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Research Article

Influences of subjective norms on teachers' intention to use social media in working

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ABSTRACT

This study investigates factors affecting teachers' intention to use the Zalo app–a social media with impressive users in Vietnam in recent years. The extended technology acceptance model (TAM) involves subjective norms (SNs) (colleagues, managers, students, and parents) and anxiety as the precursors of user attitude and intention to use as well as perceived ease of use (PEOU) and perceived usefulness (PU) as the key variables in TAM was employed. 1,105 teachers in Vietnam took part in the online survey. The study employed the partial least squares structural equation modeling (PLS-SEM) to analyze the quantitative data and the relationship among factors. The findings show that colleagues have no impact on PU, and managers have an insignificant influence on PEOU. In contrast, students and their parents positively influence teachers' PEOU and usefulness. Moreover, managers can increase teachers' anxiety levels, whereas students' connection decreases anxiety. These variables accounted for 79.6% of the variance in users' adoption. The results confirm the impact of SNs on teachers' intention to use the Zalo app in working. This is the study on issues in Vietnam related to social media used at institutional level–a no way back solution in the new educational context of the modern society.

Keywords: subjective norms, social media acceptance, Vietnamese teachers, PLS-SEM

INTRODUCTION

Given the importance of social media to individuals, organizations, and society in using these tools to communicate, there has been an increase in academic discussion of the subject in recent years (Andreadis et al., 2021). Students use social media more often in their learning (Supardi et al., 2021), especially during the pandemic (Alshalawi, 2022). Teachers are also increasingly adopting online apps and educational tools to foster and expand their professional development chances (Prestridge, 2019). When teachers become more skillful and confident in using technology, they are likely to use them more often (Wu et al., 2022).

Among many social media platforms, instant messaging applications appear among the most widely-used social networking apps, including Line, Wechat, WhatsApp, Viber, KakaoTalk, and Zalo. Zalo, the first local messaging network launched in 2012 in Vietnam, has dominated the market with about 64 million users (Le et al., 2021). This app eclipses international competitors with an 80 percent install rate among smartphone users, compared to Facebook Messenger's 73% (Phung, 2019). While Viber is recognized for its free calls and messages, KakaoTalk for its social component and Line is known for its entertainment, Zalo has incorporated these three features to offer a more robust and efficient Vietnamese communication service. Aside from essential talking, Zalo offers interest-based group chats, personalized Vietnamese stickers, and a nearby

search option (Do, 2013). Zalo is also the second most popular in Vietnam, trailing only Facebook and slightly ahead of Instagram in terms of social network concept (Phung, 2019).

When the world faced COVID-19, during the social distancing and school closures, teachers, students, parents, and related stakeholders had to keep constant contact when the students learned online from home. They used social media applications such as Zalo, Facebook Messenger, or Viber to keep the interactions. Among the platforms available, Zalo is the most popular and free app among Vietnamese citizens. However, to ensure that Zalo is an effective social network to increase working performance, identifying the external factors influencing users' acceptance or rejection of this application is necessary. Educators and researchers should have a proper understanding of the tool, which enables the social media platform to operate as the facilitator for social communication, cooperation, and all other elements of educational activity.

The reluctance of educators and learners to new technology adds needless time, effort, and money to the institution's workload and reduces the technology's advantages (Davis, 1989). However, according to Al-Qaysi et al. (2020), examining the factors of social media acceptance is an under-researched area that requires further examination. Although we can find few studies on the acceptance of social media in education in general, limited research has been conducted to identify users' acceptance of specific local online messaging apps like Zalo in their work, particularly in a developing country like Vietnam (Le, 2021; Nguyen & Le, 2021). There have been no studies on technology acceptance model (TAM) components regarding teachers' adoption of this social networking site in their profession.

As a result, this study investigates how variations affect teachers' adoption of using Zalo as a social media platform. The main focus of this study is on two new construct categories: subjective norm (SN) or social influence, which involves students' parents, managers, colleagues and students, and emotional influence, which includes anxiety. Perceived ease of use (PEOU), perceived usefulness (PU), attitude toward using, and behavioral intention to use are other key TAM constructs in the research model. Teachers were selected as study subjects because they are essential to the efficient use of technology in teaching and learning in many educational systems, according to Teo et al. (2011).

Theoretically, this study will contribute to the background of users' acceptance of a social media network in the education field with new constructs in the extended TAM, especially in the context of a home-grown network in a developing country. The study also synthesizes the extended TAM model with the theory of reason action (TRA) and the social influence theory (SIT). Practically, the study gives implications for teachers, educational managers, and policy-makers in using this social networking site to work more effectively, which partly assures the quality of teaching and learning.

LITERATURE REVIEW

Teachers and Their Using Online Social Media

Social media have become a new networking site in education, notably in higher education, and have become an effective communicative tool (Akcaoglu & Bowman, 2016). According to Septantiningtyas et al. (2021), teachers' using social networks can increase students' motivation in learning. Several studies have been conducted to determine how teachers use social media, multimedia, and digital technology in the classroom (Mailizar, 2021; Scherer et al., 2019). At the same time, Mingsiritham et al. (2020) and Prestridge (2019) investigated how teachers use social media platforms for professional development and networking. According to Ranieri et al. (2012), more and more teachers have social media profiles, so the potential for communication between instructors and other stakeholders will also grow.

The increasing use of online social networks among today's teachers suggests that incorporating these technologies into teaching and learning will be beneficial and fruitful (Durak, 2018). Ningsih and Mulyono (2019) also investigates teachers' intentions to use digital assessment resources in classrooms. As a result, the readiness of teachers to apply modern technologies is regarded as critical (Hadi et al., 2022). Furthermore, identifying the factors affecting teachers' behavioral intentions to use online social networks gives the research background to assist them in integrating technology into their teaching careers.

Theoretical background

Technology acceptance model

TAM has become the most popular model for examining users' acceptance of information technology since it was first suggested by Davis (1989) and Estriegana et al. (2019). The model consists of five key variables, classified as factors related to internal motivation (PU, PEOU, attitude towards using) and outcome components (behavioral intention to use and actual use). The model proposes external variables to explain the link with other constructs in the model (Davis, 1989).

By including additional theoretical and conceptual elements of social influence, such as SNs and cognitive instruments, Venkatesh and Davis (2000) expand upon the original TAM. According to Al-Qaysi et al. (2020), a further study examining students' and educators' acceptance, or uptake of social media is strongly encouraged to utilize the TAM and extended TAM due to their popularity and suitability for this type of research.

Social influence theory

This study uses Kelman's SIT, which indicates that important people can influence a person's attitudes, beliefs, and thus actions or behaviors by adopting the induced conduct to receive rewards or avoid punishment (compliance), develop, or maintain a desirable and beneficial relationship with another person or group (identification), or by accepting the induced behavior's positive content. Furthermore, this theory pointed out that people accept induced conduct since it aligns with their values. Wang et al. (2013) pointed out that SNs were the most common understanding of social influence. The theory of planned behavior (TPB) by Ajzen (1985) and TRA by Fishbein and Ajzen (1975) have both employed the concept of SNs to anticipate and explain any human behavior over a wide variety of features (Eraslan Yalcin & Kutlu, 2019). Abdullah and Ward (2016) indicated that TAM was constructed and expanded based on TRA and TPB. Various technology acceptance models, such as TAM2 and TAM3, include SNs as an important variable in the technology adoption process (Venkatesh & Davis, 2000; Venkatesh et al., 2003). In short, extended TAM and SIT support building the model of this research.

Research Model and Hypothesis

Subjective norm

SN, also known as the social norm or social influence, is defined by Dzewaltowski et al. (1990) and Tarhini et al. (2015) as an individual's impression of doing or not doing something based on the opinions of the majority of individuals who are important to him or her. Users prefer social media because of 'interpersonal influence' (Kim, 2011) and 'acquaintance introductions' (Barelka et al., 2013). According to Bearden et al. (1986), SN refers to normative influence, which arises when people adhere to others' expectations. In contrast, Sadaf et al. (2012) pointed out the drivers of SNs: student, peer, parental, and superior influences. In addition, educators also utilize social media to combat professional isolation inside their school or district or connect with other educators for peer support and collaboration (Trust et al., 2016). In short, social media help teachers overcome local constraints by sharing resources and developing communities (Greenhow et al., 2019). It means teachers can choose social media based on their peer impacts. Therefore, in this study, we chose the constructs of effect from colleagues, managers, students, and parents as the variables belonging to the SN domain.

Effect of subjective norm

According to Eraslan Yalcin and Kutlu (2019), most research in the field does not hypothesize a link between SN and PEOU (Tarhini et al., 2015). In addition, some other researchers pointed out that this relationship was insignificant (Choi & Chung, 2013). On the other hand, SN appears to alter users' PEOU in various TAM investigations (Lemay et al., 2018, Revythi & Tselios, 2019). Therefore, we contend that:

H1a: Colleagues have an impact on PEOU.

H2a: Managers have an impact on PEOU.

H3a: Students' parents have an impact on PEOU.

H4a: Students have an impact on PEOU.

Venkatesh and Davis (2000) established that SN is a significant determinant of PU, which indicates social influence mechanisms, using the extended TAM (TAM2 or UTAUT). Their findings reveal that out of 22 research, 86 percent show a strong relationship between SN and PU. Additionally, the TAM3 verifies SNs as having a beneficial effect on PU (Venkatesh & Bala, 2008). As a result, when users are subjected to persuasive social influence, their estimates of usefulness increase. As a result, the following hypotheses were developed:

H1b: Colleagues affect the PU of Zalo in working.

H2b: Managers affect the PU of Zalo in working.

H3b: Students' parents affect the PU of Zalo in working.

H4b: Students affect the PU of Zalo in working.

Although Fishbein and Ajzen (1975) pointed out that the causal effect of SN in TRA is that it directly determines behavioral intention while Sledgianowski and Kulviwat (2009) claim that SN explains how society (peers, bosses, and important people) affects one's behavior. Furthermore, Abdullah and Ward (2016) reviewed 107 TAM papers published in the last ten years and pointed out that SNs are the most widely used and influential drivers of attitudes and intentions to use social networks. However, no research has been conducted to investigate the impact of SN on users' anxiety about using technology. Therefore, this paper examines this direct relationship in the model, which contributes to the theoretical framework of extended TAM.

H1c: Colleagues affect users' anxiety about Zalo in working.

H2c: Managers affect users' anxiety about Zalo in working.

H3c: Students' parents affect users' anxiety about Zalo in working.

H4c: Students affect users' anxiety about Zalo in working.

Effect of anxiety

Anxiety is sub-grouped into technological and social anxiety. According to Meuter et al. (2003) and Venkatesh and Davis (2000), technological anxiety is the level of worry or fear experienced by users when using or considering technology usage. In most cases, technological anxiety leads to a desire to avoid technology. Meanwhile, social anxiety may lead to losing control over information and technology usage. Customers may become nervous when others annoy them, limiting their intention to use the applications and making them believe that the technology is challenging (Kinard et al., 2009).

Furthermore, a prevalent assumption is that online social networks provide a safer, more private, and trustworthy Internet-mediated environment for online engagement because users in social networks are frequently connected to friends, family, and acquaintances (Kayes & Iamnitchi, 2017). In reality, however, these networks have raised the stakeholders for privacy protection because they have access to an incredible amount of personal user data that would otherwise remain hidden. As a result, social anxiety may cause end-users to get disoriented, which makes social networks harder to use. We argue that:

H5a: Users' anxiety negatively influences the PEOU of Zalo.

H5b: Users' anxiety negatively influences the PU of Zalo.

H5c: Users' anxiety negatively influences attitude toward using Zalo.

Effect of other key TAM constructs

For a system to be useful, it must be simple to use. Davis (1989) and Venkatesh and Davis (2000) defined PEOU and PU as decisive criteria and postulated that ease of use is a forerunner of PU. Supporting this finding, there are empirical results about TAM in educational contexts (Granić & Marangunić, 2019), social media acceptance in general (Al-Qaysi et al., 2020) and social media adoption of educators (Alsuhaymi & Alghamdi, 2021) that the less effort a system requires, the more valuable it is perceived. Thus, we hypothesize that:

H6a: PEOU positively influences the PU of Zalo in working.

H6b: PEOU positively influences teachers' attitude toward using Zalo in working.

H6c: PEOU positively influences teachers' intention to use Zalo in working.

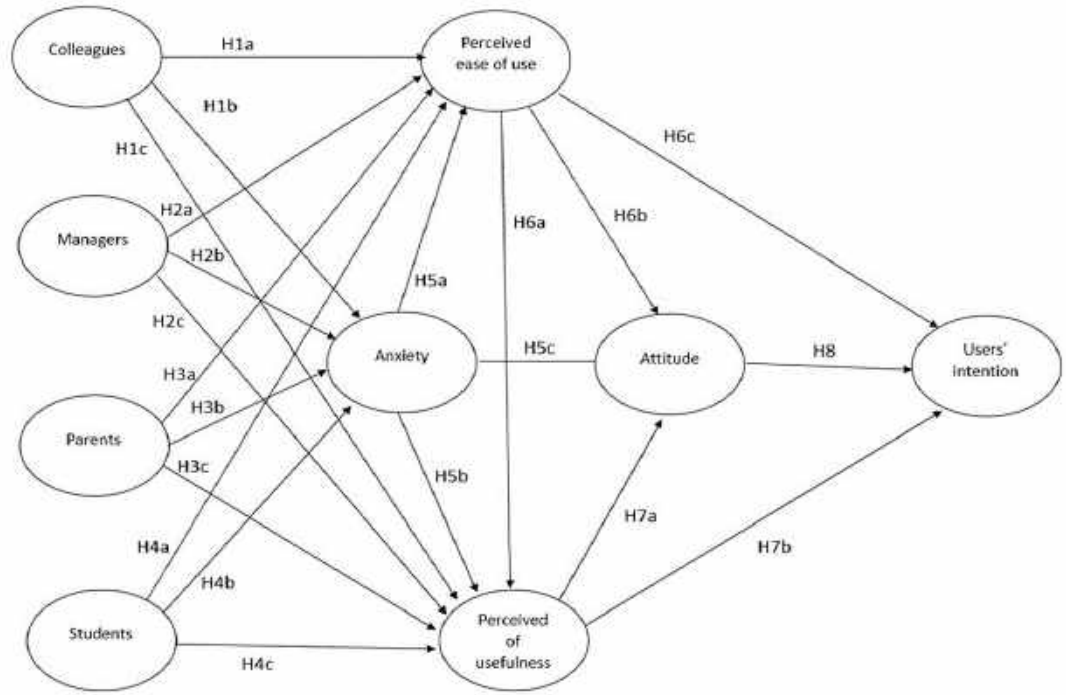

Figure 1. The proposed research model (Source: Authors)

H7a: PU positively influences teachers' attitudes toward using Zalo in working.

H7b: PU positively influences teachers' intention to use Zalo in working.

According to Davis (1989), attitude is the level of interest users have in a particular system. According to the TAM literature review, a good attitude leads to a positive intention to employ the technology (Davis, 1989). As a result, the following hypothesis is suggested:

H8: Attitude will positively affect teachers' intention to use Zalo in working.

Figure 1 shows the proposed research model.

RESEARCH METHOD

Sample and Data Collection

The data of this study was collected through an online survey, which is easy to access from multiple devices (Fraenkel et al., 2012). Participants were sent a link to a Google Form questionnaire, open for the first two weeks of September 2021, through Zalo app, a prevalent social network in Vietnam. Each participant took about 10 minutes to complete the survey. Teachers at all levels in Vietnam need to use Zalo to interact with and contact managers, students, parents, and colleagues in their working process. In addition, the Vietnamese government uses Zalo as one of the official media channels (Uyen & Ha, 2020). The survey participants were teachers who work at all levels of the educational system and were determined voluntarily using the convenience sampling method. Respondents comprised 195 (17.7%) male and 910 (82.3%) female teachers. Participants are divided reasonably evenly at school levels from kindergarten to upper secondary school. 40% of participants teach math and science, while only 1.4% of participants teach literature and social sciences. The sample characteristics are presented in **Table 1**.

Measurement Instrument

The questionnaire used in the study has been developed by the authors, based on the literature review, and validated. It had two parts: the first part contained information collected from teachers' demographics, such as age groups, gender, and the time they used Zalo (**Table 1**), and the second part included extended TAM-based information, which was first established by Davis (1989) and other related studies, including Venkatesh and Davis (2000) and Venkatesh et al. (2003). This process led to the adaptation of 22 items.

Table 1. Demographic information of respondents

Item	Values	Frequency	Percentage
Gender	Male	195	17.7
	Female	910	82.3
School level	Kindergarten	263	32.8
	Primary school	232	21.0
	Secondary school	171	15.5
	High school	188	17.0
	Higher education	251	22.7
Subjects	Literature and social science	16	1.4
	Math and science	442	40.0
	Art and music	325	29.4
	Foreign language	162	14.7
	Others	160	14.5

This section recorded their attitudes towards Zalo use in working and included teachers' responses about the SN, anxiety, PEOU, PU, attitude, and intention. Five Likert scales, ranging from "strongly agree" to "strongly disagree" were employed.

Data Analysis

The partial least squares structural equation modeling (PLS-SEM) was employed in this study using the SmartPLS version 3.3 software to analyze data. This model is concerned with predicting statistical models that aim to provide causal explanations (Hair et al., 2019). Following Hair et al.'s (2019) guidelines, there are two assessment rounds for evaluating and reporting on PLS-SEM data output. The first stage is the assessment of formative models and reflective models. By measuring factor loading, which should be larger than 0.60 (Chin, 1998), and composite reliability, which should be between 0.70 and 0.95 (Hair et al., 2021), we may assess the validity and reliability of the constructs and indicators in this work using reflective models. Next, the average variance extracted (AVE), which should be more than 0.5, is used to assess convergent validity (Hair et al., 2013). The third and last step is to evaluate discriminant validity, which can be done in one of three ways: using the Fornell and Larcker (1981) criterion, the cross-loading or the HTMT proposed by Henseler et al. (2015).

The second stage is the measured structural model. The structural model is assessed based on VIF values which are recommended to be close to five and lower (Hair et al., 2013). Then, path coefficients are estimated. The second step in this research ends with the assessment of the coefficient of determination (R^2), which is considered an in-sample predictive power (Rigdon, 2012) and can be from 0.10, which is relatively acceptable (Raithel et al., 2012). In addition, Q-square is considered to predict independent variables. A Q^2 above 0 shows the model has predictive relevance (Hair et al., 2013).

RESULTS

Measurement Model Assessment

The measurement model is completed as the first stage in PLS-SEM. According to Hair et al. (2011), AVE value for the latent variables must be equal to or higher than 0.5. Only when the constructs have values close to or larger than 0.7 is the composite reliability of the constructs valid. Values of .60 to .70 for the construct's Cronbach's alpha, which represents the reliability measure and ranges from 0 to 1, are used to evaluate internal consistency. The findings of the evaluation of the measuring model are presented in **Table 2**. The performance indices of the constructs are examined for internal consistency and convergent validity to determine the confirmatory factor analysis's criteria.

The discriminant validity was evaluated using Fornell and Larcker's (1981) criterion, a well-known technique for assessing how distinct constructs are in a model. The square root of AVE should have a greater correlation value than the other components' correlation values (Fornell & Larcker, 1981). **Table 3** shows that every diagonal value is greater than the corresponding correlation value, demonstrating the discriminant validity of the model.

Table 2. Analysis of the reflective variables' convergent validity and item reliability

Constructs	Items	Loadings	Cronbach's alpha	CR	AVE
Colleague	COL1	0.855	0.753	0.860	0.673
	COL2	0.884			
	COL3	0.711			
Manager	MAN1	0.852	0.794	0.875	0.700
	MAN2	0.781			
	MAN3	0.874			
Parents	PAR1	0.822	0.727	0.874	0.777
	PAR2	0.937			
Students	STU1	0.880	0.771	0.896	0.812
	STU2	0.922			
PEOU	PEOU1	0.905	0.909	0.943	0.846
	PEOU2	0.947			
	PEOU3	0.907			
PU	PU1	0.881	0.904	0.940	0.839
	PU2	0.944			
	PU3	0.922			
Anxiety	ANX1	0.921	0.654	0.845	0.733
	ANX2	0.787			
ATT	ATT1	0.952	0.900	0.952	0.909
	ATT2	0.955			
BI	BI1	0.962	0.916	0.960	0.922
	BI2	0.959			

Table 3. Results of Fornell-Larcker (Fornell & Larcker, 1981) criterion

	1	2	3	4	5	6	7	8	9
1. ANXIETY	0.857								
2. ATT	-0.168	0.953							
3. BI	-0.127	0.880	0.960						
4. COLLEAGUES	0.101	0.350	0.342	0.820					
5. MANAGERS	0.146	0.324	0.327	0.657	0.837				
6. PARENTS	0.039	0.493	0.477	0.421	0.474	0.881			
7. PEOU	-0.114	0.824	0.791	0.343	0.304	0.47	0.920		
8. PU	-0.129	0.801	0.786	0.400	0.393	0.516	0.824	0.916	
9. STUDENTS	-0.013	0.546	0.524	0.390	0.390	0.54	0.477	0.533	0.901

Table 4. R^2 and Q^2 results

	R^2	Q^2
ANXIETY	0.028**	0.015
ATT	0.729***	0.658
BI	0.796***	0.728
PEOU	0.320***	0.267
PU	0.724***	0.601

Note. ***p<.001 & **p<.01

Structural Model Assessment

First, the structural model in PLS-SEM was tested. The calculation from PLS-SEM shows that all latent variables meet the quality criterion, meaning their VIF coefficient value is fewer than 5.00. The result confirms no collinearity in the model. Next, the structural model was evaluated for the size of the direct and indirect effects of the latent variables and the percentage of variation predicted by the research model. Additionally, the coefficient of determination (R^2) and predictive relevance (Q^2) (**Table 4**) were evaluated. The accuracy of the model is gauged by the value R^2. Hair et al. (2019) explain a variance measured by R^2, and the model's explanatory power is measured.

Moreover, we used the SmartPLS tool to blindfold to grasp the Q^2 values of the dependent variables. **Table 4** displays the R^2 and Q^2 results. According to the adjusted R^2, the model can account for 72.9% of the variation in behavioral intentions that affected directed variables such as ATT, PEOU, PU, and indirect variables such as anxiety, colleagues, managers, parents, and students. The explanation percentage is good (Hair et al., 2019).

Table 5. Hypotheses test results

Hypothesis	Path	Coefficient	Decision
H1a	COLLEAGUES--->PU	0.035	Rejected
H1b	COLLEAGUES--->PEOU	0.136***	**Supported**
H1c	COLLEAGUES--->ANXIETY	0.029	Rejected
H2a	MANAGERS--->PU	0.090***	**Supported**
H2b	MANAGERS--->PEOU	-0.002	Rejected
H2c	MANAGERS--->ANXIETY	0.126***	**Supported**
H3a	PARENTS--->PU	0.076**	**Supported**
H3c	PARENTS--->PEOU	0.270***	**Supported**
H3c	PARENTS--->ANXIETY	-0.003	Rejected
H4a	STUDENTS--->PU	0.115***	**Supported**
H4b	STUDENTS--->PEOU	0.277***	**Supported**
H4c	STUDENTS--->ANXIETY	-0.086*	**Supported**
H5a	ANXIETY--->PEOU	-0.135***	**Supported**
H5b	ANXIETY--->ATT	-0.061***	**Supported**
H5c	ANXIETY--->PU	-0.069***	**Supported**
H6a	PEOU--->PU	0.686***	**Supported**
H6b	PEOU--->ATT	0.511***	**Supported**
H6c	PEOU--->BI	0.115**	**Supported**
H7a	PU--->ATT	0.372***	**Supported**
H7b	PU--->BI	0.175***	**Supported**
H8	ATT--->BI	0.644***	**Supported**

Note. ***p<.001; **p<.01; & *p<.05

The model is predictively meaningful when the value is bigger than zero. The Q^2 is equal to 0.728 for behavioral intentions. The result explains the significant factors that affect teachers' behavioral intentions using Zalo in working effectively. With an omission distance of seven, the blindfolding technique yields the cross-validated redundancy measure Q^2.

According to the computation results presented in **Table 5**, 17 out of 21 hypotheses were supported.

The outcomes of the path analysis revealed that managers and students did influence anxiety significantly (β=0.126, p<0.000; and β=-0.086, p<0.05), respectively; however, students have a negative relation with teacher's anxiety, confirming H2c and H4c. Colleagues, parents, and students did significantly influence PEOU (β=0.136, p<0.000; β=0.270, p<0.000; and β=0.277, p<0.000), respectively, confirming H2 and H1b, H3c, and H4b. Managers, parents, and students did significantly influence PU (β=0.090, p<0.000; β=0.076, p<0.01; and β=0.115, p<0.000) respectively, confirming H2a, H3a, and H4a. Anxiety did influence PEOU (β=-0.135, p<0.000), ATT (β=-0.061, p<0.000), and PU (β=-0.069, p<0.000) confirming H5a, H5b, and H5c. PEOU did influence PU (β=0.686, p<0.000), ATT (β=0.511, p<0.000), and BI (β=0.115, p<0.01) confirming H6a, H6b, and H6c. PU did influence ATT (β=0.372, p<0.000) and BI (β=0.175, p<0.01) confirming H6a and H6b. ATT did significant influence BI (β=0.644, p<0.000), confirming H8.

Though, this model showed that colleagues did not influence PU (β=0.035, p>0.05) and anxiety ((β=0.029, p>0.05). Parents did not significantly influence anxiety (β=-0.003, p>0.05) as well. Also, managers did not significantly influence PEOU (β=-0.029, p>0.05). Thus, H1a, H1c, H2b, and H3c were not confirmed (**Figure 2**).

DISCUSSIONS

The impact of PEOU, PU, and attitude on users' intention is confirmed in this study model. The results demonstrate the predictive power of SNs on anxiety (28%), and all constructs explain 79.6% of teachers' intention to use Zalo.

The findings show the influence of SNs on users' anxiety, PEOU, usefulness, and intention to adopt Zalo in working. Among the social norm constructs, students have the most substantial impact, followed by colleagues, managers, and parents. According to Shan et al. (2020), the SN is the consequence of an individual's response to the perceived expectation of his group or community. In addition, the influence level of SNs varies according to the collectivist or individualist culture of the participant (Lee & Wan, 2010). Vietnam is a collectivist society with an individualist culture of 20 compared to 91 of the USA, which manifests a close relationship and loyalty to the group (Hofstede, 2011). When considering themselves as a collectivist group,

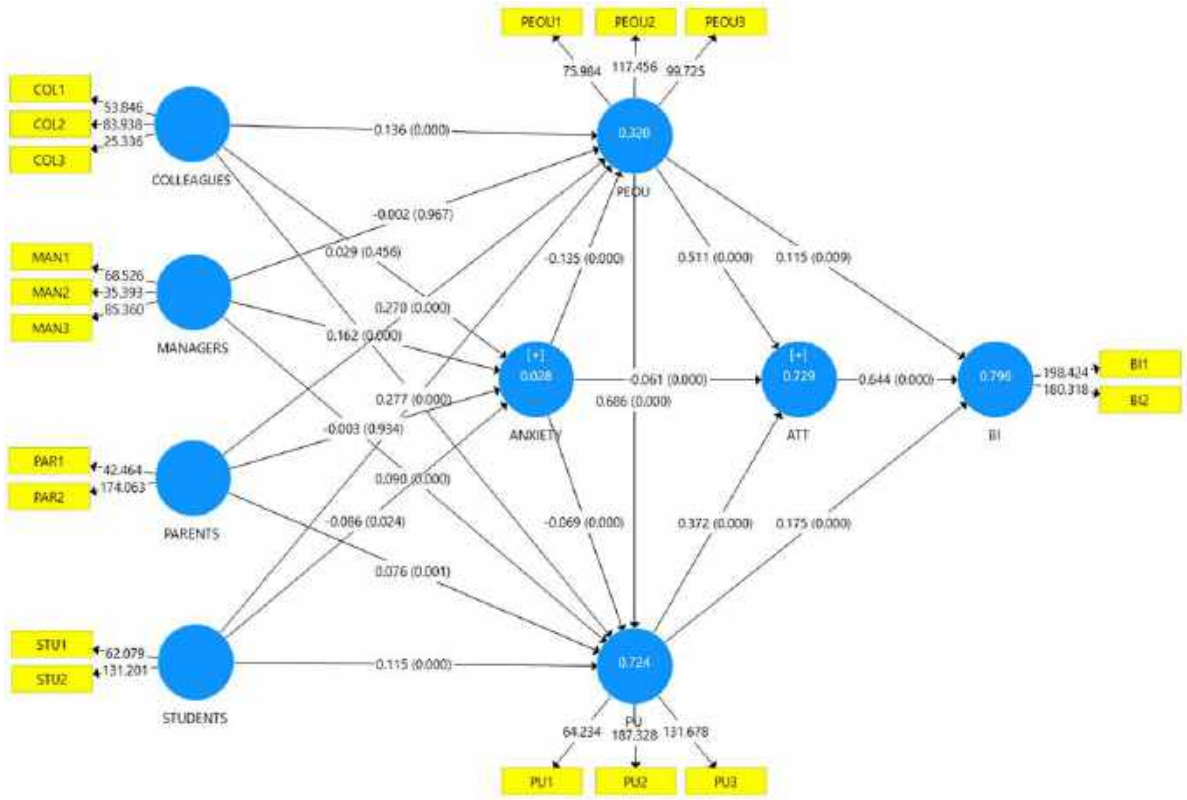

Figure 2. Path analysis results (Source: Authors)

group members are more likely to accept and adopt technology when others decide or suggest it (Lee & Wan, 2010). SNs are essential in the introductory stage of technology adoption and acceptance. When users with limited experience tend to use a new technology platform, they will be affected by their surrounding community for information to decide.

Prior studies have discovered a clear correlation between SNs and perceived utility (Abbas, 2016; Venkatesh & Davis, 2000). Furthermore, Abbas (2016) found that subjective standards had a negligible effect on PEOU and users' intentions. This study looks into the factors that influence SNs and proposes that parents and students impact teachers' perception of Zalo ease of use and usefulness. Managers have a significant influence on how teachers perceive the usefulness of the app, while coworkers have a significant impact on the ease of use. The findings infer that teachers perceived Zalo as easy and convenient because they can seek peer support and feel comfortable using Zalo for chatting and sharing information. Since Zalo users can connect to others 24/7, managers can send their employees instant notifications, warnings, and updated requirements. Zalo is more useful than convenient in manager–teachers' direction because, on the one hand, they can receive the updated information. On the other hand, it is inconvenient to be monitored and connected with the boss too frequently.

In a collectivist community, the level of anxiety when using Zalo can be influenced differently by social actors such as managers, colleagues, parents, and students. Our findings show that colleagues and parents have no significant impact on teachers regarding anxiety. In contrast, managers impose pressure on teachers when using Zalo. Reasons for this anxiety are the boss's caution about personal life interference and the worry of missing the updated information and using Zalo to replace the formal information channel. Because people in a group can send numerous messages, if the readers cannot keep up with the talk, they can miss an important notice and fail to do the tasks given by the managers.

The most noticeable finding is the negative correlation between students' interaction and teachers' anxiety. In other words, the more teachers use Zalo to communicate and discuss with students, the less anxious they become. The communication between managers and teachers is somehow one way and in the form of giving and taking orders. Teachers in this position are relatively passive in this interaction. In contrast, in the context of teachers-students, the role of teachers is to give orders; they become more assertive,

manipulate, and take control. Therefore, the communicative direction of the teacher circle can be summarized in three layers; the first layer is managers-teachers in which teachers are at lower strata. The second layer is colleagues-teachers, where the interaction is somewhat balanced and stress-free. The third layer is parents and students-teachers, in which teachers are more proactive in transferring information and guiding activities.

Also, the study findings show that anxiety has a negative impact on PEOU and usefulness, which suggests that teachers who experience more anxiety may be less likely to use Zalo than users who experience less or no anxiety. This finding supports the findings of Kinard et al. (2009), who discovered that technological anxiety causes a desire to avoid technology, whereas social anxiety causes a loss of control over information and technology usage, limiting users' willingness to use the applications. For that reason, both product producers and school managers need to consider a caring approach when applying the apps in schools where avoiding anxiety among users is as important as other educational criteria.

In addition, prior studies have shown that attitudes and intentions to adopt technology are significantly influenced by PEOU and PU (Venkatesh, 2000). For this specific case of using Zalo for working, the research findings prove the same relations of these constructs. Therefore, it is suggested that teachers intend to use Zalo if they find it convenient and beneficial for their work.

CONCLUSION

The results of this study confirm the value of TAM components and show that SN influences users' intention, which makes up 79.6% of the model.

The findings of our proposed research model contribute to the original TAM and research on users' perceptions of using online social networks. This study provides two theoretical implications. First, in a collectivist culture like Vietnam, SNs are crucial for adopting and accepting technology. Additionally, anxiety impacts how effective and simple Zalo uses when working. Second, SNs and PEOU can boost PU. The data suggest that teachers will find Zalo useful if they find the app user-friendly and others in their community suggest it.

Regarding practical implications for using social networking apps for working, our study shows that SN factors play an essential role in consumers' intention in a collectivist culture. Therefore, focusing on these determinant factors is crucial to encourage users' adoption and acceptance of technology apps. Additionally, lowering supervisors' stress would increase perceptions of Zalo's PEOU and usefulness, enhancing attitudes and intentions to use it for work.

The study has several limitations. First, the survey is the only method used for this study. Consequently, this study fails to give more insights into users' perceptions, anxiety, and the multi-dimensional impacts of SNs on users' attitudes and intentions. In further studies, user interviews should be employed with the survey. Second, this study only investigates the impact of managers, colleagues, parents, and students on teachers' attitudes and behavioral intentions. Future studies should include other actors such as family members and friends to understand SNs' effect properly.

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REFERENCES

Abbas, H. A. (2016). Subjective norm as antecedents of consumers' behavioral intentions to use smartphones in Arab world. *Journal of Mobile Technologies, Knowledge and Society, 2016*(2016), 863777.

Abdullah, F., & Ward, R. (2016). Developing a general extended technology acceptance model for e-learning (GETAMEL) by analyzing commonly used external factors. *Computers in Human Behavior, 56*, 238-256. https://doi.org/10.1016/j.chb.2015.11.036

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl, & J. Beckmann (Eds.), Action control (pp. 11-39). Springer. https://doi.org/10.1007/978-3-642-69746-3_2

Akcaoglu, M., & Bowman, N. D. (2016). Using instructor-led Facebook groups to enhance students' perceptions of course content. *Computers in Human Behavior, 65*, 582-590. https://doi.org/10.1016/j.chb.2016.05.029

Al-Qaysi, N., Mohamad-Nordin, N., & Al-Emran, M. (2018). A systematic review of social media acceptance from the perspective of educational and information systems theories and models. *Journal of Educational Computing Research, 57*(8), 2085-2109. https://doi.org/10.1177/0735633118817879

Alshalawi, A. S. (2022). Social media usage intensity and academic performance among undergraduate students in Saudi Arabia. *Contemporary Educational Technology, 14*(2), ep361. https://doi.org/10.30935/cedtech/11711

Alsuhaymi, D., & Alghamdi, A. (2021). An investigation of the factors that predict university instructors' intentions to adopt social media into their teaching. *Journal of Educators Online*, *18*(1), 1-22. https://doi.org/10.9743/jeo.2021.18.1.7

Andreadis, S., Antzoulatos, G., Mavropoulos, T., Giannakeris, P., Tzionis, G., Pantelidis, N., Ioannidis, K., Karakostas, A., Gialampoukidis, I., Vrochidis, S., & Kompatsiaris, I. (2021). A social media analytics platform visualizing the spread of COVID-19 in Italy via exploitation of automatically geotagged tweets. *Online Social Networks and Media, 23*, 100134. https://doi.org/10.1016/j.osnem.2021.100134

Barelka, A. J., Jeyaraj, A., & Walinski, R. G. (2013). Content acceptance model and new media technologies. *Journal of Computer Information Systems, 53*(3), 56-64. https://doi.org/10.1080/08874417.2013.11645632

Bearden, W. O., Calcich, S. E., Netemeyer, R., & Teel, J. E. (1986). An exploratory investigation of consumer innovativeness and interpersonal influences. *ACR North American Advances, 13*, 77-82.

Choi, G., & Chung, H. (2013). Applying the technology acceptance model to social networking sites (SNS): Impact of subjective norm and social capital on the acceptance of SNS. *International Journal of Human-Computer Interaction, 29*(10), 619-628. https://doi.org/10.1080/10447318.2012.756333

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319. https://doi.org/10.2307/249008

Do, M. A. (2013). Vietnam's flagship mobile messaging app has arrived. *Tech in Asia*. https://www.techinasia.com/zalo-vietnams-flagship-mobile-messaging-app-arrived

Durak, H. Y. (2019). Examining the acceptance and use of online social networks by preservice teachers within the context of unified theory of acceptance and use of technology model. *Journal of Computing in Higher Education, 31*(1), 173-209. https://doi.org/10.1007/s12528-018-9200-6

Dzewaltowski, D. A., Noble, J. M., & Shaw, J. M. (1990). Physical activity participation: Social cognitive theory versus the theories of reasoned action and planned behavior. *Journal of Sport and Exercise Psychology, 12*(4), 388-405. https://doi.org/10.1123/jsep.12.4.388

Eraslan Yalcin, M., & Kutlu, B. (2019). Examination of students' acceptance of and intention to use learning management systems using extended TAM. *British Journal of Educational Technology, 50*(5), 2414-2432. https://doi.org/10.1111/bjet.12798

Estriegana, R., Medina-Merodio, J., & Barchino, R. (2019). Student acceptance of virtual laboratory and practical work: An extension of the technology acceptance model. *Computers & Education, 135*, 1-14. https://doi.org/10.1016/j.compedu.2019.02.010

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research.* Addison-Wesley.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39. https://doi.org/10.2307/3151312

Fraenkel, J., Hyun, H., & Wallen, N. (2012). *How to design and evaluate research in education*. McGraw-Hill Education.

Granić, A., & Marangunić, N. (2019). Technology acceptance model in educational context: A systematic literature review. *British Journal of Educational Technology, 50*(5), 2572-2593. https://doi.org/10.1111/bjet.12864

Greenhow, C., Galvin, S. M., & Staudt Willet, K. B. (2019). What should be the role of social media in education?. *Policy Insights from the Behavioral and Brain Sciences, 6*(2), 178-185. https://doi.org/10.1177/2372732219865290

Hadi, W., Yuksafa, R., Yarmi, G., Safitri, D., Lestari, I., Suntari, Y., Umasih, Marini, A., Sudrajat, A., & Iskandar, R. (2022). Enhancement of students' learning outcomes through interactive multimedia. *International Journal of Interactive Mobile Technologies, 16*(07), 82-98. https://doi.org/10.3991/ijim.v16i07.25825

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2013). *A primer on partial least squares structural equation modeling (PLS-SEM)*. SAGE.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM)*. SAGE. https://doi.org/10.1007/978-3-030-80519-7

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice, 19*(2), 139-152. https://doi.org/10.2753/mtp1069-6679190202

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2-24. https://doi.org/10.1108/ebr-11-2018-0203

Henseler, J., Ringle, C. M., & Sarstedt, M. (2014). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115-135. https://doi.org/10.1007/s11747-014-0403-8

Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. *Online Readings in Psychology and Culture*, *2*(1). https://doi.org/10.9707/2307-0919.1014

Kayes, I., & Iamnitchi, A. (2017). Privacy and security in online social networks: A survey. *Online Social Networks and Media, 3-4*, 1-21. https://doi.org/10.1016/j.osnem.2017.09.001

Kim, B. (2011). Understanding antecedents of continuance intention in social-networking services. *Cyberpsychology, Behavior, and Social Networking, 14*(4), 199-205.https://doi.org/10.1089/cyber.2010.0009

Kinard, B. R., Capella, M. L., & Kinard, J. L. (2009). The impact of social presence on technology based self-service use: The role of familiarity. *Services Marketing Quarterly, 30*(3), 303-314. https://doi.org/10.1080/15332960902993593

Le, V. H., Maor, D., & McConney, A. (2021). The potential of social networking sites for continuing professional learning: Investigating the experiences of teachers with limited resources. *Studies in Continuing Education*. https://doi.org/10.1080/0158037x.2021.1932453

Le, X. C. (2021). Charting sustained usage toward mobile social media application: The criticality of expected benefits and emotional motivations. *Asia Pacific Journal of Marketing and Logistics, 34*(3), 576-593. https://doi.org/10.1108/apjml-11-2020-0779

Lee, C., & Wan, G. (2010). Including subjective norm and technology trust in the technology acceptance model. *ACM SIGMIS Database: The DATABASE for Advances in Information Systems, 41*(4), 40-51. https://doi.org/10.1145/1899639.1899642

Lemay, D. J., Morin, M. M., Bazelais, P., & Doleck, T. (2018). Modeling students' perceptions of simulation-based learning using the technology acceptance model. *Clinical Simulation in Nursing, 20*, 28-37. https://doi.org/10.1016/j.ecns.2018.04.004

Mailizar, M., Almanthari, A., & Maulina, S. (2021). Examining teachers' behavioral intention to use E-learning in teaching of mathematics: An extended TAM model. *Contemporary Educational Technology, 13*(2), 298. https://doi.org/10.30935/cedtech/9709

Meuter, M. L., Ostrom, A. L., Bitner, M. J., & Roundtree, R. (2003). The influence of technology anxiety on consumer use and experiences with self-service technologies. *Journal of Business Research, 56*(11), 899-906. https://doi.org/10.1016/s0148-2963(01)00276-4

Mingsiritham, K., Chanyawudhiwan, G., & Paiwithayasiritham, C. (2020). Factor analysis of smart social media technology to promote professional learning communities for teachers. *International Journal of Interactive Mobile Technologies, 14*(20), 165. https://doi.org/10.3991/ijim.v14i20.17253

Nguyen, T. H., & Le, X. C. (2021). How social media fosters the elders' COVID-19 preventive behaviors: Perspectives of information value and perceived threat. *Library Hi Tech, 39*(3), 776-795. https://doi.org/10.1108/lht-09-2020-0241

Ningsih, S. K., & Mulyono, H. (2019). Digital assessment resources in primary and secondary school classrooms: Teachers' use and perceptions. *International Journal of Interactive Mobile Technologies, 13*(08), 167. https://doi.org/10.3991/ijim.v13i08.10730

Phung, H. (2019). *The digital marketing landscape in the Vietnamese market* [Master's thesis, Haaga Helia University of Applied Sciences].

Prestridge, S. (2019). Categorizing teachers' use of social media for their professional learning: A self-generating professional learning paradigm. *Computers & Education, 129*, 143-158. https://doi.org/10.1016/j.compedu.2018.11.003

Raithel, S., Sarstedt, M., Scharf, S., & Schwaiger, M. (2011). On the value relevance of customer satisfaction. Multiple drivers and multiple markets. *Journal of the Academy of Marketing Science, 40*(4), 509-525. https://doi.org/10.1007/s11747-011-0247-4

Ranieri, M., Manca, S., & Fini, A. (2012). Why (and how) do teachers engage in social networks? An exploratory study of professional use of Facebook and its implications for lifelong learning. *British Journal of Educational Technology, 43*(5), 754-769. https://doi.org/10.1111/j.1467-8535.2012.01356.x

Revythi, A., & Tselios, N. (2019). Extension of technology acceptance model by using system usability scale to assess behavioral intention to use e-learning. *Education and Information Technologies, 24*(4), 2341-2355. https://doi.org/10.1007/s10639-019-09869-4

Rigdon, E. E. (2012). Rethinking partial least squares path modeling: In praise of simple methods. *Long Range Planning, 45*(5-6), 341-358. https://doi.org/10.1016/j.lrp.2012.09.010

Sadaf, A., Newby, T. J., & Ertmer, P. A. (2012). Exploring factors that predict preservice teachers' intentions to use Web 2.0 technologies using decomposed theory of planned behavior. *Journal of Research on Technology in Education, 45*(2), 171-196. https://doi.org/10.1080/15391523.2012.10782602

Scherer, R., Siddiq, F., & Tondeur, J. (2019). The technology acceptance model (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. *Computers & Education, 128*, 13-35. https://doi.org/10.1016/j.compedu.2018.09.009

Septantiningtyas, N., Juhji, J., Sutarman, A., Rahman, A., Sa'adah, N., & Nawisa. (2021). Implementation of Google meet application in the learning of basic science in the COVID-19 pandemic period of student learning interests. *Journal of Physics: Conference Series, 1779*(1), 012068. https://doi.org/10.1088/1742-6596/1779/1/012068

Shan, G., Yee, C. L., & Ji, G. (2020). Effects of attitude, subjective norm, perceived behavioral control, customer value and accessibility on intention to visit Haizhou Gulf in China. *Journal of Marketing Advances and Practices, 2*(1), 26-37.

Sledgianowski, D., & Kulviwat, S. (2009). Using social network sites: The effects of playfulness, critical mass and trust in a hedonic context. *Journal of Computer Information Systems, 49*(4), 74-83. https://doi.org/10.1080/08874417.2009.11645342

Supardi, S., Juhji, J., Azkiyah, I., Muqdamien, B., Ansori, A., Kurniawan, I., & Sari, A. F. (2021). The ICT basic skills: Contribution to student social media utilization activities. *International Journal of Evaluation and Research in Education, 10*(1), 222. https://doi.org/10.11591/ijere.v10i1.20598

Tarhini, A., Arachchilage, N. A., Masa'deh, R., & Abbasi, M. S. (2015). A critical review of theories and models of technology adoption and acceptance in information system research. *International Journal of Technology Diffusion, 6*(4), 58-77. https://doi.org/10.4018/ijtd.2015100104

Teo, T., Faruk Ursavas, O., & Bahcekapili, E. (2011). Efficiency of the technology acceptance model to explain pre-service teachers' intention to use technology. *Campus-Wide Information Systems, 28*(2), 93-101. https://doi.org/10.1108/10650741111117798

Trust, T., Krutka, D. G., & Carpenter, J. P. (2016). "Together we are better": Professional learning networks for teachers. *Computers & Education, 102*, 15-34. https://doi.org/10.1016/j.compedu.2016.06.007

Uyen, D., & Ha, D. (2022). COVID-19: For Vietnam, information is a public-health weapon. *Reporting ASEAN*. https://www.reportingasean.net/

Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research, 11*(4), 342-365. https://doi.org/10.1287/isre.11.4.342.11872

Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences, 39*(2), 273-315. https://doi.org/10.1111/j.1540-5915.2008.00192.x

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science, 46*(2), 186-204. https://doi.org/10.1287/mnsc.46.2.186.11926

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425-478. https://doi.org/10.2307/30036540

Wang, Y., Meister, D. B., & Gray, P. H. (2013). Social influence and knowledge management systems use: Evidence from panel data. *Mis Quarterly, 37*(1), 299-313. https://doi.org/10.25300/MISQ/2013/37.1.13

Wu, D., Yang, X., Yang, W., Lu, C., & Li, M. (2022). Effects of teacher-and school-level ICT training on teachers' use of digital educational resources in rural schools in China: A multilevel moderation model. *International Journal of Educational Research, 111*, 101910. https://doi.org/10.1016/j.ijer.2021.101910