

Predicting the Determinants of Users' Intentions for Using YouTube to Share Video: Moderating Gender Effects

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Abstract

This research aims to improve understanding of what motivates individual online users to share their videos on YouTube and whether gender affects those motivations. The work proposes a model based on the technology acceptance model (TAM) and social influences theory by conducting a survey of 206 male and 135 female video sharers of YouTube to test this model. The results indicate that perceived ease of use is an important determinant of the intention to use YouTube to share video. All factors from the social influence perspective significantly affect the intention to use YouTube to share video. The results show that differences exist in sharing behavior between female and male users. Female users' intention is strongly influenced by usefulness and social norms, while male users' intention is strongly influenced by interpersonal norms. Based on those findings, implications for theory and practice are discussed.

Introduction

THE INTERNET is widely used worldwide, and its functions have grown as a media not only for communicating data but also for sharing knowledge, photos, audio, video, and other time-based data.¹ Web sites are no longer regarded as being based only on text or the written word but are used in combination with all forms of media, providing a source for entertaining and informative media such as television or cinema. Users upload media and share them via an Internet video-sharing application. One of the most successful Internet video-sharing applications is YouTube. This free online video-streaming Web site has services that allow anyone to view and share videos uploaded by its users.

Since its initial launch in December 2005, YouTube has been the leading player in online video and has become the destination for both watching and sharing original videos globally across the Internet using Web sites, mobile devices, blogs, and e-mail.² In October 2006, YouTube was sold to Google for \$1.65 billion.³ Since then, YouTube has been monetized into a multibillion-dollar business, generating advertising revenues for Google with fears of displacement for traditional producers of video. Anyone can upload and watch videos on YouTube. There are hundreds of thousands of videos uploaded daily, and more than 100 million videos are watched daily on this popular video-sharing Web site.² The traffic of YouTube is the third highest in all categories

with 183 million monthly visitors globally and in some countries, such as in the United States, the United Kingdom, Australia, Canada, Japan, and Taiwan, YouTube ranks as the number one video-sharing Web site category.⁴

Seeing this phenomenon raises questions such as Why do people choose YouTube? What factors actually contribute to users' intentions in choosing YouTube to share their videos? The fact that every minute, 10 hours of video are uploaded to YouTube tells us how YouTube dominates this video-streaming business. The answers to these questions may be useful for competitors to benchmark YouTube's path to success. Note that in this work, we focus only on sharing video as public activities, no matter whether it is original or duplicate video material, and do not include watching activities in this study. In order to be able to upload and broadcast either public or private video clips of any reasonable length, users are required to create an account to upload their videos.

We have three main purposes for this research. The first is to examine factors on how the technology acceptance model (TAM) influences users' intentions in choosing YouTube to share videos. Many research studies have been modified and have widely applied TAM to measure the acceptance level of information technology usage.⁵⁻¹¹ However, depending on the specific Internet technology context, additional explanatory constructs may be needed beyond the usefulness and ease-of-use variables. David et al. agreed that future technology acceptance study needs to address how other

variables affect user acceptance, because those factors are likely to vary with the technology, users, and context.¹² YouTube is seen as a popular IT in the Web 2.0 domain and has prompted individuals to watch and share their videos with each other. Therefore, we also need to consider factors such as social influences in our proposed model. Our second purpose is to examine factors influencing users' intentions for choosing YouTube to share videos from a social influence perspective. The third purpose is to analyze differences of user intentions in choosing YouTube to share videos based on gender. By making comparisons, we want to understand what the most significant differences in use are for male and female participants of YouTube.

Literature

Technology acceptance model

The TAM, introduced by Davis, is intended to measure the user acceptance of technology use.¹³ It is an adaptation from the theory of reasoned action (TRA).¹⁴ According to the TRA, a person's behavior is determined by his or her behavioral intention, and behavioral intention is determined by both the attitude of a person and the subjective norm related to the behavior. Attitude is defined as a person's positive or negative feeling about doing a behavior. The subjective norm is defined as what the most important people to a particular person would think about doing a particular behavior.

TAM originally consisted of perceived usefulness (PU) and perceived ease of use (PEOU) as the beliefs of a person (Fig. 1). These two utility factors are the primary determinants of TAM. PU is the degree to which a person believes that using a specific application system would enhance his or her job and life performance. PEOU is the degree to which a person believes that using a specific application system would be free of effort. Both beliefs influence the attitude of a person in using an application system. PEOU affects PU. The easier a system is to use, the more the person believes that the system is useful to him or her. Using PU and attitude, we can predict a person's intention to use the application system.

In our study, three reasons exist for selecting the TAM as the base model. First, TAM is found to have similar or greater explanatory power than more sophisticated models.^{12,15,16} For instance, Mathieson compared TAM with TPB and found that both models effectively predict behavioral intention, but TAM is slightly better from an empirical perspective.¹⁵ Second, TAM is classified as a specific technology adoption model¹⁷ and is better suited to Internet technology, because it

helps explain the technological facet based on ease of use and usefulness. Third, according to Davis et al., the aim of TAM is to provide an interpretation of the determinants of computer acceptance that is capable of explaining individual behavior across a wide range of technologies while at the same time being both parsimonious and theoretically justified.¹² Therefore, we consider that TAM is an adequate model for the study, as it provides good predictive power while using few predictors, and it provides a clear understanding because it includes variables from a technological scope.

Social influences

A social influence process involves behavior by one person that has an effect on, or the intention of changing, the way another person behaves, feels, or thinks about a stimulus.¹⁸ The stimulus might be a political issue, a product, or an activity. Fishbein and Ajzen represented social influence in their theory of reasoned action as a subjective norm.¹⁴ In 1991, Ajzen introduced social influence as a subjective norm in the theory of planned behavior.¹⁹ Evidence shows that the more favorable the attitude and subjective norm are toward a behavior, the stronger is the individual's intention to perform a behavior.

In the past several years, many studies have proven that social influence significantly affects user behavior.²⁰⁻²⁷ Taylor and Todd regarded social influences as equivalent to the subjective norm in the TRA model and defined this construct as other people's opinions, superior influences, and peer influences in their works.^{28,29} Venkatesh and Davis incorporated subjective norms into the extended TAM model and observed that it has a relevant effect on the intention to use the system.³⁰ Chang and Cheung found that social influence on the intention to use the Internet or the World Wide Web at work is significant.²⁰ Bhattacharjee stated that the subjective norm is an important factor in predicting the intention to use electronic brokerage services. Furthermore, he viewed a subjective norm as two forms of influence: interpersonal and external. Interpersonal influence is influence by family, friends, colleagues, and superiors. External influence is influence by mass media and expert opinion.²⁷

Hsu and Lu viewed social influences as two factors: social norm and critical mass. Social norm refers to influence from colleagues, classmates, and friends, while critical mass refers to the value of technology that a user increases with the number of its adopters. In predicting the factors of users' intentions in playing online games, they found that social norms

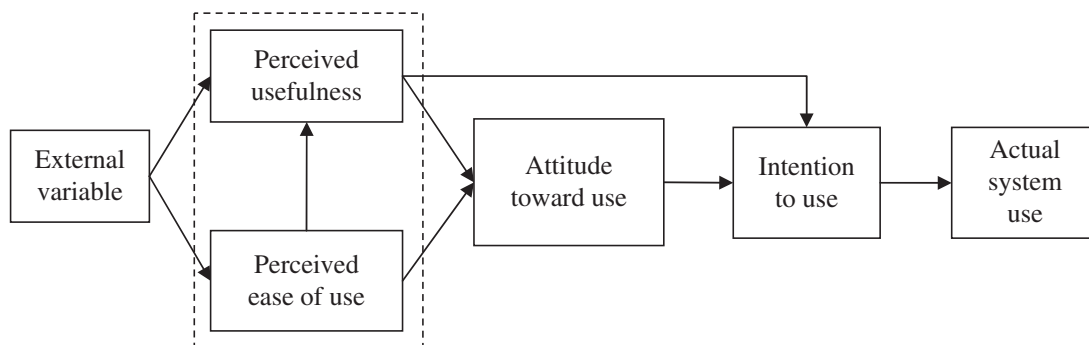


FIG. 1. Technology acceptance model.¹³

are significantly related to intention, while critical mass is significantly related to attitude.²⁵ If influence from other people can change our belief along with our behavior, then it means that we are responsive to social influence.³¹ Premkumar et al. developed a model of IT usage that incorporates three major beliefs (attitudinal, normative, and control beliefs) and found that the subjective norms have a positive influence on intention to use Internet-based technology.³²

Past studies on the innovation diffusion domain also suggest that user adoption behavior is influenced by a social system beyond the characteristics of the IT. According to Rogers’s innovation diffusion theory,³³ users tend to increase communication with referent others to interpret the IT adoption, and these interactions with the social system may influence their usage behavior. In 1995, Rogers further explained there are two types of influential channels: interpersonal channel and mass communication.³⁴ Interpersonal channels involve a face-to-face influence between two or more individuals, while mass media channels are the means of transmitting messages involving a mass medium or expert opinions. Therefore, in this study we believe that social influence affecting users’ intention to use YouTube to share videos stems from three sources: perceived network externalities, interpersonal norms, and social norms.

Moderating gender effects

Gender is one of the most common types of segmentation used in marketing practice.³⁵ There are three reasons for frequently applying gender as a segmentation strategy. First, information about gender is easily identified and accessed. Second, gender segments are measurable and responsive to marketing mix elements. Finally, gender segments are adequately extensive and profitable.³⁶ Gender is also usually used as a key moderator in consumer behavior studies³⁷⁻³⁹ and studies of technology usage.^{40,41} Gefen and Straub revealed that women and men differ in their perception of e-mail. Venkatesh and Morris found that there are also gender differences in the determinants for using a new software system at a workplace. The results from these two studies point out differential effects of gender on determinants for using information technology.

Research Model

Figure 2 illustrates the research model built on the basis of the TAM model and social influence from related literature. For social influence, the model asserts that the perceived network externalities, interpersonal norms, and social norms are directly related to the intention to use YouTube to share

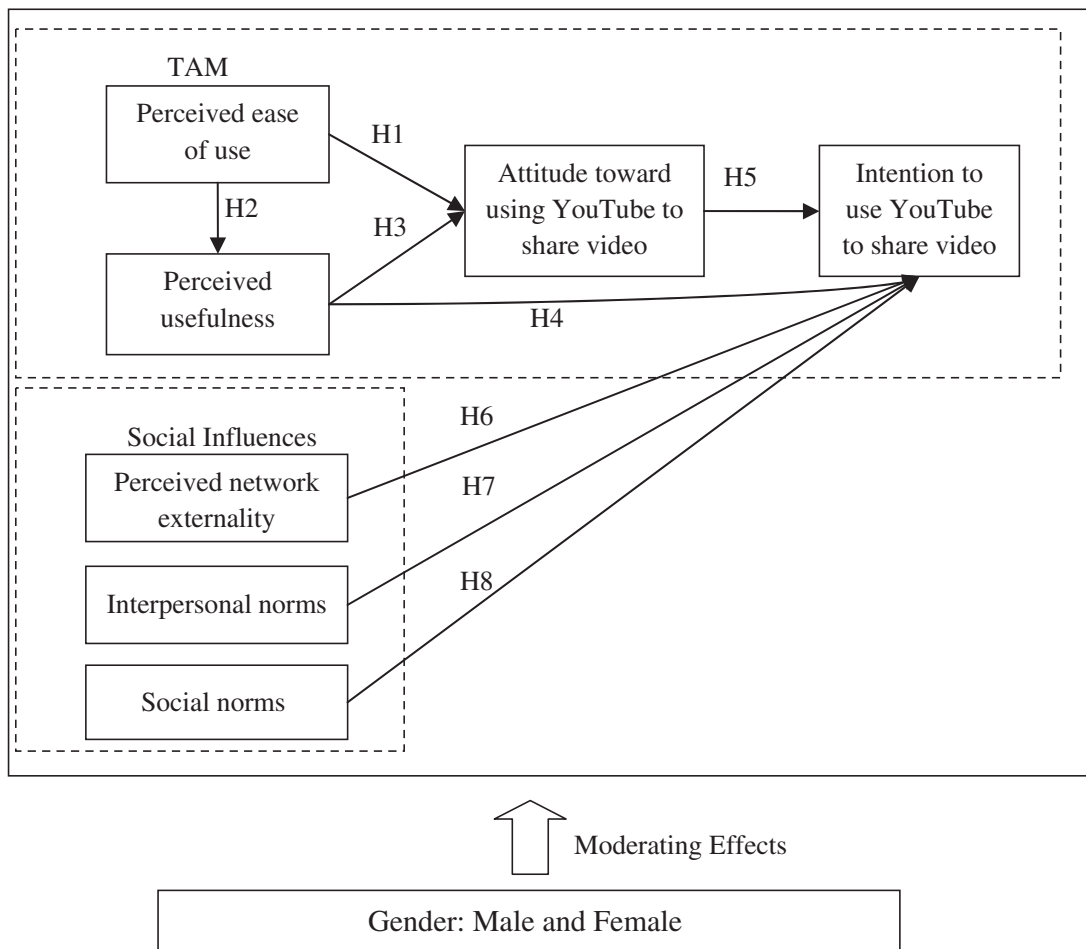


FIG. 2. Research model.

videos. This research model adopts the TAM belief-attitude-intention relationship.

We first verify the hypotheses related to PU and PEOU. In our study, PEOU is defined as the degree to which a person believes that using YouTube would be free of effort. As previous studies^{12,13,25,42,43} have demonstrated the relationship between PEOU with PU and PEOU with attitude, we establish these hypotheses:

H1: Perceived ease of use is positively related to the attitude toward using YouTube to share videos.

H2: Perceived ease of use is positively related to perceived usefulness.

Many prior studies^{7,13,25,42} have shown that PU can both directly and indirectly relate to behavioral intention. This study defines PU as the degree to which a person believes that choosing YouTube to share videos will fulfill his or her purpose, because there are many people to watch them so that this activity can enhance their life performance. Therefore, PU is expected to have a positive behavioral intention effect. As prior studies have shown that PU is also directly related to attitude, we wish to demonstrate the same results here.

H3: Perceived usefulness is positively related to the attitude toward using YouTube to share videos.

H4: Perceived usefulness is positively related to the intention to use YouTube to share videos.

The last hypothesis for the basis of TAM in our model describes the relationship between attitude and intention. We wish to demonstrate that attitude is positively related to the intention to use YouTube to share videos.

H5: The attitude toward using YouTube to share videos is positively related to the intention to use YouTube to share videos.

Aside from TAM's constructs, we add some constructs from social influence factors. Social influence occurs when someone's action is changed by another individual/things or when someone has an intention to change because of a stimulus.¹⁸ Stimulus can be people, an activity, a product, or an issue. Using Web 2.0 platforms, YouTube has similar characteristics to those of other Web 2.0 Web sites, and the most obvious one is user participation. With YouTube, users can participate in two major ways, sharing and watching videos, and in other ways, such as rating or commenting on a video. The impact of user participation on the value of the application increases as the number of participants increases.⁴⁴ In sharing video, users have an expectation that their video will be watched. If there are no other participants in that application, then uploading a video for one's own self and the value of the video do not increase. This condition is consistent with the theory of network externality.⁴⁵

According to Metcalfe's law, network externalities exist when the value of a product or service increases as the number of consumers of the product increases, not because of the quality of the product to the consumer.⁴⁶ Liebowitz and Margolis argue that network externality is the change in the benefit or surplus that a person derives from a good when the

number of other people consuming the same kind of good changes.⁴⁵ Relating to network externalities theory, the number of shared videos in a video-streaming Web site like YouTube grows as the number of YouTube viewers grows. In other words, the more people who watch YouTube, the more videos that could be shared by YouTube. Consequently, perceived network externality is included as one of the antecedents of intention to use in our model.

H6: Perceived network externality is positively related to the intention to use YouTube to share videos.

Interpersonal and social norms also profoundly impact user behavior.⁴⁷⁻⁵¹ Bhattacharjee explained about two sources of social influences:²⁷ Interpersonal influence (interpersonal norms) refers to word-of-mouth influence by friends, colleagues, superiors, and other prior adopters known to the potential adopters. External influence (social norms) refers to mass media reports, expert opinions, and other nonpersonalized information. Our study defines interpersonal norm (similar to peer-to-peer influence) as the degree to which a person believes that important others such as friends, family members, colleagues, superiors, and experienced individuals expect him or her to use YouTube to share video. It is a direct and unmediated causal effect of one person on another.⁵² Friedkin also mentioned that the greater the probability is for an interpersonal attachment from one person to another, the greater the probability will be that one person has some influence on another person. Therefore, we believe that if others expect the sharing of videos, then the individual's assessment of the likely outcome of the behavior will be influenced. Similarly, individuals may upload more videos when they feel that their friends expect them to use YouTube to share their files.

Bhattacharjee's study suggested that user intention about IT acceptance is shaped not only by the experience of peers, superiors, and family members but also by the opinions of experts, as disseminated by popular mass media.²⁷ Different from interpersonal norms, social norms refer to mass media reports, expert opinions, and other nonpersonal information considered by individuals when performing a behavior. They may be particularly critical in generating awareness and trial in the initial stages of technologies such as online video services. Karahanna et al. separated social influence into two categories: informational influence (when individuals accept information as evidence of reality) and normative influence (when individuals conform to the expectations of others).⁵³ They interpreted that informational influence works through internalization (integrating information from expert opinions into one's own cognitive beliefs), while normative influence works through identification and compliance. Undoubtedly, the mass media serves many informational functions. It can confer status on public issues, persons, organizations, and social movements and also inhibits the enforcement of social norms. Messages and images conveyed over television, radio, and printed publications reach millions of people around the world.¹⁸ By nature, they are highly impersonal, as they are not only designed to be meaningful to many individuals, but they are also communicated through a medium.

Another research conducted by Leung and Wei suggested that interpersonal norms and social norms are all particularly important for individuals' adoption of Internet technology.⁵⁴

They demonstrated that young groups are more easily influenced by peers, social norms, and their surroundings. Hence, for an online video community such as YouTube that requires a lot of peer interactions and is designed as a fun application for Internet users, we argue that the intention to use YouTube to share video is influenced by the social norms and interpersonal norms. We further define the social norms as the degree of the external influence, including mass media reports or expert opinions, that influence him or her to use YouTube to share video:

H7: Interpersonal norms are positively related to the intention to use YouTube to share videos.

H8: Social norms are positively related to the intention to use YouTube to share videos.

Methods

Measurement

This study designed the survey instrument using validated items from prior research as a means of assessing the theoretical constructs of an extended TAM model and by using TAM scales of PU, PEOU, attitude toward using YouTube to share video (AT), and intention to use YouTube to share video (BI) from Davis¹² and Davis et al.¹³ A scale for measuring perceived network externalities was developed using the measures of Lee et al.,^{55,56} and the measurement of interpersonal norms and social norms was adapted from Hsu et al.^{42,57} All of the scales were slightly modified to suit the context of the video Web site.

In order to validate the instrument, we first asked five respondents who are experts in the field of video application to discuss the length of the instruments, the format, and the clarity and appropriateness of the wording of the scales, which resulted in the revision of some questions considered ambiguous. A pilot test was then undertaken with 52 respondents through an online survey, self-selected from the population of YouTube users. The objective of the pilot study was to precisely examine the statistical validity of the constructs. Through the pilot test, we further modified inappropriate or unclear instruments in the questionnaire to improve the reliability and validity of measures developed in this study. The final list of items in the questionnaire is shown in Appendix A.

Data collection

The survey was administered from July 2, 2008, to August 20, 2008, through the passing of a questionnaire to a popular Bulletin Board System in Taiwan (bbs://ptt.cc and bbs://bs2.to) and popular forums for online gamers (http://www.gamer.com.tw and http://tw.games.yahoo.com). Respondents were asked to complete all the questions and, more specifically, to make sure to answer the questions in the main section. From 397 total respondents, only 341 were usable, while 56 were dropped because of either no experience in sharing videos through YouTube or incompleteness in answering the questionnaire. Table 1 presents a complete demographic profile of the respondents (60% male, 40% female). Around 69% of respondents were between 21 and 30 years old, while 27% were under 21 years old. More than half of the respondents had a

TABLE 1. DESCRIPTIVE STATISTICS OF RESPONDENTS' CHARACTERISTICS

<i>Items</i>	<i>Frequency</i>	<i>Percentage</i>
Gender		
Male	206	60.4%
Female	135	39.6%
Age		
<21	91	26.7%
21–30	236	69.2%
31–40	11	3.2%
>41	3	0.9%
Education		
Junior high school or below	6	1.8%
High school	13	3.8%
Bachelor's degree	195	57.2%
Graduate degree	127	37.2%
Prior experience		
<6 months	48	14.1%
6–12 months	72	21.1%
>1 year	221	64.8%
Total shared videos		
<11	281	82.4%
11–50	44	12.9%
>51	16	4.7%

bachelor's degree and more than one year's experience of using YouTube to share video.

Results

The proposed model is evaluated using structural equation modeling (SEM), a powerful second-generation multivariate technique for analyzing causal models with an estimation of the two components of a causal model: measurement and structural models. The measurement model is measured using confirmatory factor analysis (CFA) to test whether the constructs have sufficient reliability and validity. The structural model is used to investigate the strength and direction of the relationship between the theoretical constructs. This study uses AMOS 7.0 to assess the measurement and the structural model.^{58,59}

Measurement model

Reliability analysis. The initial phase of the evaluation indicates that some topics, including attitude, perceived network externalities and interpersonal norms, have item reliability below the acceptable value of 0.5.⁶⁰ Thus, we remove these items from our model. Table 2 shows the retained items. Item reliability ranges from 0.509 to 0.881. Composite reliability is computed to measure the internal consistency of the measurement model. As shown in Table 2, all composite reliabilities exceed the recommended value of 0.6.⁶¹

Convergent and discriminant validity. Convergent validity includes an analysis of factor loading and average variance extracted. Convergent validity is demonstrated when items are highly loaded. The loading coefficients for all items are above the recommended loading of 0.7.⁶² Convergent validity is also adequate when all constructs have an average variance extracted (AVE) of at least 0.5.⁶² All the AVE values

TABLE 2. FINAL CONFIRMATORY FACTOR ANALYSIS RELIABILITY ANALYSIS

Item	Factor loading	Item reliability	Composite reliability	Average variance extracted
PEOU1	0.8161	0.666	0.8693	0.6894
PEOU2	0.8591	0.738		
PEOU3	0.8149	0.664		
PU1	0.7655	0.586	0.8702	0.6917
PU2	0.8832	0.780		
PU3	0.8420	0.709		
AT2	0.7596	0.577	0.7116	0.5525
AT3	0.7266	0.528		
PNE1	0.7675	0.589		
PNE3	0.8142	0.663	0.7698	0.626
IN1	0.8781	0.771		
IN2	0.8922	0.796		
SN1	0.7134	0.509	0.8112	0.5900
SN2	0.8373	0.701		
SN3	0.7483	0.560		
BI1	0.8307	0.690	0.8877	0.7260
BI2	0.9386	0.881		
BI3	0.7791	0.607		

PEOU, perceived ease of use; PU, perceived usefulness; AT, attitude toward using YouTube to share video; PNE, perceived network externalities; IN, interpersonal norms; SN, social norms; BI, intention to use YouTube to share video.

are also above the suggested threshold. Table 2 shows the complete report for convergent validity.

To assess discriminant validity, we use the square root of the AVE guideline. We check whether the square root of AVE for each construct is greater than the correlation values of the construct with other constructs.⁶² Table 3 shows the inter-correlation between the constructs. Diagonal elements are the square root of the AVE for that construct.

As Table 3 shows, the correlation between PNE and AT (0.803) is greater than the square root of its AVE (0.7433). Although according to Kline the correlation values of the constructs under 0.85 are not categorized as being high,⁶³ we decided to do another guideline of discriminant validity—pairwise discriminant analysis—to eliminate any doubt of the first test’s results. Pairwise discriminant analysis is done to compare the original CFA model with alternative measurement models, which include every possible combination of

TABLE 3. INTERCORRELATION OF CONSTRUCTS

	PEOU	PU	AT	PNE	IN	SN	BI
PEOU	0.8303						
PU	0.279	0.8317					
AT	0.575	0.341	0.7433				
PNE	0.510	0.193	0.803	0.7912			
IN	0.300	0.289	0.271	0.272	0.8851		
SN	0.426	0.370	0.629	0.478	0.535	0.7681	
BI	0.566	0.352	0.676	0.560	0.445	0.586	0.8521

PEOU, perceived ease of use; PU, perceived usefulness; AT, attitude toward using YouTube to share video; PNE, perceived network externalities; IN, interpersonal norms; SN, social norms; BI, intention to use YouTube to share video.

Note: Diagonal elements in bold are the square root of the AVE.

combining two constructs into one.⁵ Discriminant validity is demonstrated if the chi-square is significantly lower for the original CFA model, and this suggests that a better model is one in which the two constructs are viewed as distinct (but correlated) factors.^{64,65} In this case, since combining two constructs adds 6 degrees of freedom to the new model, the chi-square differences between the original CFA and any alternative model should be at least 22.46 at a *p* value smaller than 0.001. Appendix B shows that the minimum chi-square difference is 39.5. Therefore, the test of this discriminant validity is met.

Model fit analysis. The measures used to assess the model fit include the χ^2/df ratio, the root-mean residual (RMR), the root-mean-squared error of approximation (RMSEA), the goodness of fit index (GFI), the adjusted goodness of fit index (AGFI), the normed fit index (NFI), the Tucker-Lewis index (TLI), and the comparative fit index (CFI). We did not use chi-square and degrees of freedom because the sample size in this study is considered to be large (>300), and the chi-square value ($\chi^2 = 214.2$) and related *p* value (*p* < 0.001) are neglected for their oversensitivity to the sample size.⁶⁶

Appendix C provides the summary of the model’s overall fit. All the criteria meet the recommended level.^{67–68} Consequently, the proposed model provides a suitable fit. GFI is 0.936, which is above the cutoff value of 0.8, while AGFI is 0.904, or above the cutoff value of 0.8. NFI and TLI are 0.938 and 0.960, respectively, which are both above the cutoff values of 0.9. CFI is 0.970, also above the cutoff value of 0.9. RMSEA is 0.051, below the 0.08 cutoff, indicating a satisfactory model fit. In addition, we investigate the root mean residual (RMR) index, which represents how appropriate the index is based on the fitted residual. In this study, RMR index is 0.027, below the 0.05 cutoff.

Structural model

Results of the structural model for overall data. Figure 3 gives the results of the SEM analysis. We test the hypothesized positive relationship among the research variables. According to Alwin and Hauser, the path coefficient of an exogenous variable is the direct effect of that variable on the endogenous variable. In addition, an indirect effect represents those effects mediated by the intervening variables between the cause and effect of interest in a model.⁶⁹ Table 4 shows the results of direct and indirect effects on the intention to use YouTube to share video.

The research model’s results show that perceived ease of use has a significant effect on attitude. Its direct effect is 0.608, and the indirect effect through the intervening variable of perceived usefulness is 0.0498. Thus, the total effect of perceived ease of use on attitude is 0.6578. The effect from perceived ease of use to perceived usefulness is $\beta = 0.3$ with *p* < 0.001. Thus, H1, H2, and H3 are all supported by the results. As we can see from the results, H4 is not supported. The path from perceived usefulness to intention to use is not significant ($\beta = 0.07$, *ns*). As hypothesized, attitude is positively related to an intention to use ($\beta = 0.427$, *p* < 0.001). Therefore, H5 is supported. On the other hand, even if we do not set perceived ease of use to be directly related to intention, we can see from Table 4 that it has indirect effects on intentions to use with total effects of 0.302. Perceived usefulness,

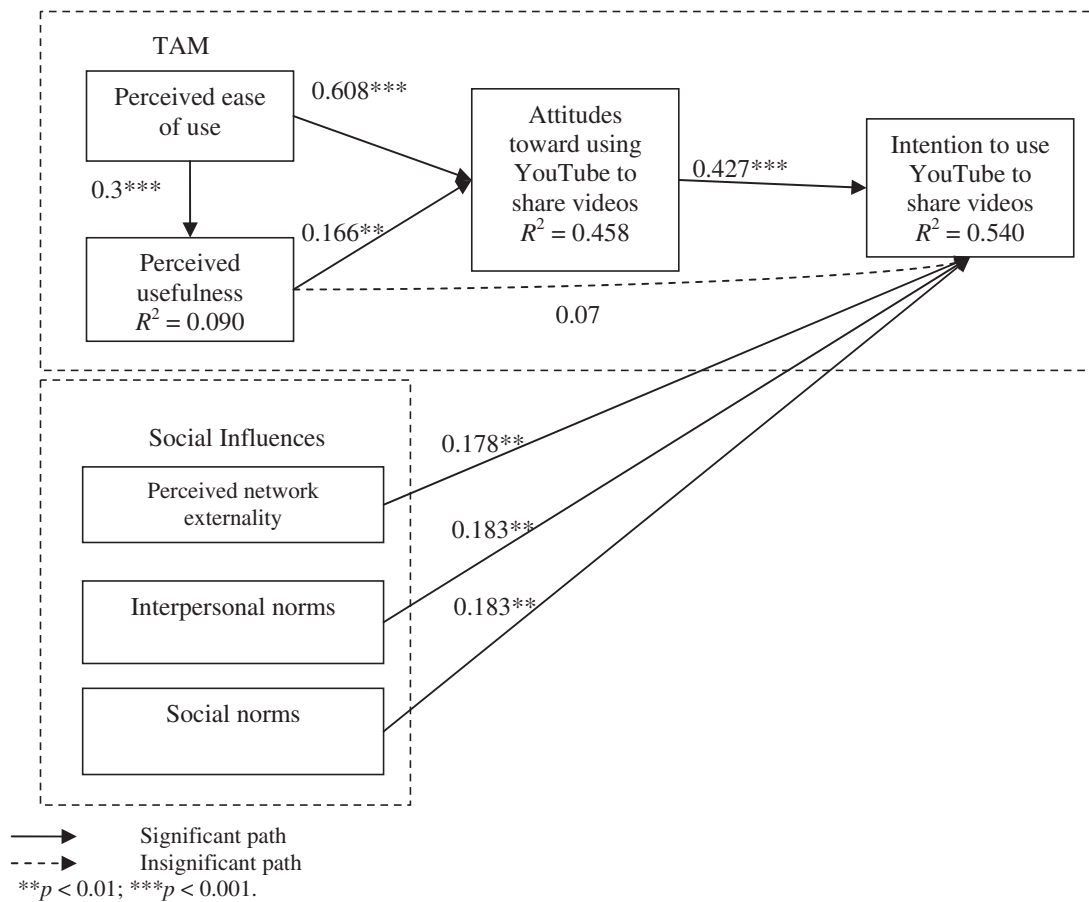


FIG. 3. Structural modeling analysis results.

with direct and indirect effects, have total effects of only 0.141 on the intention to use YouTube to share videos.

All factors from social influences, including perceived network externalities, interpersonal norms, and social norms, have significant effects on intention to use ($\beta = 0.178, p < 0.01$; $\beta = 0.183, p < 0.01$; $\beta = 0.183, p < 0.001$ respectively). Therefore, H6, H7, and H8 are also supported. The model accounts for 54% of variance in the intention to use.

Results of the moderator effect. After analyzing the complete data, we look at them by gender differences. Appendix

C provides the results of the gender comparison fits of the model. The entire fit indices of the male and female groups are all in an acceptable area. Due to the small subsample size and no requirement for a normal distribution of the data, the partial least square (PLS) is an applicable SEM technique for analyzing moderating gender effects.⁷⁰ Table 5 shows the results of the path coefficient comparison by gender. The direct path coefficient from perceived ease of use to attitude for males is significantly larger than for females ($\beta = 0.593, p < 0.001$; $\beta = 0.459, p < 0.001$). With perceived usefulness as the intervening variable, perceived ease of use indirectly affects attitude. The values of these indirect effects are 0.048 for males and 0.047 for females. Therefore, the total effect from perceived ease of use to attitude is 0.641 and 0.506 for males and females respectively. H1 is unanimously supported by the results in both the male and female groups.

As shown by the results, the path coefficient from perceived ease of use to perceived usefulness is significant for both males and females ($\beta = 0.284, p < 0.001$; $\beta = 0.187, p < 0.05$). H2 is also supported. The direct path coefficient from perceived usefulness to attitude for females is significantly larger than for males ($\beta = 0.249, p < 0.01$; $\beta = 0.168, p < 0.05$). H3 is supported. However, the results of H4 are different between the male and female groups. Perceived usefulness does not have a significant effect on intention to use in the male group ($\beta = -0.011, ns$). It does, however, have a significant effect on intention to use in the female group ($\beta = 0.162, p < 0.05$). Therefore, H4 is supported by the female

TABLE 4. EFFECTS ON THE INTENTION TO USE YOUTUBE TO SHARE VIDEOS

Construct	Direct effects	Indirect effects	Total effects
Perceived ease of use		0.260 0.021 0.021	0.302
Perceived usefulness	0.070	0.071	0.141
Attitude	0.427***		0.427
Perceived network externalities	0.178**		0.178
Interpersonal norms	0.183**		0.183
Social norms	0.183**		0.183

p < 0.01; *p < 0.001.

TABLE 5. RESULTS OF MODERATING EFFECTS BY GENDER

Research hypotheses	Path	Male ($R^2 = 0.508$)		Female ($R^2 = 0.566$)	
		Coefficient	<i>t</i> statistic (bootstrap)	Coefficient	<i>t</i> statistic (bootstrap)
H1	PEOU → AT	0.593***	10.918	0.459***	5.389
H2	PEOU → PU	0.284***	3.728	0.187*	2.252
H3	PU → AT	0.168*	2.294	0.249**	3.055
H4	PU → BI	-0.011	-0.338	0.162*	2.189
H5	AT → BI	0.408***	4.678	0.353***	4.331
H6	PNE → BI	0.155*	2.114	0.218**	3.201
H7	IN → BI	0.228***	3.395	-0.016	-0.370
H8	SN → BI	0.113	1.430	0.274**	3.249

PEOU, perceived ease of use; PU, perceived usefulness; AT, attitude toward using YouTube to share video; PNE, perceived network externalities; IN, interpersonal norms; SN, social norms; BI, intention to use YouTube to share video.

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

group but not by the male group. Path coefficients from attitude to intention for males are significantly larger than that for females ($\beta = 0.408$, $p < 0.001$; $\beta = 0.353$, $p < 0.001$ respectively). Therefore, H5 is supported.

It is interesting to see the results of factors covering social influence. Path coefficients from the perceived network externalities to intention to use for females ($\beta = 0.218$, $p < 0.01$) are significantly larger than that for males ($\beta = 0.155$, $p < 0.05$). The male group shows contradictory results with the female group in interpersonal norms and social norms. Interpersonal norms have a significant effect on intention in the male group ($\beta = 0.228$, $p < 0.001$) and an insignificant effect on intention in the female group ($\beta = -0.016$, *ns*). Thus, H7 is supported by males but not by females. In contrast, social norm has no significant effect on intention in the male group ($\beta = 0.113$, *ns*). Thus, H8 is not supported by the male group. In the female group, social norms have a significant effect on intention to use ($\beta = 0.274$, $p < 0.001$).

Finally, we use the difference in *R* square to assess the overall effect size f^2 for the moderating effects of gender on the relationships. Excluding the perceived usefulness variable from the proposed model, we see a reduction in the value of R^2 to levels of 0.507 (male sample; full sample, 0.508) and 0.543 (female sample; full sample, 0.566). The relative impact (effect size²) of perceived usefulness on intention to use is higher in the sample of females ($f^2 = 0.053$) than in males ($f^2 = 0.002$). Next, excluding the interpersonal norms variable, a reduction is seen in the value of R^2 to levels of 0.474 (male sample) and 0.566 (female sample). The relative impact of interpersonal norms on intention to use is higher in males ($f^2 = 0.069$) than in females ($f^2 = 0.000$). Eventually, excluding the social norms variable from the model, a reduction is seen in the value of R^2 to levels of 0.501 (male sample) and 0.514 (female sample). The relative impact of the social norms on behavioral intention is lower among males ($f^2 = 0.014$) than among females ($f^2 = 0.120$).

Discussion

Our research explored the impact of technology acceptance and social influence on user intention to use YouTube to share video. To address this issue, we examined the technology acceptance model and social influence perspective, which are fundamental for video-streaming application ac-

ceptance. The proposed model was tested by an SEM approach. The study strongly confirms adequate reliability, validity, and predictive power. Broadly speaking, most path coefficients in the full model are found to be statistically significant except for the factors of perceived usefulness to intention.

From a technology acceptance perspective, we find that users are willing to use YouTube to share video because of ease-of use and a positive attitude. This means the more users have a positive feeling about YouTube, the more the users intend to choose YouTube to share videos. Contrary to expectations, the result of the relationship between perceived usefulness and intention to use is insignificant. People usually want to use a system or technology if they find it is useful, but our results reveal that perceived usefulness does not directly affect users' intention. One possible explanation is that YouTube users share videos for entertainment value, and it is only a form of pursuing their interest. This result is in line with previous studies,^{7,42} which argue that perceived usefulness plays a critical role only in work-related environments, not for entertainment purposes. From a social influence perspective, the results reveal that the perceived network externalities, interpersonal norms, and social norms all affect users' intentions, indicating that the network effect, peer pressure, and positive judgments in mass media are all important to attract users to share videos on YouTube.

We used the PLS approach to analyze the model by gender differences. The study finds that male and female users are significantly different in their perceived usefulness, interpersonal norms, and social norms toward intention. Perceived usefulness positively influences the intention to use only for female users. Women users seem to have more intentions to share video when they feel that YouTube is useful for them. The path coefficient from interpersonal norms to intention is positive and strongly significant for male users but is not significant for female users. This result implies the more familiar people are to male users and the more people who suggest male users use YouTube to share videos, the more male users intend to choose YouTube to share videos. Interestingly, the result of social norms is contradictory to the result of interpersonal norms. The path coefficient from social norms is positive and significant for female users but is not significant for male users. This highlights that the more the mass media and experts publish positive judgments about

YouTube, the more female users intend to choose YouTube to share videos.

Implication for academic researchers

This study contributes to the theoretical understanding of the factors that drive the usage of online video-streaming Web sites, especially with regard to video-sharing activities, and our results are substantially different from previous studies in the knowledge and information-sharing field. We test the applicability of TAM from the platform perspective and, at the same time, test the factors of social influence to understand the social and psychological factors that give users a stronger intention to use YouTube to share video. We also examine intention to use a particular video-sharing Web site, which has rarely been studied before.

Implication for business practitioners

From a managerial standpoint, the findings of this study reveal that in order to increase users' intentions to use YouTube to share video, it is important to stimulate and foster a positive attitude toward using this Web site. A positive perception of perceived ease of use is crucial, and perceived usefulness may not be important for users. A logical implication is that users of YouTube strongly appreciate the ease of use of a Web site to share their videos. Managers can assign Web designers to design user interfaces, which can increase the perception of ease of use so as to cultivate a positive attitude. For example, this is shown by Web sites with user-friendly interfaces and Web sites that are easy to upload and offer easily managed functions. YouTube's cofounders apparently realized the importance of ease of use from the beginning. According to them, YouTube is 100% focused on creating a platform that is the easiest to use.⁷¹

Our findings also reveal that gender roles significantly moderate social and psychological factors. Given this surprising finding, we suggest that males are more driven by interpersonal communications. The male group tends to concentrate on relatives' and friends' suggestions of new technologies, and they appear to be fairly "fraternal," considering the interpersonal-related factors when using YouTube to share videos. However, the female group's video-sharing behavior is driven by expert opinions. Although the female group may still have been receiving and thinking about advice from friends or colleagues, women had not yet fully internalized and believed the views. Females tend to be quite "rational" regarding sharing behavior, considering the specialized factors when using YouTube. Based on these findings, managers of video-sharing Web sites can focus on interpersonal and specialized issues for male and female groups, which may help marketing managers attract more users to share their videos on the Web site. For example, the size of a network and invitations from familiar people to use the Web site to share videos need to be especially communicated to male users, while for female users, the focus should be more on publishing positive reports from mass media or testimonial (opinion) from experts.

Although our work provides some academic and practical insights, some limitations must be considered. The first is that the samples were self-selected from volunteers via an online-based convenient sampling. Second, the respondents were all from Taiwan. Generalization should be a caution, because

cultural and lifestyle habits may differ among countries. Future research is needed to survey respondents from different countries and bring out cross-cultural comparisons. Third, only a limited set of variables which are examined as the factors of the intentions to use YouTube to share videos. All factors are suggested by technology acceptance and social influence literature. There may be additional factors, such as perceived benefits, since YouTube has launched its reward program YouTube Partner Program.⁷² Therefore, additional dimensions (such as system quality, perceived benefit, and feedback) that may affect users' intentions should be identified in future studies. Finally, while this study focuses on online video-streaming services, many different types of Web 2.0 application (such as Wikipedia, Facebook, and MicroBlog: Plurk) are currently available on the Internet, and many more will be available in the future. Because different innovations are designed for different users in different contexts, factors influencing the adoption behavior are expected to vary across users. In order to add richness to understanding different Web 2.0 applications, future research on the usage intention of different types of innovations should also be conducted.

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References

- Garrison W. Video streaming into the mainstream. *Journal of Audiovisual Media in Medicine* 2001; 24:174-8.
- YouTube. (2008) YouTube fact sheet. http://youtube.com/t/fact_sheet (accessed Nov. 1, 2009).
- Sorkin AR. Dot-com boom echoed in deal to buy YouTube. *New York Times* Oct. 10, 2006, A1.
- Alexa.com. (2008) Website traffic comparisons. www.alexa.com (accessed Nov. 1, 2009).
- Gefen D, Karahanna E, Straub DW. Trust and TAM in online shopping: an integrated model. *MIS Quarterly* 2003; 27: 51-90.
- Hu PJ, Chau PYK, Sheng ORL, Tam KY. Examining the technology acceptance model using physician acceptance of telemedicine technology. *Journal of Management Information Systems* 1999; 16:91-112.
- Moon JW, Kim YG. Extending the TAM for a World-Wide-Web context. *Information & Management* 2001; 38: 217-30.
- Teo TSH, Lim VKG, Lai RYC. Intrinsic and extrinsic motivation in internet usage. *Omega* 1999; 27:25-37.
- Wang CC, Hsu Y, Fang W. Acceptance of technology with network externalities: an empirical study of internet instant messaging services. *Journal of Information Technology Theory & Application* 2004; 6:15-28.
- Zhang X, Prybutok V. Factors contributing to purchase intentions on the internet. *Journal of Internet Commerce* 2003; 2:3-18.
- Agarwal R, Karahanna E. Time flies when you're having fun: cognitive absorption and beliefs about information technology usage. *MIS Quarterly* 2000; 24:665-92.
- Davis FD, Bagozzi RP, Warshaw PR. User acceptance of computer technology: a comparison of two theoretical models. *Management Science* 1989; 35:982-1003.
- Davis FD. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly* 1989; 13:319-40.

14. Fishbein M, Ajzen I. (1975) *Belief, attitude, intention, and behavior: an introduction to theory and research*. Boston: Addison-Wesley.
15. Mathieson K. Predicting user intentions: comparing the technology acceptance model with the theory of planned behavior. *Information Systems Research* 1991; 2:173–91.
16. Chau PYK, Hu PJH. Information technology acceptance by individual professionals: a model comparison approach. *Decision Sciences* 2001; 32:699–719.
17. Crespo ÁH, Rodríguez IARDB. Explaining B2C e-commerce acceptance: an integrative model based on the framework by Gatignon and Robertson. *Interacting with Computers* 2008; 20:212–24.
18. Zimbardo P, Leippe M. (1991) *The psychology of attitude change and social influence*. New York: McGraw-Hill.
19. Ajzen I. The theory of planned behavior. *Organizational Behavior & Human Decision Processes* 1991; 50:179–211.
20. Chang M, Cheung W. Determinants of the intention to use Internet/WWW at work: a confirmatory study. *Information & Management* 2001; 39:1–14.
21. Liker J, Sindi A. User acceptance of expert systems: a test of the theory of reasoned action. *Journal of Engineering & Technology Management* 1997; 14:147–73.
22. Song J, Kim Y. Social influence process in the acceptance of a virtual community service. *Information Systems Frontiers* 2006; 8:241–52.
23. Grandon E, Alshare K, Kwun O. Factors influencing student intention to adopt online classes: a cross-cultural study. *Journal of Computing Sciences in Colleges* 2005; 20:46–56.
24. Nysveen H, Pedersen P, Thorbjørnsen H. Explaining intention to use mobile chat services: moderating effects of gender. *Journal of Consumer Marketing* 2005; 22:247–56.
25. Hsu CL, Lu HP. Why do people play on-line games? An extended TAM with social influences and flow experience. *Information & Management* 2004; 41:853–68.
26. Hsu MH, Chiu CM. Predicting electronic service continuance with a decomposed theory of planned behaviour. *Behaviour & Information Technology* 2004; 23:359–73.
27. Bhattacharjee A. Acceptance of e-commerce services: the case of electronic brokerages. *Systems, Man & Cybernetics, Part A, IEEE Transactions* 2000; 30:411–20.
28. Taylor S, Todd PA. Understanding information technology usage: a test of competing models. *Information Systems Research* 1995; 6:144–76.
29. Taylor S, Todd PA. Assessing IT usage: the role of prior experience. *MIS Quarterly* 1995; 19:561–70.
30. Venkatesh V, Davis FD. A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science* 2000; 46:186–204.
31. Rawlings M, Barry C, Skouteris H, Rawlings D. (2006) *Heinemann psychology one*. 2nd ed. Port Melbourne, Victoria: Heinemann.
32. Premkumar G, Ramamurthy K, Liu HN. Internet messaging: an examination of the impact of attitudinal, normative, and control belief systems. *Information & Management* 2008; 45:451–7.
33. Rogers EM. (1983) *Diffusion of innovations*, New York: Free Press.
34. Rogers EM. (1995) *Diffusion of innovations*, New York: Free Press.
35. Putrevu S. Exploring the origins and information processing differences between men and women: Implications for advertisers. *Academy of Marketing Science Review* 2001; 10:1–14.
36. Darley W, Smith R. Gender differences in information processing strategies: an empirical test of the selectivity model in advertising response. *Journal of Advertising* 1995; 24: 41–65.
37. Moutinho L, Goode M. Gender effects to the formation of overall product satisfaction: a multivariate approach. *Journal of International Consumer Marketing* 1995; 8:71–91.
38. Bendall-Lyon D, Powers T. The impact of gender differences on change in satisfaction over time. *Journal of Consumer Marketing* 2002; 19:12–23.
39. Yang C, Wu CC. Gender and Internet consumers' decision-making. *CyberPsychology & Behavior* 2007; 10:86–91.
40. Gefen D, Straub D. Gender differences in the perception and use of e-mail: an extension to the technology acceptance model. *MIS Quarterly* 1997; 21:389–400.
41. Venkatesh V, Morris MG. Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior. *MIS Quarterly* 2000; 24:115–39.
42. Hsu CL, Lin JCC. Acceptance of blog usage: the roles of technology acceptance, social influence and knowledge sharing motivation. *Information & Management* 2008; 45:65–74.
43. Jackson CM, Chow S, Leitch RA. Toward an understanding of the behavioral intention to use an information system. *Decision Sciences* 1997; 28:357–89.
44. O'Reilly T. (2005) What is Web 2.0—design patterns and business models for the next generation of software. www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html (accessed Nov. 1, 2009).
45. Liebowitz SJ, Margolis SE. Network externality: an uncommon tragedy. *Journal of Economic Perspectives* 1994; 8: 133–50.
46. Katz ML, Shapiro C. Network externalities, competition, and compatibility. *American Economic Review* 1985; 75:424–40.
47. Herr PM, Kardes FR, Kim J. Effects of word-of-mouth and product-attribute information on persuasion: an accessibility-diagnostics perspective. *Journal of Consumer Research* 1991; 17:454–62.
48. Holak S. Determinants of innovative durables adoption: an empirical study with implications for early product screening. *Journal of Product Innovation Management* 1988; 5: 50–69.
49. Agarwal R, Prasad J. The role of innovation characteristics and perceived voluntariness in the acceptance of information technologies. *Decision Sciences* 1997; 28:557–82.
50. Brancheau J, Wetherbe J. The adoption of spreadsheet software: testing innovation diffusion theory in the context of end-user computing. *Information Systems Research* 1990; 1: 115–43.
51. Wangenheim F, Bayon T. The effect of word of mouth on service switching. *European Journal of Marketing* 2003; 38: 1173–85.
52. Friedkin NE. (1998) *A structural theory of social influence*. New York: Cambridge University Press.
53. Karahanna E, Straub DW, Chervany NL. Information technology adoption across time: a cross-sectional comparison of pre-adoption and post-adoption beliefs. *MIS Quarterly* 1999; 23:183–213.
54. Leung L, Wei R. Seeking news via the pager: an expectancy-value study. *Journal of Broadcasting & Electronic Media* 1999; 43:299–315.
55. Lee Y. An empirical investigation into factors influencing the adoption of an e-learning system. *Online Information Review* 2006; 30:517–41.
56. Song J, Wladen E. How consumer perceptions of network size and social interactions influence the intention to adopt

- peer-to-peer technologies. *International Journal of E-Business Research* 2007; 3:49–66.
57. Hsu MH, Chiu CM. Internet self-efficacy and electronic service acceptance. *Decision Support Systems* 2004; 38:369–81.
 58. Arbuckle JL. (2006) *AMOS user guide 7.0*. Spring House, PA: Amos Development Corporation.
 59. Byrne BM. (2001) *Structural equation modeling with AMOS: basic concepts, applications, and programming*. Mahwah, NJ: Erlbaum.
 60. Hair J, Anderson RE, Tatham RL, et al. (1992) *Multivariate data analysis with reading*. New York: Macmillan.
 61. Bagozzi R, Yi Y. On the evaluation of structural equation models. *Journal of the Academy of Marketing Science* 1988; 16:74–94.
 62. Fornell C, Larcker D. Evaluating structural equation models with unobservable measurement error. *Journal of Marketing Research* 1981; 18:39–50.
 63. Kline R. (2005) *Principles and practice of structural equation modelling*. 2nd ed. New York: Guilford.
 64. Anderson J, Gerbing D. Structural equation modeling in practice: a review and recommended two-step approach. *Psychological Bulletin* 1988; 103:411–23.
 65. Bagozzi R, Phillips L. Representing and testing organizational theories. *Administrative Science Quarterly* 1982; 27: 459–89.
 66. Joreskog KG, Sorbom D. (1993) *LISREL 8 structural equation modeling with the SIMPLIS command language*. Hillsdale, NJ: Erlbaum.
 67. Bentler P, Bonett D. Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin* 1980; 88:588–606.
 68. Hu L, Bentler P. Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Structural Equation Modeling* 1999; 6:1–55.
 69. Alwin D, Hauser R. The decomposition of effects in path analysis. *American Sociological Review* 1975; 40:37–47.
 70. Chin WW. (1998) The partial least squares approach to structural equation modeling. In Marcoulides G, ed. *Modern methods for business research*. Mahwah, NJ: Erlbaum, pp. 295–336.
 71. Tan J. (2007) YouTube will be the best: Steve Chen. *Taipei Times*. <http://www.taipetimes.com/News/biz/archives/2007/06/12/2003364937> (accessed Nov. 1, 2009).
 72. YouTube. (2007) The YouTube Partner program: cash in your creativity. <http://www.youtube.com/partners> (accessed Nov. 1, 2009).

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Appendix A

INSTRUMENTS OF RESEARCH (5-POINT LIKERT-TYPE SCALE)

Perceived usefulness

- (PU1) Using YouTube to share videos enables me to accomplish my work/learning/life more quickly.
 (PU2) Using YouTube to share videos would improve my work/learning/life performance.
 (PU3) Using YouTube to share videos would enhance my work/learning/life effectiveness.

Perceived ease of use

- (PEOU1) It is easy to learn to use YouTube's video-sharing Web site.
 (PEOU2) It is easy for me to become skillful at using YouTube to share videos.
 (PEOU3) It is easy to use YouTube's video-sharing Web site.

Attitude toward using YouTube to share video

- (AT1) I like to use YouTube to share videos.
 (AT2) I feel good about using YouTube to share videos.
 (AT3) Overall, my attitude toward using YouTube to share videos is favorable.

Perceived network externalities

- (PNE1) Most people are using YouTube to share their videos.
 (PNE2) The number of people using YouTube to share their videos will increase the value of my videos.
 (PNE3) Many people will use YouTube to share their videos in the future.

Interpersonal norms

- (IN1) My friends think that I should use YouTube to share my videos.
 (IN2) My colleagues think that I should use YouTube to share my videos.
 (IN3) My family thinks that I should use YouTube to share my videos.

Social norms

- (SN1) I read/saw news reports that using YouTube was a good way to share videos.
 (SN2) The popular press depicted a positive sentiment for using YouTube to share videos.
 (SN3) Expert opinions depicted a positive sentiment for using YouTube to share videos.

Intention to use YouTube to share video

- (BI1) I have an intention of using YouTube to share videos.
 (BI2) I will frequently use YouTube to share videos in the future.
 (BI3) I will strongly recommend others to use YouTube to share videos in the future.

Appendix B

PAIRWISE DISCRIMINANT ANALYSIS OF CONSTRUCTS

<i>Model</i>	χ^2_{df}	χ^2 difference from original
Original CFA model	$\chi^2_{df} = 214.2$	
Combining intention with perceived usefulness	$\chi^2_{df} = 673.8$	459.6
Combining intention with perceived ease of use	$\chi^2_{df} = 538.9$	324.7
Combining intention with perceived network externalities	$\chi^2_{df} = 389.1$	174.9
Combining intention with interpersonal norms	$\chi^2_{df} = 518.0$	303.8
Combining intention with social norms	$\chi^2_{df} = 441.4$	227.2
Combining intention with attitude	$\chi^2_{df} = 349.2$	135
Combining attitude with perceived usefulness	$\chi^2_{df} = 514.7$	300.5
Combining attitude with perceived ease of use	$\chi^2_{df} = 404.3$	190.1
Combining attitude with perceived network externalities	$\chi^2_{df} = 253.7$	39.5
Combining attitude with interpersonal norms	$\chi^2_{df} = 526.5$	312.3
Combining attitude with social norms	$\chi^2_{df} = 364.1$	149.9
Combining perceived usefulness with perceived ease of use	$\chi^2_{df} = 706.8$	492.6
Combining perceived usefulness with perceived network externalities	$\chi^2_{df} = 535.1$	320.9
Combining perceived usefulness with interpersonal norms	$\chi^2_{df} = 587.7$	373.5
Combining perceived usefulness with social norms	$\chi^2_{df} = 640.6$	426.4
Combining perceived ease of use with perceived network externalities	$\chi^2_{df} = 415.4$	201.2
Combining perceived ease of use with interpersonal norms	$\chi^2_{df} = 576.9$	362.7
Combining perceived ease of use with social norms	$\chi^2_{df} = 565.4$	351.2
Combining perceived network externalities with interpersonal norms	$\chi^2_{df} = 573.4$	359.2
Combining perceived network externalities with social norms	$\chi^2_{df} = 408.0$	193.8
Combining interpersonal norms with social norms	$\chi^2_{df} = 456.8$	242.6

Difference of χ^2 at $df = 6$ and $p < 0.001$ is at least 22.46.
The results show that all of the differences of χ^2 are greater than 39.5.

Appendix C

GENDER COMPARISON FITS OF MODEL

<i>Fit index</i>	<i>Recommended criteria</i>	<i>Overall results</i>	<i>Gender</i>	
			<i>Male (n = 206)</i>	<i>Female (n = 135)</i>
χ^2/df	<3	1.879	1.628	1.375
Goodness of fit index	>0.8	0.936	0.911	0.891
Adjusted goodness of fit index	>0.8	0.904	0.867	0.836
Normed fit index	>0.9	0.938	0.914	0.899
Tucker-Lewis index	>0.9	0.960	0.952	0.959
Comparative fit index	>0.9	0.970	0.964	0.969
Root-mean-squared error of approximation	<0.08	0.051	0.055	0.053
Root-mean residual	<0.05	0.027	0.031	0.035

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1. María-del-Carmen Alarcón-del-Amo, Carlota Lorenzo-Romero, Giacomo Del Chiappa. 2014. Adoption of social networking sites by Italian. *Information Systems and e-Business Management* **12**:2, 165-187. [[CrossRef](#)]
2. Siu Lo, Gerard van Breukelen, Gjalt-Jorn Peters, Gerjo Kok. 2014. Teleconference Use among Office Workers: An Interorganizational Comparison of an Extended Theory of Planned Behavior Model. *Administrative Sciences* **4**:1, 51-70. [[CrossRef](#)]
3. Amanda J. Porter, Iina Hellsten. 2014. Investigating Participatory Dynamics Through Social Media Using a Multideterminant “Frame” Approach: The Case of Climategate on YouTube. *Journal of Computer-Mediated Communication* n/a-n/a. [[CrossRef](#)]
4. Feng-Yang Kuo, Chih-Yi Tseng, Fan-Chuan Tseng, Cathy S. Lin. 2013. A Study of Social Information Control Affordances and Gender Difference in Facebook Self-Presentation. *Cyberpsychology, Behavior, and Social Networking* **16**:9, 635-644. [[Abstract](#)] [[Full Text HTML](#)] [[Full Text PDF](#)] [[Full Text PDF with Links](#)]
5. G. Ongena, L.A.L. van de Wijngaert, E. Huizer. 2013. Designing online audiovisual heritage services: an empirical study of two comparable online video services. *New Review of Hypermedia and Multimedia* **19**:1, 61-79. [[CrossRef](#)]
6. Doo Young Lee, Mark R. Lehto. 2013. User acceptance of YouTube for procedural learning: An extension of the Technology Acceptance Model. *Computers & Education* **61**, 193-208. [[CrossRef](#)]
7. Guido Ongena, Lidwien van de Wijngaert, Erik Huizer. 2012. Exploring determinants of early user acceptance for an audio-visual heritage archive service using the vignette method. *Behaviour & Information Technology* 1-9. [[CrossRef](#)]
8. Beverly A. Bondad-Brown, Ronald E. Rice, Katy E. Pearce. 2012. Influences on TV Viewing and Online User-shared Video Use: Demographics, Generations, Contextual Age, Media Use, Motivations, and Audience Activity. *Journal of Broadcasting & Electronic Media* **56**:4, 471-493. [[CrossRef](#)]
9. Noam Lapidot-Lefler, Azy Barak. 2011. Effects of anonymity, invisibility, and lack of eye-contact on toxic online disinhibition. *Computers in Human Behavior* . [[CrossRef](#)]
10. Michael Knösel, Klaus Jung. 2011. Informational value and bias of videos related to orthodontics screened on a video-sharing Web site. *The Angle Orthodontist* **81**:3, 532-539. [[CrossRef](#)]