WHAT DRIVES USER ENGAGEMENT BEHAVIOR IN A CORPORATE SNS ACCOUNT: THE ROLE OF INSTAGRAM FEATURES

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ABSTRACT

Given the increasingly important role of SNS account in corporate marketing strategy and the growing number of technical features built in SNS platforms, it is worth investigating how these available features facilitate virtual presence and customers' engagement behaviors. Drawing upon the presence formation framework, this study examines the impact of Instagram features (i.e. call to action, Instagram stories, and geotagging) on generating users' perception of telepresence, social presence, and flow, which subsequently affect their actual engagement behavior. A field experiment with a 2x2x2 factorial design was conducted. The results indicate that all examined features can effectively evoke telepresence and social presence within a corporate SNS account. In addition, both telepresence and social presence significantly improve perceived flow, ultimately contributing to engagement behavior (i.e. following and sharing). The findings illuminate the role of social media features as crucial antecedents to presence and engagement behavior which provide business owners with interesting insights into how to effectively utilize it to maintain and foster customer relationships.

Keywords*:* Instagram features; Corporate SNS account; Presence; Flow experience; Engagement behavior.

1. Introduction

In conjunction with the rapid advancement in technology, particularly the increasing emergence of social networking sites (SNS), the way of communicating and building relationship among people has been substantially changed [Felix et al. 2017; Hammedi et al. 2015; Kumar et al. 2016; Hennig-Thurau et al. 2010]. In the marketing field, SNS gradually becomes a powerful tool helping the brand to reach, connect, and engage with customers [Ashley and Tuten 2015].

Among numerous SNSs, Instagram is currently the fourth largest social network following Facebook, YouTube, and Wechat [Smith 2019]. The statistical data provided by Sproutsocial shows that Instagram is the best social media platform for user engagement with an average engagement rate of 1.73% per post for brands [Zote 2020]. The increasing use of Instagram in business has been attracting academics' attention. There are initial efforts to explore the relationship between Instagram use and consumer engagement. Erkan [2015] conducted a comparison across 100 Instagram brand posts from eight different sectors and found significant differences in customer engagement across business sectors. A study by Phua et al. [2017] indicated that compared with Facebook, Twitter, and Snapchat users,

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Instagram users have the highest brand community engagement and commitment. Phua et al. [2018] examined how consumers engage with celebrity-endorsed e-cigarette advertising on Instagram.

Engaging on a given corporate SNS account will enhance customers' knowledge about that brand [Hammedi et al. 2015], which would further impact their product/service usage intention, facilitate electronic word of mouth (eWOM) [Habibi et al. 2014; Sivadas and Jindal 2017; Halaszovich and Nel 2017; Dwivedi et al. 2016] and increase customer loyalty [Dessart et al. 2015]. On the whole, customer engagement in corporate SNS accounts can lead to an increase in sales and corporate performance [Brodie et al. 2013; Hennig-Thurau et al. 2004; Hollebeek et al. 2014]. Acknowledging the great potential advantages of utilizing corporate SNS account, more and more business owners attempt to incorporate SNS into their marketing strategies to encourage customer engagement [Ashley and Tuten 2015; Malthouse et al. 2013].

Given the physical and psychological separation among users and sellers in cooperate SNS account, corporates are facing the challenges of establishing presence, a major drawback of computer-mediated environments in comparison with offline channels [Lu et al. 2016; Hassanein et al. 2009; Song et al. 2007]. It has been noted that SNS users tend to engage with an online brand only if they detect the presence when interacting with that site [Osei-Frimpong and McLean 2018] or if they have a sense of trust from the presence in that site [Han et al. 2016]. Thus, presence is a crucial factor that determines the success of a cooperate SNS account.

Thanks to fast-paced technological advances, presence has been largely boosted [Lu et al. 2016], for instance, via virtual reality [Lee and Park 2014; Li et al. 2003; Lu et al. 2016], text-based e-tail content [Lee and Park 2014] or social media features [Chong et al. 2018; Ou et al. 2014]. Due to the fact that SNS offers various communication tools to promote user interaction, it would be interesting to explore which technical features enhance presence and engagement in the virtual environment. Table 1 gives an overview of social media features literature. This presents a gap that though existing researches have examined the role of social media technologies on virtual presence [Chong et al. 2018; Ou et al. 2014], the context of e-commerce other than social network sites has been focused on. Specifically, Chong et al. [2018] investigated the positive impact of social media features (online reviews and instant messenger) on online interactivity and presence, which consequently would facilitate swift guanxi and perceived effectiveness of institutional mechanisms (PEEIM) in a Chinese e-marketplace. In the same research context, Ou et al. [2014] shed the light on the influence of interactivity and presence (social presence and telepresence) on buyer's repeat transactions, which are induced by various CMC instruments (i.e., instant messaging, message box, feedback system). Furthermore, Table 1 also shows that while social media features have been researched in the extant literature, little is known about the impact of social media features on consumer engagement in social network sites. Following the phenomenon and aiming at bridging these research gaps, this current research aims to investigate how social media features form virtual presence which in turn impacts engagement in corporate SNS accounts, particularly in a corporate Instagram account.

Inspired by Han et al. [2016]'s framework which utilizes site-level characteristics in SNS (i.e. machine interactivity, person interactivity, self-disclosure) to manifest social presence formation, our study specifically focuses on feature-level factors in Instagram (i.e. call to action, Instagram stories, geotagging) and how these features form both telepresence and social presence in Instagram.

In the attempt to answer these questions, we adopt Lombard and Ditton [1997]'s framework of presence formation due to its suitability to our objective. According to this framework, presence of a given medium is identified by its form features and content features. Form features are the characteristics of the medium while content features are relevant to the content conveyed within the medium, and both types can strengthen or weaken presence [Lombard and Ditton 1997]. In this study, Instagram's call to action and stories feature are served as the form features while geotagging is considered as a content feature. Accordingly, we expect this approach will enable us to understand how virtual presence is engendered through Instagram features, which in turn impacts SNS user's engagement behaviors.

Table 1: Overview of Social Media Features Research

Author (Year)	Journal	Research context/ Method	Social media features	Antecedents	Consequences
[Olbrich and Holsing 2011]	International Journal of Electronic Commerce	Social Shopping Communities/ Analyzing clickstream data	Direct shopping features (Mechanisms, Search Field); Social shopping features (List User-generated, Profile User, Rating Product, Rating Shop, Style, Tag)		Click-out
[Lee et al. 2014]	Computers in Human Behavior	Facebook/ Survey	Status, Wall, Comment, News Feed, Like, Message, Photo, Chat, Group, Game, Fan Page, Event, Note, and Friend		Bonding social capital; Bridging social capital
[Smock et al. 2011]	Computers in Human Behavior	Facebook/ Survey	Status updates, Groups, Comments, Wall posts, Private messages, Chat	Users' motivations	
[Horzum and Demirhan 2017]	Computers in Human Behavior	Facebook/ Cross-sectional survey	Status; News feed; Like; Photos; Groups; Fan Pages; Timeline; Links; Wall; Comments; Messages; Events; Games; Notes; Home page; Chat	Chronotype (evening types and morning types)	
[Lai and Yang 2016]	New Media & Society	Facebook Survey	Social interaction features; Social game features	Social needs, Enjoyment needs, Trend-following; Immersion needs; Achievement needs	Social ties
[Ou et al. 2014]	MIS Quarterly	E-commerce website (TaoBao)/ Longitudinal data	Instant messaging, Message box, Feedback system		Interactivity; presence, Swift guanxi; Trust, Actual repurchase
[Chong et al. 2018]	Information and Management	E-commerce website (TaoBao)/ Survey	Online reviews and Instant messenger		Interactivity; presence, Swift guanxi; PEEIM, Repurchase intention
[Erz et al. 2018]	Computers in Human Behavior	Instagram/ Mixed method	Hashtag	Six motives of hashtag use: Self-presentation, Chronicling, Inventiveness, Information Seeking, Venting, and Etiquette	

2. Literature Review

2.1. Presence

In general, presence is defined as the perception of direct experience in a communication environment induced by technology [Short et al. 1976; Biocca 1992]. In an online shopping context, presence refers to the degree of realism perceived by an online shopper [Li et al. 2003; Mollen and Wilson 2010]. In other words, it reflects customer's perceived similarity between shopping in physical and online stores [Lee and Park 2014]. Presence is reflected through two aspects, namely telepresence and social presence [Steuer 1992; Gefen and Straub 2004; Ou et al. 2014].

Telepresence is defined by [Steuer 1992] as the experience of presence in an environment created through a communication medium, which was the virtual reality in his study [Steuer 1992]. In other words, telepresence is the mental state during which computer-mediated communication users fail to realize that their communication experience is being processed through a mediated technology [Lee and Park 2014].

Social presence, originally proposed by Short et al. [1976], refers to "the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships". In the computer-mediated environment, social presence refers to the extent to which others' presence is perceived by users due to interpersonal interaction during the communication process [Walther 1992]. Thus, in this study, telepresence is the perception of being psychologically involved in the world created by the Instagram page, while social presence is the perception of being psychologically involved in interpersonal interactions through the Instagram page.

A number of studies have examined the important role of presence on consumers' attitudes and behavior in the online shopping environment. Lee and Park [2014] applied telepresence as a result of cue multiplicity in text-based e-tail content and investigate its influence on e-commerce website trust and e-shopping enjoyment. The positive relationship between telepresence and consumer brand engagement is founded in the context of social media marketing [Carlson et al. 2017; Algharabat et al. 2018]. Social presence of computer-mediated communication such as websites or social media is believed to be a vital factor in forming users' positive attitudes, especially in an environment lacking face-to-face interaction [Lin et al. 2014].

In this study, to answer the question of simulating users' presence experience when interacting with the page, specific characteristics of Instagram are taken into consideration. To the best of our knowledge, few studies have focused on how telepresence and social presence are formed in a corporate SNS account.

2.2. Presence formation framework

The importance of presence in online communication has been noticed by several researchers, who subsequently highlighted how presence is formed and manifested. Walther [1996] posited that online communications or computer-mediated communications are shaped by the medium that the communication from the senders to the receivers is conveyed. According to Lombard and Ditton [1997]'s framework, presence can be formed by the form features and content features of a given channel.

Form features

Form features are the characteristics of the medium, while content features are the characteristics of the content conveyed within the medium, and both types can strengthen or weaken presence [Lombard and Ditton 1997]. Form features that help generate presence include characteristics of visual display such as quality, richness, or vividness and interactivity of the medium. Interactivity is essential in forming telepresence [Steuer 1992] and social presence [Fortin and Dholakia 2005] as well as user's perception and attitude in the computer-mediated environment [Johnson et al. 2006]. Interactivity is strengthened in a corporate social network account where users are able to manage their own online space and have real-time interaction with other parties in online communication [Han et al. 2016]. Thus, in this study, we will approach the concept of the form-based feature from the perspective of interactivity.

Interactivity is defined as the degree to which users can participate in modifying the form and content of a mediated environment in real-time [Steuer 1992]. It is widely operationalized as a range of possible options that users can utilize to communicate with other entities in an online environment. Hence, the level of interactivity is closely related to the design of the medium or medium's form-based features.

According to Hoffman and Novak [1996], there are two dimensions of interactivity, which are machine interactivity and person interactivity. While machine interactivity refers to the interaction with a medium, person interactivity emphasizes human-to-human interaction facilitated by an online medium. Such communication occurs between an individual and other entities such as firm representatives, salespeople, or other online customers [Suntornpithug et al. 2010; Hoffman and Novak 1996]. Person interactivity in an online context could be manifested in the form of a sequence of relevant messages, which is enabled by the medium's function or form-based feature [McMillan and Hwang 2002]. Following the above argument, we will consider machine interactivity and person interactivity as two dimensions of form-based factors.

Content features

The second component forming presence in the computer-mediated environment is content features. Content features are defined as the characteristics of the content including objects, characters, messages, stories, etc. that are embedded in the delivered content within the form of media and also serve to encourage or discourage presence [Lombard and Ditton 1997].

Content features focus on how the content conveyed within the medium helps create nonverbal social cues and real-world-like cues [Han et al. 2016]. Hu et al. [2004] found that including playful content and emoticons can help communicate nonverbal cues and weaken social distance. Han et al. [2016] posited that self-disclosure is a way to

create real-world-like cues in an online context. In an online education context, when instructors share their personal information about themselves, they are perceived as more real by students [Aragon 2003].

2.3. Instagram features

Social media technologies are extensively utilized by the increasing number of businesses as vital channels in marketing and sales strategies [Naylor et al. 2012]. Features provided within social media platforms can effectively facilitate interaction between customers and generate virtual presence [Yoo et al. 2015]. For business purpose, Instagram is embedded with various features which can serve as powerful tools to satisfy diverse business needs [Handley 2016; Mangiaracina 2017; Foulks 2017].

Since this paper aims to examine how Instagram features form virtual presence, in doing so, help facilitate users' engagement behavior, we focus on features that enable or facilitate user's presence perception. Specifically, call to action, Instagram stories, and geotagging features are selected as the social media technologies used by online sellers to enhance cooperate Instagram page's virtual presence. Call to action (CTA) is a direction to the users designed to arouse an instantaneous response. Stories feature lets the account owners share a short video, live, an interactive poll, and a stream of pictures that are shown in the form of a slideshow through stories. In each story, Instagram account owners can interact with customers via a direct messaging box or "Question and Ask" sticker. Geotagging is the practice of adding geographical identification into online posts on social media. This study chooses these tools based on Lombard and Ditton [1997]'s framework which posited that presence can be formed by the form features and content features of a given channel. As mentioned above, interactivity is one of the form features' dimensions, thus, in this study, we approach the concept of the form-based feature from the perspective of interactivity. Specifically, call to action feature reflects machine interactivity enabled by the Instagram system while interactivity provided through the Instagram stories feature can be considered a type of person interactivity. Regarding content features, extant literature has examined different dimensions of conveyed content such as its social reality, authenticity, and plausibility [Barker 1988; Rice 1992; Short et al. 1976]. In this study, we conceptualize information richness from geotagging as content features due to the conceptual similarity between the two terms. Information richness refers to the additional information embedded in the original content of pictures and text [Otondo et al. 2008]. Geotagging, meanwhile, is defined as an indication of geographical identification by adding a specific location to the photos or the posts and placing them on a digital map [Lozano et al. 2017].

2.4. Social media engagement behavior

Social media engagement is the engagement from consumers in social media context or from social media users [Brodie et al. 2013]. Social media enables two-way interaction between users and the brand, which enhances consumer engagement [Dessart et al. 2015; Chiang et al. 2020]. According to Dolan et al. [2016], positively-valenced social media engagement behaviors include co-creation, positive contributions (likes, shares, retweeting, etc.), and consumption. The first type, co-creation, requires the highest level of social media engagement. Co-creators develop the related content and post it on the page [Dolan et al. 2016]. The second type, positive contribution, requires an average level of social media engagement [Dolan et al. 2016]. In this type of engagement, users enhance the content on a large scale by specifying their preferences through the like or share functions on Facebook and Instagram, and the favorite and retweet functions on Twitter [Dolan et al. 2016]. Chu [2011] found that when users like, share, retweet, or show their preferences toward content, their social media friends are more likely to engage with the content as well. The last type of social media engagement behavior is consumption. This is the passive engagement, where users participate via reading the posted content, comments, and discussions, viewing the posted photos and watching posted videos without any contribution [Shang et al. 2006; Gummerus et al. 2012; Dolan et al. 2016]. Although these consumers do not create content, they still reveal certain levels of engagement. Following Dolan et al. [2016], we explore engagement behaviors through following and sharing activities.

3. Hypothesis Development

3.1. Form-based presence formation

The role of call to action feature as machine interactivity in enhancing presence

Call to action, also known as CTA, is a direction to the users designed to arouse an instantaneous response [Copulsky et al. 2016]. When users click CTA, they will be directed to external websites to complete an action. The CTA feature on an Instagram page consists of "call now," "directions," and "e-mail." When users click on the "call now" button, the system will automatically make a call to the terminal number. The "Directions" button will lead users to an online map with registered addresses and directions to the users' current locations. When users click on the "e-mail" button, it will automatically bring the user to an e-mail page with contact e-mail in the recipient field where users can compose and send e-mails directly to brands.

This call to action feature reflects machine interactivity enabled by the Instagram system. According to a well-known study by Steuer [1992], machine interactivity is the interaction between users and a medium or computer-

mediated environment. Machine interactivity occurs when a user requests something on a medium by clicking specific buttons, and the medium responds to that request.

A previous study on using SNS in user relationship-building showed that corporate SNS pages offering various opportunities for users to click or interact might create the impression that users are interacting with each other, thus causing them to perceive social interaction richness and social presence [Han et al. 2016]. Coyle and Thorson [2001] found that the perception of telepresence was higher in the websites with high levels of mechanical interactivity as compared to those with low levels. Machine interactivity is known as one of the most important factors leading to the enhancement of social presence [Suntornpithug and Khamalah 2010] and telepresence [Lee and Park 2014; Steuer 1992] in computer-mediated communication, and it has been shown to contribute to a positive attitude of users. This leads to the following hypothesis:

H1a: *An Instagram page with call to action will generate a higher level of telepresence than the one without call to action.*

H1b: *An Instagram page with call to action will generate a higher level of social presence than the one without call to action.*

The role of Instagram stories as person interactivity in enhancing presence

Instagram stories comprise an ephemeral or self-destructing feature that allows owners to share multiple photos and videos or even live streams and they appear together in a "slideshow format" like Snapchat [Pittman and Reich 2016]. In each story, Instagram account owners can interact with customers via a direct messaging box or "Question and Ask" sticker. However, it will automatically disappear after 24 hours upon being posted [Tillman 2018].

Xu et al. [2016] did a qualitative study with users who experienced creating stories through Snapchat stories and watching other's stories. They found that users are interested in this feature because it is enjoyable and interactive, and the self-destructing format makes it less formal. Beukeboom et al. [2015] mentioned that brands are increasingly applying an informal style or a human voice in their social media communications to better communicate with their customers. A tone of voice has a relation to social presence, so when brands use a human voice (informal), they aim to foster consumers' perceptions of the brand as being closer and more real [Barcelos et al. 2018]. Dijkmans et al. [2015] also found that when companies apply a conversational human voice to social media interactivity, it could be evaluated more easily as a real-life relationship.

Interactivity provided through the Instagram stories feature can be considered a type of person interactivity. Person interactivity refers to human-to-human interactivity through a mediated environment [Nysveen and Pedersen 2004; Hoffman and Novak 1996]. Users tend to have perceptions of social interaction through interactivity via social networking sites since they can react or share their opinions with companies [Han et al. 2016; Kim 2015]. On the other hand, by utilizing stories feature, firms can make users perceive more social interaction by proactively communicating with their audiences in various ways such as raising questions, creating polls, answering questions, and suggesting content.

Existing studies have indicated that person interactivity would positively impact social presence in the context of online shopping [Suntornpithug and Khamalah 2010], virtual worlds [Yeh et al. 2011], and online relationship management [Han et al. 2016]. While such a relationship between person interactivity and social presence is widely examined, there is little evidence of the link between person interactivity and telepresence [Lim and Ayyagari 2018]. In this study, we argue that a stronger human-to-human interaction will more likely to make people experience the feeling of presence and being immersed in a computer-mediated environment. This leads to the following hypothesis:

H2a: *An Instagram page with Instagram stories will generate a higher level of telepresence than the one without Instagram stories.*

H2b: *An Instagram page with Instagram stories will generate a higher level of social presence than one without Instagram stories.*

3.2. Content-based presence formation

The role of geotagging as a content feature in enhancing presence

Geotagging or location tagging is another useful feature in the Instagram platform. Geotagging in this study is defined following Lozano et al. [2017]'s study as an indication of geographical identification by adding a specific location to the photos or the posts and placing them on a digital map. Posts on Instagram with geotagging obtain 79% more engagement than those without geotagging[1]. Geotagging is one important element of a pull marketing strategy, where customers usually seek out brand information through the content available online created by the brand [Li and Du 2012]. Ho [2012] posited that location information from geotagging may reduce the effort to process information by giving an accurate location, thus making it easier for individuals to obtain navigation information.

[1] Geotagging engagement - https://www.socialreport.com/insights/article/115004172723-Instagram-For-Business-The-Importance-Of-Location-Tagging

In this study, we conceptualized geo-tagging as a content feature, which is another aspect to generate social presence besides the form feature. According to presence formation theory, content-related cue refers to the characteristic embedded in the delivered content within the form of media [Lombard and Ditton 1997]. When posting on Instagram, the poster is at the discretion to make use of the geotagging function to inform the audience of location information. Users are more likely to feel that the provided information is useful when they perceive that geotagging gives them relevant clues needed for communication [Feng et al. 2016]. Thus, we conceptualize geotagging as information richness which is defined as the additional information embedded in the original content of pictures and text [Otondo et al. 2008].

Telepresence consists of two sub-components, namely vividness, and interactivity [Steuer 1992]. Vividness refers to how information is displayed through using different features available in a mediated environment, in other words, it is how users perceive delivered information in a mediated environment. Meanwhile, interactivity is defined as the degree to which customizing the form and content within a mediated environment can be performed by users in real-time [Steuer 1992]. Following the above discussion, it is clear that in this study, geotagging which is conceptualized as information richness has no relationship with telepresence.

Regarding the relationship between geotagging and social presence, a previous study found that a higher degree of social presence could be perceived through better information richness of the technology [Ogara and Koh 2014]. Moreover, Otondo et al. [2008] also indicated that relevant content and information cues provided by online sites have positive impacts on social presence. When users receive a lot of relevant information from a company website, they perceive this company to be real [Otondo et al. 2008]. This leads to the following hypothesis:

H3: *An Instagram page including geotagging in the posts will generate a higher level of social presence than the one without geotagging.*

3.3. The effects of telepresence and social presence on flow experience

The relationship between telepresence and flow experience

Telepresence enables users to immerse themselves in the world constructed within a medium [Lee and Park 2014]. It is found that telepresence can help to strengthen consumer's flow state during their online shopping [Hoffman and Novak 1996]. Novak et al. [2000] indicated that when experiencing activities in the virtual world, the sense of telepresence would lead users to a higher level of concentration, which consequently results in a loss of self-consciousness and a sense of escapism. This state happens when users lose the sense of time or find no importance of surrounding people or events in the physical environment, which gradually places them in state of flow. Many researchers have found that telepresence is a key antecedent of flow experience, where increasing telepresence results in strengthening user flow experience [Animesh et al. 2011; Carlson et al. 2017; Novak et al. 2000; Zaman et al. 2010; Pelet et al. 2017]. Based on the above argument, we propose that the higher level of being immersed that users can experience when using Instagram page, the greater likelihood that they would reach the state of flow. This leads to the following hypothesis:

H4: *Telepresence on an Instagram page positively affects flow experience.*

The relationship between social presence and flow experience

Social presence can induce a sense of psychological closeness or proximity, which results in user's state of flow [Ryan and Grolnick 1986]. Laffey et al. [2006] indicate that social presence which is generated by cordial and personal intercommunication can let people experience greater involvement, absorption, engagement, and immersion during their interaction in a mediated environment. That experience plays a crucial part in bringing more delightful participation for the participants in the virtual environment. In addition, previous studies also indicated that social presence in communication platforms or channels has a positive relationship with perceived enjoyment [Hassanein and Head 2005; Shen 2012]. Hence, it is likely that social presence would reinforce users' engagement and give rise to their state of flow during their experience in the virtual world.

Therefore, in this research context, users who perceive social presence through machine interactivity and human interactivity provided by the Instagram page might have more positive feelings and may find the experience more enjoyable. In other words, users who perceive social presence are more likely to be involved and absorbed in the communication; hence, they tend to be more focused, which could lead to the flow experience [Animesh et al. 2011; Wang et al. 2007; Zhang et al. 2014]. This results in the following hypothesis:

H5: *Social presence on an Instagram page positively affects flow experience.*

3.4. The relationship between flow experience and actual engagement behavior

The concept of flow was first introduced in 1990 by Csikszentmihalyi [1990], who defined it as a situation where an individual is fully involved in an activity, and nothing else matters. Flow has been used to describe a mental state when an individual experiences enjoyment while being engaged in an activity [Zhang et al. 2014]. In the past, flow was applied to physical activities like playing sports. However, with the emergence of advanced technologies, researchers started applying flow to computer-mediated activities such as online shopping [Animesh et al. 2011; Wang

et al. 2007; Kim et al. 2013], online games [Chang 2013; Hsu and Lu 2004], social network usage [Huang et al. 2014; Pelet et al. 2017], social commerce participation [Zhang et al. 2014; Herrando et al. 2019], mobile payment usage [Zhou 2013], and instant message usage [Zaman et al. 2010; Zhou and Lu 2011]. Hoffman and Novak [1996] started using the flow concept to explain experiences occurring in online environments. They posited that a website allows its users to experience flow by providing interactivity, enjoyment, loss of self-consciousness, and self-reinforcement [Hoffman and Novak 1996].

Extant researches in the online game context have widely acknowledged the relationship between flow experience and user engagement [Hamari et al. 2016; Jin 2012; Bachen et al. 2016]. Moreover, flow experience resulting from virtual reality stories positively influences engagement [Shin 2018]. In an online shopping environment, it is indicated that flow experience results in an "optimal" user experience which could enhance intrinsically motivated behavior, engagement, and loyalty [Mahnke et al. 2015]. Therefore, we propose that consumers who perceive flow experience through cooperate SNS account are more likely to engage with the sites than those who do not. This leads to the following hypothesis:

H6a: *Flow experience positively affects actual engagement behavior with an Instagram page in the form of following the page information.*

H6b: *Flow experience positively affects actual engagement behavior with an Instagram page in the form of sharing the page information.*

3.5. The mediating roles of telepresence and social presence

We postulated that telepresence and social presence may mediate the relationship between the three Instagram features and flow experience. As mentioned above, in this study, call to action feature reflects machine interactivity while Instagram stories feature can be considered a type of person interactivity. Hoffman and Novak [1996] and Novak et al. [2000] suggested that flow is driven by interactivity. Other studies also indicated that interactivity serves as a vital factor that helps to generate and enhance user's flow experience in the online environment [Choi and Baek 2011; Cheng 2011; Coursaris and Sung 2012].

In this manner, call to action and Instagram stories serving as two types of interactivity may have a direct effect on flow experience. Furthermore, our discussion of hypotheses H1 through H5 already explains why we expect the three Instagram features have a direct effect on telepresence and social presence which subsequently influences flow experience. Thus, we posit that call to action and Instagram stories features can be indirectly related to flow experience through social presence and telepresence. Therefore, we propose the following hypothesis:

H7a: *Telepresence mediates the positive effect of call to action on flow experience.*

H7b: *Telepresence mediates the positive effect of Instagram stories on flow experience.*

H8a: *Social presence mediates the positive effect of call to action on flow experience.*

H8b: *Social presence mediates the positive effect of Instagram stories on flow experience.*

In this study, geotagging is conceptualized as information richness of content feature, which refers to relevant information added through geotagging. Since the aforementioned literature proposes the positive influence of geotagging on social presence (H3) which positively impact flow experience (H5), it suggests that social presence may serve as a possible candidate to mediate the relation between geotagging and flow experience:

H8c: *Social presence mediates the positive effect of geotagging on flow experience.*

3.6. The mediating role of flow experience

We expect that flow experience mediates the effect of telepresence and social presence on engagement behaviors. To ground our hypotheses of the mediating effect of flow experience, we suggest that telepresence and social presence have impacts on engagement behaviors. Fiore et al. [2005] posit the positive causal relationship between telepresence and instrument, experiential values (dimensions of consumer brand engagement). A number of later studies also suggest telepresence as an important driver of engagement [Mollen and Wilson 2010; Bakker et al. 2011; Hu and Hui 2012]. In the specific context of a 3D virtual environment, such relationship has also been reported [Papagiannidis et al. 2017].

Furthermore, social presence is considered a vital element that enhances the effectiveness of communication and interaction through communication medium [Cui et al. 2013]. Osei-Frimpong and McLean [2018] revealed that intimacy from mediums' social presence as a result of interactivity could enhance users' feelings and could influence their possibility to engage with the brand. Pongpaew et al. [2017] conducted qualitative research on the effect of social presence on customer brand engagement on the Facebook fan page. They found that multimedia technology that enhances interactivity and real-time response influences users' engagement levels [Pongpaew et al. 2017]. In addition, Algharabat et al. [2018] also affirmed that telepresence and social presence have a positive relationship with engagement, which in turn impacts electronic word of mouth and willingness to donate.

In line with our discussion about flow experience, we have hypothesized the effects of social presence and telepresence on flow experience in hypotheses H4 and H5. In addition, hypothesis 6 explains the relationship of flow

experience on engagement behavior. Based on the above postulations, we have the confidence to speculate that telepresence and social presence affect engagement through flow experience. Thus, we hypothesize that:
H9a*: Flow experience mediates the positive effect of telepresence on following behavior.*
H9b*: Flow experience mediates the positive effect of social presence on following behavior.*
H10a*: Flow experience mediates the positive effect of telepresence on sharing behavior.*
H10b*: Flow experience mediates the positive effect of social presence on sharing behavior.*

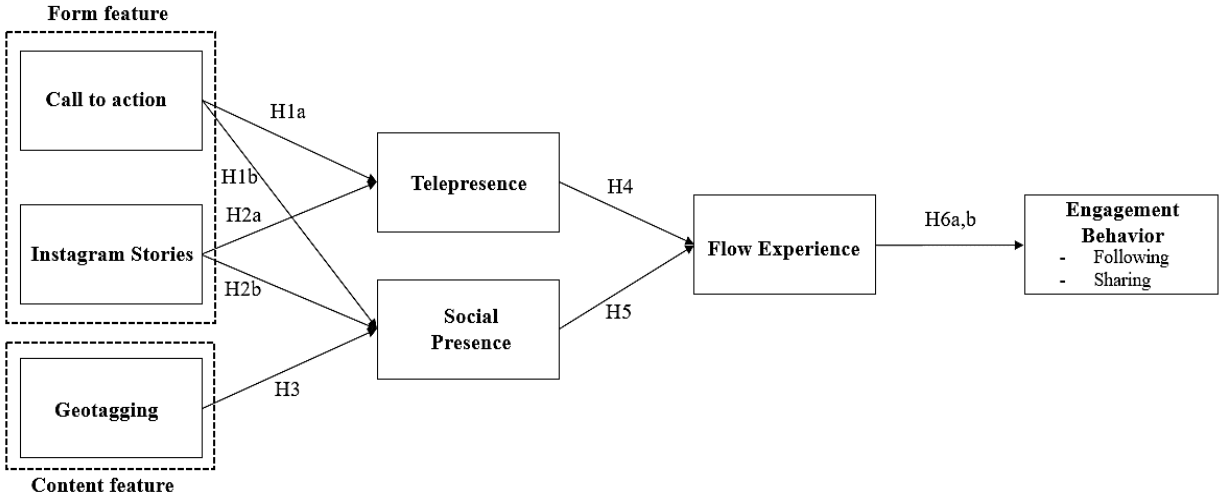

Figure 1: Conceptual model

4. Research Methodology

4.1. Research design

This study employed an experimental study using a 2×2×2 factorial design. Specifically, we examine the effect of call to action (with call to action, without call to action), geotagging (with geotagging, without geotagging), and Instagram stories (with Instagram stories, without Instagram stories) within a specific group of people. The overall experimental design of this study is illustrated in Table 2.

Table 2: Factorial Design.

Call to Action	Instagram Stories	Geotagging	
		with	without
with	with	A1	A2
	without	A3	A4
without	with	A5	A6
	without	A7	A8

4.2. Participants

Overall, 267 answers were collected, but only 253 can be used for this study upon the deletion of some duplicate answers in which respondents repeated every single question. The field experiment was conducted at JinWei Hotpot restaurant located in Tainan City, Taiwan. Since the experiment site was located close to the university campus, the respondents were mainly university students and local customers. In our research, student respondents all belong to the millennials (i.e. people born between 1981 and 1996). This generation serves as the largest part of the current labor workforce and is recorded as the most active users in various social platforms (e.g. Instagram, Facebook) [Giannoulakis and Tsapatsoulis 2016]. University students are also the popular source of data used in previous studies investigating Instagram usage behavior [Tiggemann et al. 2018; Phua et al. 2017; Li et al. 2018; Djafarova and Rushworth 2017]. Therefore, we contend that with the aim of investigating user's behaviors (i.e. following and sharing) on Instagram, those familiar with the Instagram platform and its features as the millennial generation would provide a more insightful and accurate view on our study [Duggan 2015; Statista 2020].

4.3. Stimuli development and procedures

To address the research questions, a field experiment was determined to use in this research. As field experiment behavior best understood within their natural setting is an effective tool for the controlled testing of causal processes

and recognizing users' attitudes as it can tell more than artificial settings in laboratory experiments [Babbie 2013]. Therefore, using field experiments partly helps solve the greatest weakness of laboratory experiments which lies in their artificiality. Another advantage of field experiments over laboratory experiments is greater external validity because the experiment is performed in a normal social setting. Lastly, a larger scale of sampling tends to be more accessible for the field experiment.

This field experimental study was conducted at JinWei Hotpot restaurant which is a traditional Taiwanese hotpot restaurant, located in Tainan City, Taiwan. JinWei Hotpot restaurant was selected to conduct the experiment because of the following reasons. First, in line with the prior field study [Vaughan et al. 2016], by using the real existing brand (i.e. JinWei Hotpot restaurant) with a real Instagram profile and actual posts, the results from real field experiment could increase external validity. Second, according to the Instagram Influencer Database report in 2019, fashion and food are two industries getting the highest attention from marketing on Instagram [Agency 2019]. Another consideration of choosing hotpot as the experimental product is that there is no concern about the difference between genders and ages, hence, it helps to avoid the bias and compounding effect. In addition, Jinwei Hotpot is the most popular restaurant in the area with more than 2000 followers on Instagram account.

After customers finished dining, they were asked if they had an Instagram account and if they were willing to participate in the experiment. To further encourage participation, participants were provided the information consent stating that anonymity and confidentiality of their answers would be assured [Hewson and Yule 2003], thereby reducing social desirability bias [Podsakoff et al. 2003; Whitley and Kite 2013].

Participants who agreed to join the experiment were asked to visit Jinwei Hotpot's Instagram page through their Instagram application (refer to Appendix A) and were instructed to go through different steps of the experiment. Participants were randomly assigned into 8 scenarios with different versions of Jinwei Instagram in which they were exposed to a page with or without call to action, Instagram stories, and geotagging functions. This randomization technique assigned respondents to different Instagram scenarios solely by chance, which is argued to decrease the possibility that confounding effect and social desirability effect [Rossi and Anderson 1982; Weinberg et al. 2014]. Thereafter, they were asked to complete a questionnaire including manipulation check questions.

For engagement behavior, respondents were asked to choose whether they wanted to follow and share the page with their Instagram account. If they chose to follow or share, they were requested to insert the code mentioned on Jinwei Hotpot's page to confirm their actual behavior. 10% discount on the total bill was offered for every participant completing the experiment and questionnaire survey, regardless of their final engagement decision (i.e. following, sharing, none).

4.4. Manipulation check

The manipulation checks for three examined features (i.e. call to action, geotagging, and Instagram stories) were implemented to check whether there was any difference between an Instagram page with and without those features (refer to Appendix B).

CTA's main purpose is to elicit the impulse towards a specific action [Eisenberg and Eisenberg 2006]. An Instagram page with "call to action" (CTA) included three functions of "call now," "directions," and "e-mail." When users clicked CTA, they were led to external pages to complete the action (see Appendix B.1). Then, we asked users to fill out the questionnaire to determine if they could perceive the difference between the presence and absence of CTA, for example, "Are there any buttons in the Instagram page for you to click on that lead to an external website?", using a 5-point Likert scale.

Instagram stories feature was manipulated to present online interaction between sellers and buyers. In the treatment condition with the "stories feature," users were exposed to the Instagram page with a colorful ring that appeared around the profile picture, and people could tap it to see the posted story. In each story, a 'Question and Answer' (Q&A) sticker or a direct messaging box, which can be directly added by the Instagram account owner, was designed. When customers tapped on the sticker or used the direct messaging box to ask or reply to the questions, sellers can respond to the messages from customers by text, a picture, a song, or even a live video (see Appendix B.2). Then, the participants were asked to fill out the survey on whether they could perceive the difference between the presence and absence of Instagram stories, for example, "While browsing the Instagram page, I can communicate with the admin of Instagram account" according to a 5-point Likert scale.

Geotagging generally consists of the location's name, address, and location in an online map. In the treatment condition with "geotagging", we added a specific location to the photos or the posts and users could click on it to see the address of the restaurant or the place where the pictures were taken (see Appendix B.3). Similarly, respondents for the main study were asked to fill out the questionnaire to indicate the difference between the presence and absence of Geotagging, for example, "Are there any links in the photos or the post for you to browse meaningful information that leads to Instagram account or external website?", using a 5-point Likert scale.

4.5. Measurements

Following the approach from [Zhang et al. 2011; Riaz et al. 2018], after manipulation check completion, we measured all research constructs through a survey. In this study, call to action represents machine interactivity while Instagram stories feature reflects human interactivity. Accordingly, we adapted the questionnaire items for call to action from [Hsu et al. 2015; Lu et al. 2010] and Instagram stories from [Wu and Chang 2005; Novak et al. 2000]. As geotagging is conceptualized as information richness, the measure of information richness consisted of three items from [Otondo et al. 2008] and one customized item from the scale proposed by [Huang et al. 2008]. Telepresence was evaluated based on the measurement items from [Pelet et al. 2017; Kim and Biocca 1997]. Additionally, social presence was measured by the measurements from [Algharabat et al. 2018]. Flow experience was measured by five items adapted from [Animesh et al. 2011]. Finally, for the measurement of actual engagement behavior, the participants were asked to follow or share the post from the Instagram page and to input the code mentioned on the Instagram page into the questionnaire.

Furthermore, gender, age, frequency of use, and frequency of use were included as control variables. Other than these variables, Instagram intensity and brand involvement were also tested. The measurement of Instagram intensity was adopted from [Ellison et al. 2007] while brand involvement items were from [Zaichkowsky 1985]. All items use 7-point Likert scales, from "strongly disagree" to "strongly agree", to measure (refer to Appendix C).

For the sake of constructs' content validity, practitioners, researchers, and Instagram users in the related setting were invited to review the questionnaire. According to the provided comments, a further revision was conducted to increase the questionnaire's readability and comprehension. There is no new item proposed to use after this stage of review.

5. Data Analysis and Results

5.1. Characteristics of the respondents

There was a total of 253 respondents, of which 54.94% were male, and 45.06% were female in the major age group ranging from 18 to 24 years old (58.89%). More than half of the respondents had bachelor's degrees (67.98%). About half of the respondents spent 1-3 hours per day on Instagram (52.57%), following by less than 1 hour (39.92%), 4-6 hours (6.72%), and more than 6 hours (0.79%). For actual engagement behaviors, among 253 respondents, there were 206 people following the Instagram page while 80 people shared the page to their own accounts. The details are shown in Table 3 below.

Table 3: Respondent Demographics.

Demographics	Category	Frequency (n=253)	Percentage (%)
Gender	Male	139	54.94%
	Female	114	45.06%
Age	Under 18	13	5.14%
	18 - 24 years old	149	58.89%
	25 - 34 years old	80	31.62%
	35 - 44 years old	11	4.35%
	45 - 54 years old	0	0.00%
	55 years old and above	0	0.00%
Education	High School or lower	13	5.14%
	Bachelor degree	172	67.98%
	Master degree	61	24.11%
	PhD	7	2.77%
Frequency of Use (per day)	Less than 1 hour	101	39.92%
	1 - 3 hours	133	52.57%
	4 - 6 hours	17	6.72%
	More than 6 hours	2	0.79%
Actual engagement behaviors	Following	206	81.42%
	Sharing	80	31.62%

5.2. Manipulation check results

We tested the overall manipulation check on call to action, geotagging, and Instagram Stories. The results showed that there was a significant difference between with and without call to action (M=4.264 vs 1.545, F-value = 2325.589, p-value < 0.001), Instagram stories (M=4.379 vs 1.710, F-value = 1434.909, p-value < 0.001) and geotagging (M

=4.414 vs 1.670, F-value = 1787.194, p-value < 0.001). All mean scores differed significantly in the expected direction. Thus, the experimental manipulation was successful.

5.3. Measurement Model

PLS (partial least squares) was used to assess the structural model and test our hypotheses. The measurement model was assessed by examining convergent validity and discriminant validity. Based on item loadings and the average variance extracted (AVE), convergent validity was evaluated. The results showed all item loadings were greater than the threshold of 0.7. In addition, as presented in Table 4, all constructs had AVE values greater than the recommended minimum value of 0.5 indicating that convergent validity was established. Reliability was evaluated based on composite reliability and Cronbach's value. As can be seen from Table 4, all composite reliability and Cronbach values were greater than the commonly accepted cutoff value of 0.70, and we could conclude that the construct had an acceptable level of reliability [Fornell and Larcker 1981].

Table 4: Cronbach's Alpha, Composite Reliability and Average Variance Extracted.

Items	Loading	CR	CA	AVE
Call to Action				
CTA1	0.945	**0.955**	**0.968**	**0.882**
CTA2	0.940			
CTA3	0.946			
CTA4	0.926			
Instagram Stories				
STR1	0.936	**0.960**	**0.971**	**0.893**
STR2	0.962			
STR3	0.932			
STR4	0.949			
Geotagging				
GEO1	0.936	**0.962**	**0.972**	**0.897**
GEO2	0.949			
GEO3	0.951			
GEO4	0.952			
Telepresence				
TP1	0.868	**0.908**	**0.933**	**0.736**
TP2	0.883			
TP3	0.717			
TP4	0.906			
TP5	0.901			
Social presence				
SP1	0.900	**0.876**	**0.916**	**0.731**
SP2	0.893			
SP3	0.849			
SP4	0.772			
Flow experience				
FL1	0.861	**0.911**	**0.934**	**0.738**
FL2	0.863			
FL3	0.881			
FL4	0.778			
FL5	0.906			

Note: CA: Cronbach's alpha; CR: composite reliability; AVE: average variance extracted

Discriminant validity of a construct was examined by comparing the square root of the AVE for the construct in question and its correlations with other constructs [Gefen and Straub 2005]. As shown in Table 5, the square roots of the AVE for a construct exceeded its correlations with other constructs. Furthermore, the cross-loading matrix showed that all the item loadings on the intended constructs were higher than on any other constructs (refer to Appendix D). Hence, discriminant validity was confirmed.

Table 5: Correlations matrix.

	CTA	FL	GEO	SP	STR	TP
CTA	*0.939*					
FL	0.481	*0.859*				
GEO	0.031	0.164	*0.947*			
SP	0.542	0.769	0.143	*0.855*		
STR	-0.017	0.507	0.018	0.334	*0.945*	
TP	0.518	0.713	0.177	0.697	0.376	*0.858*

Note: The italic values are the squared root of AVE.

5.4. Results of the structural model analysis

To identify standardized path coefficients and statistical significance, bootstrapping analysis is conducted. The path coefficient results in Table 6 showed that call to action and Instagram stories respectively influenced telepresence (β=0.525, p-value < 0.001; β=0.385, p-value < 0.001) and social presence (β=0.545, p-value < 0.001; β=0.341, p-value < 0.001). Geotagging was also found to have a significantly positive effect on social presence (β=0.120, p-value < 0.01). In addition, the result revealed that both telepresence and social presence produced significant impacts on flow experience respectively (β=0.344, p-value < 0.001; β=0.530, p-value < 0.001). Subsequently, flow experience was reported to positively affect both following (β=0.436, p-value < 0.001) and sharing behavior (β=0.306, p-value < 0.001). The model accounts for 18.7% of the variance in following behavior, 9.0 % of the variance in sharing behavior, 65.0% of the variance in flow experience, 41.2% of the variance in telepresence, and 41.9% of the variance in social presence.

Table 6: Results of the Research Model Testing.

	Path Coefficient	SE	t-value	p-value	Hypothesis
H1a: Call to Action → Telepresence	0.525	0.042	12.423	0.000	Supported
H1b: Call to Action → Social presence	0.545	0.043	12.590	0.000	Supported
H2a: Instagram Stories → Telepresence	0.385	0.043	8.984	0.000	Supported
H2b: Instagram Stories → Social presence	0.341	0.048	7.153	0.000	Supported
H3: Geotagging → Social presence	0.120	0.045	2.639	0.008	Supported
H4: Telepresence → Flow experience	0.344	0.052	6.653	0.000	Supported
H5: Social presence → Flow experience	0.530	0.051	10.488	0.000	Supported
H6a: Flow experience → Following behavior	0.436	0.062	7.064	0.000	Supported
H6b: Flow experience → Sharing behavior	0.306	0.051	5.984	0.000	Supported

Apart from the main effects analysis, we tested whether control variables including gender, age, education, frequency of usage, Instagram intensity [Ellison et al. 2007] and brand involvement [Zaichkowsky 1985] might influence the dependent variables. As shown in Table 7, all of the control variables eventually had no impact on engagement behaviors.

Table 7: Results for Control Variables.

Dependent Variables	Control Variables	t-value	p-value
Following behavior	Gender	1.171	0.242
	Age	1.747	0.081
	Education	0.338	0.735
	Frequency of Use	0.305	0.760
	Instagram intensity	0.584	0.560
	Brand involvement	0.542	0.588
Sharing behavior	Gender	0.929	0.353
	Age	0.254	0.799
	Education	1.014	0.311
	Frequency of Use	0.595	0.552
	Instagram intensity	0.083	0.934
	Brand involvement	1.345	0.179

5.5. Mediation effect results

We followed the bootstrapping procedure for mediation analysis in PLS [Nitzl et al. 2016] to test two mediating effects: 1. the mediating role of telepresence and social presence and; 2. the mediating role of flow experience. Bootstrapping is construed as a non-parametric resampling procedure. It does not require the assumption of symmetry and normality of the sampling distribution of the indirect effect. The main advantages of bias-corrected bootstrap include the correction of the bias that existed in the central tendency of the estimate, a greater statistical power, and a higher degree of accuracy for confidence intervals. Therefore, this bias-corrected bootstrapping procedure is employed to examine our mediation effects. PLS was used to generate 1000 samples and 97.5% bias-corrected confidence intervals.

Results show that the indirect effects of call to action and Instagram stories on flow experience through telepresence are significant (β=0.117, p-value < 0.005; β=0.086, p-value < 0.005), and the indirect effect of call to action, Instagram stories and geotagging through social presence are also significant (β=0.242, p-value < 0.001; β=0.152, p-value < 0.001; β=0.053, p-value < 0.05), supporting the hypotheses H7a, H7b, H8a, H8b, and H8c. Furthermore, our mediation results show significant direct effects of call to action and Instagram stories on flow experience (β=0.126, p-value < 0.05; β=0.276, p-value < 0.001), while geotagging has no significant direct effect on flow experience (β=0.053, p-value = 0.130). Hence, it is concluded that both telepresence and social presence partially mediates the effects of call to action and Instagram stories on flow experience while the relationship between geotagging and flow experience is fully mediated by social presence.

Similarly, the mediating effect 2 was conducted to explore how flow experience mediated the links between two independent variables (i.e. telepresence and social presence) and two types of engagement behaviors (i.e. following and sharing). As shown in Table 8, the indirect effects of telepresence and social presence towards following behavior are significant, respectively (β = 0.120 and p-value < 0.01; β = 0.185 and p-value < 0.01), supporting the hypotheses H9a, H9b. In addition, the direct influence of telepresence on following behavior is significant (β = 0.220 and p-value < 0.05), while the link between social presence and following behavior is found insignificant (β = -0.09 and p-value = 0.346). Hence, flow experience partially mediates the relationship between telepresence and following behavior and fully mediates the relationship between social presence and following behavior. The same procedure was applied to test the relationships between telepresence and social presence towards sharing behavior. The indirect effects of both telepresence and social presence on sharing behavior are found positive but insignificant (β = 0.052 and p-value = 0.076; β = 0.081 and p-value = 0.094). Thus, no mediation is concluded, and H10a and H10b are not accepted.

Table 8: Bootstrapping results for mediation effect testing

Relationship	**Direct effect**	**97.5% BCCI**	**Indirect effect**	**97.5% BCCI**	**Results**
Call to action → Flow experience	0.126*	[0.005; 0.237]			
Call to action → Telepresence → Flow experience			0.117**	[0.051; 0.197	Partial mediation
Call to action → Social presence → Flow experience			0.242***	[0.174; 0.319]	Partial mediation
Instagram Stories → Flow experience	0.276***	[0.175; 0.372]			
Instagram Stories → Telepresence → Flow experience			0.086**	[0.040; 0.137]	Partial mediation
Instagram Stories → Social presence → Flow experience			0.152***	[0.103; 0.205]	Partial mediation
Geotagging → Flow experience	0.053	[- 0.016; 0.121]			
Geotagging → Social presence → Flow experience			0.053*	[0.011; 0.099]	Full mediation
Telepresence → Following	0.220*	[0.054; 0.403]			
Telepresence → Flow experience → Following			0.120**	[0.048; 0.220]	Partial mediation
Social presence → Following	-0.09	[- 0.264; 0.104]			
Social presence → Flow experience → Following			0.185**	[0.061; 0.326]	Full mediation
Telepresence → Sharing	0.203*	[0.028; 0.370]			
Telepresence → Flow experience → Sharing			0.052	[- 0.002; 0.111]	No mediation

Social presence → Sharing	0.012	[- 0.174; 0.205]				
Social presence → Flow experience → Sharing			0.081	[- 0.185]	0.006;	No mediation

Note: *** p<0.001, **p<0.01, * p<0.05.

6. Research Discussion

The current study examined the effects of different social media features on telepresence and social presence, which subsequently leads to flow experience and actual engagement behavior, including following and sharing. Jinwei Hotpot's Instagram account was utilized to manipulate each scenario with different combinations of treatments including call to action (with and without), Instagram stories (with and without) and geotagging (with and without). A summary of the hypotheses testing results is presented in Table 10.

The call to action feature in this study was conceptualized as machine interactivity between users and a page. The results from this study illustrated that when the brand's page utilizes a call to action feature, users will perceive more telepresence and social presence compared to the scenario lacking a call to action on the brand page. This finding aligns with those of Kim [2015] and who found that machine interactivity influences telepresence. In addition, the findings of this study also support the conclusions of prior studies [Han et al. 2016; Fortin and Dholakia 2005] which demonstrated the positive impact of machine interactivity on social presence. When users click or interact with a site or page, this interaction might help users to assume that they are interacting with others, thus perceiving social interaction intimacy results in perceptions of social presence.

The Instagram stories feature was conceptualized as human interactivity, which refers to person interactivity through a mediated environment [Hoffman and Novak 1996]. The results from this study showed that when users visit a brand page with Instagram Stories, they perceive more telepresence and social presence than in the case when the page lacks Instagram stories. Lim and Ayyagari [2018] found a positive relationship between person interactivity and telepresence, which was supported by this study. This result also aligns with the findings of Suntornpithug and Khamalah [2010]; Kim [2015] and Han et al. [2016], who suggested that interactivity among people can lead to the perception of social presence. When users can share their opinions via Instagram stories as presented in this study, they tend to feel that the page is more of a social environment, thus helping them to perceive greater social presence.

This study conceptualized geotagging as information richness, which refers to information cues provided through geotagging. The results illustrated that users browsing through pages with geotagging perceive more social presence than those without geotagging. This finding supported the conclusions of Otondo et al. [2008] and Ogara and Koh [2014] in which both studies found a positive relationship between information richness provided through relevant information cues and social presence. In the current study, geotagging provided relevant information such as location for users browsing through an Instagram page. Via this information cue, users can perceive the social presence while on the page and perceive the Instagram page as real.

The results illustrated that telepresence and social presence have positive influences on flow experience. This finding reveals that telepresence positively influences flow experience was supported by [Zaman et al. 2010; Carlson et al. 2017; Pelet et al. 2017]. Their studies showed that when people are in an environment with high telepresence, they tend to lose their consciousness of the physical environment and become deeply involved in the mediated environment. The finding suggests that social presence positively influences flow experience, supporting the findings of [Animesh et al. 2011; Wang et al. 2007; Zhang et al. 2014], who found that people who perceive social presence are more likely to be entirely involved and absorbed in communication and tend to be more focused, which leads to the flow experience.

Furthermore, flow experience was found to have a significant positive relationship with both engagement behaviors. The results are aligned with [Mahnke et al. 2015] that flow experience results in an "optimal" user experience that could enhance engagement.

Regarding the mediating effects, the results show that telepresence and social presence partially mediated the effects of call to action and Instagram stories on flow experience. This finding illustrated that call to action and Instagram stories had not only a direct impact on flow experience but also an indirect effect via telepresence and social presence. The result proves the consistency with extant studies on the relationship between interactivity and flow experience [Suh and Chang 2006; Mollen and Wilson 2010], while the indirect effect is aligned with prior studies that interactivity is a predictor of telepresence [Lee and Park 2014; Steuer 1992] and social presence [Suntornpithug and Khamalah 2010; Yeh et al. 2011; Han et al. 2016] which in turn positively influences flow experience [Animesh et al. 2011; Carlson et al. 2017; Zhang et al. 2014].

Furthermore, the relationship between geotagging and flow experience was fully mediated by social presence, suggesting that social presence plays a fundamental role to prompt flow experience in the page with geotagging. When users receive relevant content and information cues from geotagging, they may perceive this medium to be more real

[Otondo et al. 2008] that could enhance user's positive feelings and enjoyable experiences [Animesh et al. 2011; Wang et al. 2007; Zhang et al. 2014].

We also found that the effects of telepresence and social presence on following behavior are mediated by flow experience. These results are consistent with the findings of past studies on interactivity and flow experience [Choi and Baek 2011; Coursaris and Sung 2012] and, following experience and engagement (i.e. following behavior) [Hamari et al. 2016; Jin 2012; Bachen et al. 2016]. In contrast, flow experience does not mediate the effects of telepresence and social presence on sharing behavior. The insignificance might be attributed to the potential differences between sharing and following behavior based on the findings of [Pentina et al. 2018]. They conducted qualitative research and found that following a brand page requires the lowest amount of user effort compared to other engagement behavior including sharing. Following the brand page is an agreement and commitment of users to continuously receive information from the brand page. However, sharing requires more consideration and effort than following. Users might have to consider the credibility of the information source as well as the accuracy and relevancy of the information since when they share something, it could reflect on their virtual identity leading to the formation of attitudes and perceptions based on the shared content [Brodie et al. 2013; Pentina et al. 2018; Johnson and Kaye 2015]. In this sense, merely telepresence and social presence may not able to promote sharing behavior.

Table 9: Summary of Hypotheses Test

	Hypotheses	**Results**
H1a	An Instagram page with call to action will generate a higher level of telepresence than the one without call to action.	Supported
H1b	An Instagram page with call to action will generate a higher level of social presence than the one without call to action.	Supported
H2a	An Instagram page with Instagram stories will generate a higher level of telepresence than the one without Instagram stories.	Supported
H2b	An Instagram page with Instagram stories will generate a higher level of social presence than one without Instagram stories.	Supported
H3	An Instagram page including geotagging in the posts will generate a higher level of social presence than the one without geotagging.	Supported
H4	Telepresence on an Instagram page positively affects flow experience.	Supported
H5	Social presence on an Instagram page positively affects flow experience.	Supported
H6a	Flow experience positively affects actual engagement behavior with an Instagram page in the form of following the page information.	Supported
H6b	Flow experience positively affects actual engagement behavior with an Instagram page in the form of sharing the page information.	Supported
H7a	Telepresence mediates the positive effect of call to action on flow experience.	Supported
H7b	Telepresence mediates the positive effect of Instagram stories on flow experience.	Supported
H8a	Social presence mediates the positive effect of call to action on flow experience.	Supported
H8b	Social presence mediates the positive effect of Instagram stories on flow experience.	Supported
H8c	Social presence mediates the positive effect of geotagging on flow experience.	Supported
H9a	Flow experience mediates the positive effect of telepresence on following behavior.	Supported
H9b	Flow experience mediates the positive effect of social presence on following behavior.	Supported
H10a	Flow experience mediates the positive effect of telepresence on sharing behavior.	Not Supported
H10b	Flow experience mediates the positive effect of social presence on sharing behavior.	Not Supported

7. Theoretical Contributions and Practical Implications

7.1. Theoretical contributions

This study contributes to the existing literature in several aspects. Firstly, this study extended the use of presence formation framework, the foundation of this study, by applying it to explain the effect of different types of social media features as antecedents. To our best knowledge, this is the first attempt to understand SNS user behaviors at the specific feature level (i.e. call to action, Instagram stories, geotagging of Instagram) and how these features create both telepresence and social presence in Instagram simultaneously. This approach significantly contributes to the presence formation literature which was focused on site-level factors and the formation of social presence only [Han et al. 2016].

Secondly, previous researches generally treat presence as a significant predictor of user's attitudes and behaviors in various contexts [Ning Shen and Khalifa 2008; Ogara et al. 2014] such as online education [Kim et al. 2016], social network sites [Chang and Hsu 2016] and telecommunication [Hwang and Lim 2015]. However, little attention has been paid to the way presence is built, especially in the corporate SNS context. This study, thus, incorporates three prominent features of Instagram to provide a more comprehensive insight into the mechanisms associated with the presence formation in a corporate SNS account.

Third, this study contributes to the literature on engagement. Although numerous prior studies have viewed social media and online communities as an effective marketing tool to impact user brand engagement [De Vries et al. 2012; Pagani and Mirabello 2011; Tsai and Men 2013; De Vries and Carlson 2014; Dolan et al. 2016; Islam and Rahman 2017; Baldus et al. 2015; Wirtz et al. 2013], only a limited number of studies have captured actual online user behavior. In general, engagement includes three dimensions, namely cognitive, affective, and behavioral engagement [Brodie et al. 2013]. However, up to the present, only five papers have investigated actual social media engagement behavior, which includes co-creation, contribution, and consumption [Dolan et al. 2016], endorsing and sharing [Dessart et al. 2015], likes, shares, and comments [Cvijikj and Michahelles 2013], following, liking, commenting, sharing, tagging, publishing photos, and modifying brand products [Pentina et al. 2018] and likes, shares and comments on Mafengwo.cn, the largest travel social media platform in research in China [Fang et al. 2018]. Therefore, this current study further enriches the behavioral engagement literature by specifically investigating the actual following and sharing behaviors of Instagram users.

At a micro level, we assessed the impact of the Instagram features on perceived telepresence, social presence, and flow experience of a social network site. We demonstrated that with the Instagram features, users have a higher level of perceived telepresence, social presence, and flow experience. In addition, our findings also shed light on the important role of the perceived presence and flow experience in mediating the effect of social media features on engagement behaviors. More to this point, we find that telepresence and social presence can be built through the implementation of social media features and positively influence users' flow experience that subsequently leads to engagement behaviors. This model can serve as a framework to evaluate other features of social media.

7.2. Managerial implications

Besides theoretical implications, practitioners can also benefit from this study. First of all, as Instagram is increasingly playing a pivotal integrated business channel, it is important to understand how Instagram features can help businesses interact with users effectively in order to create a competitive advantage. In particular, this research findings highlight that the representations of three social media features play significant roles in forming users' perception of telepresence and social presence. While telepresence is defined as the perception of being physically present in the virtual setting, social presence refers to the degree to which the user perceives the presence of an interpersonal relationship between involved parties. Therefore, in addition to the emphasis on the posted content, companies should also make sure to take advantage of utilizing available features on the page in enhancing using experience and maintaining consumer relationships.

In particular, by using call to action, users tend to perceive that the page is more real and trustable, therefore they are more likely to follow the page or share the post. Apart from this advantage, with call to action users can easily interact with companies.

Furthermore, the results showed that Instagram stories has a significant impact on user perceptions of social presence and telepresence. According to information provided by the Socialbakers, businesses, or brands that posting Instagram stories get more visibility[2]. Instagram stories offer many functions such as live videos or interactive polls. Marketers could employ these features to post multiple photos or videos to convey more information about brands and products to users as well as using an interactive poll to receive feedback from users. In addition, businesses and brands could also include geotagging, call to action as well as a hashtag into Instagram stories that users can get location information through geotagging, complete their action through call to action and easily find posted contents through the hashtag.

Last but not least, the benefits companies or brands can gain from geotagging cannot be overlooked. When businesses employ geotagging in their posts, users can access location information through the tag. In the event that a company does not have a brick-and-mortar shop but only a temporary sales business during festivals, carnivals, or events, they can utilize geotagging to inform users where they are located.

[2]Instagram stories visibility - https://www.socialbakers.com/blog/brands-get-better-organic-visibility-with-instagram-stories

8. Research Limitations and Future Research

Firstly, because our experimental study is conducted on an Instagram page of a physical shop, the findings may not be generalized to online stores. It is clear that the characteristics of physical store businesses are quite different from those of online stores, which may result in varying customer needs and perceptions of social presence and telepresence. Future research could explore this research gap by carefully differentiating between sellers employing Instagram as a main online business platform and those only using it as a tool to attract customers to their physical stores.

Secondly, despite our attempt to offer a practical view by taking advantage of the existing brand in our field experiment, there comes the issue of generalizability because only a specific brand is considered. For the sake of external validity, it is suggested that different brands and settings can be taken into account for future experiments.

Thirdly, only three Instagram features are investigated in this study. Further studies can consider different features of Instagram as well as other social media platforms (e.g. Facebook, Twitter, and Pinterest). This would provide a deeper and more thorough insight into the user's online experience as well as enhance the generalizability of the findings.

Fourthly, there are other several interesting features available on Instagram, such as shoppable posts including a shopping bag function, where users can tap an icon to see the price and buy a product by pushing again at the indicated price. By using this feature, customers can complete their purchase without leaving Instagram. Therefore, there is room for future research to focus on the influence of other Instagram features on social presence, telepresence, flow experience, and engagement behavior.

Last but not least, besides following and sharing, there are other interesting social media engagement behaviors, including commenting on the brand posts, tagging friends in the brand's post comments, using branded hashtags, or posting photos with the brand's product. Businesses or brands can easily benefit from these different behaviors. Hence, future studies could focus on other interesting social media engagement behaviors in addition to following and sharing.

9. Conclusion

To summarize, this study investigates the effects of different social media features on telepresence, social presence, flow experience, and actual engagement behavior (i.e. following and sharing). Using presence formation framework as a theoretical foundation, we examined two specific dimensions of presence formation, namely form-based and content-based features. The results indicated that three studied features (i.e. call to action, stories feature, geotagging) were found to significantly impact customer's perception of telepresence and social presence. Furthermore, telepresence and social presence positively impacted flow experience, which consequently led to greater engagement behaviors. Mediation analysis revealed that telepresence and social presence mediate the relationship between Instagram features and flow experience while flow experience mediates the effects of telepresence and social presence on following behavior only. The findings contribute to presence formation framework by extending it to examine the effectiveness of specific social media features on customer behavior. In addition, the results also provide brands and business owners with insightful implications of marketing strategies to build long-lasting customer relationships. Generating presence experience by employing available features in social media platforms is an effective way of encouraging customers to involve in consumption and contribution behavior in SNS.

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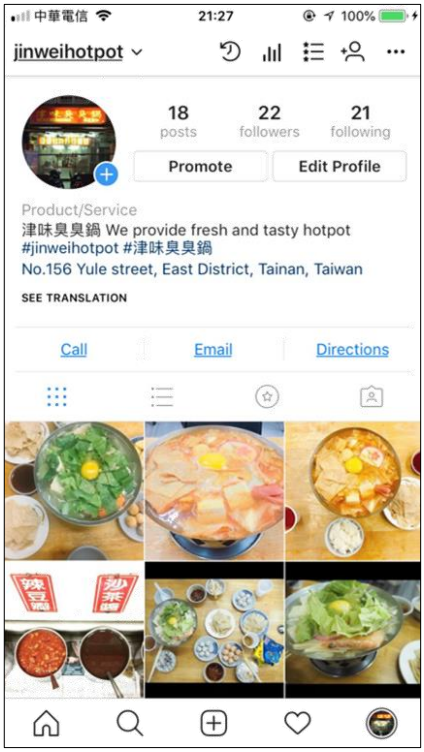
APPENDIX

Appendix A: Example of Jinweihotpot Instagram Account

Appendix B: With and Without Call to Action, Stories Feature, Geotagging

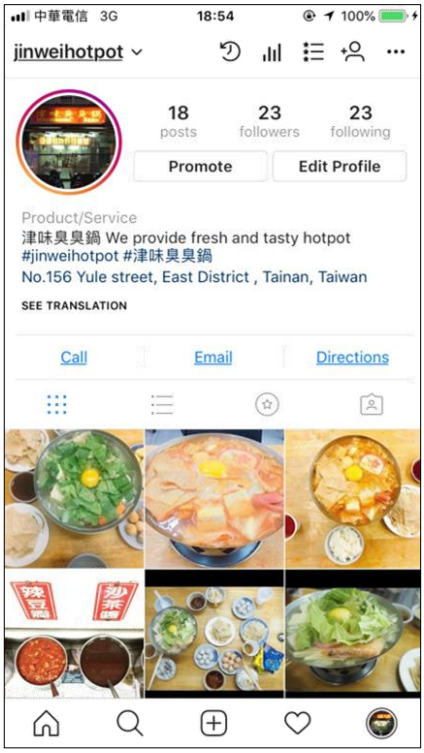
B.1. The screenshot of with and without Call to Action



With Call to Action

Without Call to Action

B.2. The screenshot of with and without Intagram Stories

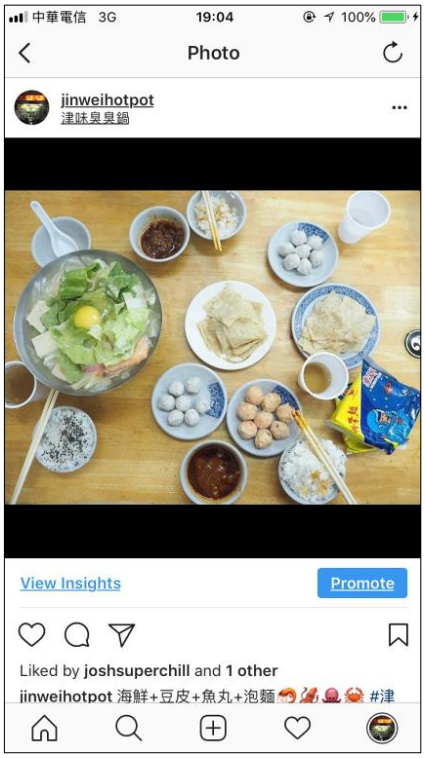


With Stories Feature

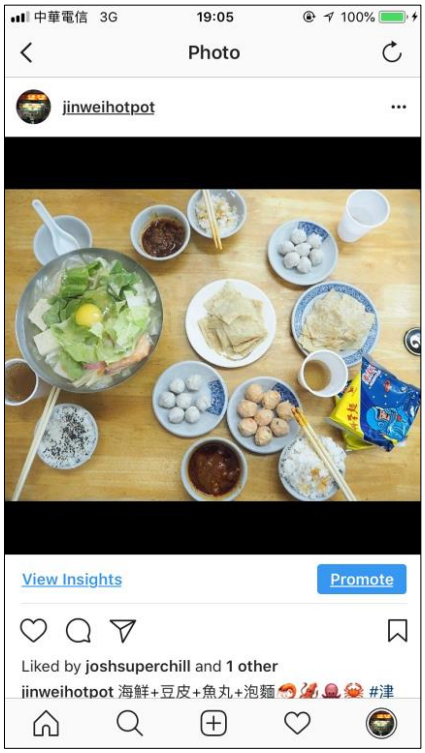
Without Stories Feature

Example of Stories Posted

B.3. The screenshot of with and without Geotagging



With Geotagging



Without Geotagging

Appendix C: Measurements

Call to Action	CTA1	When I use Call to action feature, there is very little waiting time between my actions and the Instagram account's response	Adapted from [Hsu et al. 2015; Lu et al. 2010]
	CTA2	Interacting with Call to action feature is slow and tedious (Ra)	
	CTA3	Call to action feature usually responses quickly	
	CTA4	Using Call to action feature , I can easily obtain the detailed information that I want	
Instagram stories	STR1	I can easily exchange and share opinions with the owner by using Instagram stories feature	Adapted from [Wu and Chang 2005; Novak et al. 2000]
	STR2	I can easily connect with the owner by using Instagram stories feature	
	STR3	I can easily develop interpersonal relationships with the owner by using Instagram stories feature	
	STR4	I can easily reconnect with the owner by using Instagram stories feature	
Geotagging	GEO1	Geotagging feature carried symbolic meaning in addition to the actual words.	Adapted from [Otondo et al. 2008; Huang et al. 2008]
	GEO2	Geotagging feature told me a lot about the restaurant beyond what was said.	
	GEO3	Geotagging feature communicated more information about the restaurant.	
	GEO4	Geotagging feature is useful for clarifying ambiguous information.	
Telepresence	TP1	While browsing this page, the page created a new world for me and this world suddenly disappeared when I stop surfing.	Adapted from [Pelet et al. 2017]
	TP2	While browsing this page, I felt I was in the world the page created.	
	TP3	I forgot my immediate environment when I browsed this page.	
	TP4	This page generated world seems to me "somewhere I visit" rather than "something I see".	
	TP5	While browsing this page, I felt like my body is in the room, but my mind is inside the world created by the page.	
Social Presence	SP1	I feel a sense of human interaction in this page.	Adapted from (Algharabat et al., 2018
	SP2	I feel a sense of human contact on this page	
	SP3	I feel a sense of sociability on this page.	
	SP4	I feel a sense of human warmth on this page	
Flow Experience	FL1	My imagination is aroused when I interact with this page.	Adapted from [Animesh et al. 2011]
	FL2	I feel curious when interacting with this page.	
	FL3	The interaction with this page is interesting.	
	FL4	It is fun to interact with this page.	
	FL5	I am absorbed in the interaction in this page.	
Instagram Intensity	INST1	I feel out of touch when I have not logged onto Instagram for a while	Adapted from [Ellison et al. 2007]
	INST2	I would be sorry if Instagram shut down.	
	INST3	I have been used Instagram for long time	
Brand Involvement	BRD1	This restaurant's brand has concerned to me.	Adapted from [Zaichkowsky 1985]
	BRD2	This restaurant's brand is relevant to me	
	BRD3	This restaurant's brand means a lot to me	
	BRD4	This restaurant's brand is useful to me	

Appendix D: Item-Factor Loadings and Sample Cross-Loadings

	CTA	FL	GEO	SP	STR	TP
CTA1	**0.945**	0.470	0.028	0.525	0.004	0.480
CTA2	**0.940**	0.455	0.027	0.499	-0.006	0.486
CTA3	**0.946**	0.424	0.001	0.515	-0.012	0.482
CTA4	**0.926**	0.457	0.061	0.498	-0.051	0.498
FL1	0.417	**0.861**	0.117	0.637	0.457	0.595
FL2	0.361	**0.862**	0.187	0.615	0.445	0.542
FL3	0.555	**0.883**	0.059	0.718	0.389	0.688
FL4	0.285	**0.776**	0.194	0.590	0.392	0.581
FL5	0.421	**0.908**	0.161	0.728	0.494	0.643
GEO1	0.009	0.138	**0.936**	0.126	0.007	0.147
GEO2	0.046	0.199	**0.949**	0.166	0.074	0.212
GEO3	0.046	0.157	**0.951**	0.133	-0.002	0.166
GEO4	0.005	0.099	**0.952**	0.098	-0.038	0.119
SP1	0.447	0.734	0.130	**0.900**	0.357	0.665
SP2	0.588	0.710	0.065	**0.893**	0.234	0.605
SP3	0.281	0.620	0.129	**0.849**	0.364	0.538
SP4	0.518	0.549	0.176	**0.772**	0.187	0.566
STR1	-0.008	0.452	0.038	0.298	**0.936**	0.352
STR2	-0.001	0.504	0.024	0.324	**0.962**	0.392
STR3	-0.030	0.482	-0.011	0.327	**0.932**	0.349
STR4	-0.029	0.475	0.017	0.311	**0.949**	0.324
TP1	0.430	0.597	0.232	0.567	0.307	**0.868**
TP2	0.387	0.593	0.083	0.589	0.388	**0.883**
TP3	0.401	0.535	0.163	0.554	0.264	**0.717**
TP4	0.527	0.656	0.151	0.597	0.374	**0.906**
TP5	0.465	0.665	0.134	0.680	0.274	**0.901**