and watched more public television were more willing to pay for public television.

The findings of this study are congruent with the prediction of Rogers's (1995, 2003) model that mass media use plays a major role in predicting adoption intention when an innovation is still in its early stages of diffusion. However, this study found that most of the effect of mass media use

could be attributed to the frequency of public television viewing, and that this frequency had the most significant effect on the intention to pay for public television. This finding suggests that the key to predicting the willingness of the Taiwanese to pay for public television lies in the frequency with which they view public television. Nevertheless, one problem is that Taiwan's public television's ratings have been very low, indicating that not many people are watching it. More specifically, one question in the telephone survey asked the respondents how often—from 7 (*very often*) to 1 (*not viewing at all*)—they watched public television programs. The respondents whose responses were above three were approximately 31% of the sample, indicating that only 31% of the sample watched public television programs on a regular basis. Therefore, one way public television can encourage the willingness to pay is to increase the ratings of its programs.

Furthermore, a further analysis on magazine reading showed that magazine reading was positively correlated with age, education, and personal and family incomes. Therefore, this study found that those who read more magazines weekly tended to be older, more educated, and had more personal and family incomes. These findings suggest that people who are older, better educated, and more affluent will be the potential adopters of paying a license fee for public television.

Satisfaction and Intention to Pay

H2 predicts that satisfaction with public television leads to people's willingness to pay for it. The data analysis showed that the four types of satisfaction with public television had no significant effects on people's intentions to pay for public television. However, Table 3 indicates that satisfaction that public television news is fair and credible; and, furthermore, satisfaction that public television programs are diverse and interesting positively correlated with the frequency of public television viewing that, in turn, led to people's willingness to pay for public television. Therefore, the findings of this study partially and indirectly supported the prediction of H2.

Based on secondary data analysis and intensive interviews, this study identified four features by which Taiwan's public television differentiates itself from other commercial television channels. The four features were fair and credible news, concern for minorities and localism, diverse and interesting programs, and efficient and independent operation. The data analysis showed that satisfaction with the four features of public television had no significant effects on their intention to pay for public television. However, this study found that satisfaction that public television news is fair and credible; and, furthermore, that public television programs are diverse and interesting positively correlated with the frequency of public television viewing. This finding indicates that people are most satisfied with the latter two features, and that people feel these are the characteristics that differentiate Taiwan's

public television from other commercial television channels. These findings are congruent with other Taiwanese studies which found that by adopting sensationalism to counter market competition, Taiwan's news channels sometimes had to sacrifice their credibility in news reports or to report news in a biased manner. As a consequence, most Taiwanese often questioned the credibility of news channels (Ku *et al.*, 2010; Li & Lee, 2010). Moreover, other studies showed that, although there were more than 100 television channels, most people were not satisfied with the diversity of television programs because the channels tended to imitate one another in programming and, thus, content became homogeneous (Li & Lee, 2010; Li *et al.*, 2007). These findings indicate that public television was successful in terms of establishing programming characteristics that allowed it to clearly differentiate itself from commercial television channels.

Demographics and Intention to Pay

H3 predicts that demographic variables including age, education, income, family size, and gender significantly affect the intention to pay for public television. The data analysis showed that only one of the six variables—personal income—positively correlated with the intention to pay for public television, and that demographics only explained a small amount of the variance (1.7%) in the intention to pay for public television. The data of this study only barely supported the prediction of H3.

According to Rogers (1995, 2003), demographic variables should play a major role in predicting adoption intention when an innovation is still in its early stages of diffusion. Paying a license fee for public television is a totally new idea for the Taiwanese people to adopt; thus, this innovation is still in its very early stages of diffusion. However, this study found that demographic variables played only a relatively minor role in predicting adoption intention, which was incongruent with the prediction of Rogers's model. A possible explanation for the unexpected findings is that the Taiwanese do not consider a license fee a viable means to support public television; thus, the diffusion pattern of this innovation greatly diverged from the prediction of Rogers's model. One limitation existing in Rogers's model has been a pro-innovation bias that assumes people look favorably on all innovations and are eager to adopt them. Critics point out that Rogers's model ignores that there are some innovations with which people do not want to associate or do not consider as a future trend (Li, 2004; Rogers, 1995, 2003). This possible explanation is verified by the findings of recent studies that discovered most people did not feel a need for public television because there were too many television channels available in Taiwan (Ku *et al.*, 2010). Furthermore, the data in our study showed that only about 20% of the respondents regularly watch public television.

Innovativeness and Intention to Pay

H4 predicts a positive relation between innovativeness and the intention to pay for public television. Our data analysis showed that innovativeness did not significantly correlate with the intention to pay for public television, nor with the frequency of public television viewing. Hence, the data of our study did not support the prediction of H4.

The findings that innovativeness did not significantly correlate with the intention to pay for public television are not congruent with the results of past studies. Once again, a possible explanation for the incongruent findings is that the Taiwanese do not look favorably on the innovation of paying a license fee for public television; thus, most of the findings are not consistent with the prediction of Rogers's (1995) model.

CONCLUSION

This study adopted Rogers's (1995, 2003) diffusion of innovation model to examine the factors influencing people's intention to pay for public television. The data analysis showed that most of this study's findings were not congruent with the prediction of Rogers's model, indicating that the Taiwanese do not consider paying a license fee to be feasible means to support public television. However, this study found that the frequency of public television viewing was the most powerful factor positively affecting the intention to pay for public television. After digital switchover, the public television group will have more channels and require more government funding. If the public television group relies heavily on government appropriations, political interference with the operation of public television may be inevitable. Past studies suggest that asking the public to pay a license fee is a much more effective means of avoiding political interference with public television than relying on government appropriations (Engelman, 1996; Ku et al., 2010; Lee & Solomon, 1990; Weng, 1991). Therefore, this study suggests that from a long-term perspective, asking the public to pay a license fee may be the most viable solution for sustaining the operation of Taiwan's public television. To make this solution possible, one approach is to select a few programs as core programs into which more resources are invested to attract a greater number of regular viewers. In this way, public television can gradually increase the size of its viewing audience. Another strategy is to launch issue management campaigns in which lobbying efforts are made to raise public awareness regarding the importance of public television to increase people's intention to pay for public television. For example, Weissmann's (2009) study showed that the BBC conducted several campaigns during the 1970s to change British attitudes toward paying a higher BBC license fee. By addressing the fears of Americanization in its campaign, the

BBC successfully persuaded its audience to pay a higher license fee so that the United Kingdom could sustain its high-quality television and preserve its traditional cultures. Weissmann's study indicated that, although the British were used to paying a license fee for public television, the BBC had to work hard to ask for an increase in the fee. Therefore, it may take some time for Taiwan's public television to achieve fruitful results in its efforts to change public attitudes in Taiwan.

Furthermore, this study found that the frequency of PSB viewing was the most powerful predictor for people's willingness to pay for public television, and that PSB's fair or credible news and its diverse programs were the characteristics of PSB that attracted people to watch public television programs. These findings suggest that public television should utilize its strengths—fair or credible news and diversified programming—as competitive advantage to attract more people to watch its programs. From a policy perspective, the government in Taiwan is not allowed to get involved with the operation or programming of PSB, but it can require PSB to increase its program ratings when PSB requests an increase of budget. In this way, the government can use its policies to push PSB to produce more popular programs for Taiwan's audiences.

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