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An empirical study on message forwarding on social networking sites: a sample of Vietnamese users

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Abstract: The study aimed to explore the influence of message perceptions, social identity, and subjective norms on message-forwarding intentions among users on social networking sites (SNS). Integration of the information adoption model and the technology adoption model 2 was used as a theoretical background. With a sample of 350 participants, the study attempted to investigate the relationships among the constructs. SPSS and AMOS were used to perform statistical analysis. The findings showed that: 1) the message quality and the credibility of the message source affect users' perceived message usefulness; 2) users' sense of social identity with the SNS affects their subjective norm of the community; 3) the expectations and opinions of community members affect users' intentions to forward messages; 4) users' message perceptions (e.g., perceived message usefulness, playfulness) have a positive impact on their forwarding intentions. Finally, the findings can provide SNS operators and researchers with some insights.

Keywords: forwarding; identity; user perception; subjective norms; source credibility.

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1 Introduction

Nowadays, people are more dependent on the internet, and social networking sites (SNS) are becoming increasingly important to internet users (Lakshmi et al., 2023; Nguyen et al., 2022). The rise of SNSs provides users with opportunities for self-expression outside real life. In addition to continuing ordinary interpersonal relationships on the internet, users can find other people with the same interests by expressing their opinions or forwarding other people's messages, enriching their social identity (Chernev et al., 2011). When the community has a meaning for users, the subjective norms (Ajzen, 1985) of the community may further affect the users' willingness and behaviour.

In addition, the popularity of online communities has also met the diverse needs of society and business (Armstrong and Hagel, 2009). Users cannot only self-disclose information and communicate with others more efficiently, but also, through establishing relationships between users and the convenient forwarding function, word-of-mouth and related information can be transmitted more quickly (Luarn et al., 2015). Previous studies pointed out that if someone clicks on a particular online advertisement, his online friends are two to three times more likely to click on the same ad than other people (Hollis, 2005). Therefore, companies have invested in SNSs such as Twitter or Facebook to manage their corporate image and even to create a business.

This study aims to understand the factors that influence users' behaviours of forwarding messages on SNSs and to explain past phenomena and possibilities for future development. The targeted users in this study are those who forward messages. The roles played by SNS users can be divided into three types: opinion leaders, message delivery, non-participation in message delivery activities, or giving an evaluation (Souri et al., 2018), among which message delivery includes word-of-mouth transmission and word-of-mouth reception.

This study does not target a single platform to avoid overemphasising one SNS but takes Vietnamese users as the target population. The respondents were asked to select an SNS (such as Twitter, Instagram, Facebook, Zalo, Line, etc.) to which they had forwarded messages according to their usage habits and then conduct research based on their experience of forwarding messages on the SNSs. The current study constructs a model by integrating the dual-track theory and the information adoption model (IAM) (Sussman and Siegal, 2003) with other theories relevant to social identity and subjective norms on SNSs. Through the study findings, we can gain more insights into the factors affecting users' message forwarding on SNSs.

2 Theoretical background

2.1 *Message forwarding*

Besides knowledge sharing, another type of sharing on SNS is information sharing. Information sharing means that users post information they see on SNS or other platforms to their pages on SNSs, which is a second-hand sharing of information and does not involve knowledge reconstruction. Information sharing differs from knowledge sharing, which requires reorganising or recreating knowledge before it is shared and received by others (Lin, 2019).

Information sharing consists of two different behaviours: giving and getting information (Ridings et al., 2002). Belk (2007) defined sharing as the act and process of distributing one's goods for use by others and as the act and process of receiving or taking from others. The intention of information sharing on SNSs is nothing more than self-presentation and relationship maintenance (Rui and Stefanone, 2013; Zhang et al., 2019)

Sun et al. (2005) pointed out that forwarding or transmitting information on the internet will occur in social situations. The internet simplifies the flow of information and the process of multi-party dissemination, allowing people to disseminate information with just a click of a mouse comprehensively. Chu and Kim (2011) pointed out that activities on SNSs allow users to comment, like, and share various social activities. This interaction means that users actively and voluntarily show their images. Therefore, the action of forwarding information on SNS is information sharing. Moreover, there are three differences between information forwarding on SNSs and internet word of mouth in the past: having links, posting on personal profile pages instead of public discussion blocks, and users belonging to groups and communities (Chatterjee, 2011).

SNSs organise the social networks to which the users belong, link with others, and interact through a one-to-many communication mode. These interactions consist of the release, reception, and delivery of messages, all of which express self-preference and image. There have been many studies on message release and marketing. For example, Özdemir (2012) pointed out that there are four essentials for a message to be delivered quickly: focus, grab attention, engage, and take action. In the early stage, sharing and forwarding establish relationships, but with the internet and SNS, there is more self-disclosure and image building.

The information forwarding in this study is not simply posting information and sharing knowledge but focusing on second-hand sharing by users who receive information through social platforms and forwarding/passing it to other users.

2.2 *Information adoption model*

Although the message-forwarding function of SNSs is very convenient, the impact on messages' reception varies from person to person. That means that the same content will have different responses due to other preferences, experiences, and sources of message recipients (Chaiken and Eagly, 1976).

The dual-track theory has been used in the existing information systems literature to explain how ideas, knowledge, or information influence people's adoption intentions (Sussman and Siegal, 2003). Sussman and Siegal (2003) integrated the elaboration likelihood model (ELM) in the dual-track theory with the technology acceptance model

(TAM) (Davis et al., 1992). They proposed the IAM, explaining how released information in computer-mediated communication (CMC) influences people. Messages can be divided into two ways to persuade people's attitudes: the central and peripheral cues (Petty and Cacioppo, 1986). The central path refers to the nature of the argument in the message; that is, the receiver will organise, deeply analyse, and deliberately think about the content of the received message and generate his argumentation ideas. When these messages are reasonable, they can persuade the receiver, and the message will follow the central path.

On the other hand, the peripheral path refers to messages that are not directly related to the subject (Petty and Cacioppo, 1986). Therefore, the receiver does not intend to pay attention to the details in the message and focuses only on superficial or indirect qualities of the message (e.g., releaser, transmitter, content-related things). Therefore, if the characteristics other than the quality of the message are reasonable (e.g., the releaser is credible, and likes the content-related things), they can persuade the receiver, and the message will follow the peripheral path.

The IAM regards argument quality as the central path and source credibility as the peripheral path. Argument quality refers to the persuasive strength of an argument in a message (Bhattacharjee and Sanford, 2006; Verma et al., 2023). In previous studies evaluating the success of information systems, DeLone and McLean (2004) pointed out that accuracy, relevance, understandability, and completeness are used to measure information quality factors. In addition, information quality can be evaluated by information content, accuracy, format display, and timeliness (Nirwanto and Andarwati, 2019). Source credibility refers to a message recipient's perception of the authenticity of the message's source, a response that has nothing to do with the message itself (Chaiken and Eagly, 1976). In addition, source credibility means that the source of information is believable, sufficient, and trustworthy to the information receiver (Petty and Cacioppo, 1986).

In the environment of dissemination through the internet or computer media, information receivers will be affected by peripheral cues, ignoring the in-depth study of the information content itself (Shi et al., 2018). Take e-mail as an example; information receivers would be affected by peripheral cues such as familiarity or liking of the sender while ignoring e-mail message content or deleting it (Walther, 1992). In addition, when people decide to adopt information in the CMC environment, information usefulness is more effective than argument quality and source credibility in predicting recipient behavioural intentions after adoption (Shi et al., 2020; Sussman and Siegal, 2003). Therefore, in addition to the ELM and the TAM effectively explaining how the receiver processes the information in the CMC environment, the information's usefulness can also judge how the receiver will handle the communication on the SNSs.

2.3 Perceived information playfulness

There are quite a lot of studies related to TAM. In addition to perceived ease of use and perceived usefulness that affect the user's perception, other perception constructs have also been proposed. For example, Davis et al. (1992) added perceived enjoyment to the model to become the user's intrinsic motivation, and Moon and Kim (2001) added perceived playfulness to the TAM model for verification.

Some studies believe that websites such as Facebook and MySpace are hedonic information systems and perceived enjoyment is essential for hedonic situations such as

the internet, home leisure, and games. Therefore, using the perceived usefulness of TAM to measure the user's behaviour in this environment would be counterproductive (Aguilar-Castillo et al., 2019; Kim et al., 2021; Rosen and Sherman, 2006).

Playfulness mainly focuses on the characteristics of playfulness and the state of playfulness. Perceived playfulness includes three aspects: concentration, curiosity, and enjoyment. When the user is in a fun and playful condition, they will perform specific activities because they find the interaction process fun (Andersen et al., 2023; Moon and Kim, 2001). Furthermore, the user's curiosity will be stimulated while focusing on the activity without noticing the time. Therefore, this study adopts the definition by Moon and Kim (2001) of perceived playfulness, which refers to the subjective pleasure an individual feels when taking a specific behaviour or performing a particular activity.

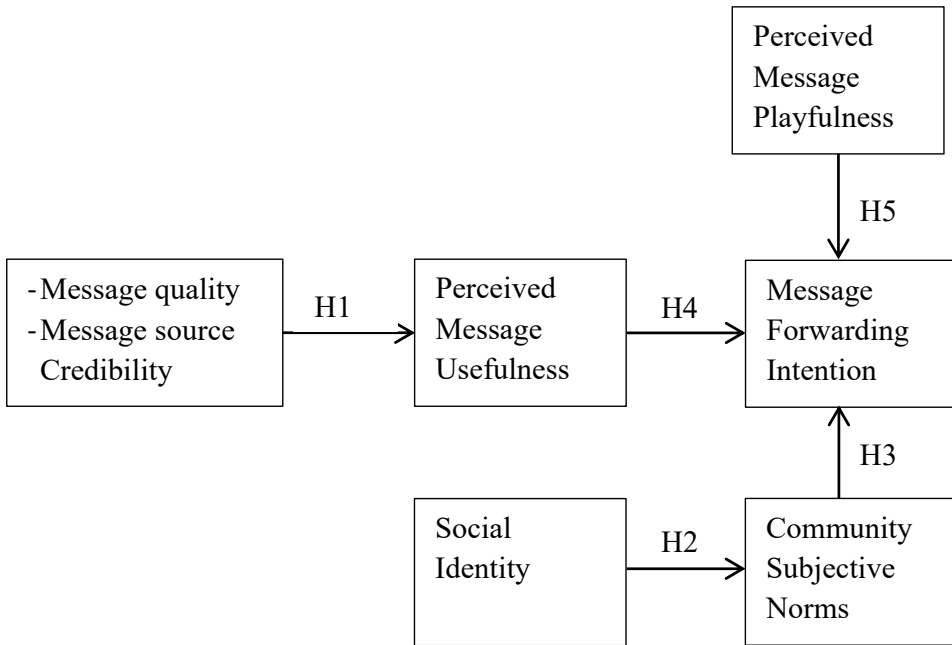
2.4 Community subjective norms

The subjective norms of the community used in this study are derived from the theory of reasoned action (TRA) (Ajzen, 1985). Consisting of normative beliefs and compliance motivations, it refers to the social pressure an individual feels about whether or not to take certain behaviours. Although the TAM (Davis, 1989) based on the TRA did not contain subjective norms, the TAM2 (Venkatesh and Davis, 2000) included subjective norms. As a result, it gained empirical support, making it one of the critical variables in the TAM-related model. Furthermore, Venkatesh and Bala (2008) believed that social norms significantly influence users' willingness to share and participate in the community; users will affect their behaviour intentions due to factors such as social pressure and identity.

Social identity refers to the relationships between users and others using SNSs or other internet interaction platforms to define their image and position in online groups and understand their rights and obligations on SNSs (Zhao et al., 2008). Besides, people with high social identity will influence their behavioural intentions through subjective norms (Ateş, 2020; Salem and Salem, 2018). In addition, the information, entertainment, interactivity, and social identity of SNSs significantly impact users' willingness to participate in virtual communities (Kim et al., 2020; Tsai and Men, 2013). Therefore, social identity may also affect the willingness to forward information on SNSs.

3 Method

SNSs connect various users through the internet; thus, the forwarded information on this platform has a different influence than before. Therefore, this study is based on the IAM (Sussman and Siegal, 2003) to explore whether message quality and source credibility affect the perceived message usefulness on SNSs. Furthermore, since the messaging platform is an SNS, social identity's influence on the community's subjective norms is also considered. Finally, because SNSs are entertaining, the perceived message of playfulness is also added to the conceptual model (Figure 1).

Figure 1 Conceptual model

3.1 Hypothesis development

3.1.1 The message processing and perceived message usefulness

Message recipients will process messages differently according to their abilities or interests, and this difference may cause recipients to have different perceptions of the message's usefulness. Therefore, according to the ELM (Petty and Cacioppo, 1986), this study divides the message processing pathway into the central and peripheral pathways. Mainly, if the message recipient processes the message from a more rigorous and objective perspective and changes his attitude, the message is processed through the central path. In contrast, if the message recipient processes the message from a perceptual and subjective perspective under the influence of environmental factors and the feelings of the message source, the message is processed through the peripheral path.

The ELM-based IAM (Sussman and Siegal, 2003) set argument quality as the central path and source credibility as the peripheral path. The ELM was applied in an environment where computers are the communication medium. Furthermore, the argument quality and the source credibility of the message impact the message's usefulness when the message is delivered in the organisation. Ha and Ahn (2011) also applied IAM to study Twitter forwarding factors and obtained the same results. In addition, judging the quality of a message is based on the description of the message details in the argument (Petty and Cacioppo, 1986). In other words, the more detailed the message argument describes the issue details, the stronger the argument quality is (Huy and Phuc, 2022). Therefore, strong argument quality means strong message quality. Thus, based on IAM in the context of SNSs, we propose the following hypotheses:

H1a Message quality has a positive impact on message usefulness.

H1b Source credibility has a positive impact on message usefulness.

3.1.2 Social identity and the community's subjective norms

Subjective norms are social perceptions that influence decision behaviour (Ajzen, 1985). Because this study uses it on SNSs, it is called the subjective norm of the community. The subjective norm of the community is the influence of people. The user may also reduce the impact of other users on him because he has different ideas from others in the community or cannot find a sense of belonging. Salem and Salem (2018) pointed out that people with high social identities will influence their behavioural intentions through subjective norms. Therefore, this study transfers the influence of interpersonal relationships in physical space to virtual community space and proposes the following hypotheses:

H2 Social identity positively impacts the community's subjective norms.

3.1.3 Community subjective norms and message-forwarding willingness

Since TAM does not consider other social factors, this study adopts the TAM2 (Venkatesh and Davis, 2000). It applies to the environment of SNSs to determine whether the recipients' message-forwarding willingness will be affected by community members.

According to the TRA (Ajzen, 1985), behaviour intention is the most direct factor affecting behaviour. The attitude towards behaviour and the subjective norm are the two most essential factors in predicting behavioural intention (Ajzen, 1985). The interpersonal network to which SNSs attach great importance theoretically makes subjective norms' influence more remarkable. Therefore, this study refers to TRA and applies it to SNSs, which are called community subjective norms, and proposes the following hypotheses:

H3 The community's subjective norms positively impact the forwarding willingness.

3.1.4 Perceived message usefulness and forwarding intention

In the context of collaborative electronic media, users' perceived usefulness of information will affect the behaviour of information sharing (Jarvenpaa and Staples, 2000). The TRA (Ajzen, 1985) pointed out that the individual's behavioural intention determines an individual's behaviour. Therefore, behavioural intention is a direct factor in deciding whether an individual will engage in a specific behaviour, while other influencing factors indirectly affect behaviour through behavioural intention. Sheppard et al. (1988) confirmed that behavioural intentions in the TRA have considerable predictive power on actual behaviours.

In addition, the perceived usefulness of TAM and the information usefulness of IAM are considered to have the same meaning (Caffaro et al., 2020; Sussman and Siegal, 2003). Therefore, following the research theme, this study changed the construct to message usefulness and proposed the following hypothesis:

H4 Perceived message usefulness has a positive impact on forwarding intention.

3.1.5 Perceived message playfulness and forwarding intention

Although the message's usefulness can affect sharing behaviour (Jarvenpaa and Staples, 2000), forwarding is because the received information is fascinating or arouses curiosity. Even because the quality of the information received is not good, it will be regarded as a topic of leisure and then transferred to others to watch. Davis et al. (1992) proposed to add perceived pleasure to the initial TAM. Heijden (2004) not only pointed out the importance of perceived pleasure to the internet, home leisure, game training, and other hedonic situations but also once again demonstrated its significant influence on use intention. In addition, Moon and Kim (2001) included enjoyment in perceived playfulness in the TAM. Based on the user's point of view, this study defines the perceived message playfulness on SNSs as 'the message makes the recipient concentrated, curious and pleased' and proposes the following hypothesis:

H5 Perceived message playfulness has a positive impact on forwarding intention.

3.2 Research design and procedure

The primary purpose of this study is to investigate the factors of message forwarding on SNSs and to understand the influence of the message and the user's SNSs on message delivery. In this study, a questionnaire was used to conduct the intentional sampling in the non-random sampling. The questionnaire obtained the required information, and further analysis was carried out to understand the relationship between the variables.

The questionnaire is modified and translated into Vietnamese based on the existing English literature scales. To reduce the semantic errors caused by the translation of questions from English to Vietnamese, we first translated the items from English to Vietnamese. Then, an expert proficient in Vietnamese and English translated the Vietnamese items back into English. We then discussed the translation with an expert professional in Vietnamese and English to remove the inconsistency between the Vietnamese and English measurements. Each variable is measured by a five-point Likert scale, from 'strongly disagree' to 'strongly agree,' with a rating of 1 to 5. The participants were asked to check their degree of agreement. There are a total of 33 items.

Pre-test questionnaires were distributed on Facebook and Zalo, and 109 valid questionnaires were collected. Based on reliability and validity analysis, seven items with low factor loadings and poor Cronbach's α were deleted. For factor analysis, the sample should be collected at least five times the total number of items (Hair, 2009). The formal questionnaire consisted of 26 items, distributed on Line, Zalo, Facebook, and Twitter. 350 valid questionnaires were collected from February 1 to March 11, 2022.

3.3 Measures

- Message processing: Sussman and Siegal (2003) established a model of information processing methods based on the dual-track theory to propose an IAM and sorted out two ways of argument quality and source credibility. Argument quality refers to the information receivers' ability and experience to evaluate whether the arguments of the information and issues are valuable (Petty and Cacioppo, 1986), and source credibility refers to the degree of trust the information receivers have in the information provider. Therefore, this study refers to Sussman and Siegal (2003) to establish an operationalised definition and measurement. There are a total of nine

items. For example, 'I think the content of the message is clear' or 'I think the content of the message is complete'.

- **Social identity:** Social identity theory states that individuals with social identity will attribute themselves to a particular group (Salem and Salem, 2018). People with high social identity will influence behavioural intentions through subjective norms. Therefore, this study refers to Salem and Salem (2018) and defines social identity as the extent to which users see themselves as part of the community. There are a total of five items. For example, 'I have a high sense of belonging to the community site or the group within the community site' or 'The image of the community site or the group within the community site reflects my image'.
- **Community subjective norms:** The community social norms of this study are drawn from the construct in the Reasoned behaviour theory (Ajzen, 1985) and refer to Ajzen (1985) and Bock et al. (2005) to establish operationalised definitions and measurements. Community subjective norms are defined as the degree of pressure an individual takes from others 'expectations when performing sharing/forwarding behaviours. There are a total of three items. For example, 'I think people on SNSs who see my forwarded message will also be willing to forward it,' or 'I think people on SNS who see my forward will want me to forward it'.
- **Perceived message usefulness:** Perceived usefulness is the user's subjective belief that using this technology will benefit work (Davis, 1989). Sussman and Siegal (2003) further proposed and applied the IAM to organisational communication. Therefore, this study refers to Sussman and Siegal (2003) to establish the operationalised definition and measurement. The study defines perceived message usefulness as recipients of messages on SNS perceive the usefulness of received messages. There are a total of three items. For example, 'I think this message has value' or 'I think the content of this message is informative'.
- **Perceived message playfulness:** Previous studies have applied perceived playfulness to technology acceptance. This study aimed to explore the effect of information interestingness on forwarding intention; thus, perceived playfulness was renamed perceived message playfulness. Davis et al. (1992) have proposed that perceived enjoyment significantly impacts the willingness to use. Furthermore, Moon and Kim (2001) and Heijden (2004) also confirmed that perceived enjoyment and playfulness influence the use intention. Therefore, this study refers to these studies to establish the operationalised definition and measurement. There are a total of nine items. For example, 'I will forget the passage of time when I read this message' or 'I read this message ignoring the sounds around me'.
- **Forwarding Intention:** Forwarding intention refers to the dimensions in the reasoned behaviour theory (Ajzen, 1985) and the TAM (Davis, 1989). Besides, the study relates to the operationalised definition and measurement by Bock et al. (2005), Ha and Ahn (2011). The study defines forwarding intention as the intentions of members on SNSs to share messages with others. There are a total of four items. For example, 'I would like to forward the message on a social networking site, or in a group within a social networking site' or 'I will forward the message to the social networking site or friends who want to see it in the community on the social networking site.'

4 Results

4.1 Descriptive statistics

A total of 350 valid questionnaires were collected. This study divided the samples into two groups according to the recovery time to test for non-response bias:

- 1 228 questionnaires of the first 10 days
- 2 122 questionnaires of the time after.

The results found that the p-value of age = 0.260, the p-value of gender = 0.332, the p-value of occupation = 0.321, the p-value of education level = 0.230, the p-value of online days per week = 0.655, the p-value of daily p-value = 0.278 for the time spent online, p-value = 0.604 for frequently used mobile phones or computers, p-value = 0.756 for the number of reposted messages in the past month, and p-value = 0.230 for the number of commonly used SNSs. There is no significant difference, meaning there is no question of response bias in the returned questionnaire.

Regarding demographic data, the gender distribution is 107 males, accounting for about 31%, and 243 females, accounting for about 69%. The age group is mostly 19 to 25 years old, with 206 people accounting for about 59%. The occupation distribution is at most 185 students, accounting for about 53%. Besides, the public education and service industries have proportions of 8% and 7.1%, respectively. Finally, most of the respondents have Bachelor's degrees with 236 people, accounting for about 67%.

At the beginning of this questionnaire, the respondents are asked to choose a social networking platform they usually use to answer. According to the choice of the respondents, the number of Facebook samples is 209, including 99 males and 110 females. Among the 134 people in Zalo, 10 males and 124 females; the rest of the SNSs have fewer samples. For example, Twitter has 1 male and 4 females; Line has only 1 female. Therefore, the social networking platforms that this study mainly focuses on are Facebook and Zalo. Besides, we performed independent t-tests on Facebook and Zalo to examine whether there was a statistically significant difference in message-forwarding intentions between the two SNSs. The results showed that the significance of the forwarding intention was 0.266, which did not meet the considerable standard. Thus, there was no significant difference in the forwarding intentions of the two SNSs.

The daily internet usage time is the largest for 2 to 4 hours (88 people) and more than 8 hours (88 people), accounting for about 25%. The number of forwarded messages in the past month was 1 to 3 at most (137 people), accounting for about 39%. Facebook and Zalo account for almost all of them, with 60% (209 people) and about 38% (134 people), respectively.

4.2 Reliability

This study used Cronbach's alpha coefficient to test the scale's reliability (Anderson and Gerbing (1988). The reliability is good if Cronbach's alpha coefficient exceeds 0.7 and the composite reliability (CR) is more significant than 0.6 (Fornell and Larcker, 1981). According to the results, the Cronbach's alpha coefficient of each construct in this study is greater than 0.7, and the CR is greater than 0.6 (Table 1), indicating that the scale of this study has good reliability.

Table 1 CR and Cronbach's alpha

<i>Constructs</i>	<i>CR</i>	<i>Alpha</i>
Message quality	0.878	0.876
Message source credibility	0.881	0.882
Social identity	0.830	0.827
Perceived message playfulness	0.917	0.916
Perceived message usefulness	0.850	0.851
Community social norms	0.878	0.879
Forwarding intention	0.879	0.874

Table 2 KMO and correlation coefficient

<i>Constructs</i>	<i>KMO</i>	<i>AVE</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
Message quality	0.812	0.646	0.804						
Message source credibility	0.760	0.655	0.639	0.809					
Social identity	0.805	0.551	0.464	0.543	0.742				
Perceived message playfulness	0.843	0.690	0.532	0.617	0.394	0.830			
Perceived message usefulness	0.500	0.741	0.604	0.602	0.331	0.825	0.861		
Community social norms	0.724	0.708	0.475	0.590	0.544	0.608	0.616	0.841	
Forwarding intention	0.813	0.647	0.387	0.481	0.331	0.599	0.645	0.627	0.804

4.3 Validity

The questionnaire is based on the scales in the relevant literature and is modified to meet the research purpose. The unsuitable items were then deleted and modified through the pre-test. Therefore, this research questionnaire has content validity.

Table 3 Factor loadings

<i>Constructs</i>		<i>Factor loadings</i>
<i>Message quality</i>		
1	I think the message is clear	0.873
2	I think the content of the message is complete	0.844
3	I think the content of the message is correct	0.784
4	I think the content of the message is timely	0.705

Table 3 Factor loadings (continued)

<i>Constructs</i>		<i>Factor loadings</i>
<i>Message source credibility</i>		
1	I think the other party has enough knowledge on the topic	0.728
2	I think the other party can be called an expert on the topic	0.654
3	I think the other party is trustworthy on the topic	0.914
4	I think the other party is reliable on the topic	0.912
<i>Social identity</i>		
1	I have a high sense of belonging to the social networking site or groups within the social networking site	0.742
2	The image of the social networking site, or groups within the social networking site, reflects my image	0.754
3	Friends of the social networking site or people from groups within the social networking site communicate values that match my expectations	0.803
4	I care what my friends on the social networking site or people in communities on the social networking site think of me	0.665
<i>Perceived message playfulness</i>		
1	I enjoy reading the message	0.865
2	It is interesting to me to read the message	0.862
3	Reading the message makes me happy and excited	0.842
4	The message piques my curiosity	0.793
5	The message makes me want to know more	0.795
<i>Perceived message usefulness</i>		
1	I think the message is valuable	
2	I think the content of the message is helpful to me	
<i>Community social norms</i>		
1	I think people on the social networking site who see my forwarded message will also be willing to forward it	0.814
2	I think people on the social networking site who see my forward will want me to forward it	0.854
3	I think people on the social networking site who see my forwarded message will agree with me forwarding it	0.855
<i>Forwarding intention</i>		
1	I would like to forward the message on the social networking site or in groups within the social networking site	0.836
2	I will forward the message to friends who want to see it on the social networking site or in groups within the social networking site	0.605
3	I may forward the message to the social networking site or groups within the social networking site in the future	0.903
4	I will try to use the function on the social networking site to forward the message	0.841

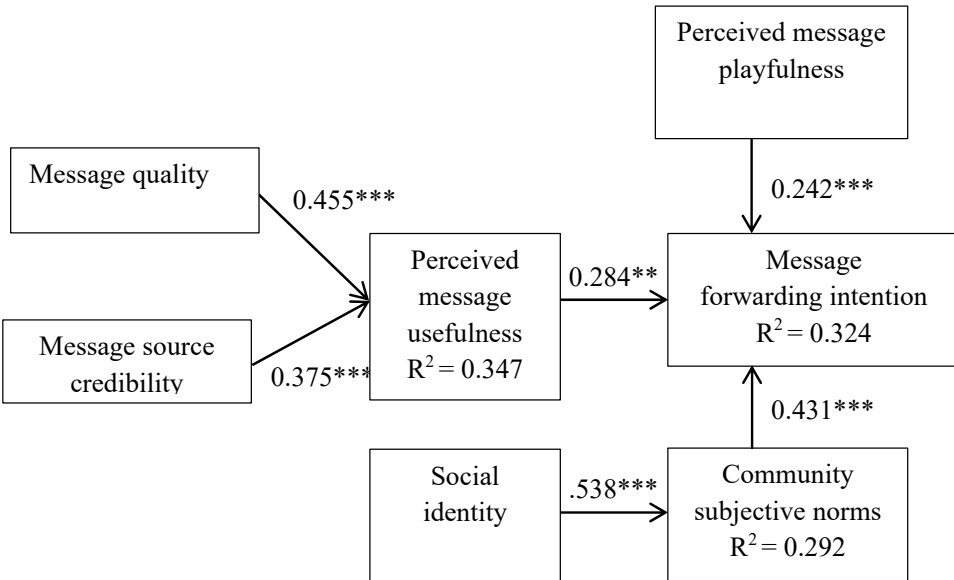
This study used confirmatory factor analysis (CFA) to measure the validity of the questionnaire to test the convergent validity. First, we tested the Kaiser-Meyer-Olkin (KMO) coefficient (Table 3), all of which are greater than 0.5, reaching the KMO measurement standard. Besides, the p-values of Bartlett's test all reach 0, which is suitable for factor analysis. Then, we measured the average variance extracted (AVE). Table 2 shows that all are greater than 0.5 (Fornell and Larcker, 1981), and the factor loadings of all constructs are more significant than 0.5 in the formal questionnaire (Table 3). Therefore, the questionnaire has convergent validity. Finally, Table 3 shows that the square roots of AVE are more significant than the correlation coefficients among the constructs. Therefore, the questionnaire has discriminant validity. Thus, this questionnaire has good validity.

4.4 Hypothesis testing

In this study, SEM was used to test the model fit. The ratio of chi-square to degrees of freedom is 2.672 (< 3); RMSEA is 0.069 (< 0.08); CFI is 0.927 (> 0.9). Besides, other indicators, such as GFI = 0.856 and NFI = 0.889, are acceptable (McDonald and Ho, 2002). Therefore, the model fit is acceptable.

This study then used SEM to conduct path analysis to evaluate whether the established path relationship is significant and the magnitude of its effect. Path coefficient (r), significance, and coefficient of determination R² between latent variables in this study are shown in Figure 2.

Figure 2 Structural equation modelling



Note: ***p < 0.001.

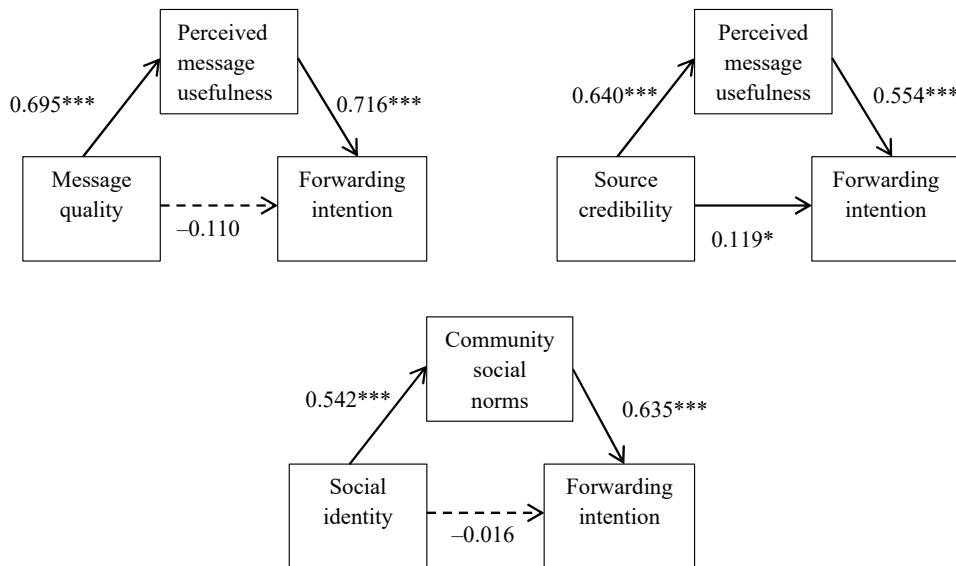
The results of the study showed that both message quality (H1a, $r = 0.455$, $p < 0.001$) and source credibility (H1b, $r = 0.375$, $p < 0.001$) have statistically significant impacts on message usefulness. Therefore, hypothesis H1 is supported. This finding is consistent

with the result of IAM that the path coefficient of H1a is higher than that of H1b. The possible explanation is that the message needs to be of sufficient quality for users to understand the content to match their perceived usefulness. If the source is from an expert in the field, it is not necessarily essential and useful for users. Most people's requirements for source credibility are not relatively high in the environment of SNSs. Ha and Ahn (2011) found the same results for Twitter.

The findings are contrary to Moon and Kim (2001). However, their study is about the willingness to use information systems rather than message forwarding, related to the relationship between an individual and others. Therefore, users will pay more attention to whether the argument quality of the message is sufficient.

In H2, social identity ($r = 0.538$, $p < 0.001$) has a positive impact on the subjective norms of the community. Thus, H2 is supported. In addition, the subjective norm of the community ($r = 0.431$, $p < 0.001$) has a positive relationship with the forwarding intention. Thus, H3 is supported, and the results align with TAM2.

Figure 3 Mediating effects



Finally, perceived message usefulness ($r = 0.283$, $p < 0.001$) and perceived message playfulness ($r = 0.242$, $p < 0.001$) have a positive impact on the forwarding intention. Thus, H4 and H5 are supported.

In addition, this study also analyses whether perceived message usefulness and community subjective norms are mediating variables. The results show that message quality, source credibility, and social identity as independent variables significantly affect the mediating variables of perceived message usefulness and community subjective norms. However, after the independent, mediating, and dependent variables are put into the model together, the independent variables have no significant effect on the dependent variable (Figure 3). Figure 3 proves that perceived message usefulness and community subjective norms are mediating variables (Baron and Kenny, 1986). Besides, perceived message usefulness is a partial mediator for source credibility. The other two have a full mediating effect.

5 Discussion and implications

In H1, users will take two message processing paths, the quality of the message and the credibility of the source, which will affect whether they think the message is useful or not ($R^2 = 0.347$). In H2, the user's sense of social identity with the SNS will affect their subjective norm of the community ($R^2 = 0.292$). In H3, the expectations and opinions of community members will affect users' willingness to forward. Finally, in H4 and H5, the user's perception of the message, whether playful or useful, will positively impact the forwarding intention ($R^2 = 0.324$), indicating good explanatory power.

In addition, the analysis results showed that most users of SNSs will still decide whether the message is useful or not based on the message quality. This finding underscores the paramount importance of attributes such as usefulness, reasonability, and logical coherence in messages within hedonic information systems. Contrary to what one might assume, the credibility of the message source is not a definitive indicator of the message's utility. This is to say, even if a message originates from a field expert with established credibility, it does not automatically render the content beneficial or relevant to users. Furthermore, the study delves into the intricate relationship between the quality and usefulness of a message, asserting that these aspects are intrinsically linked to the message itself rather than to its source. This interconnection is found to be significantly strong, suggesting that a message's quality directly influences its perceived usefulness. On a broader academic scale, the study's findings offer substantial support to the application of the IAM and the TAM2 in new contexts. These models, traditionally employed in exploring knowledge sharing and information adoption in corporate CMC environments, are demonstrated to be equally effective when applied to social networking contexts. This adaptation marks a significant stride in understanding how theoretical frameworks in information systems can be versatily applied across different digital communication platforms.

The study further establishes that the intrinsic quality of a message yields more influence on user perception than the credibility of its source. This distinction is critical in the study's focus on the dynamics of forwarding second-hand shared messages. It highlights the pivotal process in which users receive and subsequently disseminate information, a process that is markedly different from traditional knowledge sharing (Lin, 2019). In conventional knowledge sharing, there is often a need to reorganise or recreate knowledge, but in the context of message forwarding on social networks, the emphasis shifts to the transmission of existing information. In terms of practical implications, especially for companies engaged in online marketing, this study offers valuable insights. It suggests that companies should concentrate on crafting and delivering clear, high-quality messages. This approach, which prioritises the core and clarity of the message, is posited to be more effective and valuable than investing substantial resources in securing high-profile spokespeople. The implication is that in the digital age, where information is rapidly shared and disseminated through social networks, the substance, and clarity of the message itself can have a greater impact on the audience than the reputation of the individual delivering it. This insight could significantly influence how companies strategise their online marketing and communication efforts.

This study sheds light on a nuanced aspect of SNSs that goes beyond the boundaries of systems mandating real-name registration, such as Facebook. It posits that even on platforms not enforcing a real-name policy, the level of mutual interaction and understanding among users can mimic the effects of a real-name system. This

phenomenon occurs because users often become familiar with each other's real and public identities through interactions, regardless of the site's policy on anonymity or real-name usage. A key finding of this research is the significant impact of social identity on the subjective norms within an online community (Salem and Salem, 2018). The study reveals that social identity is the most influential factor in the model under consideration. This implies that a user's identification with an SNS community profoundly affects the strength of subjective norms within that community. In simpler terms, the more a user identifies with and understands their role within the community, the more potent the subjective norms – the unwritten rules and behaviours deemed acceptable – become within that group. For enterprises utilising SNSs, this insight is of paramount importance. It suggests that businesses should focus on fostering a strong sense of identity among their online community members. By nurturing this sense of belonging and identification, companies can leverage the power of subjective norms to influence user behaviour. Users with a high degree of social identity are more likely to be influenced by these norms, which in turn can significantly affect their willingness to engage in certain behaviours, such as brand loyalty, product advocacy, or community participation. This understanding is crucial for businesses aiming to maximise the impact of their SNS presence and strategies.

In the conclusion of the study, a hierarchy of factors influencing the intention to forward messages on SNSs is established. The ranking of these factors is as follows: community subjective norm holds the most influence, followed by perceived message usefulness, and then perceived message playfulness. This ordering sheds light on the priorities and motivations of users when it comes to sharing content on social networks. The prominence of community subjective norms at the top of this hierarchy resonates with the TPB (Ajzen, 1985), which posits that subjective norms can significantly impact behavioural intentions. In the context of SNSs, this effect is even more pronounced due to the platform's focus on interpersonal networks. Unlike physical spaces, SNSs place a greater emphasis on relationships and connections, thereby amplifying the role and influence of subjective norms in shaping users' willingness to engage in specific behaviours, such as message forwarding. This study demonstrates that in the virtual environment of SNSs, the influence of community norms is more pronounced than in physical settings. The virtual nature of these platforms allows for a broader and more interconnected network of social relations, which in turn enhances the impact of these norms on user behaviour. It is also notable that factors like the perceived usefulness and playfulness of a message play significant roles in influencing forwarding intentions. These findings suggest that when users find a message both useful and enjoyable, they are more likely to share it within their network, further influenced by the prevailing norms of their online community.

The study further differentiates itself by examining the relative impact of perceived message usefulness versus perceived message playfulness on the intention to forward messages on SNSs. This aspect of the research reveals a compelling insight: the influence of perceived message usefulness is notably more significant than that of perceived message playfulness. This finding presents a contrast to earlier studies by Heijden (2004) and Rosen and Sherman (2006), who suggested a greater emphasis on the hedonic or entertainment aspects of technology use. The deviation observed in this study could be attributed to the specific SNSs predominantly used by the respondents, namely Facebook and Zalo. For users of these platforms, the study implies that the functionality of disseminating messages and information is as critical, if not more so, than the hedonic

(pleasure-oriented) aspects. This indicates a shift in user priorities on these platforms, where the utility of a message - its ability to convey useful information - is a stronger driver for forwarding behaviour than the message's entertainment value. This insight is particularly relevant in understanding user behaviour on SNSs where information sharing and communication are primary functions. It suggests that for users of platforms like Facebook and Zalo, the decision to share or forward a message is more heavily influenced by the perceived practical value and relevance of the content. This understanding is crucial for content creators, marketers, and social media strategists who aim to engage users on these platforms effectively. It underscores the importance of focusing on the informational quality of content to stimulate sharing and engagement among users.

The study acknowledges the evolving landscape of the internet, marked by the growing prevalence of audio-visual multimedia and the blurring lines between virtual and real interpersonal relationships. In this context, while the entertainment value (or playfulness) of information shared on SNSs does exert an influence on users' decisions to forward and transmit messages, it is not the primary motivator. The study highlights two more critical factors that outweigh the fun aspect: the message's usefulness and the significance of interpersonal relationships within the SNS community. Users tend to prioritise the practical value and relevance of the information, as well as the importance of their connections to others in the network when deciding whether to share a message. For SNS operators aiming to amplify message dissemination, this insight is invaluable. It suggests a strategic pivot towards focusing on the utility of the content and effectively managing and leveraging interpersonal relationships within the community. Rather than solely concentrating on making messages entertaining or playful, operators should ensure that the content is useful and resonates with the interconnected network of relationships on the platform. Furthermore, the study proposes a synergistic approach by combining the three variables: community subjective norms, perceived message usefulness, and perceived message playfulness. This combination is likely to enhance the probability of a message being spread, tapping into the diverse motivations of users within the SNS environment. Such an approach recognises the multifaceted nature of user behaviour on social networks and offers a more nuanced strategy for content dissemination and community engagement.

6 Conclusions

This study is based on IAM and TAM2, coupled with the community's sense of social identity and playfulness. Besides, through a rigorous theoretical development process, the study aimed to explore the influencing factors of message forwarding on SNSs. By collecting data and analysing the users who used SNSs to forward messages in Vietnam, the research results showed that the proposed hypotheses showed significant results after data verification.

In terms of academic contribution, this study successfully extended the IAM and TAM2 theories, previously used to discuss knowledge sharing and information adoption in organisations, to forwarding messages on SNSs. The process of receiving and forwarding messages by users is the most significant difference from knowledge sharing (Sharratt and Usoro 2003), which needs to reorganise or recreate knowledge. In addition, this study does not target a single SNS to draw better conclusions in various usage

environments. In terms of practical implications, this study confirmed that the community's subjective norms, the perceived message usefulness, and the perceived message playfulness affect the forwarding intentions. Therefore, if businesses want to market online successfully, they must find messages that community users think others will want to see. Besides, they need to express the message more interestingly to increase its usefulness and playfulness. Thus, they can increase the users' intentions to forward the messages. In addition, companies can also deduce how well-crafted negative reviews can be quickly transmitted. Therefore, in addition to paying attention to their publicity, they cannot ignore the negative messages circulating on SNSs.

7 Limitations and suggestions for future research

This study tried to be as close to the truth as possible, and the inference process has theoretical support. However, there are still research limitations. For example, the analysis with this sample size and non-random sampling method cannot be more accurate, which may cause errors in the analysis results. In addition, the participants are mainly users of SNSs in Vietnam. As a result, the findings cannot fully represent the actual usage of SNS users in other countries. We suggest that future researchers can further study the influence of different cultures on constructs such as subjective norms or different types of SNSs. Besides, future studies should try to include personality traits, self-efficacy, or the effect of varying message contexts on the constructs. Finally, the research results can help SNS operators and researchers understand the factors affecting SNS users to forward messages effectively.

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