



Value of interaction on Instagram based on user perception

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Abstract: The advancement of communications technology has transformed social media from a platform of one-way emotional communication to a crucial medium of personalization, interaction, and publicity. The new wave of social media has strongly influenced Generations Y and Z. Social media platforms are thus striving to create distinctions that make them stand out from a wide variety of such platforms, and Instagram is no exception. Such platform distinctions aim to increase content interaction, meet user expectations, and increase user satisfaction, thereby cultivating loyal users. Considering that studies have rarely discussed Instagram, this study explored the influence of Instagram users' perceived interactivity, perceived value, satisfaction, and loyalty to the platform. Results from statistical analyses and tests performed using SPSS Statistics 23.0 revealed a significant, positive correlation among perceived interactivity, perceived value, satisfaction, and loyalty. This implied that users' willingness to actually participate in social media interaction is subject to perceived value and satisfaction and they also become loyal to the functions and content offered by a platform. Finally, these research results will enable relevant operators to effectively understand the usage and effects of Instagram and can serve as a reference for commercial operations with regard to marketing.

Keywords – Instagram, Perceived interactivity, Perceived value, Satisfaction, Loyalty

I. INTRODUCTION

In the era of information fragmentation, the continual emergence of various types of social media platforms has created constant competition between industries. Social media is no longer a platform of one-way emotional communication; now, each platform is characterized by its respective characteristics and main functions. This transformation has changed how people interact and indirectly affected companies and brands. The mobile user daily behavior survey conducted by the Taiwan Network Information Center (2018) revealed that 51.5% of respondents were moderate mobile phone users, using their mobile phones for 2–5 hours per day, and 28.1% were heavy mobile phone users, using them for more than 5 hours per day. Moreover, 69% of the respondents used social media apps on their mobile phone, which demonstrated the vital role of social media in the daily lives of mobile phone users. The wave of social media platforms has unintentionally changed the leading social media platforms.

According to a report by Social Media Today (2018), Instagram is the most appealing social media platform to the millennial generation. Up to 85% of teenagers log in to Instagram at least once a month. By contrast, Facebook usage reduced from 60% in 2016 to 36% in 2018. Compared with the text-based content of Facebook, users are more attracted to the visual experience offered by Instagram. Consequently, 70.7% of well-known brands worldwide use Instagram as their advertising and marketing tool (eMarketer, 2017). In addition, Truong (2014) discovered through a survey that Instagram has an engagement rate 15 times higher than that of Facebook; Instagram also has a growth rate higher than that of other mobile applications such as Twitter, YouTube, and Maps app. The fierce competition among social media platforms attaches great importance to a social media platform's engagement rate and user-perceived value in addition to the overall design of its interface.

Harvard Business School Professor Piskorski (2011) mentioned that the value proposition of all prosperous online community platforms includes functions that directly or indirectly facilitate user interaction, which extends the definition of mutual communication in real life and transforms the conventional one-way communication into a two-way, relationship-oriented communication model (Erdoğan & Cicek, 2012). Therefore, multiple companies have begun to utilize social media platforms to maintain the community engagement of their brand (Laroche, Habibi, & Richard, 2013). Hsu, Chih, & Lin (2015) asserted that brand community is the optimal method for companies today to establish their own brand and maintain positive customer relationships. Despite the large number of users on most social media platforms, only a few companies have successfully increased revenue using social media platforms. This is mainly attributable to most companies only focusing on continuous business promotion on these platforms and ignoring the establishment of an interactive relationship with users (Piskorski, 2011).

Literature has confirmed that perceived interactivity affects social media engagement. Therefore, the interactive design of social media should focus on establishing the consciousness of community value to enhance group cohesiveness, thereby achieving continued participation and even triggering loyalty. Indonesia's Tokopedia, the country's largest e-commerce platform, organized a series of marketing activities on Instagram to stand out from the tough competition for year-end sales. The company invited key opinion leaders to share content related to their business on their feed, Stories, and livestreams. Furthermore, brand logos were added to those leaders' biographies, profiles, and Story highlights to emphasize the brand image and marketing activity content. Such gestures increased the sales of flagship products twofold, the number of product page views to 67%, the number of unique (i.e., unrepeated) visitors to the store by 2.2 times, and the online visitor volume of the flagship brand by 3.1 times (Instagram, 2020). Instagram is the optimal platform on which marketing personnel can engage its audience, gain popularity, and increase customer loyalty.

Among the antecedent variables influencing loyalty, perceived interactivity, and perceived value are the crucial determinative factors. Lee, Chiang, & Wu (2011) discovered a mutual influence among perceived interactivity, perceived value, and loyalty. Relevant academic research is lacking (Pittman & Reich, 2016). Studies on Instagram have mostly focused on users, such as user motivation, user intention, value in use, and the effect of advertising value on purchase intention (Lee, Lee, Moon, & Sung, 2015; Li, Huang, & Chiu, 2016; Lin & Ke, 2017; Chou & Shih, 2018; Chen & Chao, 2019; Chen, Chen, & Chiu, 2019). Because no research has explored the mutual relationship among perceived value, perceived interactivity, satisfaction, and loyalty, the present researchers were motivated to conduct this study.

Generally, in the initial stage of loyalty development, the convenience of interaction, functionality of the operation, and overall satisfaction with regard to a social networking platform may all constitute the benefits of perceived value. In addition to the social needs of modern people, Instagram incorporates various features into its platform, such as Instagram Stories, IGTV, hashtags, filters, sharing of short video clips, and livestreams. Users have the freedom to create their own content and generate a sense of affinity through participation, communication, blending, and interaction, which trigger perceived interactivity, perceived value, satisfaction, and even an ultimate sense of loyalty. Zook and Allen (2011) noted that the more obvious the differentiation between a company and its competitors, the greater its competitive advantage. Utilizing social media for marketing has become an inevitable trend for companies. However, user engagement varies because of varying levels of motivation, psychological needs, self-disclosure, interpersonal emotional interaction, and values. Through exploring the perceived interactivity, perceived value, satisfaction, and subsequently derived loyalty of Instagram users, this study may practically contribute to government and business operators in terms of formulating and implementing Instagram marketing strategies.

II. LITERATURE REVIEW

2.1 Instagram Social Media

In the wave of emerging social media platforms, Instagram stood out from the rest and became the most influential social media platform today (Chen & Chao, 2019). Created by Kevin Systrom and Mike Krieger in 2010, Instagram is a free social application for sharing images and videos online (Mahendra, 2017). A registered user may share information on the platform and set a post's privacy setting to "public," "followers," or "close friends" according to the person's preferences. The most distinct difference between Instagram and other social media platforms is that every Instagram post must be uploaded with either an image or a video (Chang, 2018). Moreover, Instagram offers excellent built-in filters that enable users to take pictures comparable to those of professional photographers (Bradley, 2015).

The latest survey conducted by Learning Hub (2020) revealed that there are currently more than 1 billion Instagram users worldwide. The number of Instagram users in Taiwan is 7.4 million, which is one-third of the country's total population. Compared with Facebook, which comprehensively presents various online information on the same browsing page, the visual content on Instagram is more appealing to social media users (Peng, 2015). Leung (2019) mentioned in his comparative study on Instagram and Facebook that approximately 40% of users pay more attention to visual content (images) than they do to plain text. The organic reach of Instagram ranges from 20% to 100%, whereas that of Facebook plunged from 100% in the past to 4-6% today. Wu (2015) also indicated that Instagram has characteristics of a simple user interface and few commercial advertisements. With the average age of Facebook users increasing, younger adults are switching to Instagram. Because Facebook is being replaced by Instagram as the most popular social media site. Exerts a great effect on future enterprise marketing operations (Sheldon & Bryant, 2016). This study focused on Instagram.

2.2 Perceived interactivity

Perception is people's respondent behavior for understanding and gathering information about the external world; that is, the human sensory system interprets external information to explain and organize messages (Ballantine, Parsons & Comeskey, 2015). Interaction refers to the back-and-forth exchange of messages between a sender and receiver for content revision in the hope of achieving effective two-way communication (Newhagen, 1997). The term "perceived interactivity" was first proposed by Newhagen, Cordes and Levy (1995), who defined it as a two-way, psychological sensory perception encompassing internal and external self-efficacy. Internal self-efficacy is an observer's psychological feeling toward a website's performance, whereas external self-efficacy is an observer's feeling toward the interactivity on the media system of a website. Selnow (1988) deemed perceived interactivity to involve the exchange of opinions between a specific message sender and receiver through a proper communication channel, and such exchanges based on obtained content generate feedback. In the communication process, the connection between messages and message continuity and the responsiveness of both parties are key to the success of overall interaction (Schultz, 1999).

Steuer (1992) explored interactivity from the perspective of users of a medium and discovered that interaction is the degree to which users can instantly modify the form and content of the mediated communication environment. Interactivity concerns the following three major factors: (1) speed of interaction: the time and speed of response; (2) range: the number of decisions and choices in a mediated communication environment; and (3) mapping: users are led in the correct direction according to their behavior. Studies have discovered that users' perceived interactivity of a website affects website performance, which is related to quality, satisfaction, loyalty, word-of-mouth marketing, and repurchase behavior (Song & Zinkhan, 2008). Social media platforms should pay attention to the usage activities of users to continually update and improve their content, thereby enhancing the interactive relationship between users. Through facilitating two-way communication and encouraging content creation, social media platforms hope to increase user satisfaction (Li, Chiu, Liu, & Chen, 2014). Overall, perceived interactivity may be described as the degree of instant interaction perceived by a message sender and receiver. Because the orientation and focus of attention vary with each field, the discussion of interactivity differs (Downes & McMillan, 2000). This study used the four dimensions of interactivity — control, entertainment, connectedness, and responsiveness — proposed by Zhao and Lu (2012) to explore how two-way interaction affects the inner thoughts of users on the emergence of Instagram and their awareness of it.

2.3 Perceived value

Perceived value refers to customers' overall evaluation of and feedback for a product or service as well as the ratio between the sacrifice and benefit customers perceive (Gallarza and Saura, 2006; Agrawal, Atasu, & Van Ittersum, 2015). Petrick (2002) deemed that perceived value is the result of a trade-off between perceived benefits and costs. Perceived value can also be regarded as customers' subjective determination of product value (Li, Li, & Kambele, 2012). Sweeney and Soutar (2001) divided perceived value into emotional value, social value, economic value, and functional value, which are detailed as follows: (1) emotional value: the emotions experienced by customers after using a product or service; (2) social value: where customers increase their social self-concept through the use of a product or service; (3) economic value: where customers recognize that a product can result in short- or long-term cost reduction; and (4) functional value: where customers compare the quality and performance of a purchased product or service with their expectations. Overall, perceived value must be obtained through the provision of products and services. Only by obtaining perceived outcomes can the expected product performance and goals be achieved (Ballantine et al., 2015).

Wei and Lin (2010) asserted that perceived value is derived from customers' purchase intention or word-of-mouth for products or services. Therefore, individual differences in perception affect future consumer behavior and purchase intention (Lee et al., 2011). Ariely (2008) mentioned that users make judgments based on emotions as well as exhibit predictably irrational behaviors. The provision of product benefits from customers' perspective, particularly those related to a brand, product attributes, and additional services, helps reduce the cost burden on customers (Strauss & Frost, 2008). Perceived value of social media refers to the trade-off between users' perceived benefits and costs. When the perceived benefit exceeds the cost, users yield a positive perceived acquisition value. The greater the perceived acquisition value, the higher the users' reuse intention (Lee, 2011). This study used SERV-PERVAL, a multidimensional scale developed by Petrick (2002) to measure the quality, emotional response, and reputation of Instagram, thereby determining users' value development in the target situation.

2.4 Satisfaction

In today's consumer-oriented market, pursuing customer satisfaction is not only a goal of companies but also the key to building competitive advantages (Liang & Chang, 2018). The concept of satisfaction was first proposed by Cardozo (1965), who believed that improving service satisfaction helps increase customer repurchase behaviors. Moreover, customers' overall satisfaction increases when their actual experience exceeds their expectations of a product (Cho, Lee, Kim, Lee & Choi, 2004). Ostrom and Iacobucci (1995) noted that customer satisfaction or dissatisfaction is relative. That is, the degree of satisfaction perceived by customers (Tsui, Lei, & Huang, 2016) is a relative psychological feeling without a standard answer (Yeh, 2017). Kim, Chung, and Lee (2011) also indicated that satisfaction is a prerequisite for loyalty development. Satisfied customers are willing to continue purchasing, and even to recommend products to their friends, whereas unsatisfied customers switch to purchasing products from other companies. Overall, satisfaction is deemed a result of postpurchase behavior following a comparison between expectations and experience (Churchill & Surprenant, 1982; Al-Adwan & Al-Horani, 2019).

Satisfaction is more than customers' attitude developed from experiencing a product; it is the intention to jointly discuss services (Malik & Oberoi, 2017). According to Wang, Chen, & Yang (2015), satisfaction is mainly divided into three levels: (1) that which improves the company's overall competitive advantage and image; (2) that which improves the company's positive reputation and increases its successful transaction rate; and (3) that which increases customer repurchase intention and builds solid customer loyalty to accumulate profit. In addition, providing active, positive services that exceed customer expectations contributes to high satisfaction (Jones, Taylor & Reynolds, 2014). In sum, satisfaction represents customers' positive perception of a product or service, and when customers are satisfied, perceived loyalty can be achieved. Babakus, Bienstock and Van Scotter (2004) posited that customer satisfaction is a measurement with multiple items, which can be divided into overall satisfaction, product satisfaction, and service satisfaction; these are aligned with the measurement standards of this study.

2.5 Loyalty

Loyalty entails consumers repeatedly and frequently purchasing specific products or services, and such repurchase intention remains unchanged under the influence of the external environment (Oliver, Rust & Varki, 1997). Loyalty denotes that customers have a sense of identity or belonging to the company's personnel, services, and products (Hsu & Lu, 2018; Chang, Wang, & Chen, 2019). Cheng (2016) mentioned that during the two-way interaction between a customer and company, the customer develop an internal rating scale for the service perceived. Positive brand image helps reduce the uncertainty customers have when making purchase decisions. Sales personnel also play a crucial role in this process because they must continuously maintain the emotional connection between the company and customers, thereby increasing consumer loyalty (Morrison & Crane, 2007). However, the subjective thoughts and attitudes of customers greatly affect how they perceive a company (Liang & Chang, 2018).

Loyalty is generally divided into short-term and long-term. Customers with short-term loyalty easily end their connection when they discover superior options, whereas customers with long-term loyalty demonstrate their sincerity by maintaining long-term interaction with the brand (Jones & Sasser, 1995). For people with long-term loyalty, their fondness for the brand remains unchanged over time (Tung & Chang, 2013). Ingrid (2004) discovered that loyalty consists of three characteristics: (1) being willing to spend more money on the company's products or services; (2) recommending the company's products to others; and (3) building trust toward the company's products. Because for companies attracting a new customer is costlier than retaining an existing one, the success of a company depends entirely on how it maintains a positive relationship with customers (Venkateswarlu, Ranga, & Sreedhar, 2015). The six indicators proposed by Roberts, Varki and Brodie (2003), including recommendation to friends, positive comments, and information sharing, align more with the present study's objective of investigating users' loyalty to Instagram after experiencing the platform. Therefore, this study was mainly based on the scale proposed by Roberts et al.

III. METHOD

This study explored Instagram, the fastest-growing social media platform worldwide (Wagner, 2015). Based on the aforementioned research motivation, objectives, and literature review, the questionnaire content for a survey was compiled. The questionnaire responses were analyzed and tested to understand the correlation among Instagram users' perceived interactivity, perceived value, satisfaction, and loyalty to the platform.

3.1 Research Framework

This study regarded perceived interactivity, perceived value, satisfaction, and loyalty as the four variables for reliability and correlation analyses to determine the indicators of the correlation direction and strength between individual variables. Regression and path analyses were performed to verify the research hypotheses. Figure 1 illustrates the research framework of this study.

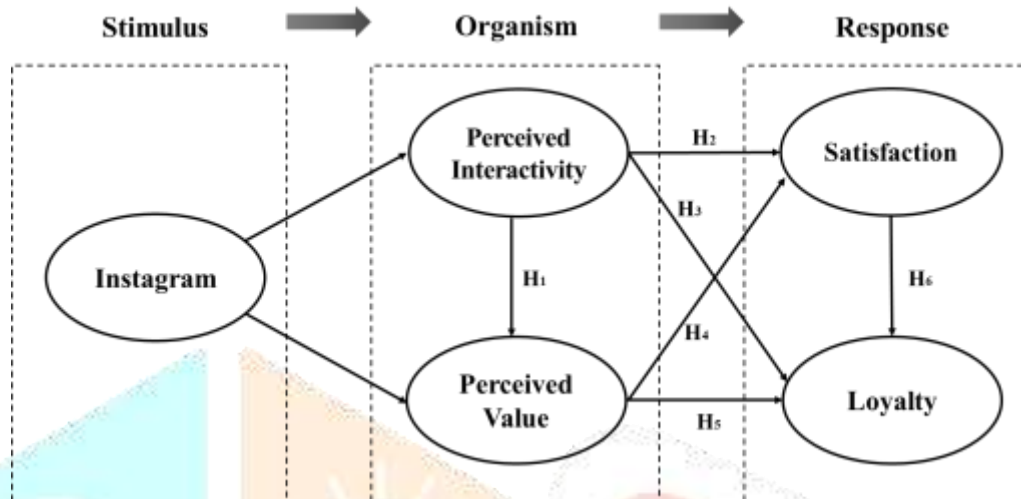


Figure 1. Research Framework

3.2 Research Hypothesis

From the perspective of social media users, this study explored the effect of Instagram users' perceived interactivity and perceived value on their satisfaction with and loyalty to the platform. Based on the research framework and research objectives, six hypotheses are proposed as follows:

- H1: Perceived interactivity positively and significantly affects perceived value.
- H2: Perceived interactivity positively and significantly affects satisfaction.
- H3: Perceived interactivity positively and significantly affects loyalty.
- H4: Perceived value positively and significantly affects satisfaction.
- H5: Perceived value positively and significantly affects loyalty.
- H6: Satisfaction positively and significantly affects loyalty.

3.3 Research Tools

The questionnaire consisted of five sections. The first section measured Instagram users' perceived interactivity of the platform using 11 questionnaire items under four dimensions (i.e., control, entertainment, connectedness, and responsiveness) proposed by Zhao and Lu (2012). The second section comprised 10 questionnaire items on perceived value, which were developed on the basis of SERV-PERVAL, a multidimensional scale developed by Petrick (2002). The third section comprised seven questionnaire items on satisfaction, which were categorized under the three dimensions of overall, product, and service satisfaction proposed by Babakus et al. (2004). The fourth section surveyed the loyalty of respondents using 10 questionnaire items developed on the basis of six indicators proposed by Roberts et al. (2003). Finally, the fifth section surveyed the respondents' demographic information, including sex, age, educational level, place of current residence, and occupation, with seven questions. All questionnaire items were developed in accordance with variables in relevant literature and the research objectives and framework. Based on their personal experience, respondents filled out the questionnaire using a 5-point Likert scale—*strongly disagree* (1), *disagree* (2), *neither agree nor disagree* (3), *agree* (4), and *strongly agree* (5)—as the evaluation method.

3.3 Population Definition and Sampling Method

This study explored the influence of perceived interactivity and perceived value on users' satisfaction with and loyalty to the services provided by Instagram. Therefore, the population was defined as Instagram users. This study used convenience sampling to pretest the questionnaire, during which 55 copies of the questionnaire were distributed. Because one questionnaire with missing data and invalid answers was removed, 54 valid copies were returned from the pretest. Four variables (i.e., perceived interactivity, perceived value, satisfaction, and loyalty) in the valid questionnaire responses were tested, and all Cronbach's α values surpassed the minimum value of 0.7 suggested by Bagozzi and Yi (1988). Subsequently, the final questionnaire was developed.

IV. Results

Because mainstream social media users satisfied the inclusion criteria, purposive sampling was employed to distribute the final questionnaire to Instagram users. The questionnaire was distributed in physical copies and online from March to April 2020, with a total of 324 copies returned, among which seven were excluded because they contained inconsistent or incomplete answers. Eventually, 317 valid responses were obtained with a response rate of 97.83%. To achieve the research objectives and verify the research hypotheses, this study conducted descriptive statistics, reliability analysis, correlation analysis, multiple regression analysis, and path analysis using SPSS Statistics 23.0. The analysis results are detailed as follows.

4.1 Descriptive Statistics

This study conducted a descriptive statistical analysis of the questionnaire responses to understand the distribution and characteristics of Instagram users' demographic data. Of the valid responses, 209 were from women (65.9%) and 108 were from men (34.1%). The majority of the respondents were aged 16–25 years (242; 76.3%), and most respondents had an educational level of college (165; 52.1%), followed by junior college (88; 27.8%). Most respondents lived in northern Taiwan (255; 80.4%). Most respondents were students (198; 62.5%). The majority of respondents expected to purchase clothes on Instagram (188; 23.9%) and most respondents expected to see image advertisements on Instagram (218; 32.7%). Table 1 summarizes the frequency distribution of the research sample.

Table 1. Frequency distribution of the research sample.

Item	Option	Frequency	Valid Percentage
Sex	Male	108	34.1
	Female	209	65.9
Age	16–25 years	242	76.3
	26–35 years	40	12.6
	36–45 years	18	5.7
	46 years or older	17	5.4
Educational level	Junior high school or lower	1	0.3
	Senior high (vocational) school	12	3.8
	Junior college	88	27.8
	College	165	52.1
	Graduate school or above	51	16.1
Place of current residence	Northern Taiwan	255	80.4
	Central Taiwan	36	11.4
	Southern Taiwan	23	7.3
	Eastern Taiwan	0	0
	Outlying islands of Taiwan	3	0.9
Occupation	Student	198	62.5
	Military personnel/public servant/teacher	31	9.8
	Technology industry	10	3.2
	Service industry	45	14.2
	Business and commerce	22	6.9
	Housekeeper	6	1.9
	Freelancer	4	1.3
	Retired	1	0.3
	What type of products do you expect to purchase on Instagram?	Food	110
Clothes		188	23.9
Cosmetics and beauty supplies		57	7.3
Accommodation		58	7.4
Electronic devices		62	7.9
Entertainment		109	13.9
Stationery and books		60	7.6
Daily necessities		117	14.9
Transportation tickets		24	3.1
What type of advertisements do you expect to see on Instagram?		Picture	218
	Short clip (15–20 seconds)	169	25.3
	Short play (micro movie)	60	9.0
	Plain text	45	6.7
	Key opinion leaders' endorsement or recommendation	65	9.7
	Funny and witty content	110	16.5

4.2 Reliability Analysis

Cronbach's α , proposed by Cronbach in 1951, was used to test the reliability of the questionnaire dimensions, thereby ensuring the internal consistency of the questionnaire. The alpha coefficients for the dimensions ranged between 0.867 and 0.905, surpassing the minimum value of 0.7 suggested by Nunnally (1967). This implied that the items of each questionnaire dimension achieved a certain level of reliability. The results are summarized in Table 2.

Table 2. Reliability analysis of the research dimension.

Dimension	Perceived interactivity	Perceived value	Satisfaction	Loyalty
Number of items	11	10	7	10
Cronbach's α	0.867	0.879	0.888	0.905
Reliability	High	High	High	High

4.3 Correlation Analysis

Pearson's correlation coefficient analysis was conducted on the samples to determine correlations among perceived interactivity, perceived value, satisfaction, and loyalty. Perceived interactivity was positively correlated with perceived value ($R = .755$; $p < .01$), satisfaction ($R = .729$; $p < .01$), and loyalty ($R = .752$; $p < .01$). This implied that users' perceived value, satisfaction, and loyalty increase with perceived interactivity. In addition, perceived value was positively correlated with satisfaction ($R = .824$; $p < .01$) and loyalty ($R = .758$; $p < .01$); accordingly, satisfaction and loyalty increase with perceived value. Finally, satisfaction was positively correlated with loyalty ($R = .733$; $p < .01$); thus, loyalty increases with satisfaction. According to correlation analysis results, significant and positive correlations were observed between all four dimensions (Table 3).

Table 3. Correlation coefficient analysis results for each dimension.

Variable	M.	SD.	Perceived interactivity	Perceived value	Satisfaction	Loyalty
Perceived interactivity	3.8737	.59924	1			
Perceived value	3.7419	.59899	.755**	1		
Satisfaction	3.8604	.62684	.729**	.824**	1	
Loyalty	3.6429	.67204	.752**	.758**	.733**	1

Note: ** $p < .01$

4.4 Regression Analysis

To verify the research hypotheses, this study first analyzed the fitness between the data and model, which was indicated by R-square (R^2) values. A regression model's explanatory power is determined by its R^2 value, which should be > 0.1 . If the p value corresponding to the t value is less than the significance level (.05), the R^2 would indicate significant explanatory power. Because all p values were $< .05$, the research hypotheses were significantly and positively correlated; thus, H1–H6 were supported. Table 4 presents the hypothesis verification results.

Table 4. Regression analysis results for hypothesis verification.

Research Hypothesis	Path	R^2	Beta	t	F	P
H1	Perceived interactivity→Perceived value	.571	.755	20.459	418.557	.001***
H2	Perceived interactivity→Satisfaction	.531	.729	18.895	357.021	.001***
H3	Perceived interactivity→Loyalty	.566	.752	20.262	410.547	.001***
H4	Perceived value→Satisfaction	.679	.824	25.801	665.710	.001***
H5	Perceived value→Loyalty	.574	.758	20.606	424.599	.001***
H6	Satisfaction→Loyalty	.537	.733	19.108	365.132	.001***

Note: *** $p < .001$

4.5 Path analysis

Path analysis was performed to test the collinearity diagnostics, significance, explanatory power (R^2), and effect size. In this study, the perceived interactivity, perceived value, and satisfaction of Instagram users served as predictor variables, and loyalty was the criterion variable. Three multiple regression analyses were performed, where (1) perceived value was the criterion variable and perceived interactivity was the predictor variable; (2) satisfaction was the criterion variable and perceived interactivity and perceived value served as the predictor variables; and (3) loyalty was the criterion variable and perceived interactivity, perceived value, and satisfaction served as the predictor variables.

Path analysis results are presented in Table 5. The unstandardized coefficient between perceived interactivity and perceived value was 0.753; the t value was 20.523 ($p = .001$); the explained variation was 57.1% (moderate explanatory power); and the effect of perceived interactivity on perceived value was statistically significant; thus, H1 was supported. Regarding satisfaction with perceived interactivity and with perceived value, their unstandardized coefficients were 0.259 and 0.667, respectively; their t values were 5.331 ($p = .001$) and 13.678 ($p = .001$), respectively; and the statistical significance suggested by the high explanatory power (explained variation of 70.5%) supported H2 and H3. In terms of loyalty with perceived interactivity, perceived value, and satisfaction, their unstandardized coefficients were 0.409, 0.340, and 0.232, respectively; their t values were 7.034 ($p = .001$), 4.838 ($p = .001$) and 3.607 ($p = .001$), respectively; and the moderate explanatory power (explained variation of 66.3%) supported H4, H5, and H6. Accordingly, all hypotheses (H1–H6) of this study were supported.

Table 5. Path analysis results.

Criterion Variable	Predictor Variable	Unstandardized Coefficient		Standardized Coefficient	t	P	Explained Variation R^2
		B	Standard Error	β			
Perceived value	Constant	0.820	0.144		5.688	0.001*	0.571
	Perceived interactivity	0.753	0.037	0.755	20.523	0.001*	
Satisfaction	Constant	0.359	0.131		2.734	0.006*	0.705
	Perceived interactivity	0.259	0.049	0.248	5.331	0.001*	
Loyalty	Perceived value	0.667	0.049	0.636	13.678	0.001*	0.663
	Constant	-0.106	0.152		-0.696	0.486	
	Perceived interactivity	0.409	0.058	0.365	7.034	0.001*	
	Perceived value	0.340	0.070	0.303	4.838	0.001*	
	Satisfaction	0.232	0.064	0.217	3.607	0.001*	

Note: * $p < .05$

4.6 Verification Results of The Research Hypotheses

Positive, statistically significant relationships were yielded from the path analysis and verification of the research hypotheses; all hypotheses were supported and the results are summarized in Figure 2. In the path analysis diagram (Figure 2), arrows denote causal relationships; the base of an arrow represents a predictor variable in the regression equation, and the tip of an arrow denotes a criterion variable (Wu, 2003).

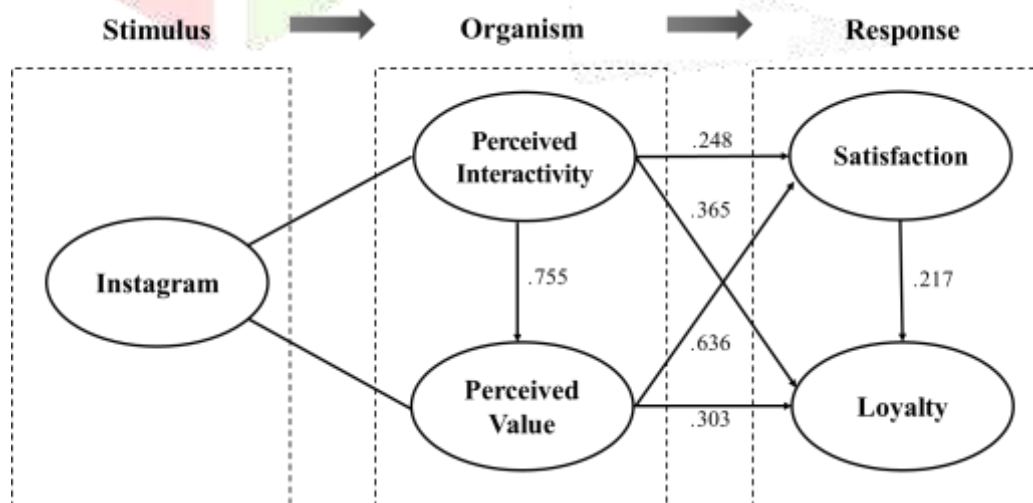


Figure 2. Verification results of the research hypotheses.

Note: Solid lines indicate significant effect

IV. DISCUSSION AND CONCLUSION

In the era of high information stickiness, social media has gradually become a crucial medium for transmitting messages. The time users spend on Instagram has been increasing considerably, rendering it a crucial topic worthy of in-depth exploration. However, relevant academic research is scarce (Sheldon & Bryant, 2016). Developing strategies to quickly and effectively attract the attention of users and increase their usage intention is necessary for companies planning to expand their business. Therefore, based on the research background, objectives, and related literature, this study explored the perceived interactivity, perceived value, satisfaction, and loyalty of Instagram users. Results on perceived interactivity indicated that most users found Instagram easy to learn, highly efficient for message dissemination, and to be a platform on which they can effectively share their mood, experiences, or feelings with others. Moreover, the Instagram users willingly followed official accounts or public figures of interest to them, but only few users were willing to invite friends and family around them to join Instagram. Regarding perceived value, the functionality and practicality of Instagram prompt the users to continue using it and enable them to share and acquire the information they need. On the whole, the social and application services provided by Instagram met the users' expectations. In terms of satisfaction, the users were most satisfied with the overall layout of Instagram, followed by user experience, and were most dissatisfied with the accuracy of information search. Finally, results on loyalty indicated that despite the new features launched by other social platforms, the users were willing to continue using Instagram and share their use experience and advantages with friends. However, the Instagram users were reluctant to purchase required goods or services on the platform. In sum, the Instagram users responded positively toward perceived interactivity, perceived value, satisfaction, and loyalty, but had a less positive perception of purchase intention, recommending the platform to relatives and friends, and the accuracy of information search. Therefore, companies planning to expand their business using Instagram must consider the aforementioned three concerns.

According to the research results, Instagram users are mostly aged 16–25 years and fall into Generation Z (digital natives) and Generation Y (millennials). Because Instagram users are used to quickly obtaining information in this digital environment, companies distributing promotional content through Instagram Stories is fitting. Because of users' sufficient control over what content they see and the short duration of Instagram Stories, promotional content on Instagram Stories must quickly and effectively attract users' attention. In addition, this study found that Instagram users' willingness for actual participation is influenced by the two-way communication interactivity of the platform content and the degree of perceived acquisition value. Users perceive satisfaction when the service meets their needs, become dissatisfied when they obtain incorrect information from a search, and develop loyalty toward messages implied by various content. Governments and companies planning to adopt Instagram marketing should first understand the interaction pattern of target users, what attracts their attention, and their information preference on the platform. Instead of a vast amount of exposure, companies should focus on users' motivation to view the content coupled with the message of an advertisement to effectively achieve comprehensive marketing. Accordingly, four practical suggestions are detailed as follows:

5.1 Conduct joint marketing with brands to increase mutual benefits.

This study discovered regarding perceived interactivity that most users were satisfied with is the hashtag function of Instagram, and they are more accepting of information shared by friends using hashtags. Therefore, this study suggests cooperation between brands to maximize marketing effectiveness with the same budget. Hashtag campaigns also help brands gain recognition on Instagram, which is conducive to the reach of posts and user engagement. When users see their friends have preferences for certain brands, they directly generate fondness for the same brands rather than searching for additional information or deliberating.

5.2 Create tutorials and engaging posts.

The survey results showed that most users expected to see advertisements using pictures, short clips (15–20 seconds), and funny and witty content on Instagram, in that descending order. Therefore, this study suggests that companies exploit said three advertisement types to promote their brands. Furthermore, topics that users resonate with (e.g., current events in life, DIY, and tips) may be incorporated into the advertisements. Instructed through pictures or short films, marketing campaigns are quick and simple for users to join, and a funny and witty touch at the end of such advertisements leaves users with a lasting impression.

5.3 Provide strong incentives for promoting two-way interaction between the company and users.

According to the present study's results and literature review, interactivity is the foundation of marketing. Therefore, under the premise that user engagement is considered, companies are suggested to provide strong incentives such as in the following examples: the first person to complete a specific task (e.g., hashtags, screenshots, comments, and photo taking) receives free products; half-price discounts; and buy-one, get-one-free deals. Such activities increase user engagement, build brand attention, and thus increase overall sales.

5.4 Implement audience-based product selling.

This study explored in its survey the type of products users expect to purchase on Instagram and discovered that the majority tend to buy clothes, followed by daily necessities, food, and entertainment. Therefore, companies planning to sell products on Instagram may consider the aforementioned four types of products if they do not have a clear goal in mind.

Instagram, exerting a strong impact on human lives, has become a crucial communication and interaction platform between users as well as between companies and users. Moreover, Instagram has changed the business models and marketing channels of multiple industries, creating a revolution in innovative services and channels. Therefore, companies should manage Instagram prudently. In addition to thoroughly understanding the

characteristics of built-in tools, companies must improve overall interactivity and value to enhance user satisfaction and even foster loyalty. Comprehensively speaking, the thoughts, feelings, and emotions of the Instagram users varied, which indicated that the questionnaire responses could not fully represent opinions of the entire population. Future studies are advised to extend the framework of this study and conduct qualitative research or in-depth explorations of users in different regions, thereby enhancing the extent and practicality of the research.

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