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Investigation of motivational factors among Chinese kindergarten teachers' engagement in music-specific professional development

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ABSTRACT

National Chinese education reforms demonstrate a burgeoning interest in inculcating music in early childhood education. Music can be an important part of personal, educational, and social development in the early years of a child. Subsequently, many educators are turning to music-specific professional development (PD) programs, driving the need for music in their teaching. However, there is a lack of understanding of the factors that motivate kindergarten teachers to participate in PD. The study aims to determine why kindergarten teachers enroll in music-specific professional development (PD) programs tailored to music. RQ1: What are the primary drivers behind kindergarten teachers' involvement in music-specific PD? RQ2: How do motivational factors influence kindergarten teachers' involvement in music-specific professional development? A cross-sectional survey including 328 kindergarten teachers aged 20-40 was conducted online. Data analysis involved descriptive statistics, correlation, and moderation analysis. The study found that the important drivers of PD participation included personal interest in music, the potential for career growth, and peer and cultural influence. Additionally, the main motivational factors included self-efficacy, teaching effectiveness, and personal interest as the most influential motivational factors. Comprehensive PD initiatives should integrate intrinsic, career, and social dimensions to create a supportive, dynamic space where teachers can build music-related skills.

Contribution/Originality: This study contributes to the existing knowledge on music-specific professional development using SEM-PLS. It specifically examines Chinese kindergarten teachers' engagement by integrating intrinsic and extrinsic motivational factors with demographic moderators to provide a comprehensive, evidence-based framework for enhancing participation.

1. INTRODUCTION

The importance of incorporating music into early childhood curricula is being acknowledged on a global scale. Early childhood music education contributes to language development, spatial-temporal skills, and memory retention (Caracci, Martel, & Le Normand, 2022). Thereby, music can be an important part of personal, educational, and social development in the early years of a child. Music plays a part in helping children learn, not just in academic areas, but it also creates a learning environment that fosters creativity and self-confidence (Kwidura, Utomo, & Wadiyo, 2021). Subsequently, music can be a motivational tool that offers social interaction by promoting cooperation and turn-taking in group activities. Thus, music is now considered an important tool in the field of education for childhood development. Globally, there is increasing recognition that music can play a key role in developing well-rounded

individuals. National Chinese education reforms demonstrate a burgeoning interest in holistic development. This shift highlights the need for kindergarten teachers to be skilled in using music as a teaching tool. In this context, teachers have a responsibility to shape early experiences of music among children through singing, rhythm, and movement-based learning. However, this requires teachers to be specially trained in music education to develop their ability to provide a musically enriched environment, making Music-Specific Professional Development (PD) programs essential. Many educators are turning to these programs, driving the need for music-specific professional development (PD). Music-focused PD provides an opportunity for teachers to enhance their teaching practices, explore new ways of making music, and refine the way they teach (Bauer, 2020). However, there is a lack of understanding of the driving factors that motivate kindergarten teachers to participate in professional development (PD). Understanding these factors is essential for developing PD programs that not only address teachers' concerns but also promote long-lasting commitment and effectiveness in practice. Therefore, the purpose of this study was to determine why kindergarten teachers enroll in music-specific professional development (PD) programs tailored to music. Subsequently, the study explored the following research questions:

RQ1: What are the primary drivers behind kindergarten teachers' involvement in music-specific professional development?

RQ2: How do motivational factors influence kindergarten teachers' involvement in music-specific professional development?

2. LITERATURE REVIEW

2.1. Importance of Music in Early Childhood Education

Integrating music-specific education can have a significant effect on children. A meta-analysis of existing studies on the effect of music on academic skills and cognitive skills showed a small effect size, indicating a moderate enhancement of memory and intelligence (Sala & Gobet, 2017). Subsequently, another study involving 66 children who were tested on vocabulary and reasoning skills four times within 2 years showed significant improvement (Linnavalli, Putkinen, Lipsanen, Huotilainen, & Tervaniemi, 2018). Similar evidence was drawn from earlier exploratory studies as well, which stated that teaching through music can aid in enhancing word reading, letter sounds, and medial phonemes (Walton, 2014). Thus, the need for enhancing the capability of kindergarten teachers to integrate music-specific teaching is established.

2.2. Professional Development in Early Childhood Education

The ability to inculcate music-specific teaching could be enhanced by professional development programs. Professional development (PD) aids in providing specific techniques for teaching (Kennedy, 2016). Kennedy (2016) conducted a review to sort programs according to techniques, duration, and intensity, thereby providing insight into how PD aids in improving teaching. For instance, teachers trained in music PD programs learn a particular set of strategies designed to build musical engagement, that is, exercises maintaining rhythm and group song creation (Bauer, 2020). Additionally, Kennedy (2016) reviewed that collaborative learning programs with an emphasis on strategic insights tend to better foster positive effects on teacher development than highly instructive methods. Additionally, the review stated that PD can be measured through modest improvements in student learning, those that facilitate teacher reflection, student achievement outcomes, and autonomy for change in the classroom. This insight provided a foundation for measuring the level of participation in PD programs in this study.

However, Kennedy (2016) also argued that teachers might face challenges such as mandatory teacher assignments and lower motivation. Similar evidence has been drawn from a study, whereby, when there is a lack of external or internal support, teacher collaboration may impose conventional teaching beliefs (De Jong, Meirink, & Admiraal, 2019). Though the literature was not directly relevant to this study, it provided insights into the potential challenges often faced by teachers during professional development (PD). Thus, the identification of motivation as a

potential factor influencing engagement in PD laid the foundation for exploring the motivational factors specific to music PD in this study.

2.3. Motivational Factors Influencing Teacher Engagement in Professional Development

Various studies provide insight into the potential motivating factors influencing PD. However, there is a considerable lack of investigation into the potential motivator factors for music-specific PD. Thus, general motivational factors behind PD have been reviewed here. Intrinsic factors, such as love of music and its important role in human life, along with the idea that teaching is a good way to exercise self-activity. For instance, 102 music education majors were included in a content analysis that stated that the driving factors for them were enjoyment, social connection, expression, learner-directed/autonomy, creativity/experimentation, and identity (Woody, 2021). Thereby, it contributes significantly to personal growth, sustaining motivation as they view their job not only as paid work but as a creative, art-inspired pursuit. Similar evidence has been provided by MacIntyre, Schnare, and Ross (2018). Their investigation argued that personal engagement is also linked to perseverance through that interest, as teachers with high intrinsic motivation are more likely to persist in learning activities. Moreover, an important insight was presented by Bautista and Ho (2021). The authors found that both internal factors, such as developing pedagogical competence and teaching confidence, and external factors, such as earning certifications for job progression, motivation drove them to achieve music PD. Therefore, factors such as interest in music and personal enrichment were determined to be among those to be investigated further.

Additionally, Bautista and Ho (2021) in their study, it was found that teachers also pursued professional development (PD) to boost confidence and meet curriculum standards. Kindergarten teachers in Hong Kong also felt that they were unprepared for the local musical curriculum and reported very high levels of need for music-related professional development to acquire ready classroom skills. Additionally, Zhang, Admiraal, and Saab (2021) argued that continuous PD is also driven by higher self-efficacy from past learning experiences among Chinese teachers. Thereby, two more factors emerged to influence engagement with PD. While self-efficacy was a direct motivating factor, experience was a mediator of motivation. However, the study stated that rural teachers typically have less training and do not have as many opportunities to acquire new teaching techniques.

Similar evidence has been found by Davidson and Dwyer (2014). Davidson and Dwyer (2014) stated that Chinese teachers indicate that rural educators may be more interested in online modules to provide flexible and accessible professional development. Such preference was attributed to their need for options given logistical constraints. Conversely, teachers in urban locations may value professional development related to careers and prefer formalized face-to-face workshops. Thus, this study also examined professional isolation through variation in location as a motivating factor. However, the observed professional isolation could be influenced by school leadership and culture. Schools that create supportive environments see higher participation from teachers in professional growth activities (Zhang et al., 2021). Chinese teachers are also motivated by extrinsic factors linked to career advancement and professional identity (Bautista & Ho, 2021).

However, Chinese teachers typically favor PD that is self-paced or integrated into their workdays, as this aligns better with the demands of the Chinese education system due to time constraints. In hierarchical systems, formal qualifications and certificates from PD are especially valued since credentialing impacts career paths, a motivation similarly observed across various sectors among Chinese teachers. Thus, institutional support such as convenience and practicality in program delivery, extrinsic incentives and credentials, school leadership, and cultural hierarchies were explored as another factor of extrinsic motivation in this study.

2.4. Research Gap

According to a study by Bautista and Ho (2021), a lack of proper preliminary training in music has left many instructors feeling unprepared. The participants made it clear that they needed further professional development in

music. Additionally, as also identified above, there is a lack of music-specific studies on PD for teachers and its characteristic features. Therefore, designing focused professional development programs that meet the various requirements of teachers and promote long-term involvement in music education requires an understanding of these subtleties. Particularly in light of China's changing early childhood education environment, this could be instrumental. Thus, this study determines why kindergarten teachers enrolled in professional development (PD) programs tailored to music.

2.5. Theoretical Framework

This study was underpinned by two main theories: Self-Determination Theory (SDT), which emphasizes teachers' personal interests and career growth (Deci & Ryan, 2012). EVT complements this by highlighting that teachers are more motivated when professional development (PD) aligns with both an expectation of success (Expectancy) and perceived importance (Value). Therefore, these theories suggest that PD is most effective when it addresses both personal and achievable needs. Based on this understanding, this study developed a measure of the level of participation based on personal and achievable needs.

3. METHODOLOGY

3.1. Research Design

The study utilized a cross-sectional survey to determine why kindergarten teachers enrolled in professional development (PD) programs tailored to music. This approach aligns with the study's objective of quantifying specific motivations such as professional growth, institutional requirements, personal interest in music, and external rewards, due to the structured format of surveys (Bryman, 2016). Moreover, it allowed the collection of standardized data from a large number of respondents within a specific time period (Creswell & Creswell, 2017). Thereby, this method allows for precise measurement of individual motivations across different demographic variables, supporting statistical analysis and enabling comparative insights. Moreover, a survey approach also aligns well with prior research on teacher participation in PD, as surveys are commonly employed due to their efficiency in gathering large datasets and producing insights (Yim & Ebbeck, 2011). In this case, the qualitative study might have successfully provided an insight into the perspective but not the motivational factors (Bryman, 2016). This study builds on this theoretical base of SDT to examine the influence of intrinsic and extrinsic motivations on teachers' engagement in professional development (PD) (Deci & Ryan, 2012). Thus, this study surveyed the target population, and the data was analyzed to quantify specific motivations such as professional growth, institutional requirements, and personal interest.

3.2. Participants and Data Collection

The study encompassed Chinese kindergarten teachers involved in music-specific PD as the target population. Additionally, the target population was decided to be aged 20 to over 40. This decision was based on the average age of teachers starting to work as kindergarten teachers and their potential retirement in China. The participants of the survey were recruited through convenience sampling utilizing online networks and educational forums that connect kindergarten teachers.

The sampling allowed practical access to a large participant base while maintaining demographic diversity (Nanjundeswaraswamy & Divakar, 2021). Subsequently, the sample size was determined to be 328. Furthermore, the study collected demographic data such as age, years of teaching experience, education level, and school location. The survey responses were collected through the aforementioned online platforms only. Institutional involvement was at the participants' own choice, and informed consent was secured.

To protect confidentiality and conform to proper research ethics, the names of individual participants and identifying details about the institutions have been omitted.

3.3. Data Analysis

Data analysis entailed using statistical tools to interpret the relationships between motivational factors and the level of participation. The dependent variable in the study was the level of participation, measured through the variable of engagement in music-specific PD. The independent variables included experience, self-efficacy, career growth, cultural influence, institutional motivation, peer influence, and personal interest in music. Besides these variables, demographic variables were measured, namely, age, background in terms of training experiences, teaching experience, and location. The entire data analysis was conducted using R software.

The data analysis followed included tool reliability and validity tests through Bartlett's Test and KMO coefficient (Shrestha, 2021). Additionally, descriptive analysis was undertaken along with the comparative analysis of correlation. This provides a broad picture of the sample's demographic distribution and overall motivational tendencies, offering fundamental information on why instructors pursue professional development in music. Finally, moderation was utilized through SMART-PLS to measure the influence of each variable in the presence of others. A thorough understanding of the motivating factors affecting kindergarten instructors in China is enabled by this dual method of data analysis, which allows for the drawing of evidence-supported findings and useful suggestions.

4. RESULTS

4.1. Tool Reliability and Validity

After analyzing 328 finally included responses and considering all 29 items in the factor analysis, it was found that the KMO coefficient is 0.755, which is higher than 0.6. It indicates that the sample size was more than adequate. The Bartlett's Test was also significant ($p < 0.05$), which shows that the dataset and attributes are highly valid for formulating a model. The subsequent factor analysis was conducted using the SEM method, considering PCA extraction.

Table 1. Factor loadings of times with reliability and validity.

Variable	Items	Factor loadings							Cronbach's alpha	AVE	CR
		1	2	3	4	5	6	7			
Certificate career growth	CCG1	0.943							0.917	0.801	0.941
	CCG2	0.817									
	CCG3	0.907									
	CCG4	0.907									
Cultural influence	CI1		0.946						0.933	0.827	0.95
	CI2		0.887								
	CI3		0.884								
	CI4		0.918								
Engagement in music-specific PD	Engagement1			0.956					0.966	0.88	0.973
	Engagement2			0.935							
	Engagement3			0.947							
	Engagement4			0.945							
	Engagement5			0.907							
Institutional motivation support	IMS1				0.975				0.949	0.868	0.963
	IMS2				0.925						
	IMS3				0.919						
	IMS4				0.906						
Peer influence	PI1					0.966			0.933	0.822	0.948
	PI2					0.824					
	PI3					0.916					
	PI4					0.915					
Personal interest in music	PIM1						0.923		0.956	0.799	0.941
	PIM2						0.878				
	PIM3						0.784				
	PIM4						0.980				
Self-efficacy effectiveness	SETE1							0.979	0.955	0.881	0.967
	SETE2							0.922			
	SETE3							0.922			
	SETE4							0.931			

It can be inferred from Table 1 that the validity (AVE) of all factors or latent variables was greater than or equal to 0.7, indicating highly valid item loadings within each variable. The reliability measures, such as Cronbach's Alpha and Composite Reliability, were both above 0.9 for all measures, demonstrating very high reliability of all latent variables.

4.2. Sample Characteristics

Table 2 represents the demographic background of the finally selected samples. As per Table 2, 57.93% were female, which indicated that the male and female populations were almost equally distributed, with the proportion of females marginally larger than males.

Around 48% of teachers were aged 31 to 35 years, 23.48% were 36 to 40 years old, and 20.43% were 26 to 30 years old, indicating that most teachers were between 26 and 40 years old. Approximately 70% of teachers had between 1 and 20 years of experience. Most kindergarten teachers were from Guangdong, Beijing, Shanghai, Zhejiang, and Jiangsu. Only 8.54% of the participants had formal music training.

Table 2. Demographic characteristics of participants.

Characteristics	Groups	Count	N%
Gender	Male	138	42.07%
	Female	190	57.93%
Age	20 to 25	23	7.01%
	26 to 30	67	20.43%
	31 to 35	156	47.56%
	36 to 40	77	23.48%
	More than 40	5	1.52%
Background	No prior training	176	53.66%
	Informal training	124	37.80%
	Formal training	28	8.54%
Experience	Less than 1 year	76	23.17%
	1 to 5 years	71	21.65%
	6 to 10 years	95	28.96%
	11 to 20 years	58	17.68%
	More than 20 years	28	8.54%
Location	Guangdong	43	13.11%
	Beijing	38	11.59%
	Shanghai	28	8.54%
	Zhejiang	25	7.62%
	Jiangsu	25	7.62%
	Henan	12	3.66%
	Hubei	12	3.66%
	Hunan	12	3.66%
	Sichuan	9	2.74%
	Shandong	9	2.74%
	Fujian	6	1.83%
	Other 72 States	109	33.07%

4.3. Descriptive Statistics and Correlation of Latent Variables

In the following Table 3, each factor or latent variable was calculated by using the mean of 4 underlying items of each variable. Table 3 showed that currently Personal Interest in Music (3.585 ± 0.949) and Certificate and Career Growth (3.569 ± 0.904) were the two most prominent and notable factors behind pursuing the music-specific professional development program by the Kindergarten teachers.

Institutional Motivation and Support (3.137 ± 1.125), improvement of Self-Efficacy and Teaching Effectiveness (3.034 ± 1.260) were moderate reasons for participating in the music-specific professional development program. However, Peer Influence (2.666 ± 0.987) and Cultural Influence (2.627 ± 1.063) were comparatively less notable reasons for participating in the music-specific professional development program.

Table 3. Descriptive statistics of factors considering mean of items.

Variables or scales	Mean	SD	Min.	Max.	Q1(0.25)	Median (Q2)	Q3(0.75)
Personal interest in music	3.585	0.949	1.5	5	3	3.5	4.25
Certificate career growth	3.569	0.904	1	5	3	3.75	4.25
Institutional motivation support	3.137	1.125	1	5	2.25	3.25	4
Self-efficacy effectiveness	3.034	1.260	1	5	2	3	4.25
Peer influence	2.666	0.987	1	4.5	2	2.5	3.25
Cultural influence	2.627	1.063	1	5	1.812	2.5	3.25
Engagement in music-specific PD	3.311	1.257	1	5	2.25	3	4.75

In the following Table 4, the latent variables were created through factor loading, and the correlation is presented as per SMART-PLS output. Table 4 shows that Personal Interest in Music and Certificate and Career Growth (r = 0.243) had a positive correlation.

Peer Influence was positively correlated with Self-Efficacy and Teach Effectiveness (r = 0.243), and Peer Influence was negatively correlated with Institutional Motivation and Support (r = -0.209). The latent variables did not have a notable correlation with any demographic variables. All correlations were moderate and at low levels, which signified a very low risk of multicollinearity.

Table 4. Correlation of latent variables and demographic variables.

ID	Variables	1	2	3	4	7	5	6	8	9	10
1	Age	1	-0.009	-0.014	0.368	-0.086	-0.049	-0.23	0.03	0.014	0.026
2	Background	-0.009	1	0.055	-0.224	-0.085	0.101	0.149	-0.081	0.034	-0.004
3	Gender: Female	-0.014	0.055	1	0.035	0.145	0.046	0.15	-0.029	-0.076	0.011
4	Experience	0.368	-0.224	0.035	1	-0.07	0.076	-0.077	0.173	0.03	0.179
5	Self-efficacy effectiveness	-0.086	-0.085	0.145	-0.07	1	0.038	0.192	-0.058	-0.007	-0.194
6	Certificate career growth	-0.049	0.101	0.046	0.076	0.038	1	0.2	-0.032	0.243	0.145
7	Cultural influence	-0.23	0.149	0.15	-0.077	0.192	0.2	1	-0.118	-0.031	0.124
8	Institutional motivation support	0.03	-0.081	-0.029	0.173	-0.058	-0.032	-0.118	1	-0.209	0.027
9	Peer influence	0.014	0.034	-0.076	0.03	-0.007	0.243	-0.031	-0.209	1	-0.084
10	Personal interest in music	0.026	-0.004	0.011	0.179	-0.194	0.145	0.124	0.027	-0.084	1
11	Engagement in music-specific PD	0.257	-0.163	0.221	0.662	0.18	0.196	0.044	0.278	-0.071	0.156

4.4. SEM PLS Model and Hypothesis Testing

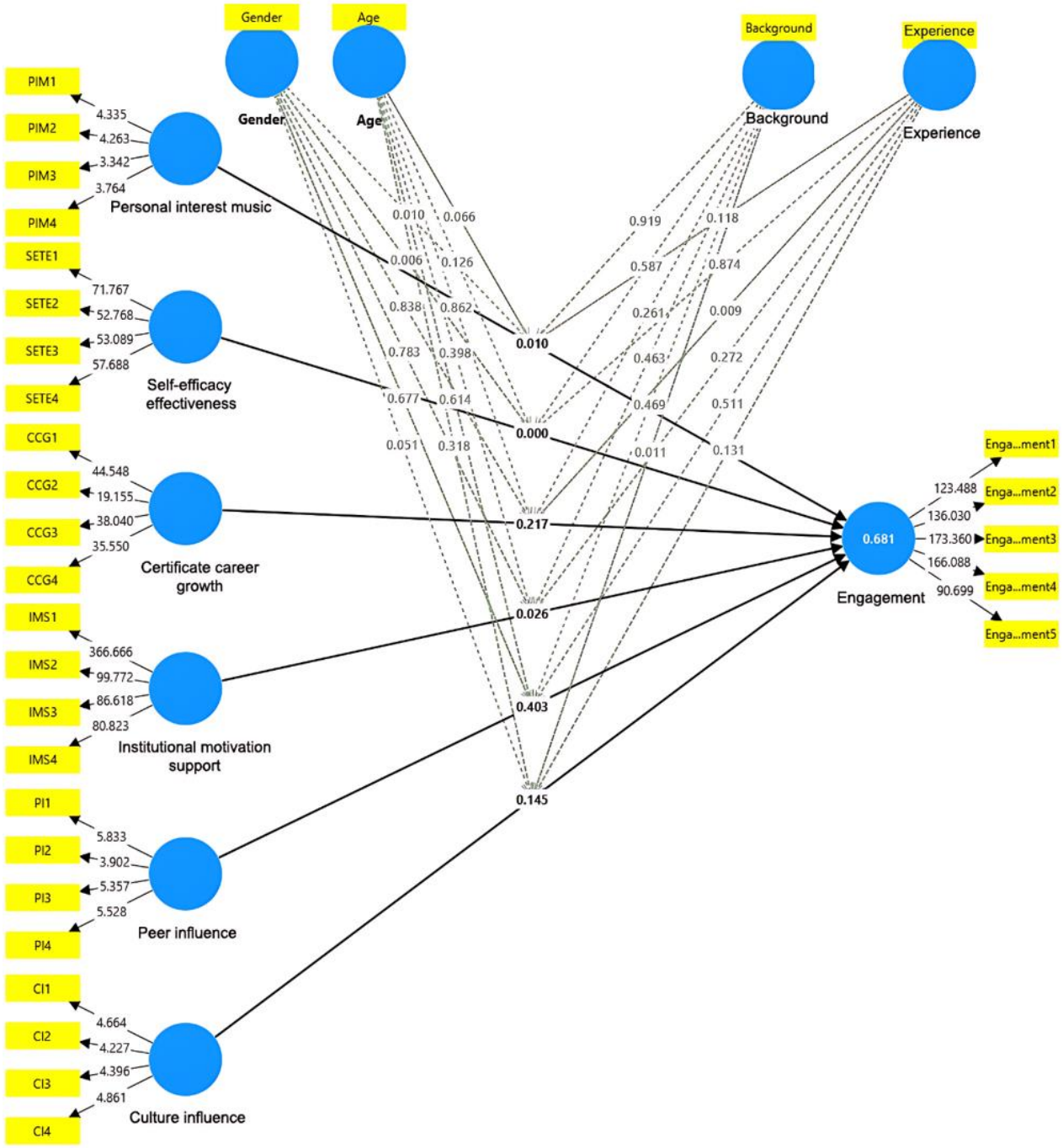

Figure 1. SEM-PLS model in SMART PLS.

The SEM-PLS Model presented in Figure 1 was developed in SMART PLS, considering moderation. The P-values of path coefficients are annotated in path connection lines, and the outer loadings are given in Figure 1. The effect of demographic variables, except for location, was analyzed; location is excluded since it would not have any significant contribution to the research purpose.

From the model, it was found that the moderating effect of demographic variables and six motivation-related latent variables could predict a 68.1% variance in engagement levels among kindergarten teachers in music-specific professional development programs (R-square = 0.681).

Table 5. SEM-PLS coefficient table.

DV: Engagement in music-specific PD	Coeff. (O)	Coeff. (M)	STDEV	T stat	P values
Age	0.01	0.034	0.064	0.16	0.873
Background	-0.094	-0.078	0.066	1.428	0.153
Gender (Female)	0.416	0.397	0.101	4.117	**0.000**
Experience	0.611	0.616	0.056	10.959	**0.000**
Personal interest in music	0.43	0.285	0.168	2.567	**0.010**
Certificate career growth	0.102	0.128	0.083	1.235	0.217
Self-efficacy effectiveness	0.513	0.435	0.118	4.339	**0.000**
Institutional motivation support	0.189	0.161	0.085	2.233	**0.026**
Cultural influence	-0.179	-0.108	0.123	1.457	0.145
Peer influence	-0.063	-0.059	0.075	0.836	0.403
Gender x peer influence	0.056	0.058	0.135	0.417	0.677
Gender x institutional motivation support	-0.028	0.007	0.102	0.276	0.783
Gender x personal interest music	-0.494	-0.349	0.191	2.587	**0.010**
Gender x self-efficacy effectiveness	-0.329	-0.273	0.12	2.735	**0.006**
Gender x cultural influence	0.26	0.194	0.133	1.95	**0.051**
Gender x certificate career growth	0.023	0.013	0.111	0.205	0.838
Age x personal interest in music	-0.154	-0.093	0.084	1.836	**0.066**
Age x institutional motivation support	-0.052	-0.059	0.061	0.846	0.398
Age x self-efficacy effectiveness	0.094	0.072	0.061	1.53	0.126
Age x cultural influence	0.063	0.038	0.063	0.999	0.318
Age x certificate career growth	-0.012	0.024	0.07	0.174	0.862
Age x peer influence	-0.047	0.01	0.093	0.504	0.614
Background x peer influence	-0.048	-0.009	0.066	0.725	0.469
Background x institutional motivation support	0.05	0.035	0.068	0.734	0.463
Background x certificate career growth	-0.058	-0.057	0.051	1.125	0.261
Background x personal interest music	0.008	0.007	0.075	0.102	0.919
Background x cultural influence	0.247	0.168	0.097	2.546	**0.011**
Background x self-efficacy effectiveness	-0.028	-0.023	0.051	0.543	0.587
Experience x certificate career growth	0.187	0.178	0.072	2.61	**0.009**
Experience x institutional motivation support	-0.059	-0.062	0.054	1.098	0.272
Experience x self-efficacy effectiveness	0.01	0.045	0.064	0.158	0.874
Experience x personal interest in music	-0.1	-0.079	0.064	1.561	0.118
Experience x peer influence	-0.045	-0.029	0.068	0.657	0.511
Experience x cultural influence	0.122	0.067	0.081	1.512	0.131

Note: "Coeff. (O)" Original sample coefficients, "Coeff (M) sample mean coefficients.

Table 5 presents the coefficients of the paths and their significance according to the SEM-PLS model and its results in SMART PLS. The table has been generated based on the model coefficient outputs in SMART PLS. As shown in Table 5, Self-Efficacy and Teaching Effectiveness ($B = 0.435$, $p < 0.05$) are the most significant motivators, exerting the strongest positive effect on engagement in music-specific professional courses among kindergarten teachers. Following this, Personal Interest in Music ($B = 0.285$, $p < 0.05$) has the second strongest positive effect on engagement. Institutional Motivation and Support ($B = 0.161$, $p < 0.05$) also demonstrate a significant positive influence on engagement. Conversely, Peer Influence and Cultural Influence have a direct relationship with engagement level, indicating their impact on the engagement process.

Within the demographic factors, Gender Female ($B = 0.397$, $p < 0.05$) and Experience ($B = 0.616$, $p < 0.05$) both had a positive and significant effect on engagement. Gender Female had a significant negative moderation effect on Personal Interest in Music ($B = -0.349$, $p < 0.05$) and on Self-Efficacy Effectiveness ($B = -0.273$, $p < 0.05$). This implies that being male enhances the effect of Personal Interest and Self-Efficacy Effectiveness on engagement. Having a prior musical background had a positive moderating effect on the influence of Cultural Influence ($B = 0.168$, $p < 0.05$), significantly strengthening the impact of Cultural Influence on engagement. Additionally, higher

experience had a positive moderating effect on Certificate Career Growth ($B = 0.178$, $p < 0.05$), indicating that greater professional experience in the teaching field significantly enhances the effect of Certificate Career Growth motivation on engagement.

5. FINDINGS

The study investigated the motivational factors driving kindergarten teachers in China to participate in music-specific professional development. The findings reveal both strengths and limitations in the current structure of music-specific professional development for kindergarten teachers. Intrinsic motivations, such as personal interest and self-efficacy, are crucial yet highlight the need for more robust institutional support. The factor analysis and descriptive statistics revealed nuanced insights into individual motivations, institutional influences, and demographic factors that collectively shape teachers' commitment to professional development in music.

Following the inference that the variables included in the study were reliable, the sample characteristics showed that most kindergarten teachers engaged in music-specific professional development (PD) were from Guangdong, Beijing, Shanghai, Zhejiang, and Jiangsu provinces, which are among the urban regions of China. Personal interest emerged as the most impactful factor, underscoring the significance of intrinsic motivation. Teachers who are passionate about music viewed professional development as more meaningful and aligned with their personal aspirations. However, the slightly lower mean score for career advancement and the lower mean score for institutional organization, in comparison to personal interest, indicate that teachers often pursued growth in this area based on personal enthusiasm rather than external encouragement.

Nonetheless, career advancement was found to be a major driver (mean 3.569). This suggested that teachers viewed professional development in music as a pathway for career growth. However, this factor also revealed an instrumental motivation, whereby involvement in music-specific PD was driven more by career benefits than a true passion for excelling in music education itself. Thus, professional development became a meaningful growth opportunity for teachers, rather than simply a career requirement. Most importantly, this dual motivation highlighted the need for institutions to create clear career pathways and recognize achievements in music education.

While these variables were found to be important, self-efficacy ($B = 0.435$, $p < 0.05$) was identified as having a significant influence on engagement in music-specific professional development. This finding highlights that teachers are more likely to commit to improving their instructional skills when they feel confident and effective in their roles. However, the data also indicates that male teachers experience a stronger influence from self-efficacy on their engagement compared to female teachers, suggesting that gender dynamics might affect how teachers perceive their capabilities and recognize their need for improvement in music education.

On the other hand, institutional support had a positive effect (mean = 3.137), and its influence was moderate compared to intrinsic factors like personal interest and self-efficacy. This suggested that although institutional backing played a role, it was not the primary driver. Critical reflection on this finding indicated that the support provided by institutions might be insufficient or poorly aligned with the teachers' actual needs, failing to foster an environment where professional development in music was fully endorsed and valued. The moderate impact of institutional motivation suggested that professional development in music might not be a priority within the educational framework, potentially limiting its appeal and accessibility. Strengthening institutional support, especially through structured incentives, might be essential to cultivate a sustainable commitment to music education.

Cultural influence and peer influence factors ranked comparatively lower in motivating teachers (with means of 2.627 and 2.666, respectively). This low influence may reflect broader societal attitudes toward music education, where it is not as culturally prioritized or where peer networks in music education are underdeveloped. A critical observation is that a lack of peer or cultural reinforcement could result in music-specific development being viewed as peripheral rather than integral to early childhood education. Developing a stronger professional community around music education within the kindergarten sector could encourage greater engagement among teachers.

In terms of investigating the demographic factors, the moderating role of these influences was found to have a moderate relationship between motivational factors and engagement. It was found that female teachers exhibited a higher overall engagement level, while male teachers were more driven by personal interest and self-efficacy. This implied that external or career-oriented motivations may hold greater appeal for female teachers within this sample. The observed gender-based differences in motivation highlighted the need for gender-sensitive approaches in music-focused professional development. Furthermore, teachers with prior music experience showed a heightened response to cultural influences on engagement. This implied that familiarity with music may increase receptiveness to cultural factors that can support music education. However, considering the limited impact of cultural influence on music-specific PD, there exists an opportunity to enhance societal support for music in early childhood education. It can be concluded that greater visibility of music-specific PD can be established if institutions collaborate with cultural organizations.

6. DISCUSSION

6.1. Primary Drivers Behind Kindergarten Teachers' Engagement in Music-Specific Professional Development

The extensive data analysis highlighted that motivational factors such as personal interest in music, potential for career growth, and peer and cultural influence were the main drivers of engagement in music-specific PD. This aligns with self-determination theory (SDT), which suggests that motivations rooted in passion and enjoyment promote greater engagement and dedication to professional activities (Power & Goodnough, 2018). For instance, Yang (2021) found teachers are often driven more by intrinsic motivation than external regulation. Teachers who are personally drawn to music likely see professional development as a way to connect their personal values with their careers.

Subsequently, music education programs that focus on creativity and personal expression can significantly drive teacher motivation by promoting autonomous goals. However, a strong emphasis on intrinsic motivation could limit engagement among teachers who may not feel a natural inclination toward music (Cho, Lee, & Lee, 2023). Thereby, the potential for career development highlights the influence of extrinsic rewards on professional engagement. The teachers are driven by organizational fairness and motivational drivers. Teachers view music certifications as valuable for career growth, potentially offering benefits like job stability, salary increases, or expanded responsibilities within their institutions. Teachers are more inclined to engage in professional development programs that boost their self-confidence. This finding aligns with Bandura's self-efficacy theory, which emphasizes how perceived competence can drive motivation and sustained effort (Bandura & Walters, 1977). Thereby, teachers who feel competent are more likely to adopt and integrate new pedagogical practices. However, this self-efficacy can be further driven by prior experience and gender. For instance, the data found that male teachers experience a stronger influence of self-efficacy on their engagement compared to female teachers. This finding aligns with prior studies that these factors influence the performance of self-efficacy (Beatson, Berg, & Smith, 2020). Thus, self-efficacy driven by demographic factors plays a significant role in driving engagement in music-specific PD. The study also found that peer networks and professional learning communities (PLCs) provide crucial support for teacher engagement. A prior literature review indicated that peer influence may also act as a potential motivator. Music-focused PLCs that include workshops and mentorship opportunities not only build teaching skills but also foster a culture that values music in early childhood education. Additionally, by enabling teachers to engage with music in ways that align with their interests, these programs can promote a more profound, lasting commitment to music education.

6.2. Influence of Motivational Factors on Kindergarten Teachers' Engagement in Music-Specific Professional Development

Extending on the primary drivers, the data from the survey provided distinct insights into the influence of motivational factors. Among all the variables of motivators, Self-Efficacy and Teaching Effectiveness had the most influence on engagement in Music-Specific PD, followed by Personal Interest in Music. Interestingly, experiences had varied effects on engagement in music-specific PD based on gender. This is a new perspective that might require

further investigation. However, existing studies found that gender, teaching level, primary teaching method, faculty rank, and teaching experience motivate teachers to participate in PD (Martin, Polly, Coles, & Wang, 2020). This highlights that an environment with tools for increasing self-enhancement, prior experience, and personal interest can motivate kindergarten teachers to participate in music-specific professional development (PD).

Additionally, peer influence and cultural influence have a direct relationship with engagement levels. These findings align with existing studies, for instance, Dille and Røkenes (2021) argued that the fear of losing face often drives teachers to participate in PD programs. This kind of peer influence in a given environment has an instrumental role in scaffolding for PD among teachers. Again, this scaffolding was stated to be influenced by attitude and self-interests (Dille & Røkenes, 2021). This again substantiates the findings of this study, especially the personal interest.

Similarly, the implication of cultural influence has been observed in other PDs, especially in linguistic classrooms. The responses from the main cities of China reflect the cultural influence in response to the National Basic Education Curricular reforms (Duan, 2021). The cultural influence is a significant force, especially among music teachers in countries or societies under the influence of Confucian culture. Additionally, it aligns with the Conceptual PlayWorld (CPW) implementation to create a playful learning environment that inculcates Chinese culture. This also reflects the role of institutional support, which has been found to be moderately influential in the current study. Thus, cultural influence plays a significant role as a motivational factor for kindergarten teachers to engage in music-specific professional development (PD).

6.3. Recommendations for Enhancing the Engagement in Music-Specific Professional Development

Based on the findings and discussion, some recommendations can be made to enhance the engagement of kindergarten teachers in music-specific PD. Firstly, professional development (PD) programs should create environments that encourage exploration and autonomy. This would enable teachers to connect music learning with their personal interests and teaching contexts and apply the same in their classrooms. Since intrinsic motivation plays a vital role in fostering teacher engagement, bringing joy and fulfillment to their professional development experience. Secondly, addressing intrinsic needs through autonomy and creativity will support teachers driven by personal interest, while clear career pathways and skill-building appeal to those with career-oriented goals. Most importantly, for PD to significantly impact professional growth, it must offer visible career benefits, such as certifications and leadership opportunities in music education, while feeling valued and recognized within their institutions (Bauer, 2020). Thus, comprehensive PD initiatives should integrate intrinsic, career, and social dimensions to create a supportive, dynamic space where teachers can build music-related skills.

7. CONCLUSION

The study aimed to investigate the motivational factors for Chinese kindergarten teachers' engagement in music-specific professional development. The data analysis revealed significant insights into both the drivers of engagement and the influence of these motivational factors. Personal interest in music stood out as the strongest motivator, indicating that teachers are often driven by a genuine passion for the subject. Additionally, career growth and certification opportunities are also significant motivators, as many teachers view music-specific professional development (PD) as a pathway to professional advancement. Lastly, self-efficacy was another important driver of engagement in professional development (PD). Since heavy reliance on intrinsic motivation may limit engagement for teachers, extrinsic motivation can successfully drive initial engagement through professional development. The shortcoming of extrinsic factors in sustaining long-term participation, if career rewards are limited, can be complemented by true passion for the subject. Thus, educational institutions should structure PD opportunities with tangible career benefits, such as certifications that support teachers' growth goals and contribute to a recognized skill set in music education. This should also inculcate the value of different PD approaches to address varying teacher backgrounds, including differences by gender and years of experience. In terms of institutional support, it is crucial

for maintaining teacher engagement in music-specific professional development. Thereby, collaborative structures, such as professional learning communities, further bolster engagement by building a sense of community around music in early childhood education. When school administrators actively support music in early education and provide resources, it reinforces the idea that music holds value, motivating teachers to continue their learning. Thus, the active role of the institution is also necessary for creating sustained involvement by making music a shared professional priority.

The practical implications of the current study are significant. Recognizing teachers' achievements through certifications or formal endorsements can appeal to career-oriented motivations. Moreover, schools and educational leaders should design programs that balance intrinsic and extrinsic motivators. Incorporating active learning components, such as workshops and mentorship, can also boost teachers' confidence in their music teaching skills, thereby supporting sustained engagement. Thus, helping teachers integrate music effectively into early childhood education can aid in their engagement in professional development.

The study laid the foundation for future research to further explore the motivational factors. Longitudinal studies might reveal how intrinsic interest, self-efficacy, and career incentives contribute to ongoing engagement in music education as they evolve over time. Additionally, examining the role of institutional culture in prioritizing music-specific professional development could yield valuable strategies for fostering supportive educational environments. These future studies would be crucial in shaping more effective and inclusive PD frameworks, ultimately benefiting teachers and enriching early childhood education.

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Institutional Review Board Statement: The study involved minimal risk and adhered to ethical guidelines for social science fieldwork. Formal approval from an Institutional Review Board was not required under the policies of Universiti Utara Malaysia, Malaysia. Informed verbal consent was obtained from all participants, and all data were anonymized to ensure participant confidentiality.
Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
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