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Apple or Huawei: Understanding Flow, Brand Image, Brand Identity, Brand Personality and Purchase Intention of Smartphone

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Abstract: The global use of smartphone has had tremendous social, environmental, and economic impacts in the last decade, and continues to grow impressively. In order to comprehend customers' purchase behavior, it is crucial to understand the driving force behind their choice of one specific brand among various competitors. A few prior researches have demonstrated that not only the optimal experience of flow, but also identity features (i.e., self-identity, social identity, brand identity) facilitate a customer's purchase intention. Previous studies also indicate that brand-related constructs (e.g., typically brand image but sometimes also brand personality and communication) predict purchase intention. As the first study combining flow, which focuses on investigating the consumer purchase behavior through identity and brand-related constructs, we propose a conceptual model that combines flow theory, brand image, brand communication, brand identity, and brand personality to investigate purchase intention. We have empirically tested the conceptual model based on the data collected from 1377 Chinese smartphone users. Results via the structural equation modeling with AMOS software indicated that flow experience, brand image, brand communication, brand personality, and brand identity all directly or indirectly explain purchase intention. Flow experience serves a critical role in mediating the path from brand communication, brand personality, and brand identity to purchase intention. The research focuses on the strategic implication of the various brand features management and aims to harmonize economic, social, and environmental sustainability.

Keywords: smartphone sustainability; flow experience; brand image; brand communication; brand personality; brand identity; purchase intention; brand communication management

1. Introduction

The use of smartphone has grown tremendously in the last decade, with the digitalized era in human society, the growth of the smartphone industry [1], and the increase of social interactions via Internet [2]. This phenomenon poses huge challenges in terms of social sustainability (e.g., internet addiction), environmental sustainability (pollution for production materials, energy usage), and economic sustainability (e.g., long-term market challenges). Inevitably, such trends continually worsen and, notably, they are not reciprocally harmonized. As such, there are trends

to maximize immediate economic profit with little care for its long-term sustainability in terms of economic, environmental, and social impacts. This is a common global phenomenon that affects the global world community, irrespective of culture, language, latitudes, geography, religion, policy, etc. Meanwhile, the levels of analyses for such phenomena encompasses all STEM (Science, Technology, Engineering and Mathematics) and SSH (Social Sciences and Humanities) disciplines. However, one of the keystones of this global contemporary phenomenon is the interface among this technology and its users, which are responsible for its universal adoption. The psychological level of analysis is a key to better understand the behavior of smartphone users. Furthermore, there are other inputs that are important to understand consumers' purchase driving force. For example, the motivations behind individuals' choice and purchase intention of a specific brand among various brands of smartphone needs to be further explored on both the psychological and economic level. Therefore, acquiring deeper knowledge at the psychological level could contribute ideas and insights for developing strategies to better cope with the various negative consequences by finding new ways to harmonize social, environmental, and economic sustainability, and, consequently, to develop strategies to better cope with these negative consequences of smartphone use at the global level. Consumption purchase represents, in fact, one of the most powerful everyday behavioral areas capable of affecting, by means of the activities and lifestyles they imply, not only the economy per se, but also its societal and environmental impacts.

Purchase intention, or the customer's tendency or willingness to buy a certain product or service in the future [3], may positively predict the chance of purchasing. Prior studies on the predictive factors for purchase intention are varied according to various theoretical scopes and practical domains. They include, for instance, factors acting brand communication (such as social media advertising [3,4]); factors acting on user's personal experiences toward the product (such as affective, cognitive, behavioral, social and sensory experiences [5]); factors like consumers' optimal experience (i.e., flow, [6]) and users' attitudes [7], which comprise affective components, cognitive components and behavioral components. There are also factors that directly influence purchase intention, for instance, the product's functional and symbolic value dimensions [8]; the brand image of the product [9]; the identity the product represents [10] such as self-identity [11], social identity [12], or both self- and social identity [13], ethnic identity [14,15], and cultural identity [16]; as well as brand personality [17].

However, only a few prior studies have demonstrated that not only the optimal experience of flow [18], but also identity (i.e., self-identity, social identity, brand identity) facilitates customers' purchase intention. Moreover, previous studies also indicated that brand-related constructs (i.e., many on brand image, a few only on brand personality and brand communication) influence purchase intention. However, little prior research has studied the brand communication effect on smartphone purchase intention [3,19], and there has not yet been research on the brand identity and personality effects on this intention. Moreover, the application of the user experience of flow to brand-related constructs, identity, and smartphone's purchase intention has not yet been studied. As such, the present work tries to understand smartphone purchase intention towards smartphone from a combined conceptual model embracing all of the above-mentioned important factors, aiming towards a 360° social-psychological view on potential determinants of smartphone consumption purchase: flow, brand image, brand communication, brand identity, together with brand personality, based on their theoretical background and literature support. Considering the mediating role of flow among brand features and purchase intention is also a way of valuing the social responsibility of the company and of the company–client transaction; in fact, a customer's flow experience speaks in favor of a consumption purchase experience that is intrinsically gratifying for the user and the client. Thus, flow experience somehow gives an intrinsically socially responsible and socially sustainable feature to the consumption purchase activity.

2. Theoretical Background, Literature Review and Hypotheses

2.1. The Relationships between Flow, Brand Image, and Purchase Intention

2.1.1. Flow Theory

Flow is a subjective experience of cognitive and affective state emerging when people are performing activities at hand: it is characterized as full concentration, complete involvement, loss of self-consciousness, and optimal enjoyment [20]. Flow theory [20,21] proposes that the main causal mechanism for experiencing flow is that the perceived challenges of the task demands and the skills one possesses to cope with these challenges are both relatively high and in balance. Flow is typically characterized by the following aspects: (a) clear goals; (b) immediate and unambiguous feedback [22]; (c) balanced skills versus challenges; (d) sense of control over the task at hand; (e) high but subjectively effortless attention; (f) distorted sense of time perception (time moves faster or slower than usual); (g) a merging of awareness and action takes place; (h) a loss of self-awareness; and (i) an 'autotelic' motivation, namely, engaging in the task itself is perceived as rewarding. Since the combinations of high challenge and high skill situations are mostly found in work and structured leisure activities in daily life, flow is perceived to be more frequent and intense within such situations [21–26]. This is relevant here, because the smartphone is an indispensable tool for people's everyday life and it brings both work and leisure functions to people's daily life along with convenience and enjoyable experiences. Therefore, research on the influence of flow experience, brought by different brands of smartphone on consumers' choice, can expand our understanding on brand identity building and on purchase intention promotion. This approach can extend the investigation of flow theory from the hedonic-utilitarian and online shopping perspective in past studies [18] to the branding perspective and smartphone purchasing intention in the present study.

2.1.2. The Concept of Brand Image

Brand image can be defined as perceptions of a brand that are as reflected by the brand associations held in a consumer memory [27]: It helps the consumer in recognizing his/her needs and wants regarding the brand, and it distinguishes a brand from competitors [28]. In order for consumers to have a particular brand image they must first have a brand node in their memory that affects how different kinds of information are associated with the brand [27]. This brand image is consumers' overall perception and evaluation of the brand and influences their purchasing and consuming behavior [29]. Therefore, a brand image develops and changes over time [30]. It is an important predictor of consumers' perceptions and behaviors towards the brand [31], such as when they evaluate a product or service before purchasing [32]. In today's competitive environment, curating favorable brand images is of vital importance in effectively positing a product in the market [33]. In this case, the company can benefit from high congruence between their own messaging and their potential customers' positive cognitions [34]. In sum, the brand image can influence consumers' attitudes and behaviors by providing extra value to products and enhancing loyalty [35].

2.1.3. The Relationships between Brand Image, Flow and Purchase Intention: A Brief Review and Hypotheses

A good amount of prior research has revealed that brand image exerts a positive influence on purchase intention [36–41]. For example, Erdil [42] found that brand image has a positive effect on store image and perception, and consumers' purchase intention. Brand image, or consumers' associations with a brand, can be divided into functional and hedonic brand image. Functional brand image refers to that consumers' informational associations with brands and provides meaningful information about the quality and value of the brand. Hedonic brand image instead refers to the perceptions, feelings, or meaning that consumers create and associate with the brand. Researchers [43] have provided insight on the importance of the functional and hedonic brand image to brand managers. Findings revealed

that both functional and hedonic brand image have a significant influence on brand purchase intention. Lien et al. [40] examined the direct and mediating effects of brand image, perceived price, trust, and perceived value on consumers' booking intentions. It was found that brand image, perceived price, and perceived value are the three critical determinants that directly influence purchase intentions. Therefore, in the present study, we wish to replicate such a finding by studying the brand image of smartphone with respect to purchase intention. Thus, we propose that:

H1a: *Brand image of a specific brand of smartphone predicts purchase intention (confirmative hypothesis).*

The positive effect of flow experience on purchase intention has been demonstrated in many studies. For instance, through empirical analysis, Hsu et al. [44] found that website quality affects customers' purchase intention through the experience of flow. Similarly, Huang et al. [45] found, in a sample of consumers who recently used the hotel booking websites, that e-service- scape influences consumers' flow experience. Furthermore, flow experience mediates the indirect effect of positive affect on behavioral intention.

Research records on the relationship between brand image and flow experience can rarely be found insofar, and almost no scholars have discussed any direct link between the two. However, indirect evidence can be traced, for instance, in Drengrer et al. [46], who investigated the effects of flow experience during marketing events. Consumer attitudes can also be influenced by the congruity or incongruity between on- and off-line brand images. Landers et al. [47] extended this work by studying how this incongruity can negatively and directly impact consumers' flow experience. Huang [48] found that the re-formation process of emerging Internet brand images in traditional industries was influenced by online context, online flow experience, and consumer cognition among other factors. In addition, this study mentioned that consumers with the Internet brand online shopping experience may have repetitive (impulsive) purchase intentions and behaviors based on brand performance, recognition, reputation, and emotional image cognition, as well as online situations and their possible online flow experience or stimulation factors.

Since the positive effects of both brand image and flow experience on consumers' purchase intention have been confirmed respectively, the relationship between brand image and flow experience needs further exploration. Therefore, in this study, we creatively put forward the following new hypotheses:

H1b: *Brand image of the specific brand of smartphone predicts flow (innovative hypothesis).*

H1c: *Flow experience mediates the path between brand image and purchase intention (innovative hypothesis).*

2.2. The Relationships between Brand Communication, Flow and Purchase Intention

2.2.1. The Concept of Brand Communication

Brand communication is the primary medium between the brand and consumers and can create positive satisfaction with and trust to the brand [49]. Brand communication can be one-way, as in traditional advertising that seeks to increase brand awareness, brand attitudes, and ultimately brand choice [50]. However, brand communication can also be two-way, or transaction-oriented communication that seeks to directly influence existing customers' purchase intention [51,52]. The connotation of "brand communication" should first be an operational practice. Brand awareness, reputation, and harmony in the eyes of the target audience will be optimized through advertising, public relations, news reports, interpersonal communication, product or service sales, and other means of communication [53]. Recent work on brand communication has suggested that positive emotional advertising exerts a stronger force on purchase intention than informative advertising. This strategy has the greatest effect on purchase intention of promotion-focused participants purchase intention, while the negative promotional communication strategy has the greatest for prevention-focused individuals [19].

2.2.2. The Relationships between Brand Communication, Flow and Purchase Intention: A Brief Review and Hypotheses

Connecting products such as a smartphone with effective brand communication is a key factor of competitive advantage, which can bring huge economic returns. If a potential customer can connect his past experience with brand communication, he will have a clearer understanding of the brand and will prefer to choose this specific brand. When investigating the relationship between luxury consumption and brand communication, taking global consumers as the target group, it is found that the history, technology, product integrity, and brand reputation of brand communication will affect consumers' purchase intention; and that brand communication has a significant positive impact on purchase intention [54]. Previous studies have shown that consumers will make judgments that affect their purchase behavior through the hedonic and functional attributes of brand communication, which can effectively enhance their willingness to buy [43]. In the study of brand communication of chain hotels, it is believed that the knowledge and values related to brand can be spread through the digital environment, so as to strengthen the loyalty and trust of the relevant public [55]. Related research has found that the reputation and popularity of a university among the student population can be improved through the university's own brand communication [45]. Based on the above research on brand communication and purchase intention, we predict that:

H2a: *Brand communication of a specific brand of smartphone predicts purchase intention (confirmative hypothesis).*

The relation of brand communication with flow can be found in prior studies, for instance, Kim and Han [56] demonstrated that customers who received customized smartphone brand communication are more likely to experience flow, and thus, more likely to choose that brand; therefore, brand communication has an impact on consumers' smartphone brand selection [56]. In a study of quick response (QR) codes for business activities, Hossain, Zhou, and Rahman [6] found that the usefulness, feasibility, and acceptability of QR codes positively influence flow, which indicates that consumers felt totally captivated, time distorted, and that nothing seemed to matter to them while using the QR codes, which then again influence online customers' satisfaction (i.e., consumer experienced positive attitudes and satisfaction towards using QR codes), as well as purchase intention. Researchers also found that when the use of the web allows the potential to enter a flow state, online consumers should be able to improve their happiness in a short period of time, because this flow experience elicited from the network environment can attract consumers and affect subsequent attitudes and behaviors [44].

In a study aiming to examine how e-book presentation types, as a way of communication, play an important role in the purchase behavior of the e-book users, Hsiuli [57] investigated user perceived characteristics of e-book presentation types and their intention to purchase the e-book. Findings indicated that, for each group of participants, flow carries the same influence on the e-book purchase intention: Users will have a higher purchase intention when they experience more reading concentration, independent of the mode of reading (e.g., tablet, computer). Softic and Poturak demonstrated that social media communication of the brand influences brand equity and consequently impacts brand purchase intention of domestic brands in Bosnia and Herzegovina [58]. Moreover, a recent study on purchasing intention of eco-efficient products found that positive and negative promotional communication strategies (i.e., styles of brand communication) have diverging effects based on consumers' personal characteristics and that it is not the brand, per se, that contributes to an increase of the purchase intention of an eco-efficient product [19]. Finally, a very recent investigation of 303 Portuguese subjects revealed that brand communication can affect flow experience, which in turn can explain the purchase intention; this verifies the intermediary role of the flow [3]. Thus, we predict that:

H2b: *Brand communication of a specific brand of smartphone predicts flow (confirmative hypothesis).*

H2c: *A mediation effect of flow on the path between brand communication and purchase intention (confirmative hypothesis).*

2.3. The Relationship between Brand Identity, Flow and Purchase Intention

2.3.1. The Concept of Brand Identity

Brand identity represents a set of strategic tools maintained by companies in order to increase recognition, to differentiate it from its competitors, and to develop brand value and customer loyalty [27,59]. It is through brand identity that a relationship can be established between the customer and a brand [60]. Developing and curating a brand identity that can help establish fruitful relationships with potential customers is a critical skill for brand caretakers [61–64]. For instance, features of brand identity, such as understanding of the image and reputation of the brand, can drive an efficient use of marketing resources and other key and high-level decisions [63].

2.3.2. The Relationships between Brand identity, Flow and Purchase Intention: A Brief Review and Hypotheses

The relation of identity with purchase intention has been well studied across literature, for instance, the identity-driven customer engagement exerted positive influence on purchase intention [10]; self-identity and social identity influence Malaysian consumers' purchase intention to pay a premium price for luxury fashion goods [13], and self-identity also plays role in Malaysian consumers' purchase intention on organic food [65]. However, the application of brand identity and purchase intention into the study of smartphone has not yet been studied. In accordance, we propose that in parallel that other identity constructs are embedded in the framework of social identity theory:

H3a: *Brand identity predicts customers' purchase intention towards a specific brand of smartphone (innovative hypothesis).*

The direct relation between brand identity and flow experience cannot be found in literature, however, some evidence can be traced in very few research contributions, and findings suggested that the more flow experienced by an individual, the more he or she would be likely to experience an enhanced identity at different levels. At the level of the individual, or personal identity, Mao, Roberts, and Bonaiuto tested the constructs of flow and personal identity quantitatively and explicitly, and found that there was a significant and positive correlation between flow and personal identity [23]. At the level of social identity, Mao and colleagues found that flow was significantly and positively associated with social identity strength in U.S., China, and Spain [24]. At the place level, significant correlations between place identity and flow experience were found in samples from both Greece and Italy [66]. Based on the above literature, we can ascertain only that there is a positive correlation between identity and flow, but we do not know whether it is because flow experience brings identity or identity brings a happy psychological experience, which accounts for the positive correlation between flow and identity. Thus, we propose that:

H3b: *Brand identity with the specific brand of smartphone predicts flow experience (innovative hypothesis).*

Flow, as an intrinsically enjoyable and favorable experience that positively affects consumer attitudes and behavior, has become the center of attention within marketing science and it positively affects the attitudes and behavior of the consumer. Consumers are often attracted by products or brands related to their own social identity. The highlight of specific social identity may trigger consumers' psychological experience and guide consumers' decision-making, thus affecting consumers' purchase intention. Prior research has shown that the greater the experience of flow, the more the likelihood of consumers' purchase intention [67]. Research also found that individual users' flow experience with e-books reflecting different presentation types helps explains purchase intention [57]. Flow can also function as a mediator on the path between perceived website quality and customers' purchase

intention in e-business [44]. As flow has proved to predict purchase intention, and consistent with what we have already proposed in H3b, we propose that:

H3c: *Flow experience mediates the path between brand identity and purchase intention (innovative hypothesis).*

2.4. The Relationships between Brand Personality, Flow, and Purchase Intention

2.4.1. The Concept of Brand Personality

Brand personality reflects a set of human-like attributes that characterize a particular brand [68,69]. According to Aaker [68], there are five dimensions of American brand personality based on the human five-factor model of personality [70,71]: Sincerity (e.g., down-to-earth, real, sincere and honest), Excitement (e.g., daring, exciting, imaginative and contemporary); Competence (e.g., intelligent, reliable, secure, and confident); Sophistication (e.g., glamorous, upper-class, good looking, and charming); and Ruggedness (e.g., tough, outdoorsy, masculine and western). Such dimensions were also replicated in Asian culture and a consistency in cross-culture dimensions was also found in Japan for Sincerity, Excitement, Competence, and Sophistication; such dimensions were also replicated in Asian culture and a consistency in cross-culture dimensions was also found in Japan for Sincerity, Excitement, Competence, and Sophistication; while in Japan a culture-specific dimension on Peacefulness was revealed [69]. Through the existing literature on brand personality, it is found that Aaker's definition is the most representative and most recognized one, as it clearly points out that brand personality and human personality are the same, and brand personality borrows the characteristics of human-being, which directly personifies the brand and states that the brand has human attributes. However, insofar, no research has yet validated a five-dimension brand personality in a Chinese sample.

2.4.2. The Relationships between Brand Personality, Flow, and Purchase Intention: A Brief Review and Hypotheses

In view of the key role of brand personality in shaping the relationship between consumers and brands, a large number of studies focus on examining the antecedent factors that affect consumers' perception of brand personality [72]. People who represent the brand (e.g., spokesperson, CEO.) can be the direct source of brand personality; other indirect factors (brand name, price and slogan) can also shape brand personality perception [73]. Prior research has demonstrated that brand personality has an effect on purchase intention [17]. Therefore, in the smartphone case, we wish to confirm the following hypothesis:

H4a: *Brand personality of a specific brand of smartphone predicts purchase intention (confirmative hypothesis)*

Djatkiko and Pradana, investigating the influential factors on the purchase intention of Samsung brand smartphone, found that features of Samsung's specific brand personality and brand image include the processor, appearance, touch, spokesperson, and price among other factors [74]. Wang, Lee, Mantz, and Hung found that, when playing "advergames"—an online video game that promotes a particular brand, product, or marketing message by integrating them into the game—gamers experiencing high flow provided positive feedback on brand personality; this trend was reversed among gamers who experienced low flow, as they provided negative feedback [75]. This finding is confirmed by Tsai and Lee [76] and it can be understood that brand personality poses an effect on flow, and in turn flow provides feedback on brand personality. Lee, Yang, and Hung found that game-brand congruity and flow impacted brand personality in games [77]. Gamers are invited to interact with advertising in enjoyable environments in order to achieve marketing targets [78], and such process could also generalize to the experience of using a smartphone. Therefore, according to these studies, we propose that:

H4b: *Brand personality of a specific brand of smartphone predicts flow (innovative hypothesis).*

H4c: *Flow experience mediates the path between brand personality and purchase intention (innovative hypothesis).*

In conclusion, the hypothesized model can be summarized as indicated in Figure 1.

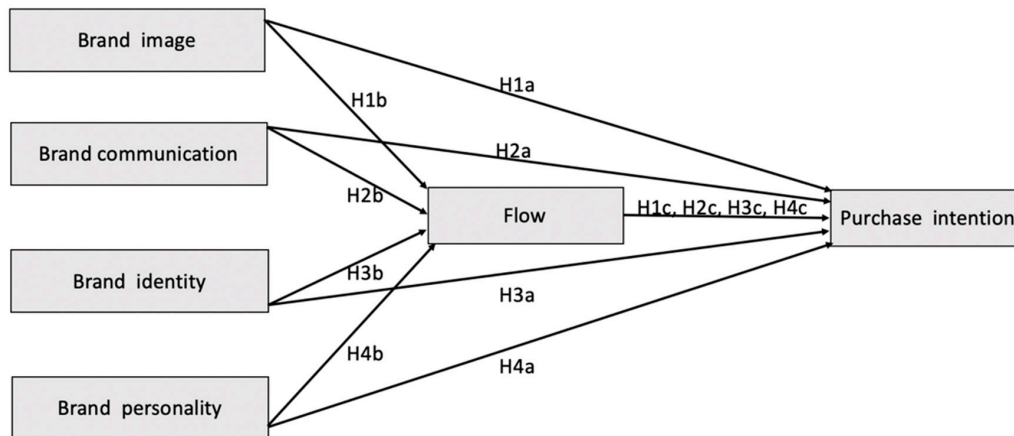


Figure 1. The proposed conceptual model.

3. Methods

3.1. Participants

A total of 1377 participants were recruited from Chengdu in Southwest China; participants' general social demographic features are reported in Table 1.

Table 1. Social demographic features of participants (N = 1377).

Questions	Options	Respons	Response Rate
Gender	Male	687	49.90%
	Female	690	50.10%
Age	≤17	35	3.00%
	18–25	1000	73.00%
	26–35	208	15.00%
	36–45	67	5.00%
	46–55	57	4.00%
	≥56	10	1.00%
Educational degree	High school	273	19.80%
	Bachelor	810	58.80%
	Master	271	19.70%
	Ph.D	23	1.90%
Socio-economic income	Low	920	66.81%
	Medium	388	28.18%
	High	69	5.01%
Smartphone brand in use	Huawe	473	34.35%
	Apple	345	25.05%
	Oppo	182	13.22%
	Mi	176	12.78%
	Vivo	129	9.37%
	Sumsang	38	2.76%
	Mei	22	1.60%
	Others	12	0.87%

3.2. Measures

Flow was measured by a five-item questionnaire that was comprised by the five flow characteristics identified by Hossain and Zhou [6]. The items (e.g., “My imagination is aroused when I interact within this brand of mobile phone”, “It is fun to interact on this brand of mobile phone”) were designed to measure how participants experienced flow in experiencing a smartphone of a certain brand. We used 7-point Likert-type scale (1—strongly disagree, 7—strongly agree), because respondents were able to report their score more easily, compared to the strict preparation requirements of the Thurston scale and given that the conditions that the Gottman scale is difficult to meet in reality. On the contrary, the Likert scale is easy to compile and has the same satisfactory confidence [79]. In the present work, the Cronbach’s alpha for internal consistency was 0.97.

Brand image was measured by a seven-item questionnaire that was comprised of seven brand image characteristics identified by Thomas [80]. The items (e.g., “The brand of this smartphone can cause my concern”) were designed to measure the customers’ image about the particular brand of smartphone they were using. Such a scale has been widely used (i.e., [81]) and the Cronbach’s alpha for the present sample was 0.93.

Brand communication was measured by a four-item questionnaire that was comprised of brand image characteristics identified by researchers [82]. Items such as “When I saw the presentation of the brand, I felt the information: (1) might be worth remembering”, (2) “might be interesting”, (3) “might be worth”, and (4) “might be valuable”. Such a scale was adopted to study the influence of brand communication, as it has been widely used in psychological marketing studies [83]. In the present work, Cronbach’s alpha was 0.94.

Brand personality was measured by a five-factor questionnaire that was comprised of the five dimensions of brand personality identified by Jennifer [84]: Sincerity, Excitement, Competence, Sophistication, and Ruggedness. A majority of scholars have adopted her scale and applied it to the different cultural circumstances [70,71] and found cross-cultural brand personality and cultural-specific brand personality [69]. In the present work, we used the Sincerity, Excitement, Competence, Sophistication, and Peacefulness dimensions that were valid in Japan and which was more appropriate for the Chinese context. Items such as “Do you think the brand of this smartphone you’re using now is . . . ?” were anchored by a 7-Likert type scale ranging from 1- completely disagree to 7-completely agree. Cronbach’s alpha regarding the present sample was 0.89.

Brand identity has typically been defined in the branding literature as a stable entity, which is internal to the firm and is the source of influence on consumers’ perceptions and interpretations of the brand meaning [68,85]. Brand identity has also been widely used in the tourism industry [86]. Despite extant work on how individuals contribute to help develop brand identity, our knowledge of management-led processes constituting part of the wider process of a socially constructed brand identity is still under-developed [87]. Brand identity was measured by an eight-item questionnaire adopted from Albrecht et al. [82]. In the present work, we use items such as “The brand shown is distinct from other brands”, “The brand shown is unique from other brands” and that are anchored by a 7-Likert type scale ranging from 1-completely disagree to 7-completely agree to get the respondents’ recognition of the smartphone brand they use at present. In fact, we use eight positive questions in a row to achieve repeated acceptance. This scale has been widely used (i.e., [88,89]); and its Cronbach’s alpha was 0.97 in the present data set.

Purchase intention was designed to test participant’s willingness to buy or recommend others to buy the same brand of smartphone he or she was currently using. According to Philip Kotler, purchase intention is the intent to buy and refers to the desire of the consumer to choose the brand in the portfolio during the evaluation phase, and forms the order to buy a particular product. The consumer typically makes decisions based on his purchase intentions, though this is also influenced by other factors. Indeed, the proximal role of intention to behavior is one of the key conclusions of the theory of planned behavior, one of the most frequently cited theories of attitudes and behavior (TPB: [90–94]). Therefore,

we used “I will buy or recommend friends and family members to buy this brand of smartphone” to analyze participants’ purchase intention ($M = 4.88$, $SD = 1.58$).

3.3. Procedure

Prior to the official data collection, all questionnaire items were translated and back translated from English into Chinese (simplified), followed by Brislin [95]. We then conducted a pilot test with 276 participants; after which, unclear items were adjusted, repetitive items were deleted, and missing items were added. During the data collection, each approached participant was asked if he or she would like to participate in a study on the brand of smartphone they were currently using, participants were then asked to respond to a series of questions in exchange for a small gift. They were told that participation would take approximately 10 minutes, that participation was voluntary, that the information they provided would not be shared with anyone other than the research team, and that no personally identifying information would be recorded (i.e., name, date of birth, phone number, etc.). To ensure the anonymity of the participants, verbal consent was obtained from each participant rather than written consent. Then participants were then asked to use Wechat (an instant messaging system that is similar to Skype and is widely used in China) to scan a quick response code linked to our online questionnaire, and subsequently, to fill and submit their answers regarding each question. Data collection lasted for 10 days, and it was conducted before, during and after the 2019 Chinese National Day holiday. One-thousand-five-hundred individuals were approached to participate in the study, of which 1377 fully responded, yielding a response rate of 91.8%.

3.4. Data Analytic Strategy

Data analyses such as descriptive statistics, Pearson bivariate correlations (two tailed) and path analyses were conducted in IBM SPSS (version 25.0). We also tested the construct reliability, in terms of internal consistency (Cronbach’s alpha) and temporal stability (test-retest reliability). Specifically, Pearson bivariate correlations were computed in order to assess convergent and divergent validity; due to the high number of pair-wise comparisons, a Bonferroni correction was considered to control Type-1 Error. AMOS version 21 was used to analyze the relationship among variables through structural equation modeling; the structure of the data was simplified through principal component analysis. In order to evaluate the goodness-of-fit of the investigated models, the significance of the Chi-square statistic, along with a series of other fit indices and their corresponding accepted cut-off standards were considered, and in particular [96–100]: The Comparative Fit Index ($CFI \geq 0.95$), Tucker-Lewis Index ($TLI \geq 0.95$), Root Mean Square Error of Approximation ($RMSEA \leq 0.08$), $NFI > 0.9$, and $0.9 > IFI > 1$).

4. Analysis of Results

4.1. Descriptive Statistics on Variables

Table 2 summarizes the descriptive statistics on study variables. The participants’ mean scores on purchase intention (PUI), flow, brand communication (BC), brand identity (BID), brand image (BIM), and brand personality (BP) are respectively higher than the midpoint of 4, indicating that our sample population have positive attitudes on the six variables that affect smartphone selection. To determine whether the score is subject to a normal distribution, we calculated the ratio of the kurtosis coefficient to its standard error. If the absolute value of the ratio is greater than 2, normality will be rejected [101]. As indicated in Table 2, the PUI, Flow, BID, BIM, BP, and BC can all follow the normal distribution.

4.2. Validity and Reliability of Constructs

In order to ensure the reliability and validity of the measurement model, we carried out the Kaiser–Meyer–Olkin (KMO) test, as well as the Bartley spherical test. As indicated in Table 3, the KMO value for flow, BP, BIM, BID, and BC were all above 0.8 ($p < 0.001$), indicating that the questionnaire has a good structural validity, value for KMO was 0.5, and for probability value was $p < 0.05$ [102]. Then,

we carried out combined factor analysis. As shown in Table 4, the truncation value of the Cronbach's alpha value (internal consistency) after the item was deleted was higher than 0.8, thus realizing the reliability of the measurement model. When the average variance extraction (AVE) value was greater than 0.5, this indicated that the questionnaire has a good structural validity. The AVE values of flow, brand image, brand communication, brand personality, and brand identity were greater than 0.5, reaching a convergence effect. The factor loadings, which were greater than 0.5, indicated that the extracted common factors were highly representative of the variables and had good overall effect. Next, it is generally believed that the correlation coefficient between variables is highly correlated when falling in the range of 0.5 and 1. The correlation coefficient of Cronbach's alpha is greater than 0.8, respectively. To sum up these claims, the reliability of the scale used in the present study was very good.

Table 2. Descriptive statistics on study variables.

Variable	Mean		SD	Variance	Skewness		Kurtosis		
	Statistics	S.e			Statistics	S.e	Statistics	S.e	Kurtosis Statistics/S.e
PUI	4.88	0.043	1.581	2.498	−0.601	0.066	0.041	0.132	0.311
Flow	4.62	0.040	1.485	2.206	−0.387	0.066	−0.047	0.132	−0.356
BID	4.87	0.041	1.539	2.367	−0.505	0.066	−0.192	0.132	−1.455
BIM	4.88	0.039	1.474	2.174	−0.506	0.066	−0.140	0.132	−1.060
BP	4.63	0.040	1.481	2.192	−0.317	0.066	−0.336	0.132	−2.545
BC	4.87	0.043	1.598	2.554	−0.509	0.066	−0.250	0.132	−1.894

Table 3. Test of construct validity and reliability.

Construct	KMO	Bartlett's Test	Items	Factor Loading	Common Factor Variance	AVE	α after Deletion
Flow	0.912	0.000	Flow1	0.926	0.857	0.857	0.961
			Flow2	0.938	0.879		
			Flow3	0.961	0.924		
			Flow4	0.946	0.896		
			Flow5	0.920	0.846		
BP	0.868	0.000	Bpersonality1	0.865	0.749	0.748	0.862
			Bpersonality2	0.927	0.859		
			Bpersonality3	0.910	0.829		
			Bpersonality4	0.891	0.794		
			Bpersonality5	0.590	0.348		
BIM	0.905	0.000	Bimage1	0.852	0.726	0.726	0.919
			Bimage2	0.830	0.689		
			Bimage3	0.730	0.533		
			Bimage4	0.819	0.671		
			Bimage5	0.901	0.813		
			Bimage6	0.894	0.800		
			Bimage7	0.861	0.741		
BID	0.950	0.000	Bidentity1	0.892	0.769	0.796	0.970
			Bidentity2	0.914	0.835		
			Bidentity3	0.912	0.833		
			Bidentity4	0.909	0.826		
			Bidentity5	0.928	0.860		
			Bidentity6	0.927	0.859		
			Bidentity7	0.921	0.848		
			Bidentity8	0.920	0.846		
BC	0.861	0.000	Bcommunication1	0.938	0.880	0.880	0.956
			Bcommunication2	0.950	0.902		
			Bcommunication3	0.959	0.920		
			Bcommunication4	0.947	0.896		

Table 4. Main effect and Cronbach’s alpha.

Variable	Mean Square	Main Effect		Cronbach’s Alpha	
		F Value	p Value	Number of Items	Reliability
Flow	72.93	150.17	0.000	5	0.97
BIM	66.60	63.00	0.000	7	0.93
BC	17.24	26.91	0.000	5	0.94
BP	351.80 (.00)	294.99	0.000	5	0.89
BID	11.06 (.00)	21.02 (.00)	0.000	8	0.97

Note: Main effect refers to using the raw data of item under each latent variable.

The Pearson correlation coefficients among the six variables covered in this study indicated strong correlations (see Table 5). The covariance coefficients as indicated in Table 6 were the results of standardized data. Each of the covariances were positive, indicating that each of these variables had the same trend. The maximum covariance between BC and BID was 0.892, and the minimum covariance between PUI and BP was 0.647. In sum, these can allow us to make further analysis regarding the hypothesis proposed in this paper.

Table 5. Correlation indices among variables.

Variable	1.	2.	3.	4.	5.	6.
1.Flow	1					
2.BIM	0.693 **	1				
3.BC	0.789 **	0.841 **	1			
4.BP	0.686 **	0.847 **	0.772 **	1		
5.BID	0.795 **	0.857 **	0.903 **	0.795 **	1	
6.PUI	0.841 **	0.672 **	0.724 **	0.647 **	0.740 **	1

Note: ** Indicates significant inspection at double tail.

Table 6. The covariance coefficients among variables.

Variable	BP	BIM	BID	Flow	PUI	BC
BP	1.000					
BIM	0.846	1				
BID	0.794	0.857	1			
Flow	0.687	0.693	0.794	1		
PUI	0.647	0.673	0.740	0.840	1	
BC	0.768	0.838	0.892	0.757	0.694	1

4.3. Test of Hypotheses via Structure Equation Modeling

4.3.1. Results of the Hypothesized Model

Table 7 reported the goodness-of-fit of the investigated default and adjusted models, the significance of the Chi-square statistic, along with a series of other fit indices. Based on these indices, the present data set indicated that the adjusted model diagram is more acceptable if compared to the default model.

Table 7. Fitting Indices for hypothesized model and adjusted model.

Fitting Index	χ^2	CFI	NFI	IFI	RMSEA	AIC	TLI	ECVI	df	p
hypothesized model	6108.615	0.348	0.348	0.349	0.860	6138.615	-0.630	4.461	6	0.000
adjusted model	9.038	0.999	0.999	0.999	0.038	57.038	0.997	0.041	3	0.029

4.3.2. Results of the Hypothesized Model and Adjusted Model

Tables 8 and 9 reported pathway coefficient indices for the hypothesized model and for the adjusted model. As indicated in Table 8, though all proposed hypotheses were valid (see Figure 2a) except for *H1b*, *H1c*, *H2a*, and *H4a*, the model fit indices did not meet the cut-off value as was shown in Table 6. Thus, after deletion of the above four paths, the adjusted model yielded with good fit (See Table 7) and good path coefficients (See Table 9).

Table 8. Hypothesis test for the proposed model.

Hypothesis	Path	Standardized Estimate	Estimate	S.e	t-Statistics	p	Decision	Remarks
H1a	BIM→PUI	0.133	0.118	0.016	7.492	0.000	Supported	Old
H1b	BIM→Flow	−0.178	−0.154	0.016	−9.747	0.000	Rejected	New
H1c	BIM→Flow→PUI						Rejected	New
H2a	BC→PUI	−0.006	−0.006	0.018	−0.311	0.756	Rejected	Old
H2b	BC→Flow	0.444	0.381	0.016	24.328	0.000	Supported	Old
H2c	BC→Flow→PUI						Supported	Old
H3a	BID→PUI	0.128	0.108	0.018	5.869	0.000	Supported	New
H3b	BID→Flow	0.527	0.436	0.015	28.910	0.000	Supported	New
H3c	BID→Flow→PUI						Supported	New
H4a	BP→PUI	0.010	0.009	0.016	0.581	0.561	Rejected	Old
H4b	BP→Flow	0.190	0.163	0.016	10.397	0.000	Supported	New
H4c	BP→Flow→PUI						Supported	New
	Flow→PUI	0.705	0.721	0.026	27.701	0.000	Supported	Old

Table 9. Hypothesis test for the adjusted model.

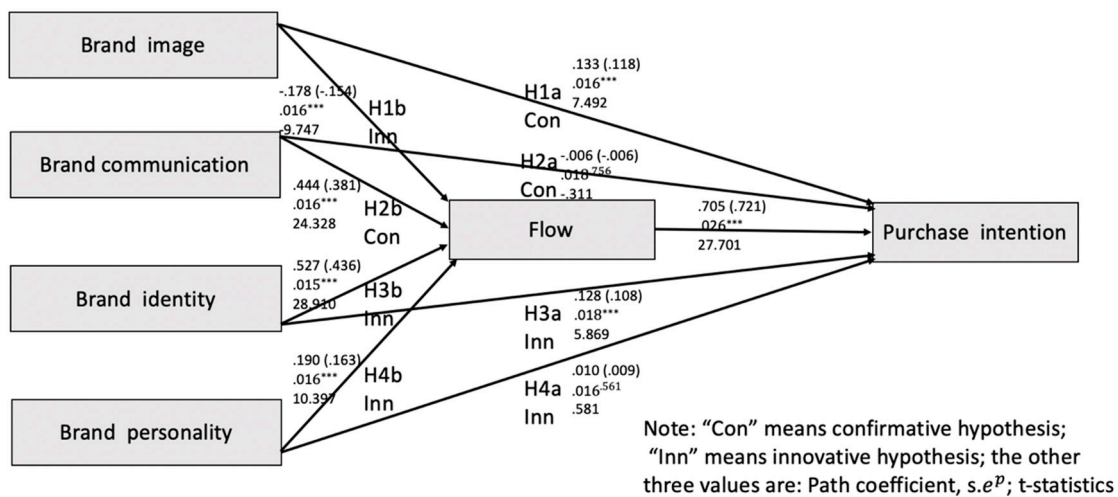
Hypothesis	Path	Standardized Estimate	Estimate	S.e	t-Statistics	p	Decision	Remarks
H1a	BIM→PUI	0.105	0.072	0.019	3.807	0.000	Supported	Old
H2b	BC→Flow	0.220	0.209	0.036	5.864	0.000	Supported	Old
H2c	BC→Flow→PUI						Supported	Old
H3a	BID→PUI	0.142	0.092	0.020	4.520	0.000	Supported	New
H3b	BID→Flow	0.492	0.485	0.039	12.396	0.000	Supported	New
H3c	BID→Flow→PUI						Supported	New
H4b	BP→Flow	0.479	0.497	0.023	21.961	0.000	Supported	New
H4c	BP→Flow→PUI						Supported	New

As indicated in Table 9, firstly, both the smartphone's brand image and brand identity had direct influence on consumers' intention to choose their preferred brand, as was shown in *H1a* and *H3a*. Secondly, the smartphone's brand communication, brand identity and brand personality all had a direct influence on consumers' perceived flow experience, and this respectively confirmed the hypothesis of *H2b*, *H3b*, and *H4b*. Furthermore, they all had an indirect effect on purchase intention through the experience of flow as evidenced in hypotheses of *H2c*, *H3c*, and *H4c*. Thirdly, brand image had strong correlations with brand communication, brand identity and brand personality. That is to say, when smartphone users had a positive evaluation for the image, personality and communication of that brand, they would perceive more flow experience during the usage, as was expected by *H2b*, *H2c*, *H3b*, *H3c*, *H4b*, and *H4c*. Finally, the adjusted model (see Figure 2b) had good fit (see Table 9) and its calculated effect size (f^2) is shown in Table 10. In this model, flow experience served as a mediator for brand communication, brand personality, and brand identity, to affect purchase intention.

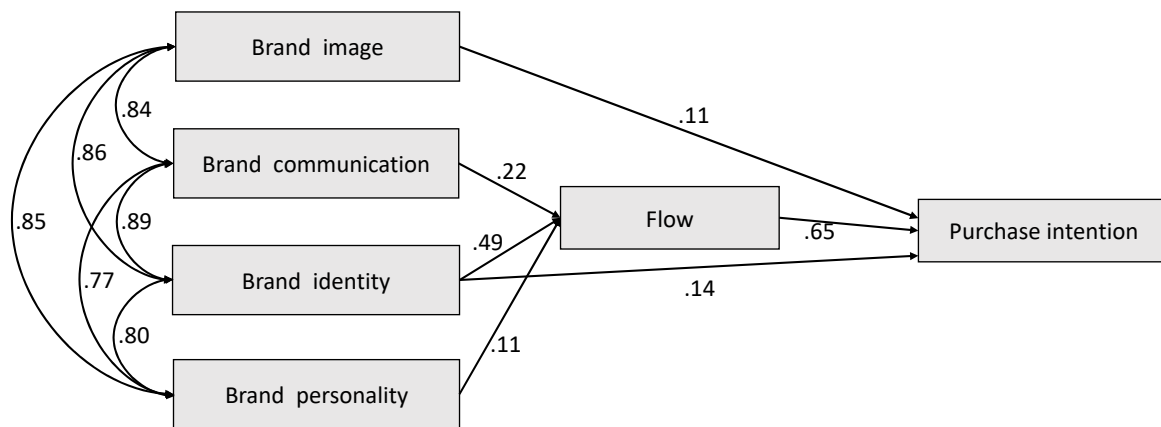
Table 10. Test of effect size (f^2)

Constructs	Brand Identity	Brand Personality	Brand Communication	Flow	Brand Image
Flow	0.492	0.112	0.220		
Purchase intention	0.463	0.073	0.144	0.652	0.105

Note: Assessing f^2 according to Salem (2018): ≤ 0.02 means small effect, ≤ 0.15 means medium effect, ≤ 0.35 means large effect.



(a)



(b)

Figure 2. (a). Results of the hypothesized model; (b) Results of the adjusted model.

5. Discussion

In order to understand what motivates customers to interact and choose a specific brand among various brands of smartphone, in other words, what stimulates purchase intention towards a specific smartphone brand, we proposed and tested a conceptual model that combines flow theory, brand image, brand communication, brand identity, and brand personality. Findings yielded from the 1377 Chinese participants can be discussed as follows.

First, in terms of purchase intention predictors, the present empirical results yielded from the 1377 sampling data demonstrated that, flow, as an intrinsically enjoyable and favorable experience that attracts users to frequently use their preferred brand, imposes strong predictions for future purchase intention. This finding expanded the research topic dealing with the application of flow theory into marketing and business, as it also confirmed the few already known previous findings [6,67,103]. This study also found that brand image directly and positively affects consumers' purchase intention. That is to say, consumers' purchase intention or retention was a function of the positivity of their brand image, based on the long-term process of interaction with the smartphone brand at hand. This finding is consistent with Kala and Chaubey [36], Ramadhan and Muthohar [37], and Erdil [42], thus confirming our hypothesis H1a. Moreover, the brand identity, which was embedded in social identity theory, was also found to be predictive for purchase intention (H3a). These two are the only direct effects.

Second, regarding flow experience predictors, interestingly, the smartphone brand image was not found to be predictive of flow experience within the present data set: The path from brand image to purchase intention through flow experience was not significant. That is to say, there is no definitive evidence that improving the smartphone's brand image can directly enhance the consumers' enjoyable flow experience when they use their smartphone, though previous work [36,37,104] proved brand image and purchase intention relations in online marketing (as in our *H1a* discussed above). Brand communication was found to be predictive for flow experience, which confirmed our hypothesis *H2b*. This could be related, for example, to customers receiving customized advertising content, being then more likely to focus on the content, and thus having more probability to generate flow. In such a way, brand communication could have an impact on consumers' enjoyable flow [56]. The innovative finding that the brand identity predicts flow experience, which confirmed hypothesis *H3b*, also supports our previous work on flow-identity correlations [23,24,66], and further provides evidence for questions raised for the flow-identity pathway relationship. Moreover, brand personality was also found to be predictive for flow experience (*H4b*).

Third, our findings demonstrated that brand communication, although it had no direct effect on purchase intention, influenced purchase intention through perceived flow experience (*H2c*). There was a similar finding for brand personality, which indirectly influenced purchase intention through flow experience (*H4c*). The direct influence of brand personality on purchase intention was not obvious, and its indirect effect through flow's mediation effect has not been much considered in previous studies. However, brand identity proved to have both a direct and indirect effect on purchase intention (*H3c*). All these findings were new and thus they contribute to innovate the areas of brand features and product, specifically related to smartphone's purchase. Furthermore, brand identity proves to be influential via flow, and this has not yet been studied in previous work, nor within the context of the smartphone market. However, it could be interpreted that, being a parallel identity construct to both personal and place identity which is embedded in social identity theory, the link between identity and flow is coherent with our previous findings relating flow with other kinds of identity levels' constructs [23,24,66]. The effect of brand identity on purchase intention, though not yet studied insofar to our knowledge, parallels constructs' effects like self-identity [13], ethical identity [14], and cultural identity [16], which are all connected to purchase intention. In general, therefore, the present result regarding the influential role of brand identity and the flow experience it promotes is coherent with the broader idea of an identity-driven customer engagement predicting purchase intention [10].

6. Conclusions

Results of the present study advance our knowledge of the impact of brand-related constructs on purchase intention, highlighting the key mediation played by flow experience, which has not been addressed in prior studies at all for these kind of variables within an integrated model as in the present proposal. The contribution of this research is to identify the strongest factors influencing consumers' willingness to purchase a specific brand of smartphone based on their current experience. For this purpose, we have developed a model encompassing all major brand constructs, namely brand image, brand personality, brand identity, and brand communication, as well as flow experience, and finally purchase intention. Brand image is the basic feature directly affecting smartphone purchase intention. However, this study shows a range of brand features playing a stronger role via their promotion of an optimal experience with the product. In fact, this contribution is the first to combine major brand characteristics and flow experience together to study smartphone purchase intention, namely one of the most globally adopted products and with huge worldwide impacts in many different perspectives, including economic, social and environment sustainability. Based on the study of 1377 Chinese respondents, we empirically confirmed that over and above the brand image direct effect, flow is the crucial direct predictive factor for influencing smartphone purchase intention and that flow is predicted by all the other considered brand features, with the exception of brand image. Flow was predominantly predicted by brand identity, followed by brand communication and brand personality.

These findings reveal that what mostly favors the consumers' optimal experience with the smartphone, and the most direct predictor, is its identity: how it represents the unique self of the consumer and how it allows the consumers to identify with it. Brand identity, brand personality, and brand communication allow a positive, enjoyable, and absorbing user experience with the smartphone, and thus, via such a flow experience, they can indirectly influence smartphone purchase intention. Brand image does not possess the power of affecting the user experience in a similar way.

7. Implications

This result set is very coherent with the literature, emphasizing how the contemporary economy is more and more detached from a mere image era, and is instead more attached with a reputation and identity era, this is an era where not only appearance features are crucial, but also behavioral and pragmatic features of companies and brands [103], as the features capable of building a company and brand reputation and to deploy its identity in relation to its stakeholders, including its customers [105]. Our results show therefore that, within such a scenario, the consumer adoption of a pervasive product such as the smartphone is based only slightly on its appearance features, its brand image, which still has some significant direct effect, being rather much more grounded in the relationship the smartphone is capable to build with its customers. Our results, coherently with this literature, show that the way in which a smartphone brand can build a relationship with its costumers is mostly by projecting a brand identity, and secondarily by building a brand communication and by possessing a brand personality. It is thanks to these three brand features that the company brand can build a strong positive relationship among the smartphone and its consumers. The consumer engagement is realized via the promotion that those three brand constructs make of a flow experience in the smartphone user: It is only, or mostly, thanks to their promotion of such a positive engaging experience in the user. These brand constructs are capable to increase the user purchase experience and subsequently to consolidate her/his purchase intention as a smartphone brand consumer.

On a more applied level in terms of practical implication, it is possible to argue that the three brand constructs that crucially promote the user's flow experience may rest themselves on a triangular reciprocal relation. Although this is not tested within the present contribution, it is possible to conceive those crucial three brand constructs in more dynamic terms, and this can have managerial implications if we consider them within a broader theoretical framework. In fact, if we follow Bernstein's considerations on company communication, brand personality is composed by the unique features of a brand, distinguishing it from other features [106]. Then a part of these features can be shared locally and globally by brand communication activities; in this way, brand communication brings out some features of the brand personality into the public realm, which is openly deployed as brand identity. According to our tested model, it is then such a brand identity which promotes the user's flow experience, namely her/his positive engagement with the smartphone. In very practical terms, therefore, the company can strategically act by first selecting some brand personality features, then communicating them effectively, to finally share an effective brand identity that can promote a positive engaging experience for the consumer. This is the main path to trigger the consumer's purchase intention. According to our model, a coherent brand image can independently and in parallel support this process too, though playing a weaker role in terms of the magnitude strength of the effect.

Finally, a responsible company should ask how such economic sustainability could be coupled with social and environmental sustainability. The answer is in the content of the above-mentioned brand constructs and features. First of all, the power of the content lies in the possibility to utilize brand personality features: Socially and environmentally sustainable content can be secured by selecting and highlighting those brand personality features that relate to social and environmental responsibility. For example, the way in which the company brand concretely operates by abiding to socially and environmentally responsible criteria, and how they are part of its brand personality. Secondly, brand communication must promote and diffuse the above-mentioned brand personality's socially and environmentally sustainable contents. In this process, the approaches are also important as they can

convey messages, over and above the above selected contents. The adopted communication approach must be equally socially and environmentally sustainable and avoid contradicting the message content with the message means. Thirdly, the provided content of the specifically selected brand personality and the communication content and approaches are all aligned with each other in terms of social and environmental responsibility and sustainability. When these factors are present, a coherent brand identity will then be spread and shared among the potential stakeholders, in our cases across the smartphone users. It is precisely this brand identity—filled with socially and environmentally responsible and sustainable contents deriving from the selected brand personality and conveyed by a socially and environmentally responsible and sustainable brand communication—that orients the smartphone user’s experience towards a socially and environmentally sustainable horizon while granting the necessary economic sustainability by bringing the final purchase intention. Therefore, from a proper alignment among brand personality contents, to brand communication contents and means, as well as brand identity and the flow experience, it can endow in the user the final purchase intention, granting the aimed economic sustainability target. Generally speaking, it is only if the company management is capable and willing to aim the brand features towards sustainable contents and means, that the social and environmental sustainability can be coupled with the economic sustainability.

8. Limitations and Future Research

In this study, best efforts have been undertaken to minimize limits, however, some limitations still need to be addressed for future research. First, the study was only conducted with Chinese consumers. As such, in order to overcome cultural and economic biases, it would be interesting and practical to implement it at least in other Asian countries (i.e., Japan, South Korea), and to test its validities and generalizability. Second, brand-related concepts confirmed their influence on purchase intention; however, more efforts are required to theoretically and empirically test the antecedent roles of other brand-related constructs that can also influence purchase intention, as well as their further antecedent variables. Third, flow is a multi-faceted concept, however, this study only adopted a five-item unidimensional scale of flow; thus, further studies can pay even closer attention to its multi-dimensional features (i.e., arousal, challenge, telepresence, time distortion, control, interactivity of speed) [18], by leveraging both psychological self-report and physiological methods. Finally, further research will be welcome to better disentangle the effects of affective [107], behavioral and cognitive variables, still together with flow, on purchase intention.

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References

1. Gartner. Gartner Says Worldwide Smartphone Sales Grew 3.9 Percent in First Quarter of 2016. 2016. Available online: <https://www.gartner.com/newsroom/id/> (accessed on 12 December 2019).
2. Derks, D.; Bakker, A.; Peters, P.; Van Wingerden, P. Work-related smartphone use, work-family conflict and family role performance: The role of segmentation preference. *Hum. Relat.* **2016**, *69*, 1045–1068. [CrossRef]

3. Martins, J.; Costa, C.; Oliveira, T.; Gonçalves, R.; Branco, F. How smartphone advertising influences consumers' purchase intention. *J. Bus. Res.* **2019**, *94*, 378–387. [[CrossRef](#)]
4. Flanagan, A.; Metzger, M.; Pure, R.; Markov, A.; Hartsell, E. Mitigating risk in ecommerce transactions: Perceptions of information credibility and the role of user-generated ratings in product quality and purchase intention. *Electron. Commer. Res.* **2014**, *14*, 1–23. [[CrossRef](#)]
5. Esmailpour, M.; Sayadi, A.; Mirzaei, M. Investigating the impact of service quality dimensions on reputation and brand trust. *Int. J. Bus. Econ. Sci. Appl. Res. (IJBESAR)* **2017**, *10*, 7–17.
6. Hossain, M.S.; Zhou, X.; Rahman, M.F. Examining the impact of QR codes on purchase intention and customer satisfaction on the basis of perceived flow. *Int. J. Eng. Bus. Manag.* **2018**, *10*. [[CrossRef](#)]
7. Hung, Y.; de Kok, T.M.; Verbeke, W. Consumer attitude and purchase intention towards processed meat products with natural compounds and a reduced level of nitrite. *Meat Sci.* **2016**, *121*, 119–126. [[CrossRef](#)]
8. Hung, K.P.; Iglesias, O.; Huiling Chen, A.; Peng, N.; Hackley, C.; Amy Tiwaskul, R.; Chou, C. Antecedents of luxury brand purchase intention. *J. Prod. Brand Manag.* **2011**, *20*, 457–467. [[CrossRef](#)]
9. Yu, M.Z.; Liu, F.; Lee, J.; Soutar, G. The influence of negative publicity on brand equity: Attribution, image, attitude and purchase intention. *J. Prod. Brand Manag.* **2018**, *27*, 440–451. [[CrossRef](#)]
10. Prentice, C.; Han, X.Y.; Hua, L.L.; Hu, L. The influence of identity-driven customer engagement on purchase intention. *J. Retail. Consum. Serv.* **2019**, *47*, 339–347. [[CrossRef](#)]
11. Dean, M.; Raats, M.M.; Shepherd, R. The role of self-identity, past behavior, and their interaction in predicting intention to purchase fresh and processed organic food. *J. Appl. Soc. Psychol.* **2012**, *42*, 669–688. [[CrossRef](#)]
12. Huang, Y.A.; Phau, I.; Lin, C.; Chung, H.J.; Lin, K.H.C. Allocentrism and consumer ethnocentrism: The effects of social identity on purchase intention. *Soc. Behav. Pers.* **2008**, *36*, 1097–1109. [[CrossRef](#)]
13. Salem, S.F.; Salem, S.O. Self-identity and social identity as drivers of consumers' purchase intention towards luxury fashion foods and willingness to pay premium price. *Asian Acad. Manag. J.* **2018**, *23*, 161–184. [[CrossRef](#)]
14. El Banna, A.; Papadopoulos, N.; Murphy, S.A.; Rod, M.; Rojas-Mendez, J.I. Ethnic identity, consumer ethnocentrism, and purchase intentions among bi-cultural ethnic consumers: "Divided loyalties" or "dual allegiance"? *J. Bus. Res.* **2018**, *82*, 310–319. [[CrossRef](#)]
15. Nenci, A.M.; Carrus, G.; Caddeo, P.; Meloni, A. Group processes in food choices: The role of ethnic identity and perceived ethnic norms upon intentions to purchase ethnical food products. *J. Community Appl. Soc. Psychol.* **2008**, *18*, 505–511. [[CrossRef](#)]
16. Chang, K.L.; Chiou, S.C.; Ha, J.L. Effects of American cultural identity on purchase intention of American commodity - An example of American military housing after the war. *Acta Oecon.* **2014**, *64*, 303–315. [[CrossRef](#)]
17. Guido, G.; Peluso, A.M.; Provenzano, M. Influence of brand personality-marker attributes on purchasing intention: The role of emotionality. *Psychol. Rep.* **2010**, *106*, 737–751. [[CrossRef](#)]
18. Lim, W.M. Understanding the influence of online flow elements on hedonic and utilitarian online shopping experiences: A case of online group buying. *J. Inf. Syst.* **2014**, *28*, 287–306. [[CrossRef](#)]
19. Lopes, E.L.; Veiga, R.T. Increasing purchasing intention of eco-efficient products: The role of the advertising communication strategy and the branding strategy. *J. Brand Manag.* **2019**, *26*, 550–566. [[CrossRef](#)]
20. Csikszentmihalyi, M. *Beyond Boredom and Anxiety*; Jossey-Bass: San Francisco, CA, USA, 2000.
21. Csikszentmihalyi, M.; LeFevre, J. Optimal experience in work and leisure. *J. Pers. Soc. Psychol.* **1989**, *56*, 815–822. [[CrossRef](#)]
22. Lambert, J.; Csikszentmihalyi, M. Facilitating or foiling flow: The role of momentary perceptions of feedback. *J. Posit. Psychol.* **2019**, 1–12. [[CrossRef](#)]
23. Mao, Y.; Roberts, S.; Bonaiuto, M. Optimal Experience and Optimal Identity: A Multinational Examination at the Personal Identity Level. In *Flow Experience: Empirical Research and Applications*; Harvat, L., Andersen, F., Ullén, F., Wright, J., Eds.; Springer International Publishing: Cham, Switzerland, 2016.
24. Mao, Y.; Roberts, S.; Pagliaro, S.; Csikszentmihalyi, M.; Bonaiuto, M. Optimal experience and optimal identity: A multinational study of the associations between flow and social identity. *Front. Psychol.* **2016**, *7*, 67. [[CrossRef](#)] [[PubMed](#)]
25. Moneta, G.B. On the measurement and conceptualization of flow. In *Advances in Flow Research*; Engeser, S., Ed.; Springer: New York, NY, USA, 2012; pp. 23–50.

26. Shernoff, D.J.; Sinha, S.; Bressler, D.M.; Schultz, D. Teacher perceptions of their curricular and pedagogical shifts: Outcomes of a project-based model of teacher professional development in the next generation science standards. *Front. Psychol.* **2017**, *8*, 989. [[CrossRef](#)] [[PubMed](#)]
27. Keller, K. Conceptualizing, measuring, and managing customer-based brand equity. *J. Market.* **1993**, *57*, 1–22. [[CrossRef](#)]
28. Anwar, A.; Gulzar, A.; Sohail, F.; Akram, S. Impact of brand image, trust, and affect on consumer brand extension attitude: The mediating role of brand loyalty. *Int. J. Econ. Manag. Sci.* **2011**, *1*, 73–79.
29. Fan, X.; Chen, J. Measurement of brand image: A brand identity-based integrated model and empirical study. *Nankai J.* **2002**, *03*, 65–71.
30. Kort, P.; Caulkins, J.; Hartl, R.; Feichtinger, G. Brand image and brand dilution in the fashion industry. *Automatica* **2006**, *42*, 1363–1370. [[CrossRef](#)]
31. Ryu, K.; Han, H.; Kim, T. The relationships among overall quick-causal restaurant image, perceived value, customer satisfaction, and behavioral intentions. *Int. J. Hosp. Manag.* **2008**, *27*, 459–469. [[CrossRef](#)]
32. Zeithaml, V. Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *J. Market.* **1988**, *52*, 2–22. [[CrossRef](#)]
33. Hosany, S.; Ekinci, Y.; Uysal, M. Destination image and destination personality: An application of branding theories to tourism places. *J. Bus. Res.* **2006**, *59*, 638–642. [[CrossRef](#)]
34. Hsieh, A.; Li, C. The moderating effect of brand image on public relations perception and customer loyalty. *Marke. Intell. Plan.* **2008**, *26*, 26–42. [[CrossRef](#)]
35. Hu, S.; Jou, S.; Liu, Y. Structural equation model for brand image measurement of jeans. In Proceedings of the His 2009: 2009 Ninth International Conference on Hybrid Intelligent Systems, Shenyang, China, 12–14 August 2009. [[CrossRef](#)]
36. Kala, D.; Chaubey, D. Impact of electronic word of mouth on brand image and purchase intention towards lifestyle products in India. *Pac. Bus. Rev. Int.* **2018**, *10*, 135–144.
37. Ramadhan, M.; Muthohar, M. The influence of perceived price, perceived quality, brand image, and store image on the purchase intention of Hypermart private label. In Proceedings of the 16th International Symposium on Management (Insyma 2019), Manado, Indonesia, 4–6 March 2019; Volume 308, pp. 140–143.
38. Aghekyan-Simonian, M.; Forsythe, S.; Kwon, W.; Chattaraman, V. The role of product brand image and online store image on perceived risks and online purchase intentions for apparel. *J. Retail. Consum. Serv.* **2012**, *19*, 325–331. [[CrossRef](#)]
39. Chen, H.; Yeh, S.; Huan, T. Nostalgic emotion, experiential value, brand image, and consumption intentions of customers of nostalgic-themed restaurants. *J. Bus. Res.* **2014**, *67*, 354–360. [[CrossRef](#)]
40. Lien, C.; Wen, M.; Huang, L.; Wu, K. Online hotel booking: The effects of brand image, price, trust and value on purchase intentions. *Asia Pac. Manag. Rev.* **2015**, *20*, 210–218. [[CrossRef](#)]
41. Yu, C.; Lin, P.; Chen, C. How brand image, country of origin, and self-congruity influence Internet users' purchase intention. *Soc. Behav. Pers.* **2013**, *41*, 599–611. [[CrossRef](#)]
42. Erdil, T. Effects of customer brand perceptions on store image and purchase intention: An application in apparel clothing. *Procedia Soc. Behav. Sci.* **2015**, *207*, 196–205. [[CrossRef](#)]
43. Adetunji, R.R.; Sabrina, M.R.; Sobhi, I.M. User-generated contents in Facebook, functional and hedonic brand image and purchase intention. *Procedia Soc. Behav. Sci.* **2017**, *33*. [[CrossRef](#)]
44. Hsu, C.L.; Chang, K.C.; Chen, M.C. The impact of website quality on customer satisfaction and purchase intention: Perceived playfulness and perceived flow as mediators. *Inf. Syst. e-Bus. Manag.* **2011**, *10*, 549–570. [[CrossRef](#)]
45. Huang, D.; Li, Z.Y.; Mou, J.; Liu, X.Y. Effects of flow on young Chinese consumers' purchase intention: A study of e-service scape in hotel booking context. *Inf. Technol. Tour.* **2017**, *17*, 203–228. [[CrossRef](#)]
46. Drengner, J.; Gaus, H.; Jahn, S. Does flow influence the brand image in event marketing? *J. Advert. Res.* **2008**, *48*, 138–147. [[CrossRef](#)]
47. Landers, V.M.; Beatty, S.E.; Wang, S.J.; Mothersbaugh, D.L. The effect of online versus offline retailer-brand image incongruity on the flow experience. *J. Market. Theory Pract.* **2015**, *23*, 370–387. [[CrossRef](#)]
48. Huang, X. Research on the formation mechanism of new Internet brand image in traditional industry field—Taking Internet food brand as an example. *Econ. Forum.* **2019**, *03*, 39–49.
49. Kempf, D.S.; Smith, R.E. Consumer processing of product trial and the influence of prior advertising: A structural modeling approach. *J. Market. Res.* **1998**, *35*, 325–338. [[CrossRef](#)]

50. Zehir, C.; Sahin, A.; Kitapci, H.; Ozsahin, M. The effects of brand communication and service quality in building brand loyalty through brand trust; The empirical research on global brands. *Procedia Soc. Behav. Sci.* **2011**, *24*, 1218–1231. [[CrossRef](#)]
51. Crosby, L.A.; Stephens, N. Effects of relationship marketing on satisfaction, retention, and price in the life insurance industry. *J. Market. Res.* **1987**, *24*, 404–411. [[CrossRef](#)]
52. Sahin, A.; Zehir, C.; Kitapci, H. The effects of brand experiences, trust and satisfaction on building brand loyalty; An empirical research on global brands. *Procedia Soc. Behav. Sci.* **2011**, *24*, 1288–1301. [[CrossRef](#)]
53. Yu, M.; Shu, Y. On "brand communication & apos. *Chin. J. J. Commun.* **2002**, 63–68. [[CrossRef](#)]
54. Liu, S.; Perry, P.; Moore, C.; Warnaby, G. The standardization-localization dilemma of brand communications for luxury fashion retailers' internationalization into China. *J. Bus. Res.* **2016**, *69*, 357–364. [[CrossRef](#)]
55. Castillo, A.; Carrillo-Durán, M.-V.; Luengo-Chávez, G. La comunicación de la marca de las cadenas hoteleras a través de sus sedes web: Propuesta de un modelo para su gestión. *Palabra Clave Rev. Comun.* **2019**, *22*, 1–36. [[CrossRef](#)]
56. Kim, Y.J.; Han, J. Why smartphone advertising attracts customers: A model of web advertising, flow, and personalization. *Comput. Hum. Behav.* **2014**, *33*, 256–269. [[CrossRef](#)]
57. Hsiuli, L. The effect of presentation types and flow on e-book purchase intention. *Eur. J. Math. Sci. Technol. Educ.* **2016**, *12*. [[CrossRef](#)]
58. Softic, S.; Poturak, M. Effects of social media communication on brand equity and brand purchase intention: A case study on domestic brands in Bosnia and Herzegovina. In Proceedings of the International Conference on Economic and Social Studies (Icesos'16), Sarajevo, Bosnia and Herzegovina, 21–22 April 2016; pp. 129–137.
59. Wheeler, A. Designing brand identity: An essential guide for the whole branding team. *J. Brand Strategy.* **2014**, *2*, 416–417.
60. Aaker, D.A.; Keller, K.L. *Building Strong Brands*; The Free Press: New York, NY, USA, 1996.
61. Chaves, E.D.E.S. Identity, positioning, brand image and brand equity comparison: A vision about quality in brand management. *Indep. J. Manag. Prod.* **2017**, *8*, 1246–1263. [[CrossRef](#)]
62. Wang, M.Y.; Zhang, P.Z.; Zhou, C.Y.; Lai, N.Y. Effect of emotion, expectation, and privacy on purchase intention in WeChat health product consumption: The mediating role of trust. *Int. J. Environ. Res. Public Health* **2019**, *16*, 3861. [[CrossRef](#)]
63. Hemsley-Brown, J.; Melewar, T.C.; Nguyen, B.; Wilson, E.J. Exploring brand identity, meaning, image, and reputation (BIMIR) in higher education: A special section. *J. Bus. Res.* **2016**, *69*, 3019–3022. [[CrossRef](#)]
64. Saaksjarvi, M.; Samiee, S. Relationships among brand identity, brand image and brand preference: Differences between cyber and extension retail brands over time. *J. Interact. Market.* **2011**, *25*, 169–177. [[CrossRef](#)]
65. Testa, F.; Sarti, S.; Frey, M. Are green consumers really green? Exploring the factors behind the actual consumption of organic food products. *Bus. Strat. Environ.* **2018**, *28*. [[CrossRef](#)]
66. Bonaiuto, M.; Mao, Y.; Roberts, S.; Psalti, A.; Ariccio, S.; Ganucci Cancellieri, U.; Csikszentmihalyi, M. Optimal experience and personal growth: Flow and the consolidation of place identity. *Front. Psychol.* **2016**, *7*, 1654. [[CrossRef](#)]
67. Korzaan, M.L. Going with the flow: Predicting online purchase intentions. *J. Comput. Inf. Syst.* **2003**, *43*, 25–31.
68. Aaker, D.A. *Building Strong Brands*; Simon & Schuster: London, UK, 1996.
69. Aaker, J.; Benet-GuidoMartinez, V.; Garolera, J. Consumption symbols as carriers of culture: A study of Japanese and Spanish brand personality constructs. *J. Pers. Soc. Psychol.* **2001**, *81*, 492–508. [[CrossRef](#)]
70. Freling, T.; Crosno, J.; Henard, D. Brand personality appeal: Conceptualization and empirical validation. *J. Acad. Market. Sci.* **2010**, *39*, 392–406. [[CrossRef](#)]
71. Smit, E.; Van Den Berge, E.; Franzen, G. Brands are just like real people. In *Branding and Advertising*; Hansen, F., Bech, L., Eds.; Copenhagen Business School Press: Copenhagen, Denmark, 2003; pp. 22–43.
72. Akaike, H. A new look at the statistical model identification. *IEEE Trans. Autom. Control.* **1974**, *19*, 716–723. [[CrossRef](#)]
73. McCracken, G. Who is the celebrity endorser? Cultural foundations of the endorsement process. *J. Consumer Res.* **1989**, *16*, 310–321. [[CrossRef](#)]
74. Djatmiko, T.; Pradana, R. Brand image and product price; Its impact for Samsung smartphone purchasing decision. *Procedia Soc. Behav. Sci.* **2016**, *219*, 221–227. [[CrossRef](#)]

75. Wang, L.; Lee, C.; Mantz, T.K.; Hung, H.C. Effects of flow and self-construal on player perception of brand personality in advergames. *Soc. Behav. Pers.* **2015**, *43*, 1181–1192. [[CrossRef](#)]
76. Tsai, S.T.; Lee, C.W. *Engineering Innovation and Design*; CRC Press: London, UK, 2019.
77. Lee, C.; Yang, C.; Hung, H. Evaluating game-brand congruity and flow on brand personality by using gamifying learning. *Eur. J. Math. Sci. Technol. Educ.* **2017**, *13*, 3083–3097.
78. Nelson, E.S. *African American Autobiographers: A Sourcebook*; Greenwood Press: Westport, CT, USA, 2002.
79. Kapes, J.T.; Mastie, M.M.; Whitfield, E.A. (Eds.) *A Counsellor's Guide to Career Assessment Instruments*, 3rd ed.; National Career Development Association: Alexandria, VA, USA, 1994.
80. Aaker, D. *Building Strong Brands: Capitalizing on the Value of a Brand Name*; The Free Press: New York, NY, USA, 1991.
81. Pedeliento, G.; Kavaratzis, M. Bridging the gap between culture, identity and image: A structurationist conceptualization of place brands and place branding. *J. Prod. Brand Manag.* **2019**, *28*, 348–363. [[CrossRef](#)]
82. Albrecht, C.M.; Neumann, M.M.; Haber, T.E.; Bauer, H.H. The relevance of irrelevance in brand communication. *Psychol. Market.* **2011**, *28*, 1–28. [[CrossRef](#)]
83. Xiao, N. How non-consumption goals (elicited by competitive setting or social risk) and self-confidence influence the importance of trivial attributes in product evaluation. *Eur. J. Market.* **2016**, *50*, 1746–1766. [[CrossRef](#)]
84. Aaker, J.L. Dimensions of Brand Personality. *J. Market. Res.* **1997**, *34*, 347–356. [[CrossRef](#)]
85. Kapferer, J.N. *The New Strategic Brand Management. Advanced Insights and Strategic Thinking*; Kogan: London, UK, 2012.
86. Saraniemi, S.; Komppula, R. The development of a destination brand identity: A story of stakeholder collaboration. *Curr. Issues Tour.* **2019**, *22*, 1116–1132. [[CrossRef](#)]
87. Essamri, A.; McKechnie, S.; Winklhofer, H. Co-creating corporate brand identity with online brand communities: A managerial perspective. *J. Bus. Res.* **2019**, *96*, 366–375. [[CrossRef](#)]
88. Hyun, S.S.; Park, S.H. The antecedents and consequences of travelers' need for uniqueness: An empirical study of restaurant experiences. *Asia Pac. J. Tour. Res.* **2016**, *21*, 596–623. [[CrossRef](#)]
89. Shoham, M.; Moldovan, S.; Steinhart, Y. Positively useless: Irrelevant negative information enhances positive impressions. *J. Consum. Psychol.* **2017**, *27*, 147–159. [[CrossRef](#)]
90. Afroz, R.; Rahman, A.; Masud, M.M.; Akhtar, R.; Duasa, J.B. How individual values and attitude influence consumers' purchase intention of electric vehicles—Some insights from Kuala Lumpur, Malaysia. *Environ. Urban. ASIA* **2015**, *6*, 193–211. [[CrossRef](#)]
91. Ajzen, I. The theory of planned behavior. *Organ. Behav. Hum. Decis. Process.* **1991**, *50*, 179–211. [[CrossRef](#)]
92. Mindick, B.; Oskamp, S.; Berger, D.E. Prediction of success or failure in birth planning: An approach to prevention of individual and family stress. *Am. J. Community Psychol.* **1978**, *5*, 447–459. [[CrossRef](#)]
93. Staats, H.; Kieviet, A.; Hartig, T. Where to recover from attentional fatigue: An expectancy-value analysis of environmental preference. *J. Environ. Psychol.* **2003**, *23*, 147–157. [[CrossRef](#)]
94. Ajzen, I. From intentions to actions: A theory of planned behavior. In *Action Control*; Kuhl, J., Beckmann, J., Eds.; Springer: Berlin/Heidelberg, Germany, 1985; pp. 11–39. [[CrossRef](#)]
95. Brislin, R.W. The wording and translation of research instruments. In *Field Methods in Cross-Cultural Research*; Lonner, W.J., Berry, J.W., Eds.; Sage: Beverly Hills, CA, USA, 1986; pp. 137–164.
96. Bagozzi, R.P.; Yi, Y. On the evaluation of structural equation models. *J. Acad. Market. Sci.* **1988**, *16*, 74–94. [[CrossRef](#)]
97. Bentler, P.M. Comparative fit indexes in structural models. *Psychol. Bull.* **1990**, *107*, 238–246. [[CrossRef](#)]
98. Bollen, K.A. A new incremental fit index for general structural equation models. *Soci. Methods Res.* **1989**, *17*, 303–316. [[CrossRef](#)]
99. Browne, M.W.; Cudeck, R. Alternative ways of assessing model fit. *Test. Struct. Eq. Models* **1993**, *154*, 136–162. [[CrossRef](#)]
100. Joanes, D.N.; Gill, C.A. Comparing measures of sample skewness and kurtosis. *J. R. Stat. Soc. Stat.* **1998**, *47*, 183–189. [[CrossRef](#)]
101. Kaiser, H.F. A second generation little jiffy. *Psychometrika* **1970**, *35*, 401–415. [[CrossRef](#)]
102. Liu, H.J.; Shiue, Y.C. Influence of Facebook game players' behavior on flow and purchase intention. *Soc. Behav. Pers.* **2014**, *42*, 125–134. [[CrossRef](#)]

103. Saura, J.R.; Reyes-Menendez, A.; Palos-Sanchez, P. Are black Friday deals worth it? Mining Twitter users' sentiment and behavior response. *J. Open Innov. Technol. Market Complex.* **2019**, *5*, 58. [[CrossRef](#)]
104. Reyes-Menendez, A.; Saura, J.R.; Thomas, S. Gaining a deeper understanding of nutrition using social networks and user-generated content. *Internet Interv.* **2020**, 100312. [[CrossRef](#)]
105. Van Riel, C.B.M.; Fombrun, C.J. *Essentials of Corporate Communications*; Routledge: London, UK, 2007.
106. Bernstein, D. *Company Image and Reality: A Critique of Corporate Communications*; Holt, Rinehart Winston: New York, NY, USA, 1984.
107. Liu, B. *Sentiment Analysis: Mining Opinions, Sentiments, and Emotions*; Cambridge University Press: Cambridge, UK, 2015.



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