

# CORRELATIONAL ANALYSIS BETWEEN PRESCHOOL CHILDREN'S EMOTIONAL COMPETENCE AND HOME NURTURE ENVIRONMENT

Xia Xiao Fei and Wei Hui Suan

**Abstract**—Previous studies have demonstrated that the development of emotional competence in early childhood is critical for future achievement, and children's emotional competence is closely related to their parenting environment. Currently, children's emotional and behavioural problems continue to be a serious concern and are frequently reported. The objective of this study is to explore the correlation between home nurture environment and children's emotional competence through a cross-sectional investigation. Using a stratified sampling method, we conducted a retrospective survey on 3-6-year-old children from ten kindergartens in Shangrao City, employing the Children's Emotional Regulation Scale (CEAS-P) and the home nurture Environment Scale for 3-6-year-old children to evaluate their emotional competence and home environment. Correlation analysis is the primary research method employed in this study, with the aim of identifying specific relationships between home environmental factors and children's emotional competence. The ultimate goal is to provide parents with direct and effective suggestions for improving their children's emotional competence.

**Keywords** – Emotional Competence, Home Natural Environment, Correlation Analysis

## I. INTRODUCTION

The preschool period is a critical period for the development of young children's brains, during which their imaginative thinking develops rapidly and their abstract thinking gradually takes shape. This is a critical period for children's emotional development, which is crucial for their social-emotional development, and a good development of their emotional abilities during this period can lay the foundation for their future physical and mental health. (Saarni Saarni 1999; Wang Xiaojun 2002)

### *1.1 The development of emotional competence in early childhood is crucial to future achievement*

Research has shown that children's emotional competence is associated with a variety of positive outcomes, including better social relationships, academic success and overall well-being. The development of emotional

competence helps young children understand and express their own emotions, while also being able to better understand the emotions of others. This allows them to build positive interpersonal relationships with others, effectively resolve conflicts, and demonstrate the ability to cooperate and empathize (Thorlacius & Gudmundsson 2019).

Emotional competence promotes the development of children's social functioning, and children with greater emotional competence have higher self-confidence, they tend to have better social interaction skills and positive peer relationships are able to manage emotions and attention effectively, as well as positive emotion regulation, which helps young children to better focus, handle challenges and stress, and improve learning outcomes; (Denham, 2006; Fabes, Gaertner, & Popp 2006). Conversely, children with weaker emotional capacities are more likely to develop emotional and behavioural problems (Eisenberg, Spinrad, & Eggum (2010), and children's emotional competence has a long-term impact on their contribution to social competence. Early skills to recognize facial behaviours, emotions, deficits, and expressions may help prevent low social functioning (Slovak, et al. 2021). In addition, emotion regulation is an important risk factor for childhood psychiatric disorders and is a major target for the prevention and treatment of childhood mental illness. (Qayyum, Razzak, Moustafa, & Mazher 2022).

### *1.2 Children's emotional competence is closely related to parenting environment*

The key developmental tasks in early childhood are emotional communication and maintaining positive peer interactions, and emotional competence is a key factor in these developmental tasks. A large body of research has shown that there is a close relationship between emotional competence and the family environment.

The link between parenting style and child development has been repeatedly demonstrated in decades of research, with parenting style playing a major role in children's social and emotional development (Mortazavizadeh, Göllner, & Forstmeier 2022). Diana Baumrind was the first to summarize four classic parenting styles, namely authoritative, authoritarian, permissive, and neglectful (Baumrind, 1971). Baumrind, 1971). Numerous studies have since shown that authoritative parenting is considered to be an effective way to promote children's social-emotional development. Parents who use more authoritative forms of discipline have children who are more emotionally regulated and adolescents who exhibit fewer problem behaviours and

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are more confident, autonomous, pro-social, cooperative, etc. (Jabeen, Anis-ul-Haque, & Riaz, 2013). Authoritative parenting is characterized by a high degree of parental responsiveness, where parents engage and care for their children in an age-appropriate manner. Parents clearly tell their children what they need and expect, but they justify these demands with a wealth of reasons to help their children learn to internalize important values (Baumrind 2012).

In addition to parenting style, studies have confirmed that parent-child attachment security has a significant effect on preschoolers' emotion regulation, and even that the combined effect of parent-child attachment security is a better predictor of emotion regulation than the specific contribution of each parent (Fernandes et al. 2021) Divna Haslam et al. found that the consistency of parents' cultural values also influenced children's emotional adjustment from a culturally diverse perspective, not just parenting style Haslam, Poniman, Filus, Sumargi, & Boediman (2020). Cultural differences in social-emotional development are an important aspect to consider in early childhood development research. Appropriate social behaviours and emotional expressions depend heavily on the cultural norms and values of that country. In East Asian cultures, there is little emotional interaction and communication in public settings, and harmony and neutrality are among the core values of East Asian cultures. However, in other cultures, the cultivation of emotional expression may be highly encouraged. Understanding and interpreting children's emotions and behaviours cannot be done without the context of the children's culture itself (Yong, Lin, Toh, & Marsh, 2023).

Amanda N, et al. found, after a long longitudinal study, that predictors of changes in emotion regulation and long-term resilience in early childhood were: within-child (temperament), child's nearest environment (parenting), and family-embedded environment (environmental risk), and examined predictors of these trajectory groups in terms of child temperament, parenting behaviour, and environmental risk. Child negative emotions, positive and negative parenting styles, and environmental risk were found to predict group membership (Noroña Zhou & Tung, 2021).

## II. PROBLEM STATEMENT

### 2.1 What is wrong with the child's emotions?

Zhang Jingli et al. 2019 investigated children in Yangzhou, China, using the SDQ scale and found that the detection rate of psychological abnormalities in preschool children was 6.4%, peer interaction problems were the most prominent 17.8% pro-social behaviour 9.4%, and emotional problems 5.7% (Zhang Jingli et al. 2019). The following year Liu Wenwen et al. The following year, Liu Wenwen et al. investigated children aged 3-6 years in 11 cities in the middle and lower reaches of the Yangtze River in China and found similar results, with a detection rate of 9.5% for abnormal emotional symptoms, 24.5% for abnormal peer interactions, and 10.2% for abnormal pro-social behaviour in preschool children in the middle and lower reaches of the Yangtze River. And a variety of health hazardous behaviours in preschool children were

found to be associated with emotional behaviour problems. (Wenwen Liu et al. 2020).

A larger survey revealed that among individuals aged 6 to 16 years in five regions of China. 17.6% of children and adolescents were identified as having behavioural and emotional problems. Among them, the prevalence of behavioural and emotional problems was higher in the boys' group than in the girls. The prevalence was higher in the higher age group than in the lower age group. The prevalence of behavioural and emotional problems in children and adolescents has been increasing over the past 30 years (Cui et al. 2021). The prevalence of behavioural and emotional problems in children and adolescents is increasing over the past 30 years (Cui et al. 2021).

Worldwide, emotional and behavioural health problems in children and adolescents remain serious, and a survey in Brazil showed that the prevalence of emotional and behavioural problems was 30.0% for boys and 28.2% for girls, and that family economic status and parents' mental health had a significant impact on children's mental health (Bach et al. 2019).

### 2.3 Research gap

The current issue of healthy development of children's emotional competence has received extensive attention from researchers, and previous studies have focused on the influence of a single aspect of the family environment on the development of emotional competence, such as cultural background, parenting style/type, and parent-child attachment. Then, what about the overall family parenting environment is associated with preschoolers' emotional competence? How does the family parenting environment affect children's emotional competence development? Further research is needed.

This study used the CEAS-P scale, a scale that evaluates positive child characteristics or behaviours, to measure and evaluate the emotional competence of healthy, normal children. This is a scale designed to observe changes in the emotional behaviour and abilities of normal children, which is more conducive to reflecting and evaluating the emotional development of healthy, typical children. The Family Nurture Environment Scale (FNES) was used to measure and evaluate the family environment of preschool children. Chinese and Western cultures have different cultural backgrounds, and family nurturing styles, parents' cultural values, and family atmosphere are different, so the FNES is based on the local Chinese culture. "Therefore, the Family Parenting Environment Scale (FPE), which is based on the local Chinese cultural background, is more consistent with the local cultural characteristics.

In addition, the Natural Family Environment Assessment Scale (NFEAS) records the support, stimulation, and experiences of children in the family environment from the perspective of children's experiences, emphasizing daily parenting behaviours and parenting styles, and it is not limited to objective family hardware conditions or subjective parenting types, and the results of the study will be helpful to all types of families and children.

## 2.2 Significant of the study

This study helps to understand the development of emotional ability of children aged 3-6 years in Shangrao, China. By comparing and discovering the level of emotional ability in different countries and regions, it can help to objectively assess and evaluate the level of emotional ability development of children. To discover the differences in children's emotional development and provide effective suggestions for local children's emotional development. Comparing the differences in the level of parenting environment of different families and comparing and analyzing the differences in parenting environments of different regions and types of families, the results of the study will benefit children and families living in small and medium-sized cities in China.

This study could discover the association between home environment and emotional competence of young children, find the relationship between home parenting environment and emotional competence, and address the question of whether the primary parenting environment in early childhood predicts emotional competence of young children. Discovering the relationship between home environmental factors and dimensions of emotional competence provides parents with direct and effective suggestions for improving the emotional competence of their children.

## III. LITERATURE REVIEW

### 3.1.1 The theory of emotional competence

Emotional intelligence has not been proposed for a long time, but it has been widely followed and discussed both in scientific research and in popular opinion. The theories of emotional intelligence that are still widely cited and discussed in the field of scientific research can be divided into the following three types: the ability model represented by Shaviro and Mayer; the trait model represented by Fernam and Petridis; and the mixed model represented by Baran. Mayer and Salovey were the first to propose the model of emotional intelligence, which is also the model most recognized by psychologists and researchers. They explicitly defined emotional intelligence through the framework followed by psychologists as; emotional intelligence is an ability rather than a trait to distinguish between emotional intelligence and personality (Abdullah, Omar, & Abdul Rahman, 2015). It is a "competence-oriented" model of emotional intelligence, which considers emotional intelligence as the ability to operate on emotions and feelings.

Mayer, Salovey in 1990 defined emotional intelligence as "emotional intelligence is a part of intelligence that includes the ability to distinguish and regulate emotions between oneself and others, and to use emotional information to guide thinking. The competency model includes three areas: expressing and evaluating emotions, managing emotions, and using emotions." Over the next seven years, two scholars expanded the dimensions of the model to include four dimensions: perceiving, evaluating, and expressing emotions, emotions for thinking, understanding and analyzing emotions and applying emotional knowledge, and reflective emotion

management that promotes the development of emotions and rationality.

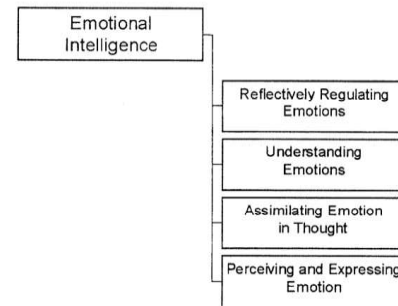


Figure 1: Emotional Intelligence Mayer, CARUSO, & SALOVEY (1997)

With regard to emotional competence, Saarni first introduced the concept of "emotional competence" in his book *Social-Emotional Development* and in 1999 summarized young children's emotional competence into eight sub-competencies, namely, the ability to perceive one's own emotions, the ability to recognize the emotions of others, the ability to empathize and sympathize, the ability to use emotional language, the ability to distinguish between internal emotions and external expressions, the ability to cope with stressful emotions and situations, the ability to communicate using appropriate emotions, and emotional self-efficacy (Saarni, 1999). Denham defines emotional competence as the ability to express, recognize, and regulate emotions. Emotional expression refers to the ability to experience and express a variety of emotions in an age-appropriate and socialized manner. Emotion regulation refers to the ability of children, with adult support, to gradually learn to suppress irrelevant emotions, maintain or enhance relevant and beneficial emotions, and diminish relevant but unhelpful emotions. Emotional knowledge refers to the ability to identify and understand one's own and others' emotional states (Denham, 2006).

Although there is still no unified consensus on the definition of the concept of emotional competence, researchers generally agree that Emotion competence is a subset of emotional intelligence, so Mayer and Salovey's model of emotional intelligence can be used as the theoretical support for this study.

### 3.1.2 The theory of home nurturing environment

Belsky (1981) first proposed family systems theory and argued that the study of family environment should take into account not only the objective family environment but also the subjective family environment. Ma and Min (1990), a domestic scholar, also divided family environment into two variables: subjectivity and objectivity. According to Wu (1992), subjective variables generally refer to factors in the family that are related to various subjective conditions such as parents' perceptions, behaviours, and volitions, such as educational styles, educational expectations, and mutual interactions among family members, etc.; objective variables generally refer to factors that are related to objective conditions such as parents' social status, identity, and occupation, such as family structure, family economic status, and parents' education level, etc.



Objective variables generally refer to factors related to objective conditions such as family structure, family economic status, parental education, etc. Family subjective variables are more reflective of parents' perceptions and expectations, while family objective variables are generally unchangeable within a certain period of time and do not depend on human will.

Bronfenbrenner proposed the ecosystem theory in terms of the spatio-temporal relationship between the environment and the child, and he viewed the child developmental environment as a complex system with a nested structure, the core of which is the child and its surroundings in the order of inner microsystem (family), middle system (kindergarten, school, peer, neighborhood, etc.), outer system (parents' occupation, community services, social development status, etc.) and macrosystem (ideology, cultural practices, etc.); during infancy and early childhood, the family is the main place where children live and grow, and parents dominate most of their children's activities.

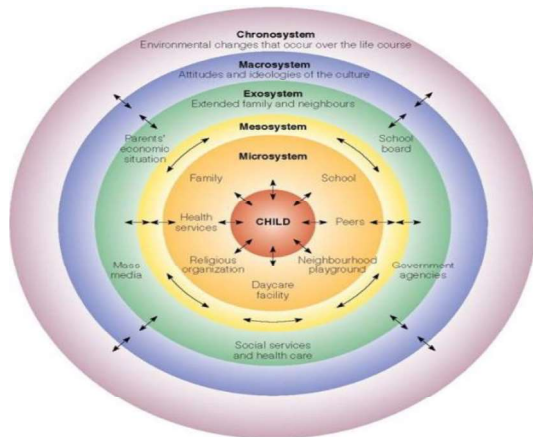


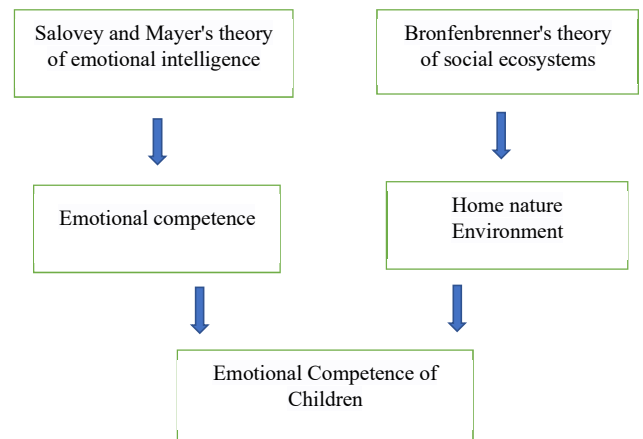
Figure 2: Social Ecosystems Forward by Bronfenbrenner (1986)

Therefore, it is of great importance to study the influence of family parenting environment on children's early intellectual development and emotional-social development (Shelton, 2018).

Therefore, this study defines family environment as the various conditions and factors in which a person grows and lives in a family. It includes the relationship among family members, family culture, family values, family atmosphere, material conditions of the family, and living environment.

Through a literature review of theoretical foundations, this paper uses Mayer and Salovey's theory of emotional intelligence as a foundational theory for studying emotional competence to explain the developmental levels of several key emotional competencies in young children through a competence perspective. Bronfenbrenner's social-ecological theory is used to explain the systematic influence of family environment on children's development and to analyze the degree of influence of family environment on children's emotional competence. Therefore, the theoretical structure of this study is shown below.

### Theoretical Framework



### 3.2 Literature of children's emotional competence

#### 3.2.1 Developmental patterns of children's emotions

Beatriz Lucas-Molina et al. conducted a 3-year longitudinal study of 108 preschoolers using the Emotional Understanding Test (TEC) and the Emotion Regulation Checklist (ERC) to explore the relationship between emotion knowledge and emotion regulation. Results suggest that emotion regulation is an ability that precedes and predicts emotional knowledge in preschool, the Lucas-Molina, Quintanilla (Sarmiento-Henrique, Martín Babarro, & Giménez-Dasí, 2020). Amanda N et al. found that children's negative emotions, positive and negative parenting styles, and environmental risk predicted group membership, and that these early childhood trajectories predicted children's resilient functioning in fifth grade. In addition, Amanda N examined developmental patterns of emotion regulation in early childhood: three trajectories were included: the child's internal (temperament), the child's immediate environment (parenting style), and the environment embedded in the family (environmental risk) They are predictors of change and long-term resilience and are influenced by systems at different levels. These different systems represent three approaches to early intervention (Noroña Zhou & Tung, 2021).

#### 3.2.2 Common emotional expressions and influencing factors in children

Grenell investigated the relationship between ego-dancing and individual differences in executive functioning (EF) and emotional control (EC). It was shown that self-direction can improve children's self-regulation in a variety of tasks, and the findings suggest that self-direction is particularly effective in frustrating tasks for children with poor self-control and that self-direction is particularly effective in vulnerable groups (Grenell et al. 2019) Sætren, S. S. et al. conducted a multilevel investigation of children's and adolescents' resilience scales with the aim of examining whether personal resilience is related to self-reported emotion regulation (personal resilience is a personal attribute related to the process of successful adaptation to the environment in the face of adverse conditions). Results showed that: Protective measures related to personal

resilience were associated with self-reported adaptive emotion regulation and outcomes (Sætren, Sütterlin, Lugo, Prince-Embury, & Makransky, 2019).

Lee, H. J. 2014 reported on the relationship between children's active and passive assertiveness and peer acceptance: active assertiveness was found to be positively associated with peer acceptance, but not with social interest. In contrast, reactive assertiveness was positively associated with peer acceptance only when social interest was high. When social interest was low, it was inversely related to peer acceptance (Lee, 2014). Shyness is characterized by experiencing high levels of fear, anxiety, and social evaluative attention in social situations and is associated with an increased risk of social adjustment difficulties. Previous research has shown that shy children have difficulty regulating negative emotions, such as anger and disappointment, which may lead to problems interacting with others. There are positive moderating relationships between shyness and subsequent pro-social and social withdrawal behaviours. Child gender further moderated these associations, so that the model predicting social withdrawal behaviour was stronger in boys. These results extend our understanding of early social withdrawal in shy children (Hipson, Coplan, & Séguin, 2019)

Chneider, R et al. (2018) explored whether specific emotion regulation processes differentially predicted specific anxiety symptoms in children and adolescents across time. Results: After controlling for depression, age, and gender, all three processes predicted physical and social anxiety, and all but non-acceptance predicted separation anxiety. Difficulties with emotional unconsciousness and goal-directed behaviour predicted subsequent changes in social anxiety. This suggests that emotional dysregulation may be a potential risk factor for the development of anxiety symptoms in adolescents. Targeted maladaptive reduction strategies may benefit prevention or intervention efforts Schneider, Arch, Landy, & Hankin, 2018). Secrist et al. analyzed childhood nightmare triggers and tested potential overlapping predictors of nightmare distress and severity, concluding that anxiety, trauma history, dissociation, and baseline vagal tone accounted for 39% of the variance in nightmare disturbance and that anxiety and dissociation were positive predictors of nightmare distress (Sætren, Sütterlin, Lugo, Prince-Embury, & Makransky, 2019).

### **3.2.3 Methods of testing and evaluating children's emotional competence**

Over the past two decades, the focus and content of questionnaires measuring children's emotional and behavioural functioning have gradually shifted from a purely pathological or risk-based focus to a more competency-based assessment. Based on different theoretical models of emotion, researchers have developed different tests of emotional intelligence. Proponents of performance-based measures of emotional intelligence argue that emotional intelligence is a subset of intelligence and therefore can only be assessed through performance and objective or competency-based assessment elements; (Mayer, Caruso, & Salovey (1999); Roberts, Zeidner, & Matthews (2001) . The ability model

theory of emotional intelligence tests measures the best behavioural performance of the individual and will find that the results of the measure are highly correlated with cognitive ability. The Childhood Emotional Adaptation Scale Preschool (CEAS-P) (Thorlaciuss & Gudmundsson (2019) : This is the most recent scale developed by Thorlaciuss et al. in 2017, the Children's Emotional Adjustment Scale Children's Emotional Sexuality Program is specifically designed to observe normal variability in children's emotional behaviours and abilities in factors reflecting healthy or typical emotional development. It is used to measure the emotional competence of children aged 3-5 years in the key emotions of anger, fear and shyness. It is a new behavioural rating scale completed by parents. The CEAS-P has 29 items covering 3 dimensions, including Temperament Control, Social Assertiveness, and Anxiety Control. By measuring preschoolers' emotional functioning through three competency-based factors (temperament control, social assertiveness, and anxiety control), the CEAS-P uses positive item language based on healthy emotional development in preschoolers, avoiding an overemphasis on negative aspects that magnify emotions and behaviours, and avoiding exclusion of test subjects and schools, making it more appropriate for measuring and evaluating children's emotional competence.

Domestic scholars translated and tested the reliability and validity of the parent-rated Childhood Emotional Adjustment Scale Preschool (CEAS-P) among Chinese preschoolers (Wu, Yang, Zhu, & Li, 2020) . The results showed that the three-factor model of the CEAS-P in a sample of Chinese preschool children had good fit, and the total scale and the subscales had high internal consistency reliability (0.77-0.93) concluded that the revised preschool version of the Children's Emotional Adjustment Scale has good reliability and validity and is suitable as a test and evaluation tool to assess the emotional competence of young children in China. Therefore, the scale was selected as a test and evaluation tool for preschool children's emotional competence in this study.

### **3.2.4 Relationship between emotional competence and home environment**

One study comparing differences in parenting styles, and young children's emotional competence across cultural backgrounds found that different cultural values of parents in individualistic cultures (Australia) and collectivistic cultures (Indonesia) affect parenting styles and children's emotional competence outcomes (Haslam, Poniman, Filus, Sumargi, & Boediman, 2020). Sun et al. explained the importance of emotional display rules and argued for the interplay between parental socialization practices and children's individual characteristics in shaping children's development, with parental socialization practices helping children balance emotional self-expression and consideration of others' feelings. (Sun, Lam, & Chung, 2021) . In addition, other studies with Chinese grandparents have concluded that grandmother's parenting style is significantly associated with children's internalizing problems, and this relationship is mediated by perceived parental psychological control and children's

emotional regulation (Li, Ahemaitijiang, Han, & Jin, 2018).

Carla Fernandes et al. 2021 examined the contribution of early parental attachment to preschool children's emotion regulation. Results showed that parent-child attachment security had a favorable effect on preschoolers' emotion regulation and that the combined effect of parent-child attachment security was a better predictor of emotion regulation than specific parental contributions (Fernandes, et al. 2021). Early parent-child emotion talk is one way to understand a child's emotions. Individual differences in the quantity and quality of early parental emotion talk on children's emotional expression were found to be positively associated with parental use of positive emotion talk and parental use of negative emotion talk with child use of negative emotion talk. In addition, parental use of positive emotion talk was positively associated with children's scores on the Emotional Intelligence Test (Cooper, 2022).

Roberts Max Z. Morris et al. 2022 used a family influence model to describe smartphone interference with the development of emotion regulation, thereby illustrating smartphone interference with the development of an integrated situational perspective. Trends in smartphone use and socioeconomic differences in emotion regulation function deserve more attention (Roberts, Flagg, & Lin, 2022) Parenting stress during the COVID-19 outbreak explored the risk factors associated with parenting stress and the impact on children's emotion regulation in families with different socioeconomic risks. The general average levels of parenting stress and children's emotional regulation did not reach clinical levels compared to Italian standards. Family disruption predicted higher levels of parenting stress, which, in turn, was associated with lower effectiveness of children's emotion regulation through the mediating role of parental involvement (Spinelli, Lionetti, Setti, & Fasolo, 2021).

In terms of intervention research, Darling, K. E et al. 2019 provided parents with regular, deliberate social and emotional learning, and parents reported that CD PEC changed their perceptions and practices for managing children's challenging behaviours, improved parent-child relationships, and reduced children's behaviour problems (Darling et al. (2019) ...The Bølstad study concluded that emotion-focused parenting interventions helped improve parents' emotional guidance and their assessment of their child's externalizing problems, while children's self-regulation mainly showed normative developmental improvements (Bølstad et al. 2021) Studies of emotion-coaching parent-child interventions tailored to the characteristics of Chinese parents have demonstrated that caregivers' positive parenting behaviours and their use of cognitive reappraisal in emotion regulation contribute significantly to the development of emotionally competent preschoolers (Qiu, 2020).

### 3.2.5 Methods for assessing children's home environment

Home Environment Observation Scale (HOME) (Totsika & Sylva, 2004). This is a descriptive scale designed to provide a systematic assessment of the environment in which children are raised and cared for.

The main goal of this instrument is to measure the quality and quantity of stimulation and support that children receive in the home environment in a natural setting. It focuses on the child's experience in the home environment, where the child acts as an active recipient and receives input from objects, events and transactions related to the home environment. It is developed from a practical experience from the perspective of protecting and promoting children's cognitive development. 3-6 years old version of HOME contains 55 items divided into 8 factors, including learning objects, verbal information, physical environment, parental response, cognitive facilitation, communication style, variety of activities and acceptance/punishment. the scale emphasizes the experience, support received in the home environment from the child's perspective and is It is widely used in the field of child development and has been tested and promoted by many studies. It is also more relevant to this study, but the accuracy of the data collected by the translated questionnaire may be biased due to the differences in cultural backgrounds and language differences between China and the West.

The Family Natural Environment Scale for 3–6-year-olds (He Shousen et al. 2009) This is a localized scale developed by Chinese scholar Dr. He Shousen with reference to the concept of HOME scale according to the local Chinese cultural background. The original entries of this scale are derived from the knowledge and experience of child care and early education experts, and the reliability and validity of the scale have reached a high level after modern statistical and measurement analysis. It has been tested by numerous studies in China. The scale consists of 53 entries divided into 6 factors: language/cognitive information, emotional warmth/self-expression, social adjustment/self-management, intervention/punishment/ neglect, activity variety/play participation, and home environment/atmosphere. There are similarities between the scale entries and HOME, but there are also significant differences. The cultural differences between Chinese and Western societies determine the differences in family parenting styles and environments. Raising children in a family environment influenced by social, economic, and cultural traditions, and directly introducing Western scales to evaluate domestic children would have significant family environment bias and uncertainty; therefore, the Family Natural Environment Scale for Ages 3-6 was used as the instrument in this study to measure and evaluate the family parenting environment of preschool children.

### 3.3 Research Conceptual Framework

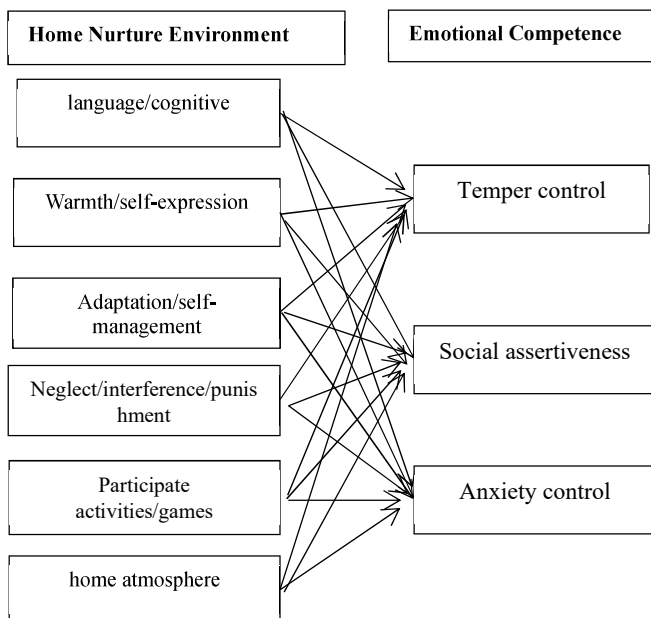
A literature review of past research reveals that key emotions such as self-control, shyness in social interaction, assertiveness, and anxiety control in young children have been focused on by researchers, and certain research findings have been obtained to provide a clearer understanding of the developmental trajectory of emotional competence. However, most of the existing studies have focused on the effects of affective dysfunction, specific emotional or behavioural problems (e.g., social emotions), and few have evaluated the level of emotional competence development and influencing



factors in most normal children from an overall developmental perspective. In addition, in terms of the effects of family environment on children's emotional competence, most studies have started from a single-family environment (e.g., parenting style, mother-child attachment, family cultural perceptions, etc.) Few studies have assessed the influence of the family environment on the emotional competence of young children by considering the family environment as a natural whole and by using the concept of an ecosystem.

Therefore, in this paper, we use the Culturally Appropriate Family Nurturing Environment Scale and the Childhood Emotional Adaptation Scale (CEAS-P), which assesses the developmental level of emotional competence of normal children, to explore the contribution of the overall natural family nurturing environment to children's overall emotional competence.

### Conceptual Framework



### 3.4 Research Hypothesis

There is a significant association and effect of the overall natural home nurturing environment with children's overall emotional competence.

There is a significant association and effect between the independent variables of all six factors in the overall home natural environment and the three key emotional dependent variables of emotional competence.

The overall home environment predicts children's overall emotional competence

Some factors in the home environment predict child temperament control

Some factors in the home environment predict children's social confidence

Some factors in the home environment predict child anxiety control

## IV. METHODOLOGY

### 4.1 Study design

This study design and research plan is as follows (see figure):

Step 1: To formulate the research question and find reports related to the research topic by reviewing the literature to understand the current status of children's emotional problems and local differences. Summarize the historical literature related to emotional competence abilities and discover the factors influencing the development of emotional competence in preschool children.

Step 2: Review the history of the literature for established theories in the area of emotional competence and children's home environments to Salovey and Mayer's theory of emotional intelligence and Bronfenbrenner's social-ecological theory were used as the theoretical basis for this study.

Step 3: Within the framework of Salovey and Mayer's theory of emotional intelligence, find an appropriate and research-tested valid scale, the Childhood Emotional Adjustment Scale (CEAS-P), to test and evaluate preschool children's emotional competence. Within the framework of Bronfenbrenner's socio-ecological theory, the home Natural Environment Scale (FNES), a culturally appropriate and tested scale for assessing the overall home environment of children, was found.

Step 4: The data obtained from the quantitative tests were compiled and statistically analyzed to evaluate the development level of Chinese children's emotional ability, to find the relationship between the natural home environment and preschool children's emotional ability, and to further analyze how the home environment affects children's emotional ability.

### 4.2 Research site

**Population:** The city of Shangrao was used as the research investigation area for this study, and parents of preschool children living in the urban area of Shangrao and its suburbs were used as the respondents. Shangrao city is located in the northeastern part of Jiangxi province, China, with the third largest city economy in the province and a population of about 1 million, which is ranked around 100th among cities in China, making it a typical small and medium-sized city in China. The results of the study can benefit families living in similar cities by investigating and assessing the emotional competence and home environment of preschoolers living in small and medium-sized cities.

**Sampling:** When sampling social science research surveys, it is generally accepted that the factor models that emerge from large-sample factor analysis are more stable than small samples, and the larger the number of question items for the factors that need to be extracted and the more factors are expected, the larger the number of subjects needed. When multivariate parametric statistics are required, it is acceptable to investigate a sample size greater than 10-15 times the independent variable DeVellis (2004), gender, age, and urban-rural differences also need to be considered during the analysis of this study. 53 entries for the home Natural Environment Scale

and 29 entries for the CEAS-P scale, so a test sample size in the range of 820-1230 cases is appropriate.

A stratified sampling method was used to sample kindergartens according to their distribution areas. The survey found that there were more than 160 kindergartens in Shangrao City, and 10 kindergartens were selected as the scope of the survey according to the sample size determined by the study, including five kindergartens in the suburbs and five in the urban areas, and kindergartens in the urban areas were selected from the core urban areas of Shangrao City, including two in Xinzhou District, two in Guangxin District, and one in Jingkai District. Five kindergartens in the suburbs were selected to the nearby township centers. All parents of children aged 3-5 in the selected kindergartens were surveyed. Except for parents who did not want to cooperate with the survey, 1225 questionnaires with effects were finally obtained. The sample size was 14.9 times the sum of the two questionnaire entries, a reasonably large sample size that helps to ensure the reliability of the study.

#### 4.3 Data Collection

After identifying the kindergartens to be surveyed, the survey was scheduled for mid-November to mid-December 2022, with a controlled time frame of about one month to complete. The first step is to contact the directors or teachers in charge of these 10 kindergartens to explain the purpose and significance of this study, getting their support is the key to the success of this survey, and to edit the electronic version of the questionnaire before this work is carried out and keep it ready. The second step is to train the kindergarten teachers, detailing the value of this study and clarifying the benefits that participation in the study will bring to the children and families. Kindergarten teachers acted as relayers to distribute the questionnaire to the children's parents, telling them the purpose of the survey so that parents would support the study as much as possible by actively cooperating and voluntarily filling out the questionnaire. In the third step, the questionnaire was distributed and collected by using the electronic platform of Questionnaire Star. The questionnaire was completed electronically, and the background of the submitted questionnaire could be viewed instantly, and the ID and time of filling out the questionnaire could be viewed to ensure the authenticity and uniqueness of the questionnaire. The distribution and collection of questionnaires were done by Jusei Sports Club using the process of conducting physical fitness tests with each kindergarten, which facilitated the distribution and collection of questionnaires for this study. In the fourth step, the electronic version of the questionnaire data from Questionnaire Star, transcribed to Excel for simple editing, classification, and calculation, and then the organized data were imported into SPSS software for backup.

### V. FINDINGS

The data from the pre-survey of 76 parents showed that the Cronbach's alpha coefficient of the home Natural Environment Scale was 0.949, which was greater than 0.8, indicating good reliability, and the KMO coefficient of the

validity test was 0.764, which was close to 0.8, indicating that the validity test was good and acceptable. The reliability test Cronbach's alpha coefficient of the CEAS-P is 0.96 and the validity test KMO coefficient is 0.855, both of which are greater than 0.8, indicating that these two questionnaires have good applicability and can be used as a test evaluation tool in this study.

In addition, a significant correlation was found between preschool children's emotional ability and their natural home environment through pretesting, with a correlation coefficient of 0.655, indicating that the research hypothesis 1 is basically valid, and it is necessary to conduct a comprehensive large sample test and analysis to deeply verify the intrinsic relationship between natural home environment and preschool children's emotional ability.

### VI. LIMITATION OR SUGGESTION FOR FURTHER STUDIES

This study was conducted on children aged 3-6 years old in kindergartens in urban and rural areas of Xinzhou District, Shangrao City, and the study area is relatively limited, so that the results of the joint survey in multiple cities will more accurately reflect the current situation and regional differences in the emotional abilities of young children in China.

The present study is a cross-sectional survey study, retrospective survey of the child's past month's parenting environment, completed by the parents. A common shortcoming of cross-sectional data for analysis is that there is a lack in verifying causality. This requires researchers to further strengthen the longitudinal design of early emotional competence development in the future in order to more accurately find evidence of the extent to which the natural home environment contributes to children's emotional development.

In addition, the scope of this study was to explore the influence of the natural environment of the home on emotional competence. However, children aged 3-6 years are already out of their families and already spend a large part of their time in kindergartens and social environments outside of the home, and kindergarten instructional management and social environmental factors are not taken into account; what are their effects on children's emotional competence? Is there an interaction between the home environment and the kindergarten instructional management and socio-cultural environment? Further research is warranted.

### ACKNOWLEDGEMENT

This work was supported by Ju Xi Sports Co and Guan Ying Rong.

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