Towards an Insight Into Customer Behavior in Virtual Brand Communities:

An Investigation of Personal and Community Characteristic Factors

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ABSTRACT

This study aims at exploring the effects of customer personal factors and characteristics of brand community on customer behaviors in virtual brand community. The data were collected from customers of virtual brand communities in the Vietnamese context via a survey. The data show that among the customer personal factors, customer ability has the largest impact on customer active behaviors in virtual brand community while customer motivation and opportunity have smaller significant influences on customer behaviors. Regarding the characteristics of virtual brand community, information quality posted in virtual community has the most dramatic effect on customer involvement in active behaviors. System quality is also relevant to customer behaviors, yet virtual interactivity and rewards are unrelated to customer activity involvement. With the findings, research shows useful suggestions for businesses in Vietnam in their efforts to understand the impact of customer behavior in the virtual community.

KEYWORDS

Ability, Activity Involvement, Community Promotion Behavior, Information Quality, Member Interaction, Motivation, Opportunity, System Quality, Virtual Brand Community, Virtual Interactivity

1. INTRODUCTION

A growing number of consumers use social networks to express and disseminate their knowledge, experiences, and opinions about products and services. The social network and sharing platform function as platforms to facilitate interaction among consumers and the formation of brand communities. (Muñiz & O'Guinn, 2001; Muñiz & Schau, 2005, 2006). Consequently, many enterprises created their brand fan pages in the social network as their virtual brand communities. Those fan pages create a community of consumers who interact with the company through liking or commenting on

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brand posts or through sharing information (Bushelow, 2012). There has been evidence that brand fan page or many firms outperforms official websites in terms of consumer traffic (Neff, 2010; Zastrow, 2013). As such, building a community brand is essential to developing the company's brand while increasing the ability of interaction between the company and the customer.

The recent innovation of social network - based brand communities provide companies with benefits such as greater accessibility to customers, lower costs and higher communication efficiency (Laroche, 2012). Virtual brand communities are known as specialized, structured, and non – geographically bond, with no constraint, allowing continuous communications between many to many members. In addition, the willingness of customers to share or respond to products and services is an opportunity for marketers to grasp customers better by paying attention to discussing values from social networks. Thus, they can assess accurately customer's satisfaction level, discover new customer's needs and find important features to target in the media. Based on this practical information, the company can provide marketing strategies for potential products or develop and improve products based on customers' practical needs. Consumers can also form and manage many successful online or virtual brand communities in which they can influence other members to voluntarily perform various community behaviors like intention of membership, recommendation, active participation, and the like. Several studies show that virtual community is a crucial reference for the members. Prior to making a decision for purchases, participants can collect information, get consultancy or advice from an expert user on virtual communities. Even for post-purchase stage, customers may share their experiences of consumption to the community (De Valck et al., 2009). In this way, customer virtual communities clearly have a vast influence on consumers and become more dependable than commercial communities (Bickart & Schindler, 2001; Brodie et al., 2013), but customer communities may also be disadvantageous to a company as negative messages from unsatisfied consumers could threaten brand image (Maclaran & Catterall, 2002).

Previous studies about virtual brand communities have addressed factors affecting a member's intention to share and customer's loyalty in a social media community of brand. For example, Gruen et al. (2006) revealed that customer characteristics like motivation, ability, and opportunities to engage in customer-to-customer exchanges are linked to customers' loyalty intentions (i.e. repurchase intention and words-of-mouth). Munnukka et al. (2015) disclosed that community commitment is associated to community members' attitudinal loyalty and behavioral loyalty. Ha (1998) studied the effects of customer attitudes and beliefs (i.e. perceived usefulness, ease of use, trust, responsiveness, and social norms) on social media-based community members' continuance intention. In a similar vein, Potgieter & Naidoo (2017) confirmed the influences of trust, perceived usefulness, and social norms on members' continuance intention. However, there is littleresearch dedicated to specific behaviors of customers in virtual brand communities. Most of the existing studies have shown interest in the influential factors for community members' loyalty towards the brand or company (Ha; 1998; Gruen et al., 2005; Munnukka et al., 2015, Potgieter & Naidoo, 2017). Meanwhile, customers' behaviors directed at communities that have been partially recognized by former research like community participation (Tsai et al., 2012) and community promotion behavior (Munnukka et al., 2015) received limited attention of researchers. A rigorous review suggests that to date no research has examined the factors affecting these community-directed behaviors in a signle study. Understanding about dynamics of these community behaviors will be valuable for companies to effectively manage virtual communities of brands – a recent prominent trend adopted by enterprises.

Moreover, prior research has, in part, identified the connections between personal factors (Gruen et al., 2005) as well as community-related factors (Islam & Rahma, 2017) and customers' behaviors in virtual exchanges. To exemplify, Gruen et al. (2005) proposed community members' motivation, ability, and opportunity to engage in interaction as crucial catalysts for customers' involvement in exchanges with others. Meanwhile, with a focus on community-related factors, Islam & Rahma (2017) accentuated information quality, system quality, virtual interactivity, and rewards as prominent drivers to customer engagement and participation in communities. These results entail the relevance

of both personal factors and community factors to community members' behaviors; nevertheless, these dispersed studies with separate effect evaluation have not provide a comparative view of the impacts of the factors. Precisely, among a considerable number of presented factors that are all viable in the virtual community contexts, information on the most influential drivers to virtual community members' behaviors are still obscure, which may restrict marketing practitioners and managers from strategic management of virtual brand communities for companies. As such, an examination of these specific factors in a relation to specific community-directed behaviors of community members will be worthwhile for companies.

This study will delve into understanding the specific actions of customers in virtual brand community. Precisely, this study aims at investigating the effects of customer's personal characteristics and community's characteristics on customer's behaviors in virtual brand communities. In comparison with the extant literature, the present study serves as a replication with three valuable extensions. First, it examines a wider extent of virtual members' community-directed behaviors including both participation behavior and community promotion behavior. Second, it offers a more comprehensive investigation of preeminent personal factors and community-based factors in a single study. Third, the study adds an interesting empirical context of an Asian developing economy – Vietnam – an underexplored context for phenomena of virtual communities. Based on the generated findings, the study aims to provide valuable managerial implications for firms to effectively run and manage virtual brand communities.

2. THEORETICAL BACKGROUND

2.1 Social Media Marketing and Virtual Brand Community

Social media platforms have been increasingly researched as crucial driver for brand visibility. Botha et al. (2010) empirically evaluated strategies for brand visibility of universities in South Africa and found that university brands did not differently position themselves in social media and did not have concerted strategy for engaging stakeholders in a particular social media. Similarly, Reineke et al. (2011) empirically tested the impact of social media strategies for brand visibility in wine industry and found out that several brands did not have a clearly defined social media strategy. Bruhn et al. (2012) empirically tested the effects of both traditional communications and social media communications including firm-created social media communication and user-generated social media communication on dimensions of visibility of brands. The study showed that social media communications are more influential to brand visibility, and firm-created social media communication has an important influence on functional brand image. Goswami et al. (2013) proposed a conceptual model to which synergies between user engagement and social media features produce online brand visibility. Capitello et al. (2014) examined social media strategies for brand visibility in wine Industry in Italy, and the results propose a conceptual approach that intergrate three dimensions including a business's strategic orientation, digital-marketing strategy, and social media tactics. Accordingly, social media tactics are influential to brand visibility. In short, prior research has stressed the pivotal role of social media to brand visibility; nevertheless, most research is conceptual proposition while empirical works are quite limited.

Virtual brand community refers to "a specialized, non-geographically bound, online community, based on social communications and relationships among a brand's consumers" (De Valck et al., 2009; p. 185).According to Baker (2002), the virtual brand communities are aggregated in the cyberspace of participants who share similar interests through electronic means like chat rooms, emails, bulletin boards, and online forums. Over time, studies have extended the concept, to which virtual brand community has been defined in many ways. For example, Nedra (2015) defines virtual brand community as the place where consumers identify with the group they have membership with and those who participate in co-creating values and exchanging ideas on online platforms to contribute to the development and enhancement of brand image. According to Ellison et al. (2007), the popularity

of social media forces advertisers to channel more effort in communicating with consumers via online social networks. The social network sites allow users to present themselves, create and maintain social connections with other individuals in the community and their social networks. One of the main qualities of virtual communities is that the Internet can overcome the barriers of space as well as time for interaction that exists in traditional communities (Andersen, 2005). The Internet offers infrastructure for the social communication, yet the interaction between member and community determines the existence and development of that community.

Nowadays, the online brand communities show more impacts to the purchase decision of consumers. The main reason that the consumers participate in a virtual community is to seek information that they need for a specific product or brand. For example, the involvement of the product relates to the feature and the value of the object to an individual (Zaichkowsky, 1986) or participation of products leads to information seeking because some products or brands are associated with a personal ego or self-image (Bloch & Richins, 1983; Beatty & Smith, 1987). Virtual brand community has become the new channel for interacting between organization and consumers.

2.2 Characteristics of Virtual Brand Community Members

2.2.1 Motivation

According to Beer (2008), the reason that users have the motivation to form or expand the social networks is because networking is the main preoccupation. Moreover, social networking sites allow users to present themselves, create, and keep social connections with other participants (Ellison et al., 2007). Instead, the motivation of the social media can be to widen the social network or locate old friends (Bonds-Raacke, 2008). But Balasubramanian and Mahajan (2001) believed the motivation

Table 1. Review of factors affecting virtual community members' behaviors

Studies	Factors affecting	Community members' outcomes studied
Personal factors		
Bagozzi & Dholakia (2002)	Positive anticipated emotions, desires	We-intentions to participate
Gruen et al. (2006)	Motivation; ability; opportunity	Loyalty intentions (repurchase intention and words-of-mouth)
Hsu & Lu (2007)	Perceived enjoyment, social norms, preferences	Customer loyalty
Tsai et al. (2012)	Extraversion, need for affiliation,	Member interaction and activity involvement
Munnukka et al. (2015)	Community commitment	Community promotion behavior, Attitudinal loyalty, repurchase intention, WOM
Community-related factors		
Bagozzi & Dholakia (2002)	Social identity	We-intentions to participate
Koh & Kim (2004)	Knowledge sharing activity	Community participation, community promotion
Hsu & Lu (2007)	Perceived cohesion	Customer loyalty
Tsai et al. (2012)	Community relationship trust, community relationship satisfaction, group identification, perceived critical mass	Member interaction and activity involvement
Islam & Rahman (2017)	Information quality, system quality, rewards, virtual interactivity	Customer engagement, brand loyalty

from electronic word-of-mouth was the economic leverage leading the marketers to escape when customers separate the social value received when interacting with other customers from economic transactions with a company.

2.2.2 Ability

Ability refers to the degree to which consumers have the necessary resources such as knowledge, intelligence, and money to turn results into reality (Hoyer & MacInni, 1997). In this model, the members who join virtual brand community have the ability to share and interact with other members or community about their knowledge, their skills, etc.. The ability of consumer in the virtual brand community were unlimited. One of the most prominent is the feedback from customer to customer, which is word-of-mouth, and in the virtual community, it's E-word-of-mouth (eWOM). According to von Hippel (1988), example of communications from consumer to consumer is know-how exchange, and it is defined as an accumulation or specialization of practical skills allowing an individual to do something effective or smooth. The know-how exchange is a kind of underground knowledge that is complicated and difficult for encoding. It enhances the potential of an individual or an organization to successfully fulfill tasks and is considered a source of sustainable advantages (Dyer & Nobeoka, 2000).

2.2.3 Opportunity

Consumers when joining the virtual brand community can reach the opportunity to gain the best benefits from organization. According to MacInni and Jaworski (1989), opportunities reflect the degree to which a situation is favorable for achieving the desired consequences (MacInnis, 1991). MacInni and Jaworski (1989) suggest that the level of processing of personal information is hinged on three factors, consisting of motivation, opportunity, and ability. Therefore, communication efficiency can be managed effectively by raising the level of the elements separately (MacInnis, 1991).

2.3 Community Characteristics

2.3.1 Information Quality

In an online environment, the quality of information entails 'the user awareness of the quality of information introduced on a website' (McKinney, 2002) and reflects the comparison between expectations and perceptions of user information (Liu, 2017). Initially, a fresh member who first join to the unknown virtual brand community will be vague with a variety of information from other consumers. Quality of information is a significant element determining the benefits that virtual brand community participants feel (Dholakia, 2009). In a definite virtual brand community, community members can easily transfer each other to get information relevant to the brand (Muniz & O'Guinn, 2001). Extensive and updated information enables members to learn, and virtual brand community has the excellent ability to allow for interactive learning as well as communication (Porter & Donthu, 2008) to collect and integrate knowledge (Wiertz & de Ruyter, 2007). Therefore, virtual brand community provides a high level of information reliability (Hung, 2011). In a similar vein, DeLone and McLean (2003) acknowledged information quality, system quality, and service quality as prominent online quality factors for evaluating the effectiveness of e-commerce. Many studies have explored the connections amongst online quality, interests, and behavioral intent (Ahn, 2004; Cao, 2005; Cheong & Park, 2005). Nonetheless, little evidence has been found about the extent to which online quality factors affect behavioral intentions for virtual communities. Therefore, the areas of research to understand the drivers for the sustainability of virtual communities should include online features, such as information quality, system quality, and service quality (DeLone & McLean, 2003). Liu and Arnett (2000) argue that while the site's success is dependent on a variety of factors, there exists little insight about the combination of these factors. Ideally, factors for ensuring for a site's attraction and retention of potential users should be examined (Smith & Merchant, 2001). Quality information is known as the quality of information that online services provide. Dimensions for

measuring quality of information comprise information accuracy, completeness, level of currency, and format of information presentation (Nelson, 2005). In a social network, the quality of information lies in the success of a virtual community. Moreover, to complete a task, presenting information must also facilitate interpretation and understanding. E-commerce researchers are increasingly paying attention to the significant role of information content when evaluating website effectiveness (Negash et al., 2003; Cao et al., 2005). Perkowitz and Etzioni (1999) stressed the necessity of linking information quality with usefulness since information is only useful if the user considers the information on the site to be accurate, informative, and daily update.

2.3.2 System Quality

According to Jang (2008), system quality refers to finding information quickly and conveniently in the community and is a measure of the degree to which the system has technical sound, error-free, easy to learn, user-friendly, well-documented, flexible, and so on. Besides, Delone and McLean (2003) showed that system quality in web-based information systems measures website functionality. According to Gorla (2010), examples of quality perceived by users can be system reliability, convenience of access, response time, and system flexibility. Prior researchers have pointed out that a usability site can affect users' search strategy and performance (Liu & Arnett, 2000; Teo, 2003; Flavian, 2006). Furthermore, Yoo (2002) revealed that system quality is particularly important in the context of virtual communities, as community members do not want to use the site when they face a shortage of access, or difficult-to-navigate website, or a website that is often slow to react and disconnects frequently. A high quality website can create a comfortable virtual environment where users can easily define functional groups and support navigation and ensure effective information transactions. Moreover, a well-established system is required to achieve organizational benefits such as reducing costs, improving process efficiency, and increasing revenue. In contrast, a badly designed system can cause damage to firms and result in higher product costs and poor organizational efficiency (Gorla, 2010; Ghasemaghaei & Hassanein, 2015). System quality entails user awareness of the system's ease of use, navigation, user-friendliness, and security over time (Barreda, 2015). The quality of a system offers first impressions for users to respond favorably to the tangible components of the brand, ensure customer satisfaction, develop trust, and create repeat buying transactions (Shin, 2013; Barred, 2015). If the customer sees a high quality system, he/she tends to participate in the system, shows favorable attitude towards the brand, and exhibits positive word of mouth (McKnight, 2004).

2.3.3 Virtual Interactivity

Initially, Steuer (1992) determined interactivity as the degree to which users are involved to modify the form and content of an intermediary environment in real time. The mechanical approach of interactivity is the response to the structural properties of online media or websites, the opportunities for interaction are provided during interaction, (Liu & Shrum, 2002). Recent studies like McMillan & Hwang (2002) apply a more explicit empirical approach, arguing for cognitive interaction - a psychological state of users in the process of interaction with their website (Wu, 2006). Since then it takes into account the awareness and participation process. Evidence suggested that there is no association or linkage between providing interactive features embedded in a page of web and consumer appreciation for interactivity (McMillan & Hwang, 2002; Song & Zinkhan, 2008). In certain cases, interactivity adversely affects consumer attitudes towards websites, because some consumers resist the level of interaction which demands too much cognitive processing (Liu & Shrum, 2002). Some studies have reached a level of consensus on the core aspects of cognitive interaction, known as user control, two-way communication, and responsive awareness (McMillan & Hwang, 2002; Song & Zinkhan, 2008; Wu, 2006; Yadav & Varadajan, 2005).

2.3.4 Rewards

Companies can also influence customer engagement behavior by offering rewards and other incentives to their customers. Several companies reward customers for referrals, especially among customers who are happy with the company. Other forms of rewards may be social recognition in a desirable group (Winterich et al., 2009) or professional recognition (Hennig-Thurau, 2004). Company characteristics like its relative size and focus on specific segments may play an important part. For example, using rewards and loyalty programs, larger companies that focus narrowly on a segment can be better positioned to effectively connect with their customers. Providing incentives is considered an important driving force for customer engagement in the online brand community (Rohm, 2013). Customers who have a high concern for benefits tend to engage in an online brand community that use rewards to foster customer awareness. These rewards affect customer behavior of selecting specific brand communities within the competition group and engaging with those communities for activities (Doorn, 2010; Fuller, 2010). Studies have suggested the positive linkage between rewards and the level of customer engagement in brand community (Wirtz, 2013; Dessart, 2015). Braun (2016) proposed that customers who try to create value through their involvement with online brand communities also aim to win some financial and/or non-financial rewards. The rewards that customers perceive from the virtual brand community can probably motivate customers to join brand community.

2.4 Behaviors of Community Members

2.4.1 Member Interaction

The interactions between members are very important for community development (Algesheimer, 2005; Waskoand Faraj, 2005; Wasko, 2004). Interaction represents the extent to which community members interact or exchange with each other through communication, two-way communication, and mutual assistance. The interaction of member in virtual brand community can be classified into two types: the interaction among members and the interaction between member and community. Social psychology has identified a set of interactions amongst individuals that affect interpersonal attraction and group interaction, such as familiarity between interactions, perception the interpersonal and professional similarities of other team members (Shen et al., 2010). These factors have been widely-researched in the face-to-face personal interaction context. However, evidence suggests that people can also develop new interpersonal relationships in a computer-mediated environment (Bordia, 1997). Although interactive parties in a virtual brand community do not meet directly, they form the impression and evaluation of those whom they interact with during the process of communication. It is argued that the factors affecting the attraction of individuals in the real world will also affect the relationships amongst members in the online community. Besides, another factor is that virtual brand community members may find themselves similar to other members. Similarities can be in demographic characteristics or psychological characteristics. Cognitive similarities can positively affect the development of personal attraction and friendship (Byrne et al., 1986). Hagel and Armstrong point out that virtual communities develop between people with common interests or experiences (Hagel & Armstrong, 1997). Interpersonal communications in the consumer community may affect members' attitudes for purchasing decisions or brands (Bickart & Schindler, 2001). An individual who interacts with others offers new ideas in the process of innovation from the beginning (Nonaka & Takeuchi, 1995; Majaro, 1988). Therefore, for virtual brand communities, interpersonal interaction plays a determining role in bringing creative ideas.

2.4.2 Activity Involvement

The involvement of members is related to the extent to which members actively participate in the activities of the brand community. This includes finding information quickly and conveniently in the community (Gorla, 2010). Information search has been identified as the core purpose for involvement in community. Consumers tend to find information by participating in an object (Bloch, 1986). As

such, participation is the ultimate motivation for consumers to involve in a virtual community. It is a person's perception of personal suitability to an object (Krugman, 1967; Mitchell, 1979). The involvement of the product relates to the characteristics of the object and the value of the object to an individual (Zaichkowsky, 1986).

2.4.3 Community Promotion Behavior

Previous studies show that consumers' commitment to online brand community is the premise of community promotion behavior, and it signals their association with brand community (Casaló et al., 2008). Promoting a virtual community entails a member's intention to introduce the virtual community to non-members (Algesheimer, 2005). Members' recommendations of virtual community are also important to foster community success as recommendations help to develop the virtual community by attracting new potential members to the community. Promotion of community includes activities such as introducing the virtual community to others, for example, by presenting the benefits of community participation, inviting people who are not involved in the virtual community, or pressing strong positive aspects of the community when someone criticizes it. Crucially, community members used to promote the community more often between close friends and relatives (Koh & Kim, 2004).

3. HYPOTHESIS DEVELOPMENT AND RESEARCH MODEL

3.1 Virtual Community Members' Personal Characteristics and Behaviors of Community Members

The factors in member characteristics (motivation, ability, opportunity) contribute to promoting contribution, giving opinions and feeling responsible when interacting with members among the virtual community sites. Such interaction is indispensable for the participation of the brand community, because interpersonal communication provides opportunities for community development through the creation of cultural capital and the spread of rituals and tradition (McAlexander, 2002; Wasko, 2004). HennigThurau (2004) delve into the various factors that motivate consumers to participate in online forums. They discovered that the participants of virtual brand community exhibited a similar set of motivations as the participants of traditional community. Motivation of members serves as a driving force to trigger interest in interacting with other community's members (Gruen et al., 2006). Also, with a competent ability for participating in virtual communities like technological usage capability or an ability for interpersonal communication in virtual brand community, participants become more confident or less insecure in interacting in virtual communities (Martı́nez-Ló́pez et al., 2016). Besides, opportunity to come across or connect with other members of the communities allow for favorable conditions for members to interact in the virtual communities (Kim & Sullivan, 2019). Therefore:

Hypothesis 1a: Personal characteristic (motivation, ability, opportunity) positively affects customer interaction in virtual communities.

The factors of member characteristics (motivation, ability, opportunity) affect their participation in the brand community's activities, the time for engaging in brand community, and the feedback related to participation by each individual. Any consumer may participate in such exchanges to obtain necessary skills to better understand, use, operate, modify, and/or repair a product (Hennig-Thurau, 2004). Motivation is known as the driver for behaviors, so when community members have a strong motivation for joining virtual communities, they likely exhibit more participation behaviors (Martı́nez-Ló́pez et al., 2016). Abilities of members determine the level of involvement of participants in virtual communities to which low ability of communication and social media usage may lower members' interests in participation in virtual communities, and so decreasing members' involvement.

Moreover, propensity of opportunities for members to join virtual communities such as accessibility to virtual communities and opportunities for interaction (e.g. interesting posts, contests, etc) with virtual communities may elicit members' contributions and involvement to virtual communities (Gary, 2000). Hence:

Hypothesis 1b: Personal characteristic (motivation, ability, opportunity) positively affects activity involvement in virtual communities.

The degree of an individual's motivation and ability to join the brand community is related to the ability to promote the brand community outside the community. With strong motivations, community members may be prompted to be active in promoting about virtual community to outside. Competent abilities in participating in virtual communities boost members' positive feelings as well as satisfaction in contributing to virtual communities, and so enabling members to have an impetus to promote about virtual communities (Chiang et al., 2018). Opportunities reflect the degree to which a situation is conducive to achieving the desired outcome (MacInni & Jaworski, 1989). On the Internet, opportunity is assumed to be available in general and the focus becomes the constraints that an individual face (e.g., time, connection availability, organizational policy) when participating in exchanging know-how. Gruen et al. (2006) proposed that motivation, ability, and opportunity of members affect their exchanging of information with others. Following this line of research, the current study proposes:

Hypothesis 1c: Personal characteristic (motivation, ability, opportunity) positively affects community promotion behavior in virtual communities.

3.2 Community Characteristics and Behaviors of Community Members

Customers involve in a significant online brand community for the quality of brand-related information (Dessart, 2015; Dholakia, 2009). Customers in the online environment perceive the quality of information as the degree to which information is appropriate to their expectations and meets their requirements for the specific activity they participate in (Eppler, 2006). Information in the online brand community with such qualities provides customers with a great experience that enhances their positive brand influence and ultimately their intention to engage and long-term relationships with brand community (Dessart, 2015). With a well-designed system quality, community members likely experience the ease of use, user friendliness, navigation, and security (Barreda et al., 2015) which contributes to create first impression to members to respond favorably to brand, including communities of brand (Shin et al., 2013). Virtual interactivity entails connection between members and communities which strengthens members' interactivity intentions (Madhavaram et al., 2005) including intentions of interacting with other virtual members. Through virtual communities, members have opportunities to receive rewards which can be in the form of monetary benefits (lotteries, special offers, loyalty programs, etc), functional benefits (information and support), social benefits (peer recognition, altruism), and psychological benefits (membership, entertainment) (Barreda et al., 2015; Dholakia et al., 2019; Fuller, 2010). Such rewards serve as motivational drivers for customers to have more inclination for interacting with communities, including other community members (Rohm et al., 2013). Therefore:

Hypothesis 2a: Community characteristic (information quality, system quality, virtual interactivity, rewards) positively affects member interaction behavior of customers.

An individual can participate in a consumer community and find information when they participate in a specific brand or product. Participation can be cognitive or emotional. Awareness participation is caused by a pragmatic motive, referring to personal concerns with the costs and benefits of the

product or service and interest in the performance of the product. Preliminary qualitative research indicates that by participating in a challenging off-road adventure etiquette, annual community activities, veteran members and newcomers of a driving community gain relationships, as well as feeling different from others in the community. When customers perceive of a high quality system, they likely engage more with that system. This means that quality system motivates members to exhibit more involvement into the activities in the system (Islam & Rahma, 2017). Virtual interactivity has been also recognized to motivate customers to stay and engage in more participation in virtual community (Islam & Rahman, 2017). Wirtz et al. (2013) theoretically proposed that rewards are positively conducive to customer's involvement in online communities. Customers who seek benefits from communities find to be appealed by rewards provided by brands in the community. To this group of customers, rewards are the main motivator for them to participate in activities in online brand communities (Islam & Rahman, 2017). Braun et al. (2016) also proposed that customers who attempt to contribute to online brand community through involvement into activities also have an aim to receive some financial or nonfinancial rewards. Hence:

Hypothesis 2b: Community characteristic (information quality, system quality, virtual interactivity, rewards) positively affects activity involvement

In this context, we believe that the commitment of the brand community has a positive indirect relationship with brand loyalty, so the effects of commitment to loyalty are expressed through community promotion behavior. It can describe the reason why active member always ready to shared their knowledge about the benefits from their virtual brand community to their acquaintances, friends, colleagues, etc. The Internet has emerged as an influential medium, providing rich means for interactions between customers and companies is virtual brand community (Ho and Lee, 2015). Interactive theory supports the favorable role of interaction of online platforms in building relationships with customers (Di Pietro et al, 2012; Calefato, 2015). Virtual interaction refers to 'the degree to which online users can participate in adjusting the content of the website in real time (Steuer, 1992) and related' 'the level of information exchange among member community and between community members and community owners (Jang, 2008). According to McKnight et al. (2004), high system quality of brand allows customers to spread favorable word of mouth. Doorn et al. (2010) and Fuller (2010) also reckoned that rewards affect customers' behaviors to engage with communities for co-creative activities. Meanwhile, promotion for community is a form of activities that members can co-creating values for communities. Therefore:

Hypothesis 2c: Community characteristic (information quality, system quality, virtual interactivity, rewards) positively affects community promotion behavior.

Based on the aforementioned hypotheses, the following research model is proposed:

4. METHODOLOGY

4.1 Samples

To make a research about the customer behavior of virtual brand communities, the target object are people who have a high frequency of using the Internet, for example, company fanpages, forum, blogs… which have information transfer between user and firm regularly. The study targeted the sample of Vietnamese context – an Asian developing economy. According to Anh (2018), the number of users of Facebook in Vietnam in 2017 is 55 million, while this figure was merely 46 million in 2016. The rate of growth of users of Facebook in Vietnam is

Figure 1. The proposed research model
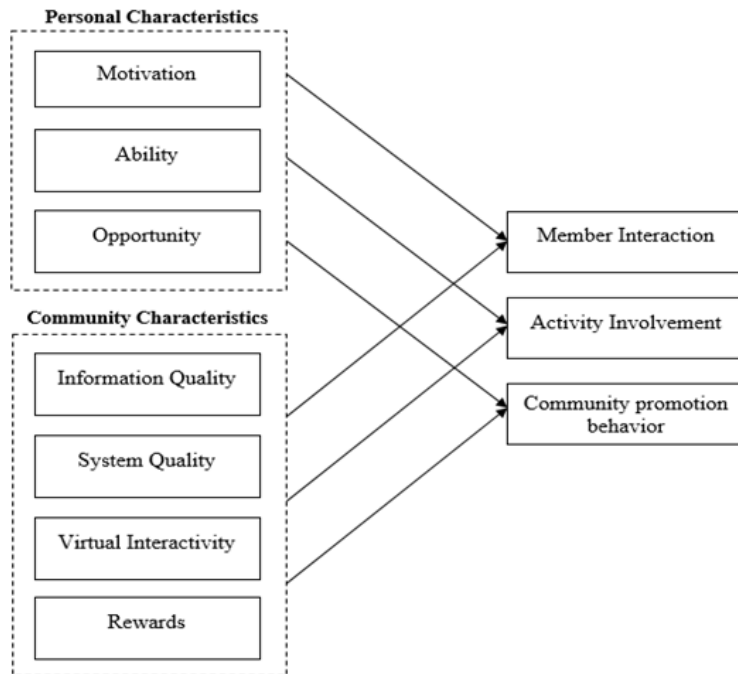
considered 9 times faster than the increase rate of population of the country. The number of users has increased by 57% during the period of 2015-2017 while the amount of discussion increased to 175%. Rather than merely receiving the information delivered by marketers, a social network user, on average, contributes 2.7 discussions on social networks per day. With these burgeon development of social media usage like Facebook, Vietnam is an interesting context to research about customers' community behaviors. The survey was taken from diversity objects to get a generality evaluation. Sample size selection is really important and strongly affect to research outcomes. Larger samples are better for results due to the trend of decreasing the errors possibility, overestimating the accurateness of population evaluations, and grow the generalizability of the consequences. Follow Hair (1995) and Mulaik (1990), the sample size results are 100 - needy, 200 - fair, 300 - good, 500 - very good, and 1000 or more - excellent. As a result, 300 or more samples are suitable for this study. Eventually, the author receives 342 responses from the online survey. However, there are only 292 responses accepted. Generally, the percentage of genders is nearly the same with 48.6 percent of females and 51.4 percent of males. The range of age is divided into four groups such as under 18 years old, from 19 to 25 years old, from 26 to 40 years old and above 40 years old. The age that has the highest number belong to 19 to 25 (67.8%) followed by 13.4 percent of 26 to 40 and 14 percent of under 18. Above 40 has the smallest percentage, only 4.8%. The next is about education level where the number of university reaches more than a half (59.2%) and the rest is high school, colleges and after university. Because of the biggest responses is come from 19 to 25 group, in which the majority of customers is student, accounting for about 56.5 percent. Officer is the second largest group with 20.5 percent. Furthermore, the normal income of student also up to 53.8

percent that is under 5 million per month. The percentage between above 10 million to under 15 million group and above 15 million group is almost equal (12% and 9.6% respectively).

4.2. Data Collection Procedure

All the measures of variables were collected and selected from previous research. As the target of this study is about customer behavior of Vietnamese people, the questionnaire was translated into Vietnamese. The questionnaire was translated provided that the meaning in Vietnamese is the closest with the meaning in English with the goal of making the most accurate results. The survey was divided into two sections, namely general information and evaluation questions of the study's variables. Nominal scales are used to ask questions for customers about gender, age, education level, job, and income with the first section. Then Likert scale which is a kind of interval scales is the measurement in the second section. Likert scale answers are ranked from one to five in particular: 1 - totally disagree, 2 - disagree, 3 - neutral, 4 - agree and 5 - totally agrees. As the target of this research is virtual communities, online survey is the ideal way to collect data. In addition, because of many conveniences of using Google form in collecting data, this program is chosen to collect the data. Before the data collection process, a pilot test was applied. A selected group of 45 respondents did the survey and then provided feedback on the meaning and wording of the measuring items in the questionnaire. The final questionnaire was revised accordingly.Facebook is the largest social network in Vietnam (Wearesocial Company, 2015) with many virtual communities, so the author decided to publish the survey through community pages on Facebook. The survey was published in three weeks in March of 2019. A total of 342 online questionnaires were collected; however, 292 valid questionnaires were used for data analyses due to exclusion of missing and/or invalid answered questionnaires. The data were analyzed through SPSS 20 (Statistical Package for Social Sciences).

4.3. Measures

Measures of the three factors of member characteristics were adopted from Thomas et al. (2015) with three items for motivation, four items for ability, and five items for opportunity. In community characteristics, information quality and system quality were measured with four items, virtual interactivity with three items and rewards with two items, adopted from Jamid and Zillur (2017). Three items were used to measure member interaction and activity involvement that were adopted from Roderick et al. (2013). The measures of community promotion behavior were taken from Juha et al. (2015) with three items. Cronbach's alpha values of all scales are above 0.7. Definitions and measures of all of the variables are included in the appendix.

5. RESULTS

Cronbach's alphas were checked for testing reliability of the study's constructs. The results show that all of the variables have the Cronbach's aphas of above .70, suggesting adequate reliability of the variables. All of the measuring items were put into Exploratory Factor Analysis (EFA). The results showed that ten factors emerged with the Eigen value of above 1.0, accounting for 80% of variance. The largest factor explained 20%, and all of the items loaded on its appropriate factors. These results suggested adequate validity for the study's measures.

   According to the result from table, the value of Sig. (2-tailed) is less than 0.05 that means all variables have related correlation with each other. The result of the relationship between 7 independent factors (MO, AB, OPP, IQ, SQ, VI, RE) with 3 dependent factor (MI, AI, CPB) show the Sig. value of less than 0.05. Then, the relationships were tested through single regression analyses. Table 1 demonstrates the results of regression analyses.

Table 2. *Correlational matrix of the variables*

Variables	Means	Std	1	2	3	4	5	6	7	8	9	10	AVE
1. MI	3.349	.969	.913										.852
2. AI	3.527	.999	.664**	.913									.835
3. CPB	3.456	.938	.699**	.692**	.916								.856
4. MO	3.514	.863	.582**	.575**	.581**	.858							.783
5. AB	3.389	.859	.602**	.584**	.630**	.739**	.905						.779
6. OPP	3.091	.979	.424**	.427**	.419**	.429**	.425**	.882					.677
7. IQ	3.561	.872	.548**	.507**	.633**	.575**	.583**	.438**	.899				.769
8. SQ	3.502	.773	.529**	.499**	.616**	.462**	.567**	.393**	.639**	.877			.730
9. VI	3.708	.812	.473**	.424**	.613**	.518**	.548**	.316**	.620**	.650**	.877		.785
10. RE	3.434	.779	.439**	.367**	.491**	.441**	.459**	.245**	.396**	.489**	.545**	.877	.795

Notes: The numbers in diagonal are the Cronbach's α reliability coefficients, **p< .01; *p< .05

Table 3. Regression analysis results

Direct effects	Coefficients	T Value	P Value	Outcome
Motivation -> Member Interaction	.290	3.892	.000	Supported
Ability -> Member Interaction	.382	5.029	.000	Supported
Opportunity -> Member Interaction	.168	3.375	.001	Supported
Motivation -> Activity Involvement	.312	3.951	.000	Supported
Ability -> Activity Involvement	.358	4.525	.000	Supported
Opportunity -> Activity Involvement	.184	3.544	.000	Supported
Motivation -> Community Promotion Behavior	.235	3.253	.000	Supported
Ability -> Community Promotion Behavior	.442	6.114	.000	Supported
Opportunity -> Community Promotion Behavior	.148	3.132	.002	Supported
Information Quality -> Member Interaction	.350	4.904	.000	Supported
System Quality -> Member Interaction	.263	3.111	.002	Supported
Virtual Interactivity -> Member Interaction	.044	0.540	.590	Unsupported
Rewards -> Member Interaction	.237	3.377	.001	Supported
Information Quality -> Activity Involvement	.395	4.422	.000	Supported
System Quality -> Activity Involvement	.305	3.328	.001	Supported
Virtual Interactivity -> Activity Involvement	-.013	-.144	.886	Unsupported
Rewards -> Activity Involvement	.146	1.916	.056	Unsupported
Information Quality -> Community Promotion Behavior	.340	5.600	.000	Supported
System Quality -> Community Promotion Behavior	.257	3.567	.000	Supported
Virtual Interactivity -> Community Promotion Behavior	.225	3.229	.001	Supported
Rewards -> Community Promotion Behavior	.188	3.151	.000	Supported

6. DISCUSSION AND CONCLUSION

6.1. Discussion

Nowadays, along with the development of the Internet, consumers not only seek information, news and work online, but they also own one or more personal accounts on social networks such as Facebook, Instagram, ... Therefore, the importance of the virtual community is accentuated, but there has been little research into the specific behaviors of customers in the virtual brand community, especially for the Vietnamese market. This research focused on analyzing the factors of personal characteristics in the community (motivation, ability, and opportunity) andfactors of community characteristics (information quality, system quality, virtual interactivity, and reward) as catalysts for members' community-directed behaviors (i.e. member interaction, activity involvement, and community promotion behavior). The study uses the quantitative method with an online survey for members of virtual brand communities in Vietnamese context. The results of the study indicate that all member characteristics and community characteristics affect members' behaviors consisting of member interaction, activity involvement, and community promotion behavior.

Among the member characteristics examined, ability of community member, has the largest coefficients for effects on customer behaviors, and as for the community characteristics, the information quality of the community has the greatest effect on community member behaviors. The result that ability has the largest effect (based on coefficient values) on members' behaviors directed at community is in contrast to prior study's result to which motivation of community serves as the strongest driver for customer interaction with others (Gruen et al., 2006). Interestingly, motivation has conventionally known as the driving force for customer behaviors, in the present study with the empirical evidence of Vietnamese context, ability becomes a stronger driver for community members' behaviors directed at communities. This can be inferred that ability of interacting in community is a prominent factor that customers concern for. When customers are competent in participating in virtual communities like solid online communication ability and technological capability, they becomes more active and productive in contributing to communities with positive behaviors. The study's result of significant effect of opportunity on virtual community members' behaviours is also dissimilar to the empirical finding of Gruen et al. (2006) whereby opportunity is non-significantly related to customers' behaviors in interacting with others. The significant effect of opportunity on all three types of community members' behaviors known as member interaction behavior, activity involvement, and community promotion behavior entails that customers in Vietnamese context are inclined to participate in virtual brand communities. If they expose to opportunities for participating into communities, they become more active for contributions to the virtual communities. This suggests that virtual brand community's visibility and activeness are influential to foster more members' participation in contributing to communities.

The outcomes also show that in the community characteristics, information quality has the largest coefficients of effects on customer behaviors. This is followed up by system quality. Virtual interactivity is not significantly relevant to member interaction. Both virtual interactivity and reward do not relate to activity involvement. Clearly, information quality and system quality are two factors that consumers are interested in, because information quality enablesconsumers to understand about products and services, and system quality facilitate interaction process of community members. Capturing accurate and reliable information will prompt customers to exhibit positive behaviors directed at communities. The utmost concern of customers for information quality also reflects that customers are attentive to information provided by the brand as well as members in the community. Also, if the online brand community has the ability to respond, process transactions quickly, and provide information security system, it can stimulate consumer positive behaviors since customers care about system quality.

The study's significant effects of dimensions of virtual community on specific members' behaviors are consistent with prior research's conceptual proposition that virtual community's characteristics

are catalysts for sharing behaviors of members which are later conducive to community participation and community promotion behaviors (Koh & Kim, 2004). The significant relationships in the current study are also in line with the results of Islam & Rahman (2017) such that information quality, system quality, virtual interactivity, and rewards are associated with members' levels of engagement in communities. The result that information quality is the strongest driver for members' behavioral outcomes is similar in both research. However, the study's results vary from those of Islam & Rahman (2017) such that system quality is the second strongest driver in the present study while the second most influential factor in the study of Islam & Rahman (2017) is virtual interactivity. Meanwhile, in the current research, virtual interactivity is found to be irrelevant to both member interaction and activity involvement.

Another difference identified for this study's findings compared to the prior research is the non-significant effect of rewards offered from the communities on members' activity involvement. This finding is against theoretical proposal of Wirtz et al. (2013) and Dessart et al. (2015) that rewards are positively linked to customer's engagement or involvement into brand communities. It is also in opposite with recognition of Rohm et al. (2013) that incentives for members are a catalyst for their level of engagement in virtual communities. In addition, according to Brodie et al. (2013), an examination of online community includes the community per se, community roles, and community members. This study's attempt with personal characterisitcs of community members and community characteristics reflects the focus on community members and community per se. Meanwhile, community roles are not attended to. Ideally, future research should extend the research scope to cover more factors, also inclusive of community roles.

6.2. Theoretical Implications

The study is a replication with two significant extensions that are valuable to the extant literature. First, on the topic of virtual communities, there have been many previous studies conducted and they mainly used the samples of developed economies. This study is an early empirical research of dynamics of virtual communities in to Vietnamese market. In particular, the Vietnamese market does not have much research on this subject, so this will be an early study of this field in Vietnam. The empirical evidence of Vietnamese context adds a significant contribution to the existing literature of the topic. In addition, the model of the study is new in that it includes both personal and community's characteristics and specific community-directed behaviors of customers. This is the very early study to focus on the influence of those factors on specific elements of customer citizenship behaviors, so it extends the literature of virtual community and consumer behaviors. With its novelties, this research serves as a replication with valuable extensions and creates a valuable foundation that motivates future research to develop a deeper insight into this field.

6.3. Practical Implications

Based on the results of the study, some practical contributions are made for managers, especially for marketing managers in an attempt to manage customer behaviors on social media. First, in the group of personal characters, ability and motivation are the two most influential factors. In order to stimulate these factors, managers should create campaigns and promotion or organize interactive activities like rewarding quizzes, give-away, mini-games, that are related to topics of interest to the customers. These topics may be in the current hot trend or fun topics that can impress, attract people, and facilitate customers' interaction with each other. Specifically, for games, managers should organize games with attractive rewards related to issues discussed in the group to encourage users to learn about the group, through which users will become more engaged with the group. Managers should also consider organizing mini-games which require players to tag their friends as well as relatives so as to increase interaction and grow the number of members for the community. Managers may also create quizzes that reward prizes according to certain time frames to create a habit of participation in the community. Besides, there should be regular surveys to update customers' information and needs.

Through data collected, managers should create appropriate strategies. At the same time, they should create customer gratitude programs such as congratulating birthday members on a monthly basis and organize periodic events for all members to have the opportunity to communicate directly to each other and with the company. In addition, the managers should provide information to customers by hot approaches such as live-stream to answer the questions and introduce new products and services. In the meantime, managers need to develop specific communication strategies with definite goals and establish specific preferential policies for individuals who actively contribute to the community. In policy, there should be a ranking of contribution levels and based on which there are valuable incentives for each rank. In order to facilitate ranking, managers should have a monitoring plan to monitor the process, which may apply technology or simply use manpower. Furthermore, managers should anticipate the next trend to be able to grasp opportunities, catch the trend and develop marketing plans in the near future.

Besides that, information quality and system quality are two variables that have the big effective for customer behaviors. For these factors, managers should establish a code for their virtual brand community. The code includes rules and information security policy which should be public and requires all members to comply. Specifically, managers have to take steps to verify the information before it is publicized to the outside. Thus, in the code there should be penalties to handle and manage cases of spreading false information. Moreover, posts must have a clear classification of title, form, and format. This will create unity and professionalism. Especially, the managers need to post at peak hours when the members are online. Besides that, the interface is selected and designed with the target customer. Moreover, if the scale of businesses is big, investment in information technology system is the best choice to manage and control information in a comprehensive and effective manner. In addition, for some network communities that adopt the payment system, the information security platform, and payment systems must be invested and paid considerable attention.

6.4. Limitations and Recommendations for Future Research

There exist some limitations in this study. Firstly, because the topic is still new, there are not many studies available for reference and comparisons of the findings. Second, the scale of the survey is still limited, because surveys were conducted only on Facebook while other favorably-used channels in Vietnam such as Instagram, Zalo, etc. were not targeted. Future studies are advised to include these channels in their evaluation of the effects. Finally, while customer engagement in virtual brand communities can be various amongst industries (Jayasingh & Wright, 2019), the present study examined the phenomenon with general sample. Ideally, future research should investigate the effects of the factors on behaviors of community members on different categories of industries such as mobile, airlines and retail, electronics, restaurants (Jayasingh & Wright, 2019).

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APPENDIX A: RESULTS OF EXPLORATORY FACTOR ANALYSIS

					Rotated Component Matrix					
	Component									
	1	2	3	4	5	6	7	8	9	10
OPP2	.868									
OPP3	.868									
OPP1	.853									
OPP4	.729									
AB2		.770								
AB3		.750								
AB1		.731								
AB4		.698								
SQ2			.792							
SQ1			.764							
SQ3			.750							
SQ4			.663							
AI2				.793						
AI3				.772						
AI1				.753						
MI3					.783					
MI2					.772					
MI1					.745					
MO1						.765				
MO2						.746				
MO3						.596				
CPB2							.687			
CPB3							.685			
CPB1							.669			
RE1								.871		
RE2								.689		
VI3									.730	
VI2									.653	
IQ3										.742
IQ4										.700
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.										
a. Rotation converged in 8 iterations.										

APPENDIX B: MEASURES OF THE VARIABLES

Scale of Motivation (Adapted From Thomas, Talai, Andrew, 2015)

Definition	Measuring items
Motivation is commonly viewed as a force that directs individuals toward goals (Gruen et al., 2006)	The topics of discussion in the forum are generally relevant to me.
	I am always interested in the issues being discussed on the forum.
	Being on the forum energizes me.

Scale of ability (Adapted from Thomas, Talai, Andrew, 2015)

Definition	Measuring items
Ability refers to the degree to which consumers have the necessary resources such as knowledge, intelligence, and money to turn results into reality (Hoyer & MacInni, 1997).	I generally find it easy to exchange ideas with other Internet forum participants.
	I can communicate clearly on Internet user forums.
	I am generally good at navigating within the forum.
	I consider myself very skilled in using the forum.

Scale of opportunity (Adapted from Thomas, Talai, Andrew, 2015)

Definitions	Measuring items
Opportunity refers to the degree to which a situation is favorable for achieving the desired consequences (MacInnis, 1991)	In general, I find that I just don't have enough time to spend on the forum.
	My organization has a policy that restricts my Internet access for uses such as the forum.
	My organization frowns upon participation in Internet-based forums.
	I am often frustrated by the downtime of the forum.
	If my Internet connection was faster, I would use the forum more frequently.

Scale of member interaction (Adapted from Roderick, Ana, Biljana, Linda, 2013)

Definition	Measuring items
Member interaction refers to the extent to which community members interact with one another through frequent interpersonal contacts, bidirectional communication, and mutual help (Tsai et al., 2012)	I frequently interact with other community members.
	I have bidirectional communication with other community members.
	I cooperate with other community members.

Scale of activity involvement (Adapted from Roderick, Ana, Biljana, Linda, 2013)

Definition	Measuring items
member–activity involvement refers to the extent to which members actively participate in a brand community's activities (Tsai et al., 2012)	I actively participate in the brand community's activities.
	I spend a lot of time engaging in the brand community's activities.
	I provide feedback related to participation in the community's activities to the community's website.

Scale of community promotion behavior (Adapted from Juha, Heikki, Anna, 2015)

Definition	Measuring items
Community promotion behavior refers to the activity of promoting the brand community to others outside of the virtual brand community (Koh & Kim, 2004)	I invite my close acquaintances to join our brand community.
	I often talk to people about the benefits of this brand community.
	I often introduce my peers or friends to this brand community.

Scale of information quality (Adapted from Jamid, Zillur, 2017)

Definition	Measuring items
Users' perception of the quality of information presented on a Web site (McKinney et al., 2002)	Brand community has sufficient contents where I expect to find information.
	Brand community provides complete information.
	Brand community provides accurate information.
	Brand community provides reliable information.

able 8: ns6.se refer to page y papers studying the influences of personal factors and community characteristics in virtual commScale of system quality (Adapted from Jamid, Zillur, 2017)

Definition	Measuring items
System quality refers to speedy and convenient search for information in the community (Jang et al., 2008)	Brand community has an appropriate style of design for site type.
	Brand community has easy navigation to information.
	Brand community has fast response and transaction processing.
	Brand community keeps personal information secure from exposure.

Scale of virtual interactivity (Adapted from Jamid, Zillur, 2017)

Definition	Measuring items
Virtual interactivity refers to the extent to which online users might participate in adjusting the content of website in real time (Steuer, 1992)	Brand community communicates information in an appropriate format.
	Brand community has a high degree of activity in informational and interpersonal exchanges.
	Brand community has a high Speed of inquiry and response.

Scale of rewards (Adapted from Jamid, Zillur, 2017)

Definition	Measuring items
Rewards refer to the degree of monetary or psychological appreciation for its proactive members (Jang et al., 2008)	Brand community offers Monetary rewards.
	Brand community offers Psychological rewards.

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