The Influence of Fan Pages on Consumer Purchase Intention: Liking Behavior as a Moderator

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Abstract

Social networking sites host more than one billion members. These sites feature countless fan pages, containing product information for social media marketing. For this type of business model, a burgeoning social networking environment has arisen. In Taiwan, consumers frequently use social networking sites, which are learned about through electronic word-of-mouth references, as portal sites to transfer to product pages. Thus, consumers can easily obtain numerous types of brand information that promotes purchase intention. Based on the perspective of consumer behavior, a research model was developed to examine what factors affect consumers' perceived values and purchase intentions on fan pages. Moreover, the relationships between perceived value and purchase intention were determined to be moderated by liking behavior. Empirical analyses were performed using structural equation modeling. The results indicated that brand awareness of products and recommendations through electronic word-of-mouth significantly affect perceived value. Perceived value also significantly affects purchase intention. Additionally, liking behavior moderates the relationship between perceived value and purchase intention, despite brand image having no effect on perceived value. These results could provide a reference for future research on fan page influence and suggest a practical reference for company business strategies.

Keywords: Brand Awareness, Brand Image, Electronic Word-of-Mouth, Perceived Value, Purchase Intention, Liking Behavior

1. Introduction

Social networking sites, on which products can be purchased at favorable prices instantly and conveniently, have recently burgeoned. Consumers can save time by shopping online and comparing the advantages and disadvantages of similar products by different brands, in addition to benefitting from the many discounts offered through merchants' marketing strategies. Companies can conduct business electronically and consumers can purchase products through social networking sites (Bickle, McKenna et al. 2004). To gain business opportunities and improve sales, companies should be actively engaged in social networking as an indispensable channel (Ba 2001; Balasubramanian and Mahajan 2001; Lu, Zhao et al. 2010; Yadav, de Valck et al. 2013; Hajli 2015; Can and Kaya 2016; Hajli, Sims et al. 2017). Additionally, e-commerce revenue has come from mobile platforms, indicating that mobile social networking sites are becoming the most used business channel.

Consumers' online shopping engagement behavior indicated that they received information from online advertisements which are a critical source of product promotion for consumers to discover products. Social networking sites also continued affecting consumers' opinions of a product. The general assumption of prices being cheaper online than in an actual store by consumers tends to drive companies to establish fan pages on social networking sites to promote the sales of products. Social networking business has now become the new emerging model for companies.

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Well-known social networking sites such as Facebook and Line have become some of the most used portal sites for Internet users and now provide essential access channels for product marketing activities and media information. Companies rely on social networking sites to provide users with product information and services and must carefully plan the content of advertisements to attract users to browse and click like to further influence consumer purchase intention. This is performed to gain sales and improve corporate profits (Mouakket 2015). Hence, a consumer who wants to buy a product of personal preference on Facebook and Line must collect information in advance and perform in-depth comparisons to select the most appropriate product.

In recent years, through the interaction between companies and consumers on fan pages hosted by Facebook, as well as among consumers, the potential for consumers to develop a sense of recognition and trust in company products has arisen (Kudeshia, Sikdar et al. 2016). Along with the developing trend of social network use by businesses, online business behaviors can directly affect the group economy, because the behavior of liking creates a bandwagon effect and encourages new consumers to increase their purchase intentions.

To investigate these social media topics, numerous studies have focused on service quality, marketing strategy, purchasing preference, social media value, consumer satisfaction, and consumer loyalty regarding social networking sites. However, scant empirical studies have been conducted with the practical cooperation of actual companies (Pöyry, Parvinen et al. 2013; Gamboa and Gonçalves 2014; Kwon, Park et al. 2014; Lee, Yen et al. 2014; Hajli 2015; Kaur, Dhir et al. 2016; Wang, Yeh et al. 2016; Hajli, Sims et al. 2017). Thus, the current study investigated which factors affect consumers' purchase intention on fan pages. In addition, we also explored the motives and characteristics of the behavior of liking as the moderator of the relationship between perceived value and purchase intention. That is, consumers typically browse through various discount offers for a product on fan pages and produce a good impression of the product, resulting in a like. Accordingly, this study focused on the influence of fan pages on purchase intention after consumers have browsed product information to understand the effects of the relevant factors. The results can assist companies in managing fan pages and social networking communities and improve the efficiency of product promotion and sales.

2. Theoretical background and research hypotheses

2.1 Social networking site

In recent years, social networking sites have become an Internet portal for consumers. Shen, Brdiczka et al. (2015) proposed a definition of a social networking site and believed that the service must be based on the Internet. A social networking site is a web service that enables users and groups to connect, search, join, and expand their network of friends through the platform. It also facilitates the sharing of information openly, semi-openly, or privately between individuals or among friends through specific settings. For example, Facebook users can replicate their entire real-life relationships on the web through online interactions to enhance their connections. Such use of Facebook can enhance pre-established relationships and provide new contacts through friends to form a special social network. Fan pages can help Facebook users share their business news and product information publicly (Kim and Yang 2017).

Andrew et al. (2012) indicated that Facebook is the most powerful promotional tool, and it is available as a subject of research on social media. Many social networking sites currently exist. To clearly understand the relevance of social networks, this research focused on fan pages, in which a specific page was treated as a collective of individuals with similar interests, emotions, and intentions to discuss, exchange, and recommend goods. The behavior of liking has similar results to the bandwagon effect, through which approval of products is based on superficial information. Thus, information is spread through a social networking site in a similar fashion to that of word-of-mouth.

For a company with a long history or strong brand reputation, the establishment of a fan page comprising a considerable number of members is necessary to maintain communication with consumers. The efficiency of this approach surpasses that of providing information through web and SMS marketing. However, new, less established businesses lack such solid consumer groups and loyal fans. Therefore, these businesses must utilize the Internet to quickly establish and expand groups of loyal customers. The effective use of the functions and services of social networks can strengthen an efficient marketing strategy.

2.2 Relationship between electronic word-of-mouth and perceived value

Electronic word-of-mouth (eWOM) is related to online consumers' statements about a product or company that expresses their shopping experience through online recommendations (Hennig-Thurau, Gwinner et al. 2004; Jalilvand, Esfahani et al. 2011). Previous correlation studies on eWOM and marketing strategies have reported that the key element that affects consumers' purchase intentions is the force of recommendation expressed in words (Kim, Wang et al. 2016; Liu, Li et al. 2017). The eWOM exchanged between people may affect product packaging and even sales progress. Consumers typically believe eWOM more than they do marketing advertisements (Hennig-Thurau, Gwinner et al. 2004; Jalilvand, Esfahani et al. 2011; Lee, Kim et al. 2012; Zheng, Zhu et al. 2013; Dehghani and Tumer 2015; Baber, Thurasamy et al. 2016). Recently, eWOM has become a critical basis for consumers' decision-making when purchasing products. Consumers on social networking sites also recommend products by copying the word-of-mouth of others as well as through eWOM marketing. Kim, Wang et al. (2016) reported that consumers typically have certain degrees of understanding regarding the value of a product; however, consumers also must understand the differences among various brands. Ultimately, the selected value of a product is still determined by the consumer. If the consumer disregards a product's features and advantages and simply wants to buy a product, then the decision may be determined by the recommender. The current research aimed to determine whether consumers produce a perceived value to purchase products when recommended through eWOM on Facebook.

In this study, an eWOM recommendation referred to a social network user introducing a product to others through a fan page. The eWOM recommendation could attract new users to participate, increasing the popularity of a social networking site and improving the value of a product in the minds of consumers (Yap, Soetarto et al. 2013). Eisingerich, Chun et al. (2015) also revealed that users' sharing, commenting, or liking behavior encourages others to learn the value of a product and purchase the item. Thus, eWOM recommendations motivate consumers to produce a perceived value of a product and further encourage them to recommend the product to others. We propose the following hypothesis:

H1: eWOM recommendation for a product affects fan page consumers' perceived value.

2.3 Relationship between brand image and perceived value

Brand image (BI) within a consumer's mind is developed, maintained, given meaning, and affected by stimulation. Erdil (2015) claimed that a BI comprises a consumer's thought and feeling about a brand, even though they might differ. In this study, BI value was considered reliant on the extent to which the features of a product influenced a consumer to generate a particular self-image. Thus, the consumer's perception and experience may promote his or her purchase intention. Social networking sites are popular exchange platforms that provide convenient channels for consumers to obtain product information and play a vital role in brands' information seeking and sharing (Faryabi, Sadeghzadeh et al. 2012; Zhang, Benyoucef et al. 2016). Ibrahim, Wang et al. (2017) further indicated that consumers consider a variety of BIs by accessing various types of brand information such as price fairness and functional superiority. Prior studies have argued that online consumers can determine their perceptions of a BI and value through experience and symbolism, further affecting their purchase intention (Sääksjärvi and Samiee 2011; Wu, Yeh et al. 2011; Aghekyan-Simonian, Forsythe et al. 2012; Djatmiko and Pradana 2016; Luna-Cortés 2017). For example, Nisar and Whitehead (2016) indicated that consumers on social networking sites can obtain useful brand information and then promote a BI according to their brand preference, thereby generating brand value. In this study, we assumed that if consumers can acquire practical, fashion-related, or interesting information about products from fan pages (i.e., if consumers can expect to satisfy inquiries into product functions), then they may be more likely to generate different values for a BI. Therefore, we expected BI to affect consumers' perceived value on fan pages. Accordingly, we proposed the following hypothesis:

H2: BI affects the perceived value of a product for consumers on a fan page.

2.4 Relationships between brand awareness, perceived value, and purchase intention

Brand awareness (BA) is related to the means through which consumers become informed and accustomed with a brand name and recall and recognize the brand. The strong memories a consumer accumulates of a particular brand can be used as a basis for consideration when choosing a product (Mattera, Baena et al. 2012; Chitcharoen, Kanthawongs et al. 2013). In this study, BA was considered vital for companies to operate social networking sites. The aim to acquire a well-recognized brand can increase a consumer's approval of a special brand, enhance consumer confidence in the products, and increase a consumer's purchase intention.

Our study investigated the perceived value of a product brand formed by browsing through product functions on a social networking site that serves as one of the key elements in the decision-making process for the purchase. BA could be the basis of a prioritized purchase consideration for consumers.

In related literature about social networking sites and brands, BA has been identified as a significant predictor for consumers' purchase intention originating from online information that represents a value (Zaglia 2013; Hassan Zadeh and Sharda 2014; Kaur, Dhir et al. 2016; Wang, Hsiao et al. 2016). Barreda, Bilgihan et al. (2015) also reported that the extent of awareness is dictated from consumers' perceptions of a product brand, which in turn is formed using social networking sites. Barreda, Bilgihan et al. (2016) and (Oh 2000) have argued that BA may motivate consumers to perceive the specific value of a product. Consumers may even select their priority for purchasing according to the level of BA. Moreover, BA affects purchase intention in online communities (Hutter, Hautz et al. 2013). Therefore, we expected BA to affect consumers' perceived values and purchase intentions on social networking sites. Accordingly, we proposed the following hypotheses:

H3：BA affects the perceived value of a product for consumers on a fan page.
H4：BA affects the purchase intention of a product for consumers on a fan page.

2.5 Relationship between customer perceived value and purchase intention

Perceived value is related to consumers' perceptions of product value as characterized by performance and function considerations, the pricing of the merchandise, and the extent of emotional involvement (Dodds, Monroe et al. 1991). Consumers' purchase intention is generally considered to be their choice, which in turn depends on the perceived value and benefit. A higher perceived value would be more able to attract a consumer to purchase. In recent years, the operators of online commerce sites have used perceived value to evaluate consumer's purchase intention (Pires and Aisbett 2003; Kuo, Wu et al. 2009; Yoo, Lee et al. 2010; Li, Li et al. 2012; Hutter, Hautz et al. 2013). However, the aforementioned studies have revealed that consumers perceived value is crucial for evaluating product purchase intention (Hsu and Lin 2015; Doha, Ghasemaghaei et al. 2017). In the discussion of the relationships between perceived value and purchase intention, many scholars have considered perceived value to directly affect purchase intention (Bonsón Ponte, Carvajal-Trujillo et al. 2015; Hsu and Lin 2016). Adjei, Noble et al. (2010) discovered in online community research that brand value is positively related to purchase intention. Hu, Huang et al. (2016) focused on social shopping websites and confirmed that consumers' perception of value positively influences purchase intention. Similarly, Wu, Chen et al. (2014) also revealed that perceived value positively influences repurchase intention in their investigation of mobile commerce in Taiwan. Thus, we proposed the following hypothesis:

H5：Perceived value affects the purchase intention of a product for consumers on a fan page.

2.6 Liking behavior

Liking behavior is related to consumers' motivations for pressing like for others' posts on social networking sites. The phenomenon of liking behavior enables consumers to express their favorable attitudes toward special information and others' posts on social networking sites by clicking the like button and contributing to the total like count (Hong, Chen et al. 2017). Studies have also revealed that consumers' liking behavior in different contexts of Facebook is influenced by their social and usage behaviors (Gerlitz and Helmond 2013). In the context of an online social network, empirical studies have investigated the effect of liking behavior intention on satisfaction with enjoyment and usefulness (Mouakket 2015), images and videos (Sabate, Berbegal-Mirabent et al. 2014) and product news (Lee, Yen et al. 2014). Regarding liking behavior, few studies have demonstrated empirical support for the moderating effect of consumers' perceived value on purchase intention in the context of a social networking site. Related studies have examined the mediating effect of liking behavior on the relationship between social gratification and utilitarian gratification with WeChat (Gan 2017), the value of a brand as formed by consumers' perceived purchase behavior with Facebook (Lipsman, Mudd et al. 2012), and perceived value as a key determinant factor affecting behavioral intentions on Facebook that may develop into Facebook commerce (Lee, Yen et al. 2014).

Furthermore, Hong, Chen et al. (2017) indicated that users may receive likes from others for their own posts, which is more meaningful and valuable and attracts the user's attention. The behavior of clicking like should be included as a potential moderating variable in studies focused on Facebook. However, none of these studies have examined liking behavior as a moderator of the relationship between perceived value and purchase intention, which was under taken in this study. Liking behavior was included as a moderator in the current study based on the viewpoint that the relationship between perceived value and purchase intention would differ according to consumers' perceptions of a fan page. Thus, we proposed the following hypothesis:

H6: Liking behavior moderates the relationship between perceived value and purchase intention.

3. Methodology

3.1 Research model

In this study, on the basis of prior findings, we identified three major external variables for consumers' purchase intentions on fan pages, namely eWOM, BI, and BA. Also, liking behavior was regarded as a moderator in the model. Figure 1 presents our research model. Prior studies have empirically validated the key role eWOM plays in affecting consumers' perceived values of a brand or product, such as sharing experience and making recommendations to others (Yap, Soetarto et al. 2013; Baber, Thurasamy et al. 2016; Kim, Wang et al. 2016). Consumers' impressions of a special brand are derived from using the product or listening to others' recommendations. Studies had demonstrated that BI is critical for determining the use of a product (Aghekyan-Simonian, Forsythe et al. 2012; Djatmiko and Pradana 2016; Ibrahim, Wang et al. 2017). BA indicates a consumer's perceived value of a product brand after browsing through product information. It advances confidence in the product and increases the consumer's purchase intention. Thus, BA is a key element in the purchasing decision-making process (Hassan Zadeh and Sharda 2014; Barreda, Bilgihan et al. 2015; Wang, Hsiao et al. 2016). In addition, liking behavior on social networking sites is a moderating variable that can fulfill consumers' intervening expectations through the resultant perceived value affecting the process of forming a purchase intention. However, liking behavior has been demonstrated to be a critical factor in online communities. Liking behavior may help consumers establish positive value in the form of such things as images and videos. When consumers obtain useful or helpful information from fan pages, they may also click like (Lipsman, Mudd et al. 2012; Sabate, Berbegal-Mirabent et al. 2014; Mouakket 2015; Gan 2017).

Figure 1. Research model.
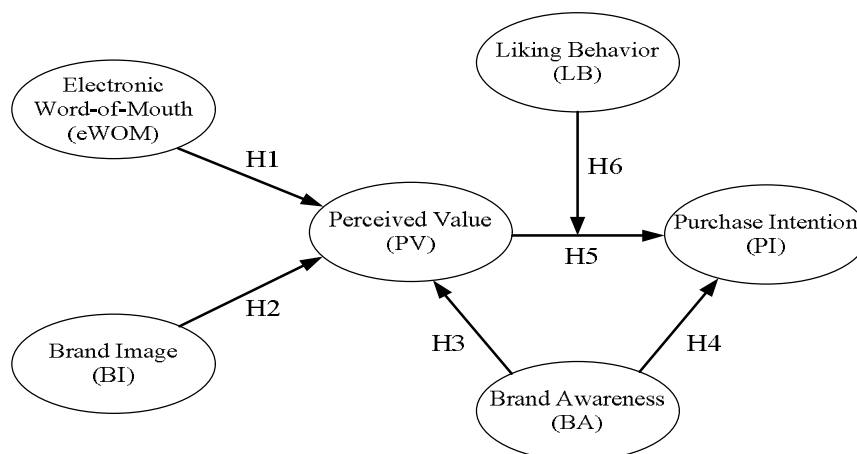
3.2 Data collection

Of the 475 distributed questionnaires, 418 returns were eligible for analysis. The respondents comprised students and office workers. The overall response rate for the study was 88%, which was regarded as relatively high, especially because the respondents were office workers who were likely to have been too busy to answer the questionnaires. The SPSS 18 software was used for the statistical analysis of the survey data. The results of the basic descriptive statistics analysis are listed in Table 2. In total, 49.04% of the respondents were male and 50.96% were female. The respondents were primarily aged between 21 and 30 years, with the majority (80.14%) aged between 21 and 40 years.

Generally, the demographic information of the respondents was consistent with that of social networking siteusers, of which the majority is young people. Thus, the sample is a good representation of social networking site users. The respondents had a higher than average level of education, with 69.86% having at least a college degree.

Table 2. Demographics of Respondents

Profiles	Sample composition	Frequency	Ratio (%)
Gender	Male	205	49.04%
	Female	213	50.96%
Age	Below 20	29	6.94%
	21-30	178	42.58%
	31-40	157	37.56%
	41-50	50	11.96%
	51 above	4	0.96%
Education	Below Junior high school	3	0.72%
	Senior high/ Vocational school	62	14.83%
	University & Junior college	292	69.86%
	Graduate school and above	61	14.59%
Industry type	Student	138	33.01%
	General service industry	104	24.88%
	General manufacturing	74	17.70%
	General financial industry	12	2.87%
	Food and catering industry	61	14.59%
	Leisure and entertainment industry	29	6.94%
Income (NT)	10000 under	32	7.66%
	10001~20000	91	21.77%
	20001~30000	154	36.84%
	30001~40000	121	28.95%
	40001~50000	12	2.87%
	50001 above	8	1.91%
How much usefan pages for a week? (Day)	7	346	82.78%
	6	17	4.07%
	5	19	4.55%
	4	9	2.15%
	3	13	3.11%
	2	3	0.72%
	1	11	2.63%
How much usefan pages for a day? (Hour)	1 under	58	13.88%
	1~2	140	33.49%
	3~4	136	32.54%
	5~6	42	10.05%
	7~8	14	3.35%
	9~10	12	2.87%
	10 above	16	3.83%

For type of industry, the majority of respondents were students at 33.01%, followed by employees in the general service industry. For income, 36.84% of the respondents earned between NTD 20,001 and 30,000. Most of the participants (82.78%) used fan pages daily. Finally, 33.49% of the respondents used fan pages for between 1 and 2 hr daily, followed by 32.54% who used them 3 to 4 hr daily, as outlined in Table 2. In addition, the reasons for respondents inquiring into further product information on fan pages were as a pastime (73.68%), followed by the product's appealing appearance (45.45%), as listed in Table 3.

Table 3. Consumers' Reasons for Inquiring into Products on Fan Pages

Purpose	Items	Numbers	Percent
Why do you inquire intoproduct information on fan pages? (Multiple-choice)	As a pastime.	308	73.68%
	The product looks good.	190	45.45%
	The product is famous.	161	38.52%
	I participate in product discount activities.	139	33.25%
	I join new users on fan pages.	129	30.86%
	The product is practical.	111	26.56%
	The appearance of the product attracts to me.	110	26.32%
	The product information has many "likes".	108	25.84%
	The product is available.	95	22.73%
	I like to read feedback information from other users.	59	14.11%
	To read product information.	56	13.40%

4. Data analysis

4.1 Measurement model evaluation

Convergent and discriminant validity tests were conducted to evaluate the measurement model for the full sample (n =418). The convergent validity measures whether items can effectively reflect their corresponding factors and can be assessed by examining the composite reliability (CR), item reliability, and average variance extracted (AVE). Hair, Black et al. (2006) suggested that the standardized factor loading should be greater than 0.5, the CR should be greater than 0.7, and the AVE should be greater than 0.5. Cronbach's α must be greater than 0.7. All item loadings were greater than 0.7 with significant t values, as listed in Table 4. This confirmed the convergent validity of all constructs (Chin 1998).

Table 4. Construct Reliability and Validity for the Full Sample (n=418)

Latent variable	eWOM	BI	BA	PV	PI	LB	AVE	CR	Cronbach's α
eWOM	**0.887**						0.787	0.949	0.948
BI	0.582	**0.877**					0.769	0.952	0.951
BA	0.499	0.508	**0.878**				0.771	0.931	0.931
PV	0.564	0.496	0.506	**0.893**			0.798	0.941	0.940
PI	0.532	0.498	0.479	0.663	**0.869**		0.756	0.939	0.939
LB	0.650	0.584	0.504	0.381	0.524	**0.850**	0.722	0.928	0.927

Note: Diagonal lines display the square roots of the AVE.

Discriminant validity was verified by determining if the square root of each construct's AVE was greater than its correlations with other variables (Fornell and Larcker 1981). The results confirmed the discriminant validity when each construct item loading was higher for the measured construct than it was for the cross-loadings on the other items (Chin 1998). The results indicated that the square roots of the AVE in the study were all greater than the cross-construct correlation coefficients, indicating good discriminant validity. Therefore, the model had a good internal fit. Overall, most of the indices met the suggested standards, indicating a good overall model fit in this study, as listed in Table 4.

4.2 Confirmatory factor analysis

The result of a Harman's single-factor test revealed that common method bias was not relevant in this study (Podsakoff and Organ 1986), as listed in Table 5.

Table 5. Confirmatory Factor Analysis for the Full Sample (n = 418)

Items	eWOM	BI	BA	PV	PI	LB
eWOM1	**.800**	.243	.305	.251	.206	.262
eWOM2	**.790**	.380	.319	.316	.169	.245
eWOM3	**.780**	.289	.322	.305	.184	.271
eWOM4	**.769**	.353	.332	.230	.121	.233
eWOM5	**.739**	.371	.344	.295	.187	.203
BI1	.256	**.859**	.234	.156	.219	.219
BI2	.269	**.849**	.292	.220	.219	.147
BI3	.220	**.834**	.319	.251	.211	.161
BI4	.231	**.841**	.227	.208	.069	.172
BI5	.210	**.835**	.196	.207	.225	.130
BI6	.214	**.877**	.214	.240	.120	.069
BA1	.281	.238	**.859**	.176	.123	.176
BA2	.293	.198	**.852**	.165	.144	.223
BA3	.308	.220	**.796**	.137	.279	.232
BA4	.309	.207	**.788**	.147	.251	.129
PV1	.151	.108	.302	**.781**	.255	.351
PV2	.150	.092	.264	**.817**	.279	.353
PV3	.181	.098	.274	**.810**	.275	.245
PV4	.179	.167	.213	**.795**	.259	.343
PI1	.211	.235	.214	.224	**.804**	.218
PI2	.278	.121	.248	.274	**.821**	.139
PI3	.278	.080	.204	.298	**.853**	.067
PI4	.300	.125	.180	.177	**.869**	.120
PI5	.233	.104	.204	.210	**.861**	.215
LB1	.362	.213	.259	.174	.174	**.805**
LB2	.305	.216	.215	.218	.252	**.802**
LB3	.343	.221	.126	.189	.228	**.819**
LB4	.311	.207	.207	.253	.304	**.744**
LB5	.175	.221	.291	.242	-.025	**.781**

4.3 Structural model

The results obtained using the LISREL software for the structural model are illustrated in Figure 2. Purchase intention had a 53.9% explanatory power (R^2 = 0.539) and comprised the factors of perceived value and BA. Perceived value (standardized coefficient = 0.752) was greater than BA was (standardized coefficient = 0.145), making perceived value the more influential factor for purchase intention. Perceived value had a 64.7% explanatory power (R^2 = 0.647) and was most affected by eWOM (standardized coefficient = 0.499), followed by BA (standardized coefficient = 0.285). Thus, eWOM was the most influential factor for perceived value. This finding implied that a consumer who perceives a high value for a product tends to be affected by more purchase factors on a fan page.

Figure 2. Results of the structural equation modeling.
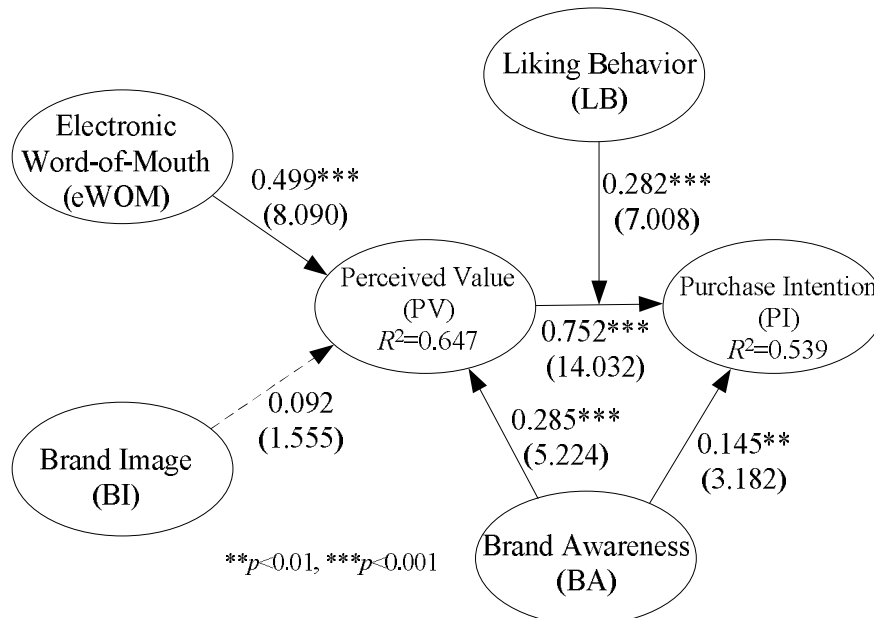
The results demonstrated that eWOM on fan pages had a significant effect on perceived value (β=.499, t=8.090); thus, H1 was supported. However, BI had no positive association with perceived value on a fan page (β=.092, t=1.555); thus, H2 was not supported. BA consistency was also positively associated with perceived value (β=.285, t=5.224) and purchase intention (β=.145, t=3.182); thus, H3 and H4 were supported. Perceived value had a significant positive effect on purchase intention for users of fan pages (β=.752, t=14.032); thus, H5 was supported. The moderating effects of liking behavior were investigated by considering the relationships between dependent variables, perceived value, and purchase intention. These effects were determined to significantly influence users on fan pages (β=.282, t=7.008); thus, H6 was supported. A summary of the hypotheses testing results is provided in Table 6.

Table 6. Summary of Hypotheses Testing Results

Hypothesis (connection between potential variables)	R^2	Standardized coefficient	t value	Hypothesis code	Hypothesized connection	Hypothesis testing
Electronic word-of-mouth → Perceived value		0.499	8.090***	H1	Positive	True
Brand image → Perceived value	0.647	0.092	1.555	H2	Positive	False
Brand awareness → Perceived value		0.285	5.224***	H3	Positive	True
Brand awareness → Purchase intention		0.145	3.182**	H4	Positive	True
Perceived value → Purchase intention	0.539	0.752	14.032***	H5	Positive	True
Liking behavior → Perceived value and Purchase intention		0.282	7.008***	H6	Positive	True

Basic goodness of fit was a criterion used to measure the research model. If the estimated coefficient yielded in a structural model exceeded the defined acceptable range, then the estimation in the entire model was inaccurate. The test results indicated that the standard factor loadings were all greater than 0.5 and less than 0.95 with a standard deviation within the nonsignificant range of 0.025–0.074, indicating a good fit in the study. The results are listed in Table 7.

Table 7. Descriptive Statistics for the Scales

Latent variable	Items	Mean	Standard Factor Loading	Standard deviation	t-Value
Electronic Word-of-Mouth	WM1	4.07	0.872	0.037	12.252
	WM2	3.99	0.874	0.035	12.194
	WM3	4.01	0.915	0.025	10.851
	WM4	4.01	0.877	0.035	12.141
	WM5	4.05	0.897	0.032	11.588
Brand Image	BI1	3.67	0.861	0.051	12.627
	BI2	3.71	0.904	0.039	11.582
	BI3	3.78	0.896	0.041	11.866
	BI4	3.77	0.897	0.040	11.824
	BI5	3.78	0.896	0.042	11.853
	BI6	3.82	0.802	0.070	13.306
Brand Awareness	BA1	3.79	0.864	0.058	11.586
	BA2	3.75	0.881	0.051	11.047
	BA3	3.86	0.906	0.044	10.974
	BA4	3.95	0.860	0.056	11.694
Perceived Value	PV1	3.94	0.885	0.040	11.777
	PV2	3.88	0.924	0.033	10.099
	PV3	4.06	0.870	0.040	12.131
	PV4	3.96	0.894	0.040	11.469
Purchase Intention	PI1	3.90	0.837	0.054	12.641
	PI2	3.94	0.885	0.043	11.652
	PI3	4.04	0.821	0.058	12.854
	PI4	4.00	0.900	0.040	11.118
	PI5	4.12	0.902	0.037	11.045
Liking Behavior	LB1	4.00	0.855	0.042	11.810
	LB2	4.02	0.896	0.039	10.500
	LB3	4.10	0.875	0.041	11.270
	LB4	4.06	0.839	0.049	12.146
	LB5	3.95	0.779	0.074	12.964

Table 8. Summary of Overall Model Fit

Index	Chi-square/degree of freedom			Absolute fit index			
Testing standards	x^2	df	x^2/df	GFI	AGFI	RMSEA	SRMR
	---	---	<3	>0.9	>0.8	<0.05	<0.08
Results	905.33	344	2.63	0.897	0.912	0.053	0.039
Determination	p value not reaching insigificance	---	Excellent	Excellent	Excellent	Slightly higher	Excellent
Index	Incremental fit index					Parsimoious fit index	
Testing standards	NFI	NNFI	CFI	RFI	IFI	PNFI	PGFI	CN
	>0.9	>0.9	>0.9	>0.9	>0.9	>0.5	>0.5	>200
Results	0.980	0.983	0.985	0.977	0.985	0.866	0.689	194.889
Determination	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Slightly Low

The research model used had a chi-square/degree of freedom of 2.63 (less than 3, the standard suggested by Jöreskog and Sörbom (1993)), indicating that the model had a satisfactory fit. The normed fit index (NFI), non-normed fit index (NNFI), comparative fit index (CFI), relative fit index (RFI), and incremental fit index(IFI) must all be greater than 0.9. The results listed in Table 8 indicate that the indices all met these standards. Overall, most of the indices met their theoretical standards, proving a satisfactory overall model fit for the study (Hair, Black et al. 2006).

5. Discussion

The objective of this study was to propose and validate a theoretical research model within the fan page context for social networking sites. The present study examined the antecedents of purchase intention for users of fan pages by analyzing the roles of eWOM, BI, BA, perceived value, and purchase intention, as well as the role of liking behavior as a moderator. We evaluated the results of the relationships between the different latent variables, which motivate the purchase intention of users of fan pages. We also examined the effects of the external variables eWOM, BI, and BA on perceived value, which in turn affect the purchase intentions of users of fan pages. The corresponding figures illustrate the explanatory powers of these constructs according to the squared multiple correlation (R^2) results. The model determined that the three variables of eWOM, BI, and BA, when combined, explained 64.7% of the variance in perceived value. Perceived value accounted for 53.9% of the variance in purchase intention.

Table 7 lists the results. First, eWOM had a positive influence on perceived value. Based on the findings presented, we observed a strong influence with a high beta value ($\beta = .499$, $t = 8.090$), supporting H1. This result was consistent with that of Yap, Soetarto et al. (2013), who claimed that eWOM could attract new users, increasing the popularity of fan pages and strengthening product value in the minds of consumers. Our findings indicated that consumers enjoy sharing their experience of products they have bought and services they have used on fan pages. Users also enjoy posting about the producers of products and the providers of services (Basri, Ahmad et al. 2016).

Next, BI did not influence perceived value. This indicated that the interaction effects between BI and perceived value ($\beta = .092$, $t = 1.555$) were nonsignificant, not supporting H2. This is contrary to suggestions in related studies (Nisar and Whitehead 2016). Our findings indicated that the nonsignificant interaction effects may have arisen because consumer perceptions about product images on fan pages were not composed of deep impressions or sufficient pleasure to view a product as attractive, making the positive relationship with brand consistency observable but not significant. This differed from the findings of Luna-Cortés (2017), who indicated that the symbolism of a brand logo was affected by user perceptions. Thus, operators must strengthen the information shared on fan pages such as price fairness and functional superiority (Ibrahim, Wang et al. 2017).

In addition, BA positively influenced perceived value, supporting H3. This was consistent with Barreda, Bilgihan et al. (2016). Successful fan pages enable consumers to interact, receive likes, post messages, post reviews, receive and provide updates, and provide credible and rich information related to their fan page product experiences. The functionality of fan pages has progressed recently, offering an opportunity for marketers and operators to generate BA that yields perceived value. BA also positively influenced purchase intention, supporting H4. This was consistent with Hutter, Hautz et al. (2013). Developing BA by presenting a product through a fan page should be a fundamental ambition of any page operator and product marketer. This result indicated that a high degree of product awareness on fan pages causes consumers to develop strong purchase intentions and thus increases the sales volume of the product. Furthermore, Barreda, Bilgihan et al. (2015) reported that without the generation of BA, other higher levels of brand elements cannot be established. The BA of a product should stimulate consumer purchasing. Operators should provide products on fan pages to develop a strong BA so that the product can gain the support of consumers. The opportunities for brands to develop strong BA through fan pages are numerous. BA will likely greatly influence the generation of fan pages and consumer intentions to purchase products.

Finally, consistent with prior studies on liking behavior (Gan 2017; Hong, Chen et al. 2017; Ozanne, Navas et al. 2017), we observed liking behavior differences for fan page consumers' purchase intentions, caused by such things as offers for prices cheaper than of physical stores to encourage liking. Liking behavior exerts a significant moderating effect on the paths from perceived value to purchase intention, supporting H6. Perceived value was observed to have a strong influence on purchase intention for fan page users, supporting H5. This was consistent with the findings of Dehghani and Tumer (2015), who suggested that product information is provided for others when users click like. Moreover, consumers may rely more on fan pages when browsing for necessary information. Based on our results, we determined that the impacts of liking behavior are moderated by the identity of the users who perform it on fan pages.

We also determined that liking behavior from a close friend will have a stronger effect than that from a stranger on the development of different marketing aspects, the effectiveness of value co-creation, and the arousal of purchase intention.

6. Implications and limitations

6.1 Implications for research and practice

The findings of this study have implications for both academics and practitioners. From a theoretical perspective, prior studies have primarily examined general users' behavior intentions on online communities. However, the current study focused on consumers' purchase intentions on fan pages of social networking sites. Although some studies related to liking behavior have explored the motivations of users of online communities from the marketing perspective, this study extended this line of research by focusing on the moderating effect of liking behavior on the relationship between the perceived value and purchase intentions of fan page users. Second, previous studies have investigated the effects of brand community on user adoption of brand loyalty. The current study extended this line of research by examining the constructs of extrinsic variables, namely BI, BA, and eWOM, and their effect on perceived value. The result for BI differed from those of previous studies and should inspire a different verification approaches, such as a contrastive study between actual stores and online fan pages.

From a managerial perspective, the findings offer practical implications for fan page developers and managers for encouraging consumers to browse products and post information. The study indicated that consumers' perceived values can be influenced by the brand perceptions of BA and eWOM through different fan pages. In particular, BA and eWOM are the most influential in altering perceived value. Because many fan page platforms are multifunctional (e.g., encouraging user promotions, enabling instant replies, using specific font labels, and providing visual symbolism), operators should present different product features to promote consumer BA. Fan page operators should design various features that satisfy consumers' requirements to increase the likelihood of liking behavior and the transference of information through eWOM over fan pages. In addition, information regarding consumers' favorite products and liking behavior on fan pages could improve the purchase intentions of other consumers. Operators should also directly serve and communicate online with consumers through the fan page. Doing so could substantially contribute to the overall strategy. A design that facilitates information sharing over fan pages could provide immediate product information to enhance the efficiency and effectiveness of a marketing strategy. The proper management of a fan page would facilitate the rapid spread of news and information. It would also improve the overall business operations and imbue a sense of professionalism in the company image.

6.2 Limitations and future research

Our study had some limitations. First, we did not distinguish between social networking sites in Taiwan. Consequently, caution should be exercised when generalizing there search findings of this study because they do not represent fan pages on all social networking sites. Future studies should take various samples into account by including fan page users of different social networking sites, such as LINE and Twitter. In addition, the study primarily focused on products for which consumers perceived the degree of value and did not consider the effects of other factors such as service quality and after-sales service. Future studies should consider combining other theories (e.g., expectation confirmation theory) with the uses and gratifications theory to fully identify factors affecting the continuance of consumer purchase intentions.

Appendix A. Measurement Items in Each Construct and References

Constructs	Measurement items	References
Electronic word-of-mouth (eWOM)	eWOM1: I am willing to share my experience of product purchases with other users on fan pages. eWOM2: If others must purchase a product, I am willing to recommend products on fan pages. eWOM3: I publish product information shared by other people on fan pages. eWOM4: When friends recommend a product on a fan page to me, I share the information with others. eWOM5: I actively recommend appropriate products on fan pages to friends based on their requirements.	Lee, Kim et al. (2012) Wang, Shen et al. (2013)
Brand image (BI)	BI1: I think products on fan pages are reliable. BI2: I think products on fan page are of high quality. BI3: I think products on fan pages are attractive. BI4: I have a good impression of products on fan pages. BI5: I think products on fan pages are pleasing. BI6: Overall, products on fan pages have a good reputation.	Lien, Wen et al. (2015) Barreda, Bilgihan et al. (2016)
Brand awareness (BA)	BA1: I am very familiar with products on fan pages. BA2: In comparison with those of other brands, products on fan pages have a certain degree of recognition in the industry. BA3: I believe that products on fan pages belong to good brands. BA4: Generally, I buy well-known products on fan pages.	Barreda, Bilgihan et al. (2015) Barreda, Bilgihan et al. (2016)
Perceived value (PV)	PV1: I purchase satisfactory products from fan pages at a reasonable price. PV2: Purchasing products through this fan page is worth as acrifice of time and effort. PV3: Compared with other online shops, it is wise to choose this fan page for purchases. PV4: Overall, using fan page products makes me feel good.	Kuo, Wu et al. (2009) Hsu and Lin (2015)
Purchase intention (PI)	PI1: If I must shop, I intend to purchase products from a fan page. PI2: If I must shop, I plan to purchase products from a fan page. PI3: I immediately buy a product after obtaining product information from a fan page. PI4: I am willing to buy products recommended by my friends on fan pages. PI5: I buy products at some point in the future after obtaining product information from fan pages.	Bai, Yao et al. (2015) Hu, Huang et al. (2016)
Liking behavior (LB)	LB1: To inquire about product information, I click like on fan pages. LB2: To see posts from others about product information, I click like on fan pages. LB3: To see product information shared by others, I click like on fan pages. LB4: To see the likes from others for products, I click like on fan pages. LB5: In general, if I like a product, I click like on fan pages.	Hong, Chen et al. (2017) Gan (2017)

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