

Moderating Effect of Parents' Anxiety about Their Children's Education between Parent WeChat Group Use and Online Support among Chinese Parents

Peng Wang^{1,2}, Sharifah Sofiah Syed Zainudin¹, Nurul Ain Mohd Hasan¹, Lu Liu¹

¹Department of Communication, Faculty of Modern Languages and Communication, Universiti Putra Malaysia, Malaysia

²Zhejiang Yuexiu University, China

Correspondence: Wang Peng, Department of Communication, Faculty of Modern Languages and Communication, Universiti Putra Malaysia, Malaysia; Zhejiang Yuexiu University, China

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Abstract

Previous studies have investigated the influence of social media as a digital resource for parental support. However, little research is available regarding parent WeChat groups and their impact in providing online parenting support. Given that parents in China frequently have specific anxiety around their children's education, this is an important research area. Thus, this study examines the moderating effect of Parents' Anxiety about Their Children's Education (PAE) in the relationship between parents WeChat group use and online support. Using a sample of primary school parents (N = 493), the study found a positive association between parents WeChat group use and online support. The results indicated that PAE moderated the association between parents WeChat group engagement and online support, but not for the relationship between parents WeChat group intensity and online support. This study contributes to expanding the literature in WeChat group use, online support and PAE in East Asian countries with similar social and cultural contexts.

Keywords: parent WeChat group, online support, PAE, primary school children's parents

1. Introduction

In the age of social media, Chinese parents' "education anxiety" has become a kind of group anxiety widely spreading in society. This pathological and social phenomenon is not only against children's physical and mental health development but is also a hidden danger to family harmony and social harmonious development, which has become an important issue for the relevant state departments and all sectors of society (Ding & Xue, 2023). The level of educational anxiety among Chinese parents is generally high, with 68% of parents feeling anxious about education, especially during their children's early childhood and elementary school stages (SmartStudy, 2018).

As a new social medium, WeChat is compatible with various media forms, such as text, voice, and video, and has deeply intervened in the lifestyles of individuals (Wu, 2018). Produced by Tencent, WeChat is a free instant messaging tool that facilitates interpersonal communication. At the end of September 2023, the combined monthly active accounts of WeChat totaled above 1.3 billion (Statista, 2023). WeChat now covers more than 200 countries and regions, making it China's most popular social media platform (Wu, 2018). WeChat group chat leverages the WeChat platform to enable communication and interaction among different groups simultaneously in the same virtual space. Depending on the attributes of group members, WeChat groups can be categorized into various types based on 'circle culture', such as colleague groups, friend groups, family groups, hometown groups, community groups, and so on (Y. Wang et al., 2020). The capacity of these groups has expanded from the original limit of 40 members to 500, facilitating the transition from individual interactions to small and, subsequently, larger groups.

Along with the high degree of development of China's education informatization, parental participation in education has also taken on a new form, the home-school WeChat group, which has been extensively promoted and utilized in home-school interactions, and has become an essential tool and medium of communication between home and school. For example, parents interviewed bluntly said that they "can't actually see the teacher a few times a semester all

rely on WeChat groups to contact them", and the role of home-school WeChat groups in parental participation in education can be seen (Shao, 2021). At the same time, these parent WeChat groups have brought about a surge in anxiety while bringing convenience (Shao, 2021). These groups consist of parents whose children are classmates or attend the same school or training institution, often sharing similar backgrounds, geographical proximity, or common goals (Liu, 2020). Parents often learn about their children's experiences in school through the parent WeChat group. At the same time, they are also exposed to other children's performances, which triggers a tendency to make comparisons (You, 2019). It increases the invisible pressure on parents to rank and compare their children (Xinhuanet, 2020). In addition, parent WeChat groups have been criticized by parents as "praise groups", "receive groups", "homework groups", "comparison groups", and "boast groups" (Xinhuanet, 2020).

As there have been repeated calls for the education sector to "reduce the burden" on students, the education department has proposed the Regulations on Student Health Work (2022), which sets out rules for primary and secondary school students regarding daily study time, rest time, etc. However, due to the pressure of further education and employment, the burden of education in China is still very heavy. In the basic education stage, students' schoolwork is burdensome, and anxiety about their children's education has become one of the most annoying things for most Chinese middle-class parents (Wang, 2012). According to Han's (2018), 88.5% of middle-class parents in Nanjing, Wuhan, and Foshan who were the parents of junior high school students felt concerned about their children's education. He, M., & He, J. (2020) analysed the data from 235 parents of primary and secondary school students and found that parents' educational anxiety mainly included five factors: academic anxiety, future development anxiety, physical and mental health anxiety, behavioral anxiety, and safety anxiety. Parents' overall educational anxiety was at the upper-middle level, with a higher level of future development anxiety and a lower level of physical and mental health anxiety. Previous studies have found that using parent WeChat group provides parents with social support and reduces educational anxiety (Shao, 2021; Li, 2018; Huang, 2017). On the other hand, several studies have found that parent WeChat groups do not provide social support to parents; instead, they increase parents' educational anxiety (Zhang, 2020; Chen et al., 2018). Parents pay attention to education-related information through social media, especially mobile-based social media, and some parents even pay attention to dozens of educational WeChat official accounts and more than a dozen different education-related WeChat groups. Education anxiety increasingly spreads, and social media fueled its proliferation and diffusion (Li, 2021). Thus, parent WeChat groups in this research included both WeChat groups created by school teachers and WeChat support groups created by parents on their initiative.

Nevertheless, research is limited regarding whether parents of different levels of PAE, whose WeChat group intensity and engagement are associated with online support. To fully capture the moderating role of PAE between parents WeChat group use and online support, the present study aims to extend previous research.

2. Literature Review

2.1 Usage of Parent WeChat Group

Previous research on the relationship between social media use and psychological effects has concentrated on social media intensity and engagement (Ellison et al., 2014; Verduyn et al., 2017; Wang et al., 2019; Keleş et al., 2019).

Facebook intensity measure scale was developed by Ellison et al. (2014), including two self-reported assessments of the number of Facebook friends and the time spent on Facebook per day and a series of Likert-scale of how the users feel about Facebook is also included. Facebook intensity scale was used in other social media, like online communities, WeChat, Twitter, Instagram, and Snapchat (Bae et al., 2020; Y. Chen et al., 2018; Wang et al., 2019; Alhabash & Ma, 2017; Alsalem, 2019) Social media was used to help people keep in touch with acquaintances, maintain social ties and develop new relationships (Ellison et al., 2014; Sagioglou & Greitemeyer, 2014; Kerrigan & Hart, 2016). Similarly, Thomas et al. (2020) found that social media could be a useful tool in facilitating offline relationships and maintaining ties to old friends. Furthermore, a recent study indicated the intensity of SNS (Social Networking Site) through metrics such as SNS viewing, SNS posting, SNS liking, and SNS responding (Boer et al., 2022). The questionnaire provided examples of SNS, including 'Facebook, Twitter, Instagram, Google+, and Pinterest'. Regarding IM (Instant Messaging) usage intensity, the study assessed IM viewing and sending (Boer et al., 2022).

Numerous activities are possible on most social media platforms. Psychologically relevant media use behaviors can be active and passive (Jang et al., 2016;; Þórisdóttir et al., 2019; Valkenburg et al., 2021). Active use involves chatting, posting photos, posting status updates, and liking or commenting on posts, pictures and updates (Gerson et al., 2017). In contrast, passive use refers to browsing, scrolling, reposting links, or looking at content from others (Frison & Eggermont, 2015). According to Verduyn et al. (2017), passive social media use leads to declines in well-being because it induces upward social comparison and envy. Similarly, Frison and Eggermont (2015) found active Facebook use leads to positive outcomes in the long run, and passive Facebook use revealed a more harmful impact on adolescents' well-being.

For parents with primary school children, parent WeChat groups expand the interaction space, bringing together parents

who may be strangers in real life within a defined arena. The parent WeChat group is an important supplementary management tool in managing primary and secondary education. Many schools require each class to establish a WeChat group. The teachers and parents of students in each class are required to join the group, and any notices of the school and class are released in the class parent WeChat group (Hua & Lin, 2019).

The class parent WeChat group is a WeChat group created by the class teacher or a member of the family committee acting as the group leader, inviting the parents of students in their class to join the group (Huang, 2017). Li (2018) defined parent groups as QQ groups and class parent WeChat group in which they were established from kindergarten to high school to promote home-school co-education and to jointly promote the learning and growth of the students. The members of the groups were mainly the parents and teachers of the students in their classes. Thus, the purpose of creating parent WeChat groups is to promote home-school co-education so that the family and the school work together to serve the learning and growth of students.

In China's "education anxiety" environment, parents have a high sense of initiative and participation in online home-school interactions. For example, parents interviewed bluntly stated that they "can't actually see their teachers a few times a semester all rely on parent WeChat group contact" (Hua & Lin, 2019); the role of parent WeChat groups in parental educational participation is evident. In addition, there is also a tendency for parents to be passive users in their WeChat groups; according to Shao (2021), "Buddha-like" is an interactive norm for parents in their WeChat group, being "uninvolved," "silent," "not talk," "not care about anything," "inactive," "unresponsive," "inactive," "unresponsive," and so on. In terms of the content, mode and frequency of interaction, "Buddha-like" is reflected in the fact that parents mainly pay attention to notifications in the WeChat group, reply to messages as required, rarely or even never participate in follower-type interactions, and seldom or even never interact with the teacher on their initiative.

2.2 Parent WeChat Group Use and Online Support

Research on social support got its start in the 1970s. Social support is also an expectation of personal relationships and predicts perceived interpersonal competence and reported satisfaction with friends, family, and romantic partners (Abbey et al., 1995; Pasch & Bradbury, 1998; Sprecher, 2002; Potter, 2020) Social support can be conceptualized as bidirectional "interpersonal transactions that provide individuals with esteem, stress-related aid, and emotional assistance" (Jetten et al., 2012). These transactions enhance the ability to cope with stressful events (Shorey et al., 2012). The exchanges can cover a wide variety of activities, which fall under three broad categories: informational support, instrumental support, and emotional support (S. Cohen & Syme, 1985; Leahy-Warren et al., 2011). Other scholars add appraisal support relevant to self-evaluation (Utz & Breuer, 2017).

Pew Research Center (2015) in the United States surveyed more than 2,000 parents on their social media usage and found that 75% of parents with children under the age of 18 trust parenting social media websites and discussion groups. Social media has become parents' main source of parenting information or advice. Nearly 50% of parents said that when they need advice or a sense of belonging, they will turn to social media for help, find solutions to parenting problems or obtain social and emotional support. In addition, mothers are relatively more dependent on social media (Duggan et al., 2015).

Participants of online communities can showcase themselves, form social relationships, and exchange social support, making them a valuable source of social support (Drentea & Moren-Cross, 2005; Parry et al., 2013; Biră et al., 2020). People who are experiencing extreme hardship, in particular, often turn to online social support when their current social interactions become unstable (Classen et al., 1996). Engaging in WeChat groups allows users to experience a feeling of flow, influence other users, and feel like they belong, all of which improve their overall wellbeing (Eysenbach et al., 2004). According to Wang G et al. (2019), there is a favorable correlation between the level of WeChat use and social support received both online and offline. It was shown that the goals of information gathering and interpersonal communication had a significant impact on the acquisition of social support via WeChat. WeChat is essential for fostering pro-community behavior, attachment, and trust in the community; this was especially evident during the COVID-19 epidemic (You et al., 2023). WeChat groups facilitate stronger interpersonal communication and information exchange and contribute to building and reinforcing community bonds.

Additionally, research suggests that social media might be a useful resource for emotional and informational support for parents (Wagg et al., 2019). On one hand, engagement on social media predicts psychological outcomes; both active and passive use may relate to protective factors for emotional distress, such as social support (Oh et al., 2014). Social media use predicts psychological effects; both active and passive use may be associated with elements that buffer against emotional distress, such as social support. There was a noticeable difference in active versus passive use as related to social anxiety and loneliness (O'Day & Heimberg, 2021). Even after controlling demographic variables, active social media use demonstrated a substantial negative correlation with depression, whereas passive social media use revealed a positive association (Escobar-Viera et al., 2018). According to the rich-get-richer theory, those with strong offline social ties will utilize social media to expand their networks and improve the quality of their friendships

(Pouwels et al., 2021). Active use is linked to increased sentiments of connection, decreased loneliness, offline social inclusion, and increased daily online social connectivity with friends (Burke et al., 2010).

In addition to emotional support, parent WeChat group intensity and active parent WeChat group use facilitate information exchange. For example, Hua and Lin (2019) considered the parent WeChat Group a messaging tool for parents. Parents and schools may work together to raise the future generation through collaborative parenting via parent WeChat group. Along the same lines, Zhang (2020) subsequently argued that parent WeChat groups are a useful channel of communication between the home and the school, and the group owner on WeChat for parents of primary school pupils will provide information on teaching strategies, life hacks, etc. Through the WeChat group, parents can interact with teachers regarding their children's performance at home and provide feedback on their learning. Teachers will consciously notify parents about the learning circumstances of students in the class, activities, assignments, and school or class notices posted in the group. Even when parents return home after school, they can interact with teachers through text, voice, pictures, videos and other ways to interact with the teacher (Huang, 2017). This indicates that WeChat's role in providing information and emotional support is crucial for parents navigating complex situations for their children. Hence, this study postulates that:

H1: Parent WeChat group intensity is positively associated with online emotional support.

H2: Parent WeChat group intensity is positively associated with online informational support.

H3: Active parent WeChat group use is positively associated with online emotional support.

H4: Active parent WeChat group use is positively associated with online informational support.

2.3 Parents' Anxiety about Their Children's Education (PAE)

Anxiety has gradually become a widespread psychological state in contemporary Chinese society. Anxiety is a collection of tensions such as depression, irritability, dissatisfaction, depression, insecurity, irrational impulses, etc., which are expected to be generated in the population due to the uncertainties in society (Qiu, 2003; You, 2019). Following the implementation of the "double reduction" policy, parental anxiety has changed and is now more commonly associated with educational anxiety (Sun et al., 2022).

Educational anxiety stems primarily from concerns over children's grades, after-school parental tutoring, and increased parental duties (W. Zhang, 2023). An important phenomenon for Chinese parents, their concern about their children's education is not only a common negative emotion in society but also has a significant impact on teenagers' learning, lives, and health (P. Liu et al., 2023). Studies that are pertinent to this topic have also demonstrated that parents' anxiety about school negatively affects their kids' extracurricular physical activity (Chen et al., 2022).

Lopes et al. (2022) systematic review concluded that those who struggle with anxiety or depression seems to use social media more regularly and vice versa. While under the context of widespread PAE among parents in China, at a time when educational anxiety continues to spread, parents hope to alleviate educational anxiety by actively avoiding relevant information and reducing social media use, but they also fear that they will be trapped in an information silo and delay their children's future in the information lag. As a result, parents will once again transform their complex fear of missing out on information into a reliance on social media. Social media platforms are not only an important place for mothers to exchange educational information and seek mutual support but also a field where anxiety is aroused and amplified by mutual infection. A study of the relationship between new media use and family parenting behavior found that the more new media is used, the greater the sense of parental competence in the parenting process (Liu, 2020). To realize students' comprehensive development, the parent WeChat group link parents into an organic whole through information production and information transfer, making the flow of information a bond of close connection with each other (Bai X., & Zhang Z., 2022). The use of WeChat in relation to PAE has been explored in various studies, particularly focusing on its role in parental support contexts. Shi et al. (2023) found the parents who were part of the WeChat group experienced lower psychological distress and care burden compared to those in standard follow-up groups. We thus propose the following hypothesis:

H5: PAE moderates the relationship between parent WeChat group intensity and online emotional support.

H6: PAE moderates the relationship between parent WeChat group intensity and online informational support.

H7: PAE moderates the relationship between active parent WeChat group use and online emotional support.

H8: PAE moderates the relationship between active parent WeChat group use and online informational support.

2.4 Research Model

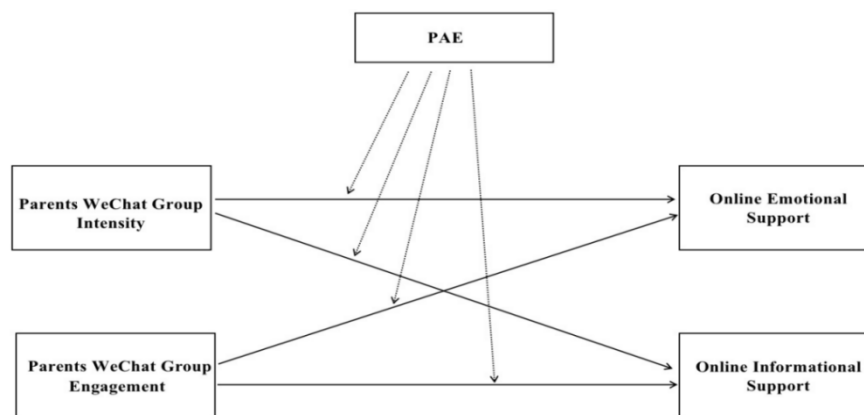


Figure 1. Conceptual Framework

3. Research Methodology

3.1 Variable Measurement

This study includes four main constructs: Demographic background, parent WeChat group use, online support and PAE. Ten items are intended to capture the respondents' demographic information for the background in demographics. Participants are asked questions related to demographic information, including parent role, age, living area, marital status, educational background, employment status, family monthly income, number of children, number of children in primary school and grade of children in primary school.

WeChat group use is measured by WeChat Group use intensity and engagement with items originally developed for Facebook intensity scale (Ellison et al., 2007), WeChat intensity scale (Wang et al., 2019) and general internet use (Escobar-Viera et al., 2018). For WeChat group use intensity, participants were asked, "To what extent are you emotionally connected to your WeChat group and integrate it into your daily activities?" Response options for each item ranged from 1 ("strongly disagree") to 5 ("strongly agree"). All the measurement items were adapted from prior literature and further modified to fit the research context of the online parenting group. For WeChat group engagement, participants were asked, "How frequently do you perform the following activities when you are in a WeChat group?". Items associated with active WeChat group Use included "like/favorite/voting" "share others' content" "comment on or respond to someone else's content" and "post your own content" were used in this study. "Never," "less than once a week," "2–6 times a week," "once a day," and "several times a day" were the available response choices.

EA Nick (2018) developed the Online Social Support Scale (OSSS). The four subscales include esteem/emotional online social support, social companionship, informational online social support and instrumental online social support. To measure social support within the WeChat group, subscales measuring informational support and emotional support were used, because the other subscales did not apply. Thus, we changed the wording by replacing "Online" with "WeChat group". Twenty statements (ten for each domain) are measured using a 5-point Likert scale (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = very often). Scores are summed, with high scores indicating higher support needs.

As for parents' anxiety about their children's education (PAE), this study uses Sun et al.'s (2022) measurement questionnaire of parents' anxiety about their children's education (MQPAE), selecting two subscales as parents' educational anxiety scale that facilitated insights about both the child(ren)'s learning attitude and school performance. Parents are asked to rate their agreement with 13 statements, such as, 'You are worried about children's lack of learning initiative' using a five-point Likert scale (1= strongly disagree, 2= disagree, 3= neutral, 4= agree, and 5= strongly agree). PAE scores that are higher indicate a higher PAE.

3.2 Data Collection and Analysis

The primary poll was conducted using convenience sampling from December 4 to December 31, 2023. This study's population consists of individuals who (1) have at least one child in primary school in China and (2) belong to at least one parent WeChat group. This study primarily targeted parents of primary school children because they perceive higher levels of anxiety about their children's education (SmartStudy, 2018). The online questionnaire was developed using Wen Juan Xing (wjx.cn). The questionnaire asked participants to score the intensity and engagement of their parent WeChat group use, Social Support, and PAE, as well as submit personal information. The questionnaire took

approximately 10 minutes to complete. A total of 520 questionnaires were distributed, and all 520 were recovered. Of these, 493 surveys were useful, resulting in an effective return rate of 94.8%. Data were analyzed using SPSS 27.0 and Smart-PLS 4. Smart PLS-SEM can be used to analyze complex research models that incorporate related theories and empirical data. In accordance with Leguina's (2015) suggestion, a two-step approach was adopted, in which the outer model was tested for convergent and discriminant validity before testing the inner model. Hypotheses were tested using the inner model.

4. Results

4.1 Descriptive Statistics

207 mothers (42%), out of 493 survey respondents, were mothers. Aged between 31 and 35 years old (27.4%), the majority of participants were married (83.2%), working full-time (64.3%), and educated up to a bachelor's degree (33.3%). Their family income ranged from ¥10,000 to ¥19,999 (37.7%), and they had one child (80.5%), two (18.7%), and three or more (0.8%) enrolled in primary school.

4.2 Evaluation of the Outer Measurement Model

According to Hair et al. (2014) and Kline (2016), the outer model could be evaluated through composite reliability (CR), internal consistency reliability (Cronbach's alpha), convergent validity and discriminant validity. The results from the evaluation of the outer measurement model and factors cross-loading were as follows. Cronbach's alpha (α) values ranged from 0.865 to 0.941, and composite reliability (CR) values ranged from 0.865 to 0.944 (Table 1). For other indices, each factor had values of "Standardized Factor Loading" (SFL) that were greater than 0.70, and all values of AVE were higher than 0.5 (Table 1). These summary statistics indicate the scale has acceptable internal reliability and convergent validity (Hair et al., 2014; Kline, 2016; Fornell & Larcker, 1981).

Additionally, three methods have been developed to evaluate discriminant validity: the Heterotrait-Monotrait ratio of the correlations (HTMT) approach, the Fornell-Larcker criterion method, and the cross-loading matrix (Henseler et al., 2014). According to Table 1, the inter-variable correlation coefficient is less than the diagonal AVE values that are bolded. Moreover, it is suggested that discriminant validity is absent by HTMT values greater than 0.90 (Cardella et al., 2021). In this study, HTMT levels were substantially below the recommended value (Table 2). The convergent validity, discriminant validity, and scale reliability that were acknowledged in the study's outer model for measurement are validated and supported when the prior findings are taken into consideration.

Table 1. Assessment of the Outer Measurement Model.

	α	CR	AVE
PAE	0.941	0.944	0.585
ES	0.936	0.936	0.633
IS	0.932	0.932	0.620
WGE	0.865	0.865	0.712
WGI	0.895	0.896	0.657

Table 2. Inter-construct correlations, square root of AVE, and HTMT results.

	Fornell-Larcker Criterion					HTMT Results				
	PAE	ES	IS	WGE	WGI	PAE	ES	IS	WGE	WGI
PAE	0.767									
ES	0.317	0.796				0.332				
IS	0.331	0.625	0.787			0.348	0.668			
WGE	0.402	0.541	0.419	0.844		0.442	0.600	0.466		
WGI	0.484	0.449	0.466	0.437	0.810	0.524	0.489	0.510	0.496	

4.3 Assessment of the Structural Model

Through the bootstrapping process, the influence between variables will be described by the path coefficient. The t-statistical test value determines whether the hypothesis is accepted or rejected; if the t-value is greater than 1.96 and the significance (p-value) is less than 0.05, the hypothesis is accepted. The path coefficient results report will be as follows.

Eight hypotheses were offered in this study, four of which have direct connections. The smart PLS results show that the

intensity of the parent WeChat group has a positive and significant impact on online emotional support ($\beta = 0.230$, $p < 0.001$) and online informational support ($\beta = 0.290$, $p < 0.001$). Similarly, online emotional support ($\beta = 0.352$, $p < 0.001$) and online informational support ($\beta = 0.170$, $p < 0.005$) are positively and significantly impacted by active parent WeChat group use. Hence, hypotheses H1, H2, H3 and H4 were supported.

PAE had a positive and significant moderating influence on the relationship between active parent WeChat group use and online emotional support ($\beta = 0.227$, $p < 0.001$) and online informational support ($\beta = 0.201$, $p < 0.01$), respectively. With respect to the specific indirect effects of PAE in the relationship between parent WeChat group intensity and online emotional support ($\beta = -0.083$, $p = 0.111$), as well as parent WeChat group intensity and online informational support ($\beta = 0.016$, $p = 0.768$), whereas it was not significant. Thus, H7 and H8 were supported, but H5 and H6 were not supported (Table 3).

Table 3. Study Tested Hypothesis.

Study Tested Hypothesis	Beta (β)	T- Values	P values	Acceptance
H1 WGI -> ES	0.230	4.644	0.000	S
H2 WGI -> IS	0.290	5.027	0.000	S
H3 WGE -> ES	0.352	6.963	0.000	S
H4 WGE -> IS	0.170	3.447	0.001	S
H5 PAE x WGI -> ES	-0.083	1.594	0.111	NS
H6 PAE x WGI -> IS	0.016	0.295	0.768	NS
H7 PAE x WGE -> ES	0.227	4.071	0.000	S
H8 PAE x WGE -> IS	0.201	3.645	0.000	S

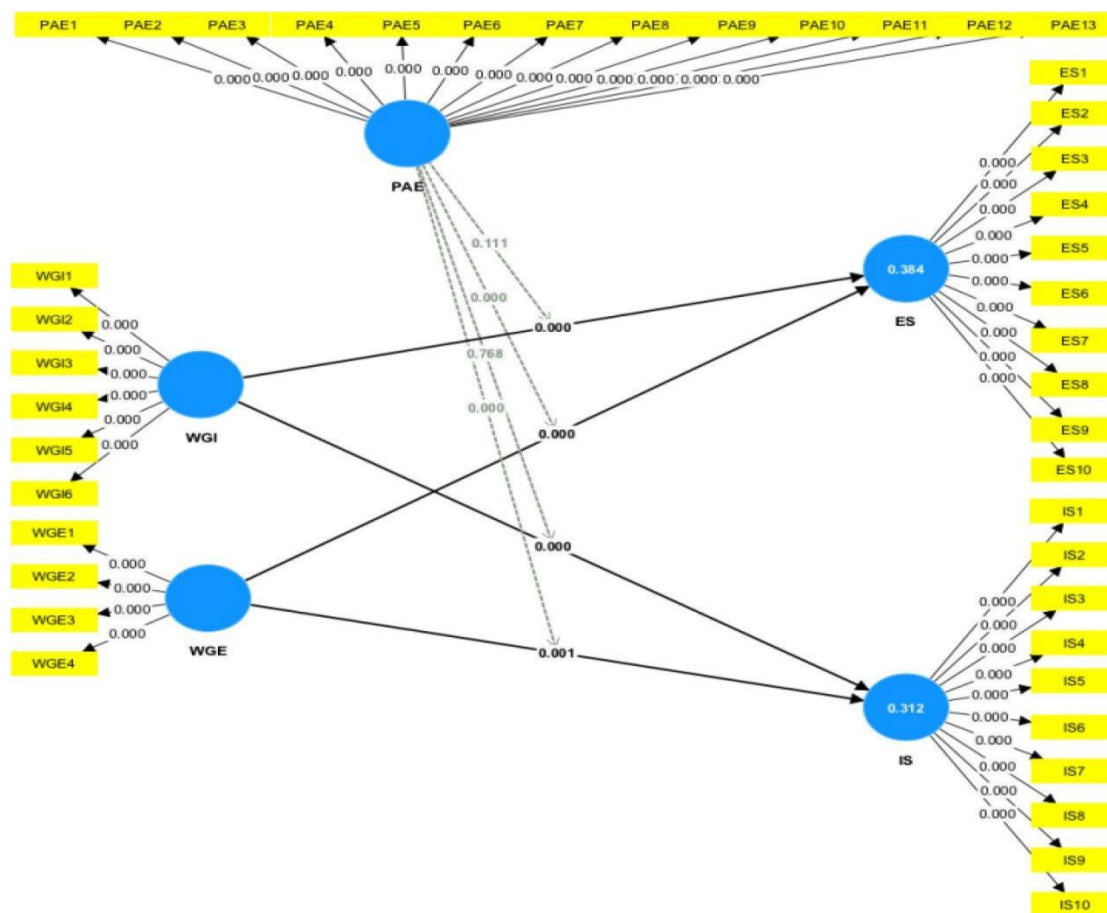


Figure 2. Inner & Outer Model

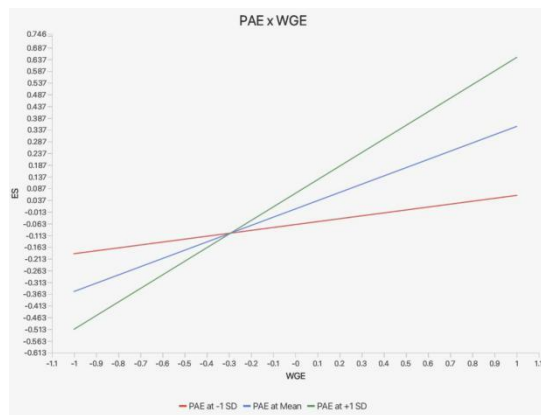


Figure 3. Simple slope analysis-PAExWGE->ES

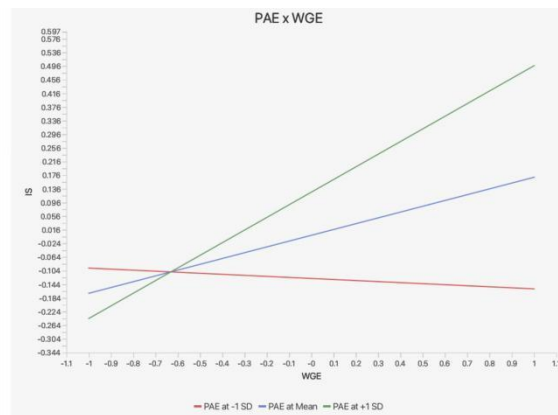


Figure 4. Simple slope analysis-PAExWGE->IS

Finally, a typical moderator analysis of SmartPLS shows a simple slope plot for the relationship between parent WeChat group engagement to online emotional support and online informational support, which is moderated by PAE. Figure 3 shows a relationship between parent WeChat group engagement and online emotional support. The relationship is stronger for high PAE with a steeper slope and less strong for low PAE with a gentler slope. On the other hand, Figure 4 indicates that the relationship between parent WeChat group engagement and online informational support is stronger with higher PAE and weaker with lower PAE; thus, both have opposite slope trends.

5. Discussion

The current study investigates the direct effects of parent WeChat group use intensity and engagement on online emotional and informational support independently. Moreover, this study examines the moderating effect of PAE on the relationship between the subscale of parent WeChat group use and online support.

Further, it implies that parent WeChat group intensity and active parent WeChat group use are positively associated with online support. A range of relationships, from latent links to weak and strong ties, can be connected via the WeChat group (Shen & Gong, 2018). For parents, the higher the extent to which they emotionally connect to their parent's WeChat group and integrate it into their daily activities, the more emotional and informational support they perceive. Moreover, parents could also perceive more emotional and informational support when they share, like, comment on, and post more content in the parent WeChat group. The results are consistent with those of Wang et al. (2019), who suggested that individuals communicating through computers may perceive themselves as more attractive and socially connected. This perception may encourage them to seek additional information from online companions. This finding suggests that, in the absence of geographical and temporal boundaries, parents can obtain emotional and informational support online, thanks to the strength of weak ties (Bae et al., 2020).

In addition, from the perspective of PAE's moderating effect on the association between parent WeChat group use and online support. This study illustrates that increases in parent WeChat group engagement translate stronger into increases in online emotional and informational support for parents perceiving higher PAE. In comparison, reductions in parent WeChat group engagement translate less strongly into increases in online emotional support and reductions in online informational support for parents perceiving low PAE. However, the present study did not find the moderating effect of PAE in the relationship between parent WeChat group intensity and online support. This finding is consistent with that of Li (2021), who found that mothers had higher levels of anxiety, were active users of social media, and sought self-affirmation and psychological compensation through interactions between similar groups. This also accords with our earlier observations, which showed that parents concerned about their children's education, even with time and space constraints, can keep abreast of their children's dynamics through the use of parent WeChat groups and more easily obtain professional guidance and support in their educational approach (Gu et al., 2018). Similarly, by observing online educational forums and parent communities, Li (2021) found that mothers had higher levels of anxiety, were active users of social media, and sought self-affirmation and psychological compensation through interactions between similar groups. However, this result is contrary to previous studies that suggested people with high anxiety could gain less from social relationships via social networking sites than people with low attachment anxiety (Liu et al., 2013).

According to the findings, promoting parent WeChat group intensity and engagement is essential for parents to perceive online emotional and informational support. For parents with high PAE, the more parents WeChat group engagement, the more they could perceive online emotional and informational support. However, improving parent WeChat group intensity may not be optimal. Therefore, future research should examine the relationship between different parent WeChat group use patterns and online support. Moreover, more potential moderators between these relationships could be examined among parents.

6. Limitations

The limitations of the study should also be pointed out. First, the data used in this study mainly came from China. Our findings can help explain linkages in east Asian countries with similar social and cultural contexts. However, there are vast possible variations in national conditions, such as those about cultural and educational policies between different countries (Sun et al., 2022). Second, this study focuses primarily on PAE in the context of primary school students. Future research can explore this topic in greater detail using a variety of empirical research perspectives, including those of parents of kindergarteners, junior and senior high school students, and others, to better understand the variations in parental anxiety. Last, only parent WeChat groups were investigated, so caution should be used in generalising conclusions to other social media for parenting. Although parent WeChat groups are indeed mandatory platforms for most parents in China, passive users and non-users with PAE may get social support from other platforms.

7. Conclusion

In conclusion, the results of this study provide meaningful insights into the research on the moderating role of PAE in the relationship between parent WeChat group use and online support. Firstly, parent WeChat groups can help connect home and school. Parents involved in school education to improve students' performance are extremely helpful. To increase awareness of parents' education, that is, from the root of the change in students' growth and learning environment, and more conducive to the students becoming a more comprehensive development of morality, intelligence, physicality, aesthetics, and the physical and mental development of the human being (Li, 2021). Secondly, parent WeChat group use is positively associated with perceived social support. Parent WeChat group, as an important channel of direct communication with parents on the intervention of parental concepts through parent groups, will allow parents to channel more effective online informational and emotional support (Zhu et al., 2023). Thirdly, the association between parent WeChat group participation and online support is moderated by PAE. Future research on parent WeChat group use of social support in relation to PAE will benefit from applying and extending these findings to better understand the WeChat group usage of parents.

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Authors contributions

Wang Peng and Dr. Sharifah Sofiah Syed Zainudin were responsible for study design and revising. Wang Peng and Liu lu were responsible for data collection. Wang Peng drafted the manuscript. Dr. Sharifah Sofiah Syed Zainudin and Dr. Nurul Ain Mohd Hasan revised it. All authors read and approved the final manuscript.

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No additional data are available.

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