

The Relationship Between DouYin Use Intensity and Parenting Anxiety: The Mediating Role of Online Upward Social Comparison

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Abstract

Based on the current situation of parenting anxiety, this paper constructs a parenting anxiety evaluation model based on structural equation model (SEM), and uses partial least squares (PLS) to estimate the parameters, and makes a comprehensive evaluation of parenting anxiety. The results show that the intensity of parents' Douyin use (ID) is positively correlated with the Network upward social comparison (NUSC). There is a positive correlation between Network upward social comparison (NUSC) and parenting anxiety (PA), that is, the upward social comparison on the Internet generated during the use of Douyin by parents is likely to cause parenting anxiety; The intensity of Douyin use is positively correlated with parenting anxiety, that is, the greater the intensity of Douyin use is, the more likely it is to produce anxiety in the process of parenting. Online upward social comparison plays a mediating role in the relationship between Douyin use intensity and parenting anxiety.

Key words: Parenting anxiety; Network upward social comparison; Intensity of Douyin¹; Partial Least Squares

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¹ Douyin is the The Chinese version of TikTok.

INTRODUCTION

According to the statistics of Aurora, as of June 2019, the industry penetration rate of short video APP is as high as 67.9%, and Douyin ranks the first in the changing trend of the penetration rate of short video head APP, which has reached 47.9% (Dong, 2016). Douyin has become China's national short video platform, and since 2018, Douyin short video has begun to extend its reach into the cultural and educational field (Guo, 2020).

According to the Research Report on Short Videos and Knowledge Dissemination, as of December 2018, There were nearly 18,000 knowledge creators with more than 10,000 followers on Douyin, and more than 3 million short knowledge videos were released, with a total viewing volume of 338.8 billion. Among them, the average number of fans of the author on maternal and child care is 203,293, and the average play volume is 164,083 times. As the knowledge of maternal and infant parenting is closely related to the society, the knowledge of maternal and infant parenting is the most shared (Tsinghua University, 2019). The dissemination of Douyin maternal and child parenting knowledge has selectively received and constructed western theories and views on parenting knowledge, which has widely influenced the parenting concept of modern families in China. Young parents take parenting knowledge as the parenting code. The "authoritative discourse" of family parenting has shifted from grandparents to "opinion leaders" in social media. The rich and diversified parenting knowledge and the collision of the old and new parenting concepts aggravate the anxiety of parents in the process of parenting. As Sun Yunxiao, a researcher at the China Youth and Children Research Center, said, "Today's parents think more about how to be good parents than any other generation." (Liu, 2017).

The production of parenting knowledge in the form of short videos breaks down the barrier of knowledge. Such intuitive expression and social knowledge sharing

make more parents willing to accept scientific knowledge (Feng, 2019). But at the same time, “the public, inundated by information, gradually lost the real life based on life experience and spiritual belief, resulting in cognitive confusion, confusion, panic, insecurity and ultimately anxiety about the unknown world.” (You, 2019).

Parental anxiety is detrimental to the growth and development of children. Foreign scholars McMahon also pointed out that postpartum depression and anxiety of mothers have an impact on the infant temperament and its factors (McMahon et al, 2001); A study, reported by New Scientist in the UK, followed 169 children aged five to 10 for three years and found that children whose parents had anxiety or depression suffered significantly more than other children (Pan, 2015). Therefore, it is of great significance to study the relationship between parents’ Douyin use behavior and parenting anxiety, not only for the self-management of parents’ emotions, but also for the physical and mental health of children.

ONLINE UPWARD SOCIAL COMPARISON AND PARENTING ANXIETY

Parenting Anxiety

In China, the concept of parenting anxiety is quoted most frequently is: Parenting anxiety refers to excessive sensitivity and nervousness for a series of events such as children’s food, clothing, appearance, physical development, temperament and personality, peers and parent-child relationship (Sang, 1998). The parenting anxiety in this paper refers to the parenting anxiety and emotions generated by parents in the process of raising children (0-12 years old), including health and safety anxiety, education anxiety, parental self-evaluation anxiety and parental self-development anxiety. (Note: 0-12 years old are medically defined as minors.)

By comparing domestic and foreign studies on parenting anxiety in recent ten years, Ma (2016) found that the research subjects of parenting anxiety in China mainly focused on parents. CNKI’s academic articles on parenting anxiety are mainly from the perspective of psychology and sociology, and analyze the attribution and influence of parenting anxiety as a psychological or social phenomenon. For example, Guo (2019) analyzed the causes of parenting anxiety from three perspectives: culture and country, gender anxiety and media discourse trap. Chen (2018) believes that there is a profound contradiction between the ideal life of urban middle-class mothers and the ideology of motherhood in family and society, which deepens mothers’ parenting anxiety.

Social Media and Parenting Anxiety

The popularity and popularity of social networking sites make their influence on individual psychological development become the focus of relevant fields. On

the one hand, the use of social networking sites will enhance individual life satisfaction and happiness (Indian & Grieve 2014; Liu et al., 2015) Increasing and expanding individual social capital (Zhong, 2014; Frison & Eggermont, 2015). On the other hand, the use of social networks has become a major factor causing individual depression and anxiety. For example, Niu et al. (2016) believed that social media use based on Qzone was a significant predictor of depression, and there was a significant positive correlation between college students’ Internet use and their anxiety.

There are few studies on social media use and parenting anxiety among Chinese scholars. You (2019) described the new features of “parenting anxiety” in the context of new media, and studied the interactive relationship between “parenting anxiety” and the media environment. It holds that the fragmented information transmission mode of new media will inevitably lead to the fragmentation of parenting information. “The mass dissemination of knowledge information without systematic interpretation on new media platforms will make parents feel confused when receiving information. “Liu (2020) from a media availability perspective, research WeChat group chat technology availability affect how the formation and the spread of the anxiety, think the use of WeChat group contributed to the group members for the individual experience and emotional state, sharing WeChat group of daily communication anxiety is easy to form emotional resonance and infection, Eventually most group members acquire learned anxiety.

Online Upward Social Comparison and Parenting Anxiety

Social comparison is a universal social psychological phenomenon. Festiger (1954) believes that there is a driving force in human body to evaluate their own views and abilities. This process of comparing their views and abilities with others is called social comparison. This process of comparison requires no personal subjective effort, is conscious and universal. According to the different object or direction of comparison, social comparison can be divided into upward social comparison and downward social comparison: upward social comparison refers to the comparison with people better than their own, and downward social comparison refers to the comparison with people not as good as their own (Xing & Yu, 2006). Social comparison on social networking sites is the extension of real social comparison on the Internet, which mainly refers to the process in which individuals compare with others in terms of ability, achievement, appearance, popularity and other aspects by browsing the self-presentation of other users during the use of social networking sites (Feinstein, et al, 2013). Individuals unconsciously make social comparisons when using social networks, and relevant studies have also shown that individuals make more social comparisons on

social networks (Vogel et al, 2014; Lian, et al; Qiu,2017). In addition, researchers believe that when individuals compare with others on social media, they mainly conduct upward social comparison (Shi, et al, 2017). because most of the photos, voices and other information published by individuals on social media are carefully selected and edited before being published (Fox & Vendemia, 2016). The impact of upward social comparison on individual psychology on social networking sites has been paid attention to by many studies (Stronge, et al,2015). In addition, researchers believe that when individuals compare with others on social media, they mainly conduct upward social comparison (Shi, et al, 2017), because most of the photos, voices and other information published by individuals on social media are carefully selected and edited before being published (Fox & Vendemia, 2016). The impact of upward social comparison on individual psychology on social networking sites has been paid attention to by many studies (Stronge, et al, 2015). Upward social comparison is a key factor for depression caused by social media use (Niu, et al,2015). Passive social media use can negatively predict self-esteem (Niu, et al, 2017). There may also be a certain correlation between upward social comparison on SNS and individual social anxiety (Ma, 2019).

When parents compare their children’s development with the “standards” presented in the new media of parenting, they have fallen into the value judgment of the outside world on their ability, aided by the infinite psychology of “keeping up with the Joneses”, and thus fall into the anxiety based on competitive pressure (You, 2019). Wechat group members are relatively fixed and closed, so the information from group members is more easily accepted and trusted by individuals and becomes the reference object for comparison of group members, thus causing profound subject anxiety (Liu, 2020). Although Chinese scholars have begun to pay attention to the relationship between social comparison and emotion on social networks, the research started late. CNKI shows that academic papers in this field were published in 2017. There are only 17 articles on the topic of “Online upward social comparison”, and most of them focus on the relationship between college students’ upward social comparison on social networks and their emotions, without involving children’s parents and their anxiety. There are fewer research results on parenting anxiety in the context of new media, and most of the research content is the new presentation of Chinese parents’ parenting anxiety in the context of new media. Although the paper of Liu and You involves the discussion of social comparison and parental subjective parenting anxiety, it is only a secondary research issue of the paper. So far, there is no special discussion on the relationship between parents’ Douyin use behavior and parenting anxiety. Based on the above studies, this paper proposes the following hypotheses:

H1: The intensity of Douyin use by parents has a positive impact on parenting anxiety

H2: The intensity of parental Douyin use has a positive impact on the upward social comparison.

H3: The upward comparison of parents’ network has a positive impact on parenting anxiety.

H4: Online upward social comparison plays a mediating role in the relationship between the intensity of Douyin use and parenting anxiety. The model construction of this paper is shown in Figure 1:

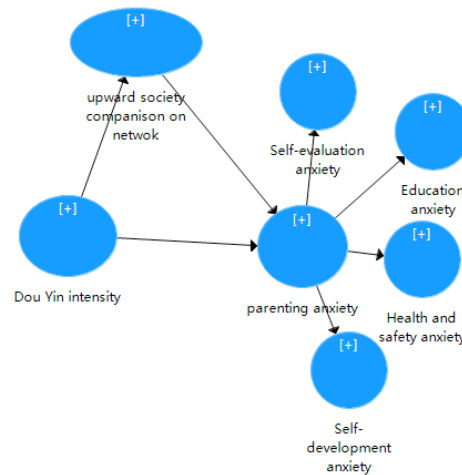


Figure 1
Frame diagram of parenting anxiety evaluation model

THE DATA COLLECTION PROCESS

Questionnaires were made by Using The WJX.CN, and online questionnaires were distributed through WeChat circle of friends and friends forwarding snowball. A total of 218 questionnaires were collected, of which 218 were valid, with effective recovery of 100%.

TOOLS

Social Networking Sites Use Intensity Scales

Ellisoin, Steinfield and Lampe were used to evaluate the intensity of children’s parents’ use of social networking sites by using the Facebook use intensity questionnaire. The questionnaire was translated and the scope of the questionnaire was limited to parents’ use of Douyin (Ellison, Nicole & Lampe, 2007). The questionnaire consists of 8 items. The first 2 items are self-reported measurements of the number of friends on social networking sites and the average time spent on social networking sites per week. The last 6 items used Likert 5 points score (1= “completely inconsistent”, 5= “completely consistent”) to measure the intensity of emotional connection between individuals and social networking sites. The scores of all items are added up after standardized processing, which is the score of social networking site use intensity. The higher the score is, the stronger the user’s website use intensity is.

The Upward Social Comparison Scale

The upward social comparison scale was developed by Gibbons and Buunk. Part of the Iowa-Netherlands Comparison Orientation Measure (INCOM) translated and revised by Liu et al, which contains 6 items. All items are scored 1-5 points (1= “very inconsistent”, 5= “very consistent”). The sum of the scores of each item is the total score of upward social comparison. The higher the score is, the more likely users are to make upward social comparison with others in the process of using social networking sites.

Parenting Anxiety Scale

Parenting anxiety scale is a self-developed scale by sorting out the parenting anxiety questionnaire of You (2020). The scale consisted of 18 items, which evaluated the health and safety anxiety, education anxiety, parenting self-evaluation anxiety and parenting self-development anxiety of parents. All items were scored 1-5 points (1= “very inconsistent”, 5= “very consistent”). The sum of the scores of each item was the total score of parenting anxiety. The higher the score, the greater the degree of parenting anxiety of parents.

DATA ANALYSIS

In this study, PLS-SEM method was adopted and smart-PLS3.0 software was used to verify the structural equation model (SEM). PIS-SEM path modeling is an iterative estimation combining principal component analysis, canonical correlation analysis and multiple regression, which is a causal modeling method (Lin, Qian & Wu, 2021).

Sample Data Analysis

Based on the retrieved valid sample data, this study first made simple descriptive statistics of the gender, age and other basic information of the respondents in the retrieved 218 valid questionnaire data, and the results are listed in Table 1.

Table 1
Sample distribution feature

Title	Options	Number of people	Proportion/%
Age	Age 25 and under	6	2.75
	26-30age	24	11.01
	31-35age	78	35.78
	36-40age	69	31.65
	41-45age	30	13.76
	46-50age	7	3.21
	Aged 51 and above	4	1.83
Education Background	High school and below	124	56.88
	College degree or equivalent	45	20.64
	Undergraduate	37	16.97
	master	12	5.50
	doctor	0	0
Are You the Mother or Father	Mother	171	78.44
	Father	47	21.56

Table 1
Sample distribution feature (Continued)

Title	Options	Number of people	Proportion/%
How Many Children Are There at Home?	one	70	32.11
	two	140	64.22
	Three or more	8	3.67
How Old is Your Youngest Child	0-1 years old	14	6.42
	1-3 years old	22	10.09
	3-6 years old	47	21.56
	6-12 years old	135	61.93
What Are Your Main Sources of Parenting Information	Parenting books, magazines	85	38.99
	Parenting TV	52	23.85
	Web search engine	63	28.9
How Many Apps do You Have on Your Phone?	Douyin	82	37.61
	Wechat official account, Weibo	71	32.57
	QQ group, WeChat group	50	22.94
	forum	21	9.63
	the elders of the family	75	34.4
	other	59	27.06
How Many Apps do You Have on Your Phone?	none	115	52.75
	One to three	93	42.66
	more than three	10	4.59

Reliability and Validity

Reliability is used to describe the consistency and reliability of questionnaire analysis materials. Cronbach’s Alpha reliability coefficient method is commonly used to measure reliability (Liang, Dai & Zhu, 2015). Validity test is to verify the correctness of the results (Ma, 2021). In this study, PLS3.0 software was used to test the reliability and validity of the questionnaire, and the reliability and validity coefficients of latent variables were obtained, as shown in Table 2

Table 2
Reliability and validity of parenting anxiety model

Variable	Cronbach’s alpha	Composite reliability (CR)	Average variance extracted (AVE)
HASA	0.905	0.934	0.778
ID	0.908	0.929	0.686
EA	0.892	0.925	0.756
NUSC	0.944	0.956	0.783
PA	0.956	0.961	0.577
SDA	0.892	0.920	0.698
SEA	0.917	0.938	0.751

Note. ID Intensity of Douyin; NUSC Network upward social comparison; PA Parental anxiety;

EA Education anxiety; HASA Health and safety anxiety; SDA Self-development anxiety;

SEA Self-evaluation anxiety.

Cronbach's alpha (CA) is higher than 0.7, and composite Reliability (CR) is higher than 0.7, indicating that this variable has good internal consistency. AVE is higher than 0.5, indicating that AVE can explain more than 50% of the Extracted variation and has good convergence validity (Fornell& larcker, 1981). As shown in Table 2, CV and CR of all variables in this study are higher than 0.7, indicating good internal consistency of the measurement model. AVE values of all variables are higher than 0.5, indicating that the measurement model has good convergence validity.

Path Analysis

The research of this model mainly uses SmartPLS 3.0 to calculate the path coefficient between the latent variables, the load coefficient between the latent variables and the corresponding observation variables and the weight of each indicator by using PLS parameter estimation method. It was found that the factor load coefficients of the observed variables Q8 and Q9 of Douyin usage intensity were too low, which were 0.327 and 0.505 respectively. After deleting one by one, they were measured again, get the path coefficient of the model.

In the structural model, the endogenous potential

variable R² represents the variance explained by the model, and the latent variable R² in this model is shown in Table 3.

Table 3
R² value of latent variable

Variable	R ²	Adjusted R ²
HASA	0.740	0.739
EA	0.809	0.808
NUSC	0.440	0.438
PA	0.247	0.240
SDA	0.762	0.761
SEA	0.798	0.797

According to Table 3, health and safety anxiety, education anxiety, self-development anxiety, and self-evaluation anxiety have a strong ability to explain parenting anxiety, and network social comparison also has a strong ability to explain parenting anxiety.

Bootstrapping test technology was used to verify the hypothesis of causality between latent variables. T-statistics of each path coefficient was calculated to judge the significance of the relationship according to the size of T value, and the results of latent variables causality test were finally obtained.

The path relationship between the latent variables of the parenting anxiety model was obtained from the results of the path coefficient and the latent variable T value, as listed in Table 4.

Table 4
Standardized path coefficients of structural equation model

Hypothesis	Constructs of measurement	Path coefficient	p value	T Test	Result
H1	ID→NUSC	0.664	0.000***	14.875	support
H2	NUSC→PA	0.325	0.000***	3.689	support
H3	ID→PA	0.217	0.008**	2.578	support

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

Mediating Effect Test

From the results of the path coefficient and the latent variable T value that upward social comparison in Douyin use plays a significant mediating role in the influence of

Douyin use on parenting anxiety. In order to further test the mediating effect, Bootstrapping method was used to test the mediating effect. The result is shown in Table 5.

Table 5
Specific indirect effects

Relationship of constructs	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P value
ID→NUSC→PA	0.216	0.216	0.061	3.533	0.000
ID→NUSC→PA→EA	0.194	0.195	0.055	3.533	0.000
ID→NUSC→PA→HASA	0.186	0.186	0.053	3.520	0.000
ID→NUSC→PA→SDA	0.188	0.189	0.054	3.515	0.000
ID→NUSC→PA→SEA	0.193	0.193	0.055	3.512	0.000

CONCLUSION

Analysis of Influence Between Latent Variables of the Model

Hypothesis H1 passed, indicating that parents' Douyin use intensity is positively correlated with their online upward social comparison. In other words, the stronger the

parents' Douyin use intensity is, the more likely they are to produce online upward social comparison psychology. The hypothesis H2 passed, indicating that the intensity of Douyin use is positively correlated with parenting anxiety, that is, the greater the intensity of Douyin use by parents, the more likely they are to have anxiety in the process of parenting. Hypothesis 3 is approved, indicating that

upward social comparison on the Internet is positively correlated with parenting anxiety, that is, the upward social comparison on the Internet generated during the use of Douyin by parents is easy to produce parenting anxiety.

Mediating Effect Analysis

It can be seen from Table 5 that the upward social comparison in Douyin use has a strong significance with parenting anxiety and the four observed variables of parenting anxiety, indicating that the mediating variable had a significant mediating effect between the intensity of Douyin use and parenting anxiety. So H4 is valid. That is, online upward social comparison plays a mediating role in the relationship between the intensity of Douyin use and parenting anxiety.

The Influence Relationship Between Latent Variables and Their Corresponding Observed Variables

The path coefficient test results of parenting anxiety model show that the path coefficient between parenting anxiety and its corresponding observation variables are all greater than 0.8, indicating that there is a strong correlation between them. This indicates that self-evaluation anxiety, self-development anxiety, education anxiety and health and safety anxiety can well reflect the latent variables of parenting anxiety.

Research Significance and Deficiency

From the perspective of social comparison and parenting anxiety, this study introduced the variable of online upward social comparison and found that Douyin use did not directly cause parenting anxiety, but had an impact on parenting anxiety through the independent mediating effect of upward social comparison in Douyin use. This further indicates that the upward social comparison in Douyin use is the key to parenting anxiety, suggesting that future research on Douyin use should focus on specific experiences and feelings in Douyin use. Secondly, we should take a comprehensive and objective view of the use of Douyin. We should not only pay attention to the potential risks of the use of Douyin, but also deeply explore the impact of individual differences on the use of Douyin. In practice, we should pay attention to the negative impact of upward social comparison on parents' parenting, and guide parents to correctly view the information presented by others in Douyin and improve their own media literacy.

At the same time, there are still some deficiencies in this study. Social comparison has individual differences, which will affect the frequency and direction of individual social comparison (Guo & Huang, 2010). Future studies should include individual differences in social comparison. Secondly, although individuals may have negative experiences in the process of using Douyin, it is undeniable that Douyin has become an important channel for many parents to acquire parenting knowledge. Future

studies should explore how to maximize the dissemination of positive parenting knowledge and reduce parents' parenting anxiety.

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