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A STUDY OF THE USE BEHAVIOR OF LINE TODAY IN TAIWAN BASED ON THE UTAUT2 MODEL

Estudo sobre o comportamento de uso do LINE TODAY em Taiwan baseado no modelo UTAUT2

Un estudio sobre el comportamiento de uso de LINE TODAY en Taiwán basado en el modelo UTAUT2

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ABSTRACT

As mobile business has flourished and people's news-reading habits have changed, the use of mobile news platforms has become a new trend. Due to this change, the use rate of LINE TODAY news from Taiwan became the world's highest in 2018. The study uses the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model to explore behavioral intentions and the use behavior of LINE TODAY in Taiwan. A total of 199 valid samples were collected. Results show that performance expectancy, effort expectancy, social influence, facilitating conditions, and habit have positive impacts on behavior intentions. Behavior intentions and habit have positive impacts on use behavior. Results provide LINE TODAY and its peers with an improvement strategy and a reference for future development and research into mobile news platforms.

KEYWORDS | Mobile news platform, behavioral intention, use behavior, LINE TODAY, UTAUT2.

RESUMO

À medida que os negócios baseados em tecnologia móvel têm crescido e mudado o hábito de leitura de notícias das pessoas, o uso de plataformas móveis de notícias tem se tornado uma nova tendência. Devido a essa mudança, a taxa de utilização da plataforma de notícias Line Today de Taiwan foi a mais alta do mundo em 2018. O estudo utiliza o Modelo Estendido ao Consumo da Teoria Unificada da Aceitação e Uso de Tecnologia (Utaut2) para explorar as intenções comportamentais e o comportamento de uso do Line Today em Taiwan. Foi coletado um total de 199 amostras válidas. Os resultados mostram que a expectativa de desempenho, a expectativa de esforço, a influência social, as condições facilitadoras e o hábito afetam positivamente as intenções de comportamento. As intenções de comportamento e o hábito afetam positivamente o comportamento de uso. Os resultados oferecem ao Line Today e seus similares uma estratégia de aprimoramento, bem como referências para desenvolvimento e pesquisas futuras sobre plataformas móveis de notícias.

PALAVRAS-CHAVE */ Plataforma móvel de notícias, intenção comportamental, comportamento de uso, Line Today, Utaut2.*

RESUMEN

A medida que los negocios basados en tecnología móvil han prosperado y cambiado los hábitos de lectura de noticias de las personas, el uso de plataformas móviles de noticias se ha convertido en una nueva tendencia. Debido a este cambio, la tasa de uso de la plataforma de noticias LINE TODAY en Taiwán fue la más alta del mundo en 2018. El estudio utiliza el modelo de teoría unificada de la aceptación y uso de tecnología 2 (UTAUT2) para explorar la intención conductual y el comportamiento de uso de LINE TODAY en Taiwán. Se recogió un total de 199 muestras válidas. Los resultados muestran que la expectativa de desempeño, expectativa de esfuerzo, influencia social, las condiciones facilitadoras y el hábito tienen impactos positivos en la intención conductual. A su vez, la intención conductual y el hábito tienen impactos positivos en el comportamiento de uso. Los resultados proporcionan a LINE TODAY y sus pares una estrategia de mejora, así como referencias para desarrollo e investigación futuros sobre las nuevas plataformas móviles de noticias.

PALABRAS CLAVE */ Plataforma móvil de noticias, intención conductual, comportamiento de uso, LINE TODAY, UTAUT2.*

INTRODUCTION

With the rapid development of mobile commerce, information technology is quietly changing the habits of modern people. The pattern of consumer behavior has also changed from "mobile as a priority" to "mobile only", which not only alters the competitive relationship of the media circle, but also gives rise to a new wave of service needs (Market Intelligence & Consulting Institute, MIC, 2016). As the need for socialization, information, games or shopping has increased, social media has become an important marketing strategy for business and a necessity in people's daily lives (Appel, Grewal, Hadi & Stephen (2019).

Digital technology has changed the news-reading habits of people. Readers' access to news has changed from traditional newspapers to social platforms by way of mobile devices. The diversification of mobile news delivery services enables users to access news content easily at anytime and anywhere on mobile devices by visiting mobile news websites, or logging on to social media services (Lee, Lindsey & Kim, 2017). As social media platforms changed the behavior of online users, the way of going directly to news sites to browse major news stories, or use Google to search for major news events, has changed dramatically (China Times, 2015).

In recent years, LINE has been committed to providing diversified services that are centered on user needs, including news, games, maps, payments, and e-commerce in five major areas (Business Next 2016; China Times, 2017b). TODAY is a global mobile news platform provided by LINE that offers premium content from multiple partner media, allowing users to browse, store, leave messages or share news on LINE TODAY at any time. Users can go directly to LINE TODAY to read news by swiping left and right to the news page, and swiping up and down to browse rich news content topics such as focus, entertainment, and life (LINE TODAY, 2017). In 2018, LINE's monthly active users in Taiwan reached a new peak of 21 million, and its usage rate of three major features such as LINE functions, stickers and LINE TODAY news is the world's first (Business Next, 2008).

According to ETtoday (2018), Taiwanese readers rely heavily on social media, especially Facebook and Line, with 56% of them getting their news from them, but these platforms have relatively little social responsibility. The Digital News Report of 2018 pointed out that fake news produced in China last year spread to Taiwan and the Taiwan media, which was deeply influenced by the social media and contributed to the spread of this fake news. It is clear that social media platforms can generate data easily and quickly, and spread instant messages, which makes more and more people vulnerable to intentionally misleading information. Compared with traditional news sources, however, the credibility of contents circulating on social media platforms is debatable due to independence of freedom of expression. (Meel & Vishwakarma, 2019).

The main users of LINE TODAY in Taiwan are over 25 years old, and the proportion of males is significantly higher than that of females. LINE TODAY is convenient for users to search for and read news in the chat scene. Most female users are used to pressing likes instead of leaving messages. Markets such as Indonesia and Thailand like to see original community content. Furthermore, the advantage of LINE TODAY lies in its large user base and stickiness, which other media platforms do not have (ChinaTimes, 2017a).

The aggregated media platform must satisfy not only the rich categories and real-time content supply, but also emphasize personalization and what content people want to see. Compared to other news platforms, LINE TODAY has changed the habits of users who read news and the way they use the site. In Taiwan, LINE TODAY has a large number of users, which facilitates online surveys, and it is worth observing user adoption factors. Therefore, the purpose of this study is to explore the behavior of using a cell phone to read news in substitution of the traditional media, taking LINE TODAY as a case study. The study is based on the Unified Theory of Acceptance and

Use of Technology 2 (UTAUT2) model with good explanatory power for understanding the behavioral intentions and use behavior of LINE TODAY.

The study is divided into five parts as follows: The first part is an introduction, which describes the background, purpose and significance of this study. The second part discusses the meaning of the relevant literature review. The third part provides the conceptual framework along with hypotheses and the statistical methods used. The fourth part summarizes the collected data, the results of the data analysis and the findings. The final part presents a meaningful conclusion, including the contributions, recommendations and implications of this study, as well as future directions.

LITERATURE REVIEW

Rapid changes in digital technology have enabled new technologies to continue to evolve in just a few years, driving changes in consumption patterns and the development of social media, and redefining the definition of news communication. Social platforms not only introduce the consumption of images, videos and music, but also help consumers judge the authenticity of news by providing social commentary (TAVIS, 2012). The popularity of mobile devices on the social platform has completely disrupted the tradition of the news industry. More than 50% of mobile device users in Taiwan use the Internet as their main source of news, including social media. The trend of news services using a mobile social platform is mainly due to the rise of social networking sites.

In the beginning, the news portal only allowed readers to receive news in one direction until the YAHOO! KIMO news arrived, when the two-way message function appeared. But since the launch of LINE TODAY in 2016, it has become a life partner of Taiwanese people. LINE TODAY is different from YAHOO! KIMO, mainly because of its mobile device applications, while YAHOO! KIMO news is a product of the personal computer (PC) era. LINE TODAY has created a content portal that allows readers to watch the news with one click. It is also available for providing diversified and integrated content. After LINE provided its LINE Points service, people saw the news on their PC to LINE TODAY and developed the habit of watching it several times a day (Global Views, 2018). Many Taiwanese use LINE TODAY to watch the news, and the media platform is growing so rapidly that it is worthy of attention because of its development.

The technology acceptance model and related theories

Many studies have explored the adoption of different models for user acceptance of new technologies, such as the theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), and the Unified Theory of Acceptance and Use of Technology (UTAUT), and UTAUT2 models. Davis (1989) suggested that the proposed TAM was the most widely used and accepted tool in various research fields, mainly based on the TRA of Fishbein and Ajzen (1975), which tries to predict and understand human behavior.

TAM is primarily used for explaining the adoption of information systems by employees of the organization and to predict the behavior of users. Perceived usefulness and perceived ease of use are the two important belief variables of this model, and they affect the attitude towards using technology, which in turn affects the user's intention to use it and their actual behavior. The model only focuses on the perspective of these two variables, however, and the impact of other important external variables may be ignored. Studies also show only a 40%

accuracy in predicting the user's use of the system, although TAM has a streamlined and clear theoretical foundation. Therefore, some studies have improved on the model and offered their suggestions.

Venkatesh, Morris, Davis, and Davis (2003) made improvements and suggestions based on the limitations of previous models, and developed the UTAUT model. Their studies confirmed that the identifying factors in the UTAUT model directly affect behavior intentions and can predict actual use behavior. Although their UTAUT model has a good explanatory power in the research on the acceptance of new technology, in some recent studies, the results and the capacity for explaining individuals' acceptance of technology are not exactly the same as their results (Chao, 2019).

The UTAUT model generally focuses on explaining employee acceptance of the new system within the organization, but considers only the external motivation for using information technology, and not for explaining the non-organizational adoption of new technologies and considering users' internal motivations. Therefore, Venkatesh, Thong, and Xu (2012) proposed an extension to the UTAUT model, namely UTAUT2, which focused on individual perspectives in technology adoption. They changed the context from organization to consumer, and introduced new constructs and relationships into the model. The UTAUT2 model revised the above models and addressed the need to include significant predictors that can be used in various contexts of user adoption of mobile technology.

Recent studies, however, such as those by Dwivedi, Rana, Jeyaraj, Clement and Williams (2019), have argued that the UTAUT model theoretically infers relationships that may not be applicable to all contexts, pays no attention to some potentially important relationships, and also excludes some constructs that may be crucial for explaining Information Technology (IT)/Information Systems (IS) acceptance and use. Shiferaw and Mehari (2019), therefore, extended UTAUT and used context-specific determinants in their research to improve its predictability.

Unlike other studies that mostly use UTAUT or UTAUT2 as their theoretical basis, Hallikainen, Alamäki and Laukkanen (2019) considered that existing research generally focuses on online behavior, especially mobile adoption, and believes that technology adoption is innovative behavior. Given this limitation, they extended the lead user theory as the theoretical framework, based on the personal innovativeness theory, and focused on innovative behavior in leading users of business mobile services. Their targeted samples, however, were formed by business decision-makers, so opinions may differ from the views of consumers.

Of all the theories or models that focus on individual perspectives and use them to predict technology acceptance and use, the UTAUT2 model has gradually become the theoretical basis of most studies and has high explanatory power. As a result, this study attempts to verify whether this model has good explanatory power, its purpose being to explore behavioral intentions with regard to LINE TODAY and use behavior, and the UTAUT2 model is suitable for this study. The following sections further discuss UTAUT and UTAUT2 respectively.

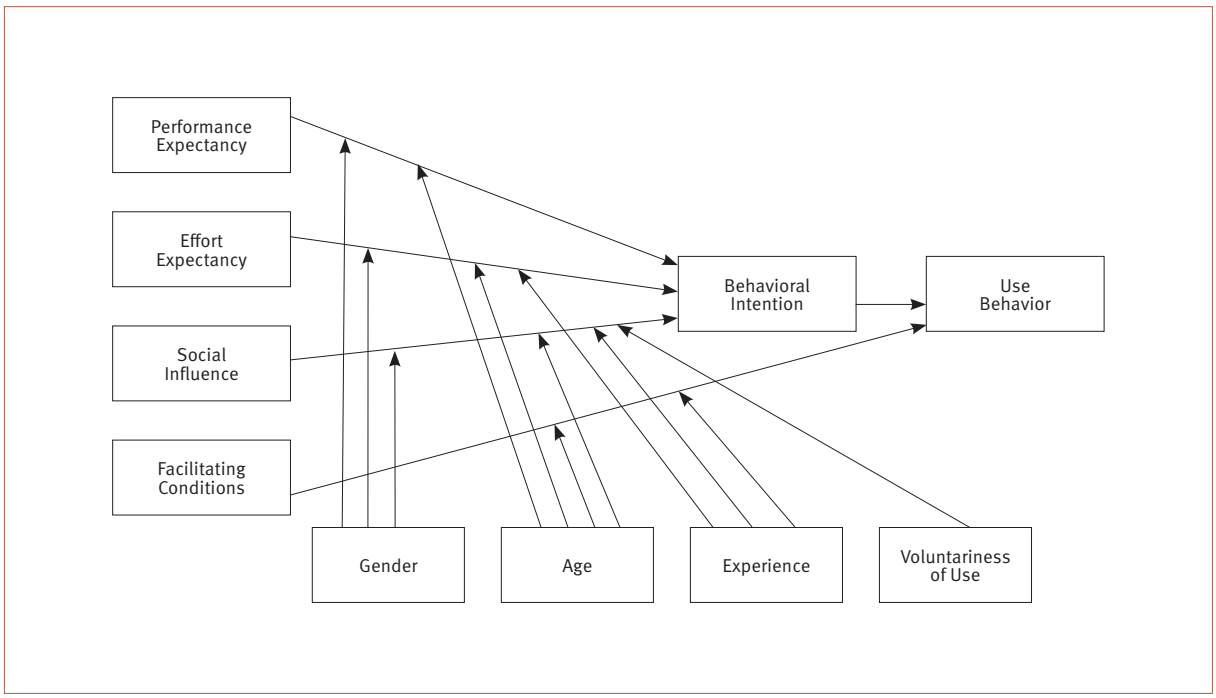
The UTAUT model

Venkatesh et al. (2003) collated relevant studies over the years and concluded that empirical theory has different explanatory abilities in different categories. They compared the eight models from pervious technology acceptance models, discussed their differences, cross-validated the data, and put forward the unified theory of acceptance and use of technology (UTAUT). The UTAUT model includes the following: 1. Theory of Planned Behavior (TPB); 2. Theory of Reasoned Action (TRA); 3. Technology Acceptance Model (TAM); 4. Model of PC Utilization (MPCU); 5. Motivational Model (MM); 6. Innovation Diffusion Theory (IDT); 7. Combined TAM and TPB (C-TAM-TPB); and 8. Social

Cognitive Theory (SCT). They integrated and improved on the previous technology acceptance model to provide a more complete model of how information technology is used. The explanatory power for user behavior is up to 70%, which is much higher than in other theoretical models in the past, which indicates that their adjustment variables provide a more complete explanatory power for user behavior (Cao & Niu, 2019; Chopdar, Korfiatis, Sivakumar, & Lytras, 2018).

In the UTAUT model shown in Figure 1, the arguments put forward in the pertinent literature were integrated into four dimensions, including performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating conditions (FC), and four moderating variables were added: gender, age, experience and voluntariness of use. The UTAUT model advocates that behavior intention affects user behavior. Behavior intention is affected mainly by performance expectancy, effort expectancy and social influence, while the two factors directly affecting user behavior are facilitating conditions and behavior intention. The above-mentioned influence will be affected by four interference variables: gender, age, experience and voluntariness of use.

Figure 1. **UTAUT model**

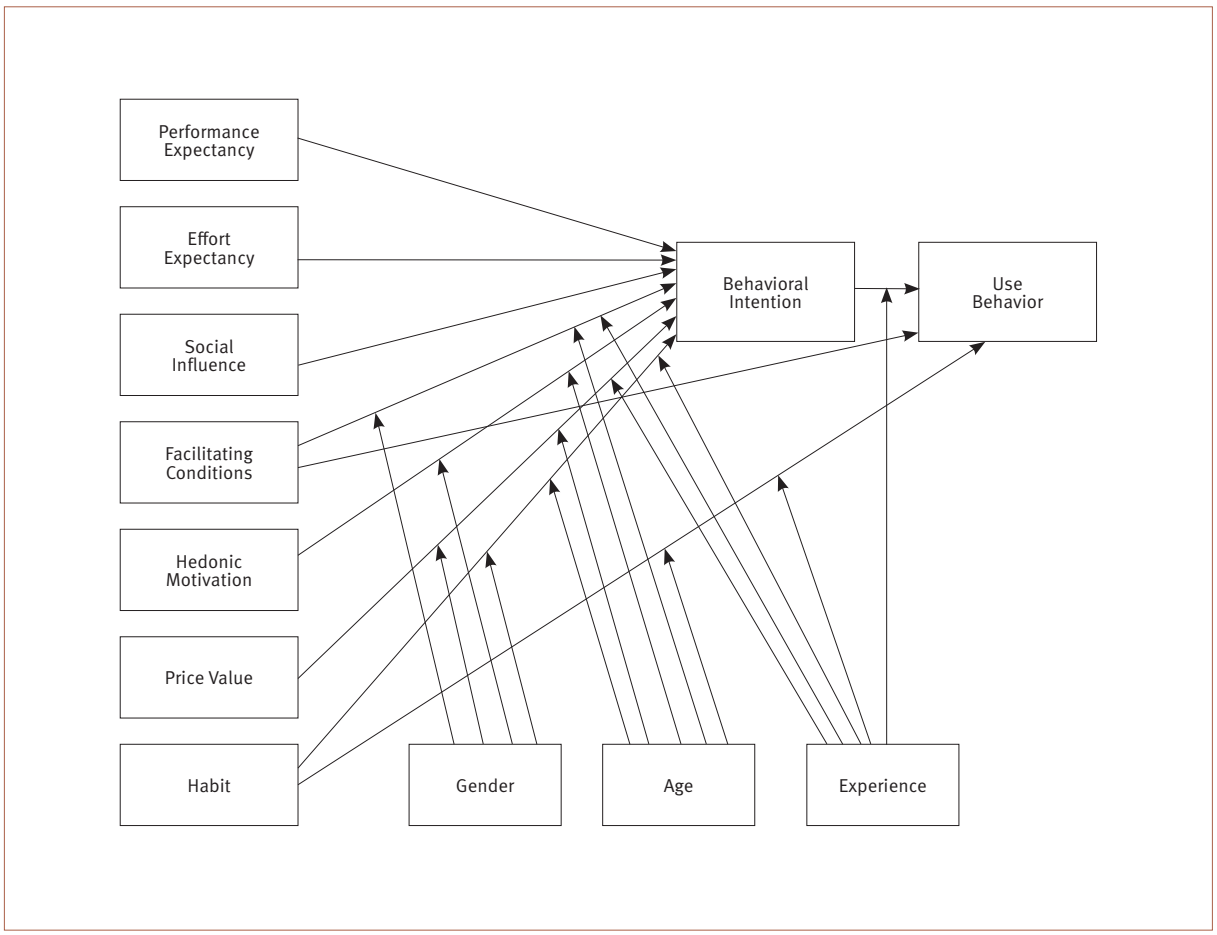


Source : Venkatesh *et al.*, 2003.

The UTAUT2 model

After referring to the empirical research, Venkatesh, et al. (2012) revised and extended the existing UTAUT model by adding three new factors, hedonic motivation, price value and habit, to the theoretical framework, as shown in Figure 2. In comparison with the UTAUT model, the UTAUT2 model considered individual perspectives in technology adoption and is more explanatory because it reduces the adjustment variables to age, gender and experience. The explanatory power of behavior intention in the UTAUT2 model increased from 56% to 74%. The explanatory power of the use of technology also increased from 40% to 52%.

Figure 2. **UTAUT2 model**



Source : Venkatesh *et al.*, 2012,

Since the UTAUT model was initially discussed from the viewpoint of the users of enterprise systems, Venkatesh et al. (2012) believed that it could be widely used with different technologies. Therefore, besides adding new variables, the UTAUT2 model also introduces some changes in the relationship between the original variables, for example: facilitating conditions not only affect use behavior, but also affect behavioral intention. The UTAUT2 model also slightly revised the definitions of performance expectancy, effort expectancy, social influence and facilitating conditions. As for the adjustment variables, voluntariness of use is no longer discussed in this model.

Based on the UTAUT2 model, many scholars have conducted evaluations and related studies to verify use behavior and intention, and all of these investigations have good explanatory power (Ramírez-Correa, Rondán-Cataluña, Arenas-Gaitán, & Martín-Velicia, 2019; Herrero, Martín, & Salmones, 2017; Alalwan, 2020, Tamilmani, Rana, Prakasam, & Dwivedi, 2019). It is believed that the use of the UTAUT2 model for exploring individual adoption behavior is closer to the user's current environment. Therefore, the study analyzed the UTAUT2 model as the basic framework for exploring use behavior and the factors associated with using LINE TODAY. "Hedonic motivation" and "price value" will not be included in this study because LINE TODAY is a free mobile news platform with no cost considerations and lacks hedonic motivation. Hypotheses of the study are developed to explore the relationships between variables, based on the conceptual framework.

The effect of performance expectancy, effort expectancy, social influence, facilitating conditions and habit on behavioral intention

Recent studies into mobile social network games (Baabdullah, 2018), computer supported collaborative classrooms (Ali, Nair, & Hussain, 2016), and video streaming platforms (Weng & Huang, 2017) have found that performance expectancy, effort expectancy, social influence and facilitating conditions have positive impacts on the behavioral intention to use new technologies. Habits also affect the behavioral intention to use new technologies (Ramírez-Correa et al., 2019). The study concludes that the greater the user's performance expectancy, effort expectancy, and facilitating conditions for using LINE TODAY, the greater their intention to use it will be. The opinions of others and habit also affect the intention to use LINE TODAY. The hypotheses were as follows:

H1: Performance expectancy positively affects behavioral intention to use LINE TODAY.

H2: Effort expectancy positively affects behavioral intention to use LINE TODAY.

H3: Social influence positively affects behavioral intention to use LINE TODAY.

H4: Facilitating conditions positively affect behavioral intention to use LINE TODAY.

H5: Habit positively affects behavioral intention to use LINE TODAY.

The effect of behavioral intention, facilitating conditions and habit on use behavior

Venkatesh et al. (2012) found that both behavioral intentions and facilitating conditions have direct impacts on the use behavior with regard to technology. Based on the technology environment of users, after incorporating the habit variable into the UTAUT2 model they found that habit affects use behavior when new technologies are being adopted. Meanwhile, related studies into online mobile games and video streaming platforms also support the correlation (Ramírez-Correa et al., 2019; Weng & Huang, 2017). Based on the above, this study infers that the greater the behavioral intention, facilitating conditions and habit of using LINE TODAY, the greater the use behavior of using LINE TODAY. The hypotheses are as follows:

H6: Behavioral intention positively affects use behavior with regard to using LINE TODAY.

H7: Facilitating conditions positively affect use behavior with regard to using LINE TODAY.

H8: Habit positively affects use behavior with regard to using LINE TODAY.

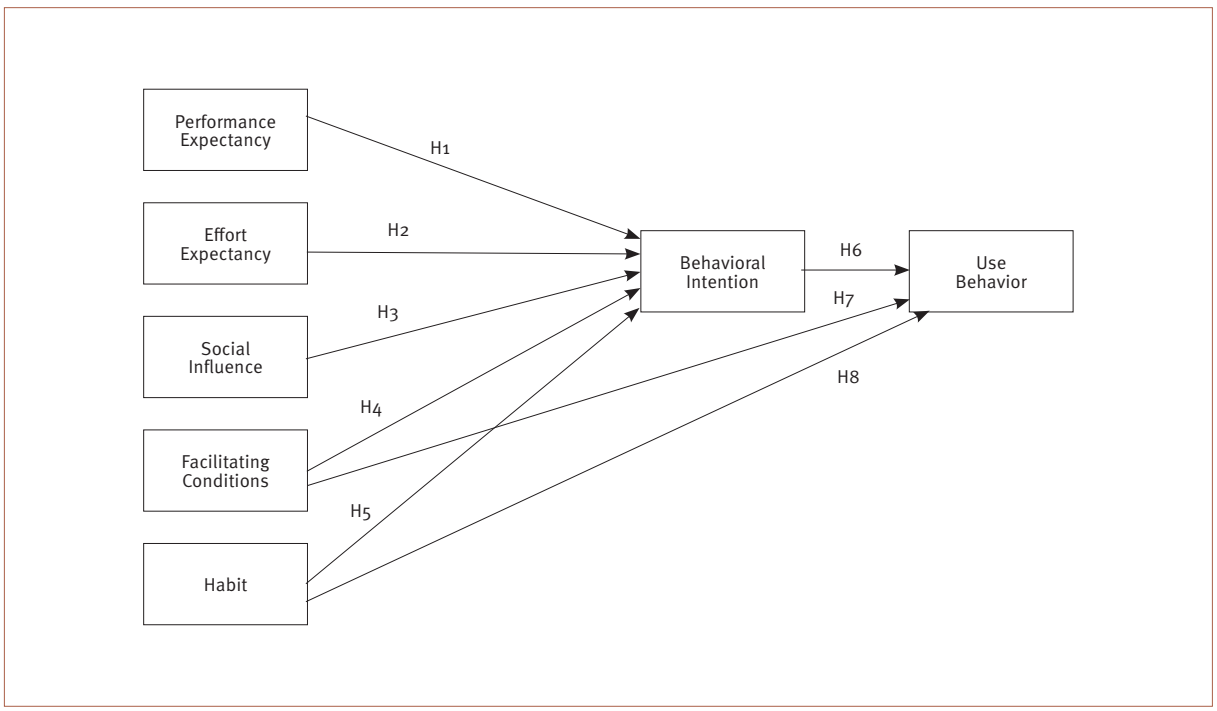
RESEARCH METHOD

Based on the above research motivations and purposes, this study established the research model and hypotheses and the operational definitions by studying and discussing relevant literature. Considering time, economy and resource constraints and other factors related to data collection, the study adopted a non-random and convenient sampling method, so the sources of the respondents are not excessively concentrated in a particular group, but spread among users on different levels. A face-to-face and online questionnaire (www.surverycake.com) were simultaneously distributed to the respondents who were asked to complete the questionnaire by scanning the QR code.

Research model and operational definition

The study constructed a research framework (as shown in Figure 3) based on the UTAUT2 model that explains the use behavior of LINE TODAY. In this study, the definition of performance expectancy refers to the extent to which users believe that LINE TODAY can make their news viewing experience more efficient or rewarding. Effort expectancy refers to the user's perception of the simplicity of operating LINE TODAY. Social influence refers to the extent to which users feel the influence of their relatives and friends on their use of LINE TODAY. Facilitating conditions refer to the process by which users believe that the available software and hardware technologies and equipment resources can support individuals who use LINE TODAY. Habit is defined as the extent to which users use LINE TODAY, and is affected by former operating experiences and habits. Behavioral intention refers to specific actions or future behavioral orientations taken by users after using LINE TODAY. Use behavior refers to the time and frequency with which the user actually uses LINE TODAY.

Figure 3. **Research model of the study**



Measurement

The study uses the questionnaire survey method to collect data and expert opinions were sought with regard to amending the questionnaire. The questionnaire structure of the study is divided into three parts. At the beginning of the questionnaire, the respondents were asked if they had ever used LINE TODAY. If so, they continued to fill in the questionnaire. If not, they stopped answering. Finally, the first and third parts of the questionnaire were measured on the nominal scale, while the second part of the questionnaire adopted a 5-point Likert scale to measure the degree of consent of the respondent.

The questions were compiled into a scale containing 27 measurement questions, where 1 is "Strongly disagree" and 5 is "Strongly agree". The results of this study questionnaire were statistically processed and analyzed in order to perform basic data analysis using PASW ® Statistics software. Due to the small sample characteristics of this study, Partial Least Squares (PLS), using SmartPLS 3.0 for structural equation modelling (SEM), was used to assess the measurement model and structure model of this study.

Sample and data collection

A revised the questionnaire based on the results of the pilot-test. In the test, 60 samples were collected and of these, 6 were invalid and 54 were valid, with a collection rate of 90%. Results of the pilot-test showed that the reliability coefficient was over 0.8 for all variables and considered acceptable (Nunnally, 1978). A total of 230 formal questionnaires were collected, excluding 31 of which were incomplete or the respondents had never used LINE TODAY. The number of valid questionnaires (199 out of 230) received gave a return rate of 86.5%, which reached the criteria suggested by Harris (1985). According to Chin (1998), PLS can fit small sample data, the minimum requirement being 30-100 samples. In addition, the study uses bootstrapping repeated sampling to test whether the path coefficients reach a significant level. Typically, 500 bootstrap samples may be sufficient to obtain stable estimates. In this study, the bootstrap resampling method was used to generate 1000 bootstrap samples in order to improve computational powers for parameter estimation and inference when the sampling was restricted by the small size of the original sample. Therefore, the number of samples in this study is in compliance with the PLS sample requirement threshold and is suitable for structural model analysis.

Results of data analysis

Descriptive statistics analysis was first used to summarize the basic features of the sample data. Data analysis was then used to confirm the suitability of the items of the scale, which is also the basis for measuring overall reliability and validity. Factor analysis is used to test the construct validity of a questionnaire. Since the observed variables and the latent constructs of the research model were based on the UTAUT2 model, confirmatory factor analysis was used to verify the correlation between analysis factors and variables in order to obtain the composite reliability (CR), average variance extracted (AVE) and correlation coefficients between the constructs to achieve convergent and discriminant validity. To assess measurement reliability, item-scale correlations were used to examine the construct validity of the items, with a loading greater than 0.5 and Cronbach's alpha values greater than 0.7. CR is also considered for internal consistency assessment in construct reliability because it preserves the standardized loadings of the observed variables. Discriminant validity was employed by comparing the AVE of the construct pairs to the squared correlation between them. The structural model was employed by estimating the paths between the constructs in the model. The significance of the path coefficients was determined using t-statistics calculated by applying the bootstrap technique.

Descriptive statistics analysis

The proportion of female respondents to the questionnaire was higher than the proportion of male respondents (58.3% of female and 41.7% of male). Most of respondents (53.8%) were aged between 21 and 30, followed by

those aged 20 and below (44.7%). The study further investigated the education, occupation, and monthly average income. Respondents who were college graduates represented 87.9% of the sample, followed by those with a postgraduate qualification or higher at 11.1%. The average monthly income of 83.9% of the respondents is less than NT$20,000, while 10.1% have an income of between NT$20,001 and 30,000 (NT=New Taiwan dollar). In occupation terms, 83.4% were students, followed by those working in the information industry, accounting for 4.5%. With regard to use behavior, the results show that 73.9% of respondents use LINE TODAY every day for less than 30 minutes, while 24.6% respondents use LINE TODAY less than one day a week. As for the channels used, , 89.2% of respondents watch LINE TODAY on their mobile device.

Validity and reliability test

Confirmatory factor analysis was performed using the Partial Least Squares (PLS) of SmartPLS 3.0. The statistical results are shown in Table 1. For evaluating the reliability and validity of the observed variables, the loadings of all items in the scale were employed to test construct validity with the correlations of items in the scale ranged between 0.764 and 0.919, while the AVE values of the constructs were between 0.658 and 0.802. With respect to the criteria, convergent validity demonstrated that the loadings of the observed variables were greater than 0.7, and the AVE values for each construct were greater than the standard 0.5. The t-test of the estimated value of each item reached a significant level ($p<0.001$), which is believed to be very acceptable. As shown in Table 1, the composite reliability (CR) values of the constructs ranged from 0.885 to 0.948, which is above the 0.7 recommended by the threshold, indicating that the constructs of this study have internal consistency. Cronbach's alpha values were greater than 0.8, indicating that the measurement model had acceptable reliability, as suggested by Hair, Anderson, Tatham, & Black (1998).

Table 1. **Construct reliability and validity**

Constructs	Items	Loadings	T-Statistics	α	CR	AVE
Performance Expectancy (PE)	PE1	0.888	64.494	0.909	0.932	0.734
	PE2	0.856	45.468			
	PE3	0.841	33.173			
	PE4	0.852	39.465			
	PE5	0.845	34.532			
Effort Expectancy (EE)	EE1	0.844	37.869	0.899	0.925	0.712
	EE2	0.849	32.730			
	EE3	0.824	27.028			
	EE4	0.867	34.429			
	EE5	0.834	33.207			
Social Influence (SI)	SI1	0.894	49.772	0.918	0.942	0.802
	SI2	0.901	74.636			
	SI3	0.869	37.599			
	SI4	0.919	70.480			

Continue

Table 1. **Construct reliability and validity** Concludes

Constructs	Items	Loadings	T-Statistics	α	CR	AVE
Facilitating Conditions (FC)	FC1	0.791	21.255	0.827	0.885	0.658
	FC2	0.764	21.457			
	FC3	0.846	40.479			
	FC4	0.841	38.749			
Habit (HA)	HA1	0.912	61.920	0.931	0.948	0.784
	HA2	0.897	44.411			
	HA3	0.860	37.619			
	HA4	0.897	53.833			
	HA5	0.859	28.030			
Behavioural Intention (BI)	BI1	0.898	61.000	0.905	0.932	0.779
	BI2	0.870	49.133			
	BI3	0.882	45.827			
	BI4	0.879	54.284			
User Behaviour (UB)	UB1	0.769	25.563	0.816	0.842	0.728
	UB2	0.922	57.975			

To test discriminant validity, the square root of AVE of the individual constructs was used as the criterion for judgment. From the matrix of correlation coefficients between the constructs in Table 2, the correlation coefficient of each construct in this study ranged between 0.612 and 0.838, and the square root of the AVE value of each construct was greater than the correlation between any two constructs, showing that the questionnaire designed for use in this study had sufficient discriminant validity.

Table 2. **Discriminant validity**

	PE	EE	SI	FC	HA	BI	UB
Performance Expectancy (PE)	0.857						
Effort Expectancy (EE)	0.730	**0.844**					
Social Influence (SI)	0.612	0.619	**0.896**				
Facilitating Conditions (FC)	0.711	0.670	0.629	**0.811**			
Habit (HA)	0.748	0.698	0.624	0.739	0.885		
Behavioural Intention (BI)	0.801	0.776	0.714	0.838	0.799	0.882	
User Behaviour (UB)	0.766	0.771	0.735	0.796	0.816	0.832	**0.849**

The cross-loading of all observed variables was also more than the inter-correlations of all other observed variables for each construct, as shown in Table 3. Thus, these findings confirm the cross-loading assessment criteria and provide acceptable validation for the discriminant validity of the measurement model. As a result, the proposed conceptual model supported the fact that the measurement model provided validation for discriminant validity and acceptable convergent validity with confirmation of adequate reliability.

Table 3. **The cross-loading of all observed variables**

	PE	EE	SI	FC	HA	BI	UB
PE1	0.872	0.608	0.564	0.575	0.660	0.687	0.636
PE2	**0.864**	0.619	0.521	0.594	0.624	0.712	0.661
PE3	**0.877**	0.694	0.575	0.674	0.698	0.734	0.546
PE4	**0.874**	0.647	0.497	0.641	0.656	0.687	0.561
PE5	**0.876**	0.612	0.511	0.617	0.624	0.673	0.618
EE1	0.657	**0.827**	0.549	0.565	0.615	0.653	0.588
EE2	0.563	**0.820**	0.446	0.518	0.530	0.633	0.662
EE3	0.584	**0.841**	0.559	0.550	0.593	0.640	0.585
EE4	0.578	**0.855**	0.509	0.581	0.581	0.662	0.584
EE5	0.678	**0.853**	0.531	0.596	0.606	0.670	0.636
SI1	0.507	0.494	**0.842**	0.571	0.483	0.598	0.557
SI2	0.535	0.568	**0.873**	0.538	0.552	0.645	0.620
SI3	0.542	0.496	**0.867**	0.538	0.534	0.615	0.543
SI4	0.539	0.585	**0.886**	0.536	0.593	0.617	0.518
FC1	0.567	0.520	0.512	**0.796**	0.591	0.731	0.651
FC2	0.607	0.541	0.517	**0.843**	0.651	0.687	0.719
FC3	0.590	0.568	0.548	**0.816**	0.593	0.690	0.632
FC4	0.601	0.600	0.513	**0.871**	0.621	0.677	0.676
HA1	0.684	0.659	0.610	0.693	**0.905**	0.793	0.657
HA2	0.693	0.617	0.536	0.677	**0.941**	0.726	0.667
HA3	0.664	0.620	0.559	0.655	**0.879**	0.686	0.613
HA4	0.690	0.651	0.582	0.675	**0.911**	0.717	0.678
HA5	0.680	0.634	0.556	0.667	**0.926**	0.716	0.691
BI1	0.668	0.678	0.576	0.709	0.646	**0.850**	0.667
BI2	0.671	0.629	0.580	0.710	0.702	**0.834**	0.721
BI3	0.681	0.655	0.627	0.733	0.671	**0.853**	0.679
BI4	0.694	0.667	0.636	0.688	0.689	**0.851**	0.654
UB1	0.521	0.533	0.487	0.683	0.586	0.647	**0.779**
UB2	0.643	0.639	0.548	0.702	0.625	0.709	0.896

Structural Model and hypothesis test

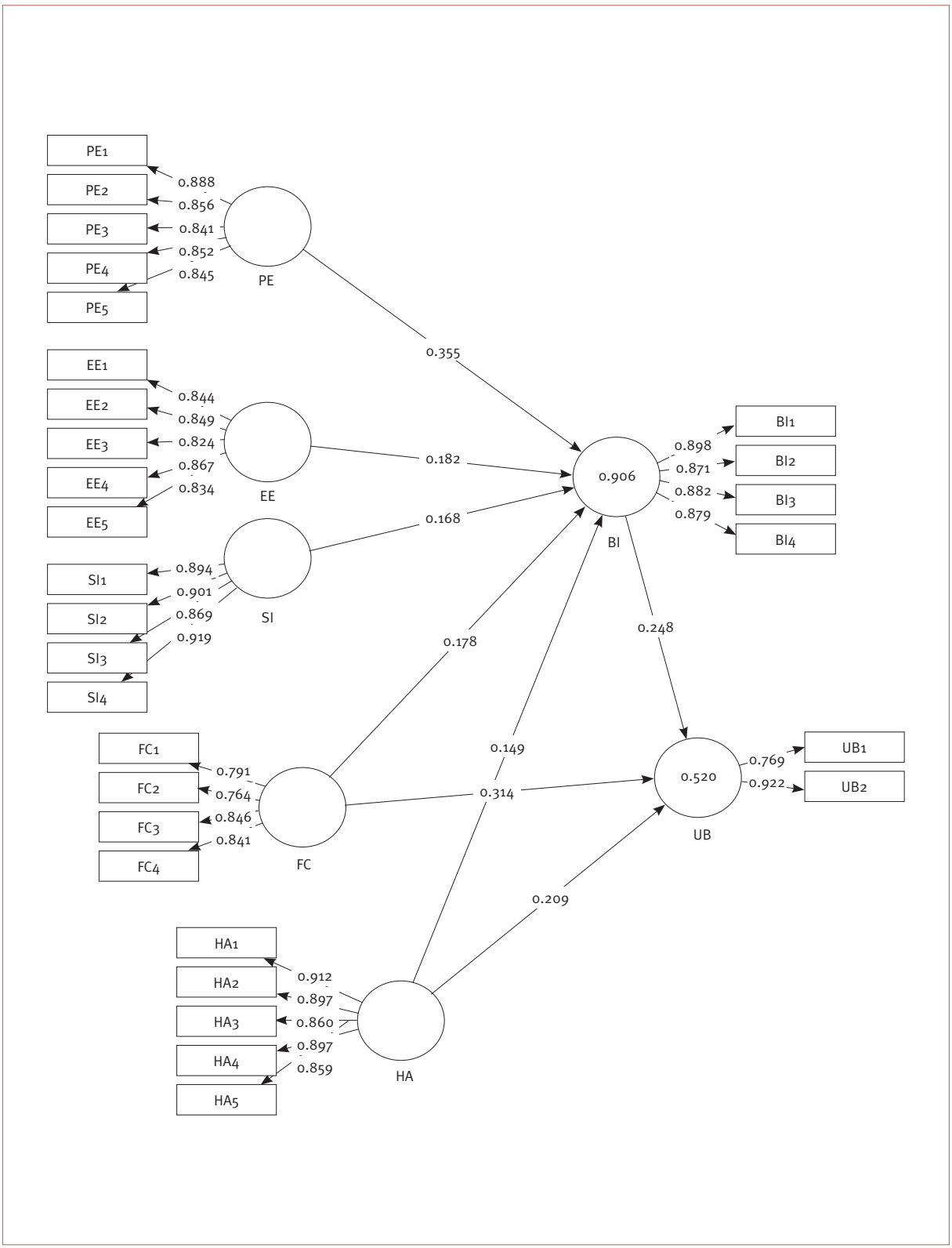
This study used PLS to test whether the value of the standardized path coefficients (β) between the various constructs was statistically significant. The coefficient of determination R^2 was used to measure the explanatory power of the structural model. Since PLS is distribution-free and does not provide the overall compatibility model, in order to test the significance of the estimated path, bootstrap resampling of 1000 and the t-test were used to explain the relationship between variables as a hypothesis test and causal analysis. The path coefficients Beta (β) of the structural equation model, the coefficient of determination R^2 values and the t-statistic value are shown in Figure 4 and Table 4. As predicted, the path coefficients (β) in the hypothesized model and the corresponding t-values in Table 4 indicated that performance expectancy (β= 0.355, f^2=0.376, T = 6.064, p = 0.000), effort expectancy (β= 0.182, f^2=0.248, T = 3.665, p = 0.000), social influence (β= 0.167, f^2=0.267, T = 3.513, p = 0.000), facilitating conditions (β= 0.176, f^2=0.282, T = 4.066, p = 0.000), and habit (β= 0.318, f^2=0.245, T = 3.492, p = 0.001) positively affect behavioral intention to use LINE TODAY. The results confirmed that H1, H2, H3, H4, and H5 were supported. Behavioral intention positively affects use behavior to use LINE TODAY (β= 0.152, f^2=0.197, T = 4.453, p = 0.000), showing that H6 was supported. Facilitating conditions positively affect use behavior of using LINE TODAY (β= 0.212, f^2=0.182, T = 2.694, p = 0.007), confirming hypothesis H7. Habit positively affects use behavior of using LINE TODAY (β= 0.242, f^2=0.090, T = 2.364, p = 0.018). Thus, hypothesis H8 was supported.

Table 4. **Path coefficient β value, Cohen's f2 , and T-statistics.**

	Hypothesized Path	β	f^2	T-Statistics	*P* Value
H1	PEBI	0.355	0.376	6.064	0.000
H2	EEBI	0.182	0.248	3.665	0.000
H3	SIBI	0.167	0.267	3.513	0.000
H4	FCBI	0.176	0.282	4.066	0.000
H5	HABI	0.318	0.245	3.492	0.001
H6	BIUB	0.152	0.197	4.453	0.000
H7	FCUB	0.212	0.182	2.694	0.007
H8	HAUB	0.242	0.090	2.364	0.018

Figure 4 illustrated the path coefficients (β) and R^2 values of the model. The estimated coefficient of determination R^2 significantly explained the structural model, with performance expectancy, effort expectancy, social influence, facilitating conditions, and habit accounting for 90.6% of the variance in behavioral intention and 52% of the variance in use behavior. Based on the results, R^2 values were considered substantial and the analysis findings indicated five identified factors appearing as significant predictors of behavioral intention and use behavior in the model. The study also uses Stone-Geisser's Q^2 to evaluate the predictive relevance of the model. The Q^2 in the study model is 0.698 and 0.348, and as Chin (1998) suggested, a Q^2 value greater than zero means that the model has predictive ability.

Figure 4. **The structural equation model**



In accordance with the PLS analysis of the measurement models and structural model, as expected both models gave statistically significant results and all of the hypotheses were accepted. Although the β value is not high, all of them are significant and the R2 explanatory power is as high as 52% and 90.6%, so the distribution of β value is statistically significant. It can be seen from Table 4 that the size of β indicates the degree of influence of the independent variable on the dependent variable, and its impact is greatest on performance expectancy, followed by habit, and so on. The results of this study confirmed the identified factors affecting behavioral intention and can support the explanatory power for user behavior to use new technologies.

CONCLUSION

This study focuses on the user's point of view and uses the UTAUT2 model as a theoretical basis for exploring the use behavior of LINE TODAY. Based on the empirical results, all factors have a positive impact on behavioral intentions. When the user believes that LINE TODAY can satisfy their purpose of watching the news, it will increase their intention to use the platform. According to the results, it is recommended that if users think that LINE TODAY is practical and helpful to their lives, this will increase their willingness to use it. When users think that LINE TODAY's user interface is easy to operate and without too much effort, they will be more willing to use it.

However, when the user uses LINE TODAY, they will use it because of the opinions of important other people. This result is consistent with past research (Venkatesh et al., 2003; Venkatesh et al., 2012). The more users feel that their relatives and friends influence their use of LINE TODAY, the more their intention to use it will increase. In addition, when users think that the relevant software and hardware technologies and equipment resources currently available can support the degree of personal use of LINE TODAY, and the more users feel a degree of environmental support when using the platform, the more they use it.

Venkatesh et al. (2012) believe that habit is the tendency to use technology automatically. It has been pointed out by past studies that habit is a previous act and a key idea that drives repetitive behavior. When users use LINE TODAY as the platform of choice for watching news, it will increase their intention to use it. In the past, the literature on the UTAUT and UTAUT2 models also pointed out that behavioral intention has a significant impact on the actual use of technology, regardless of the technology being used in the organizational or consumer environment (Venkatesh et al., 2012; Venkatesh et al., 2003). However, although the facilitating conditions of this study have positive effects on use behavior, some of the results did not have a significantly positive impact, which is consistent with the result of Weng and Huang (2017) on the use behavior of LINE TV. It is inferred that having sufficient resources and knowledge to use LINE TODAY, although it may increase the willingness to use it, it may not increase actual use time and frequency, which may be related to the fact that the user still has other choices.

Contribution of the study

The study is mainly aimed at research into the behavioral intention and use behavior of LINE TODAY users on the mobile news platform. At present, there is little research into LINE TODAY. Therefore, the study uses the UTAUT2 model to analyze the factors affecting users' behavioral intentions and their use behaviors of LINE TODAY. Although the UTAUT2 model has been empirically proven to be a scientifically accepted model with a

relatively well-structured, well-discussed, and suitable for consumer behavior research, because it has been proposed for only a few years, research using this model is not as extensive as that using TAM. The specific contributions of this research are as follows: (1) It confirms that the UTAUT2 model can be used for checking behavior intentions and use behavior of LINE TODAY users, and it has good model explanatory power; (2) Studies have shown that performance expectancy, effort expectancy, social influence, facilitating conditions, and habit have a positive impact on behavioral intention, while behavioral intention and habit have a positive impact on use behavior (The results of this study are available for future researchers wishing to engage in relevant research.); (3) The study found that LINE TODAY users are mostly young people aged between 21 and 30, who are mainly college students. LINE TODAY has a large number of users in the LINE community. From the above results, it can be seen that compared to other news-only platforms, LINE TODAY not only provides news, but also provides multiple services to make it more developmental. In addition, young people are more receptive to using LINE TODAY to gain new knowledge.

Practical implications of the study

Based on the research process and results, the study suggests management and practice implications for managers in the practical area of strategy. In terms of the services provided by LINE TODAY, the performance expectancy results confirm that the platform allows users to achieve their purpose of watching the news. The study results also suggest that LINE TODAY is helpful and efficient in life, enabling people to access the latest information and knowledge instantly. Furthermore, relatively young people accept the new IT platform more readily. As far as effort expectancy is concerned, managers can enhance the design and operation of the platform interface to make it easier for users to get started. At the level of social influence impact, since LINE TODAY is still a content platform, there is less involvement in the online interaction of users when they watch news. At present, they can only post their own comments under the news content, and display them on the screen they are watching. In the future, they can use LINE TODAY's own push to advantage in the LINE chat room, live events or online chat windows to increase user interaction. Enhancing users' behavioral intentions by way of diverse and concise content is also why mobile news platform managers cannot ignore the social influence factor. Therefore, it is hoped that managers can continue to enhance existing advantages, integrate different platforms, and eliminate their shortcomings to increase users' intention to use.

LINE TODAY's mobile news platform can also introduce differentiated services for different user groups, launch content that may be of interest, introduce preferences based on the characteristics of different ethnic groups, or provide more service levels to serve different types of users. It can also try to personalize the service with different time and readings. On the other hand, it should be able to combine related services other than news, such as food recommendations, shopping recommendations, news about related products or information, combined with the suitability of mobile devices, more accurate marketing that goes deeper into the user's life. For example, for social entertainment, it can provide more news content, such as entertainment, travel, fashion and horoscopes, use community sharing to satisfy the characteristics of its willingness to share, and then enhance use intentions. Entertainment novelties can be combined with the existing LINE platform to develop other new-style functions, such as live competitions, basketball games combined with online news, in order to stimulate the curiosity of this group and enhance their use intentions. In addition, it can also increase audio and video content, especially news, entertainment, and lifestyle, and enhance live content, including concerts, awards ceremonies and sports events.

Limitations and future directions

Although the establishment of the research framework, the design of the questionnaire, and the data collection and analysis are rigorous and objective, the research process is inevitably limited by time, manpower and resources. The following, therefore, are research restrictions and future research recommendations for researchers. Under time and funding constraints, the use of convenient sampling methods, using the face-to-face questionnaire combined with online questionnaires for data collection, and convenient sampling, are referred to the issue of sample representative in this study. From the collected samples, the age group is between 21-30 years old, and most are students, so the discussion about overall nature of users is limited. In the future, relevant research can be extended to include the whole of Taiwan, thus increasing the number of samples in order to expand the research results and make them more externally valid. Since the sample is not large in this study, but there are five independent variables that may result in a lower β value, it is recommended that the sample size be increased in the future to improve the predictive value of β. However, the sample characteristics of this study are consistent with the characteristics of the main ethnic groups in Taiwan, which are mostly young people, so the research findings are still valuable. Quantitative analysis of this study is only based on the data collected by the target group and the analysis on the assumption that the research object has an understanding of a certain situation so it does not provide a qualitative study for an in-depth understanding of the thoughts of the subjects.

Currently, LINE TODAY platform provides the instant hot list and shares news content in time by analyzing the historical records of user browsing information. Therefore, it is recommended that LINE TODAY can provide cross-domain related services for topics of interest such as news of returning trains during the Spring Festival by analyzing user needs. This can be done by attaching a booking link or providing travel news, and attaching relevant information (accommodation, air fares, etc.). Under the existing resources, it is recommended to enhance the richness of news content presentation in the LINE TODAY news platform function.. It can analyze the types of news that people browse, provide relevant news recommendations and push relevant information. It can also provide relevant and in-depth information to the public about the content of the news, in order to increase people's involvement of the news or enhance their connection with life.

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AUTHORS' CONTRIBUTION

The conceptualization and theoretical-methodological approach were coordinated by Lisa Y. Chen. The theoretical review was conducted by Lisa Y. Chen and Yi-Jhen Chen. Data collection was performed by Yi-Jhen Chen. Data analysis, writing and final review were performed by Lisa Y. Chen.

ERRATUM

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