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Promoting Positive Development Among Rural, Left-Behind Youth in China: A Mixed-Methods Approach

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By

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2022

Approval of the Dissertation Committee

This dissertation has been duly read, reviewed, and critiqued by the Committee listed below, which hereby approves the manuscript of Yaqiong Wang as fulfilling the scope and quality requirements for meriting the degree of Doctor of Philosophy in Psychology with a concentration in Positive Developmental Psychology.

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Abstract

Promoting Positive Development Among Rural, Left-Behind Youth in China:

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by

Yaqiong Wang

Claremont Graduate University: 2022

The positive youth development (PYD) framework has shifted our attention from a deficit-based approach to a strength-based perspective to studying adolescent development (Lerner, 2005; Lerner & Steinberg, 2009). Integrating both the PYD and resilience science frameworks, this study developed and validated an instrument for assessing the individual strengths and environmental supports that enable a positive developmental trajectory for rural, left-behind youth (LBY) in China, a vulnerable group of youth who are endangered by prolonged parent-child separation. This newly developed instrument contains two scales: the Individual Strengths (IS) Scale and the Environmental Supports (ES) Scale.

Utilizing an exploratory sequential design, this study was conducted in three steps: (1) conducting qualitative interviews to inform the creation of survey items, (2) developing an instrument based on qualitative findings and existing literature, and (3) conducting quantitative analyses to validate and revise the survey instrument.

During the qualitative investigation, semi-structured interviews were conducted with 22 teachers and LBY. Thematic analysis revealed five individual strengths (i.e., *achievement motivation*, *self-control*, *positive coping*, *academic engagement*, and *prosocial orientation*) and

four categories of environmental support (i.e., *social support*, *caring and belongingness*, *rules and high expectations*, and *extracurricular activity participation*) that were critical for the positive development among Chinese LBY. An original item pool was created based on qualitative findings and existing literature, and an iterative process of reviewing and revising items through expert reviews and field tests followed to refine the factor structure and individual items in both the IS and the ES scales. The finalized IS Scale contained 75 items that assessed eight individual strengths: *achievement pursuit, self-control, positive coping, internal locus of control, hopeful future expectation, intention to contribute, social competencies,* and *obedience*. The finalized ES Scale contained 91 items that assessed five categories of environmental support: *social support, trust and acknowledgement, rules and role models, positive climates, and extracurricular support*. Both scales were validated through quantitative analyses.

During the quantitative investigation, a series of exploratory factor analysis (EFA) were conducted to reduce the number of items used to capture the constructs of individual strengths and environmental supports emerged from the qualitative study. The EFA process resulted in a 65-item scale for individual strengths with seven subscales: *goals and future expectation, academic engagement, intention to contribute, prosociality, positive coping toward parental migration, positive coping,* and *academic motivation*. Overall, the scale accounted for 74% of the total variance. The analyses resulted in a 68-item scale for environmental supports with eight subscales: *school support, support of migrating parent(s), positive community and societal environment, support of caregiver(s), extracurricular support, family support, peer support,* and *support of peer relatives*. The scale accounted for 70% of the total variance. An independent sample was recruited to validate the factor structures emerged from EFAs through confirmatory factor analysis. The 68-item measure of environmental supports was supported, while the 65-

item measure of individual strengths was slightly adjusted to a 63-item scale. The Cronbach's α of each scale and subscale ranged from 0.88 to 0.98, indicating strong internal consistency reliability. Both individual strengths and environmental supports were positively correlated with the PYD total score, PYD subscale scores, academic achievement, and subjective wellbeing, and were negatively correlated with externalizing problem behaviors.

The findings were discussed and the implications of these findings for future PYD research among Chinese LBY were addressed. This research effort has the potential to expand our understanding of PYD as it applies to a new group of young people as well as to yield an important research tool for policy makers, educational practitioners, and youth workers who want to implement practices and policies that promote PYD among rural LBY in China.

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Chapter 1: Introduction

Even though a secure attachment with parents has long been considered essential for a child's healthy development, each year roughly 61 million children under 18 years old in rural China endure a prolonged separation from their parents (All China Women's Federation, 2013). This group is called rural, left-behind children as they are left alone at their rural homes when one or both of their parents migrate to urban areas in search of work (Ge et al., 2019; Luo et al., 2009). Over the past four decades, hundreds of millions of Chinese peasants have migrated from rural areas to urban centers for economic reasons (Luo et al., 2009). However, due to China's restricted household registration system and the lack of financial resources available to migrant workers, young children are usually left in rural hometowns (Ge et al., 2019). Rural left behind children account for 37.7% of rural children and 21.9% of all children across the country. Within this left-behind group, more than one third of the young people are adolescents between 10 and 18 years of age. Left-behind adolescents represent a vulnerable population given that they undergo a critical transitional period between childhood and adulthood without adequate parental support. Henceforth, this group will be referred to as "left-behind youth" (LBY).

A predominantly negative view of Chinese rural LBY has been prevalent among the public and research community. Existing literature has largely focused on understanding the psychopathological outcomes of prolonged parent-child separation, such as depression and anxiety (Fellmeth et al., 2018; Liang et al., 2017). Rural LBY are portrayed as deficient in a range of social, emotional, and academic outcomes compared with non-left-behind peers (Ge et al., 2019). Limited research has examined the experiences of rural LBY from a strength-based perspective.

Shifting from a deficit-based view, researchers began to focus on the resilience science framework to understand the positive adaptions of Chinese rural LBY. Resilience research has identified important factors that enable young people to bounce back from challenges. Factors that support resilience often include social support within and outside the family (Fan et al., 2018; Xiao et al., 2019), positive family characteristics (Liu et al., 2020; Xiao et al., 2019), and individual strengths (Fu & Law, 2018; Hu, 2019). However, resilience researchers mainly focus on alleviating or minimizing negative outcomes, rather than promoting positive ones.

The burgeoning field of positive youth development (PYD) provides another framework for studying rural LBY in China; however, here the research has been limited and the results have been mixed. Many studies find that compared to non-LBY in rural areas, LBY fare worse for a range of positive developmental outcomes, including subjective well-being (Zhou et al., 2018) and satisfaction with family and school (Su et al., 2017; Ye et al., 2020). However, a smaller portion of studies suggest there are insignificant differences between the two groups with regards to indicators of positive development (e.g., Murphy et al., 2016). The mixed findings suggest that rural LBY may possess unique assets that help them thrive. Several researchers have proposed that these unique assets may include being emotionally close with parents (Niu et al., 2020), stable parental marital status (Guo et al., 2019), and social support from nonparental caregivers, teachers, and peers (Chai et al., 2019). In addition to examining the environmental supports for rural LBY, researchers have also examined positive characteristics of thriving LBY. These include gratitude (Niu et al., 2020), future orientation (Su et al., 2017), and an internal locus of control (Wen & Lin, 2012).

Existing research on resilience and PYD among Chinese rural LBY represents a groundbreaking shift from a passive, negative view of adolescents' shortcomings to a more

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hopeful view of adolescents' strengths. However, little is known about how rural LBY thrive. For instance, first, the development of rural LBY involves complicated interactions between individual characteristics and environmental factors, but lacking is a comprehensive investigation of the individual strengths and environmental supports that enable positive adaptions for LBY. Second, researchers have tended to focus on *either* the resilience *or* the PYD framework. While each framework has its merits, applying one framework cannot address both protection and promotion of rural LBY. In short, both frameworks may be necessary. Finally, although research has identified a few protective and promotive factors for rural LBY, the field lacks a validated, culturally sensitive measure that can assess multiple assets for this group. Taken together, to advance our understanding of rural LBY through a PYD lens, the field needs a measure of rural LBY's assets.

This cross-sectional, exploratory sequential study was designed to develop an instrument that measures the assets among Chinese rural LBY, including these youth's individual strengths and environmental supports. In addition to integrating internal and external assets, this study examined external support from multiple sectors, including family, school, and community. The investigation is framed by the relational developmental systems (RDS) metatheory (Lerner, Lerner et al., 2015), integrating both the resilience and PYD frameworks. The RDS metamodel conceptualizes resilience and PYD as mutually beneficial individual-context relations that support positive developmental trajectories (Lerner et al., 2013). The present study aimed to identify and measure the individual and environmental components of these individual-context relations that enable positive adaptations among LBY. Given their large population and considerable developmental issues, supporting Chinese rural LBY in their pursuit of becoming healthy, engaged citizens is more important than ever. This study's focus on LBY's assets was

likely to provide insights into what can be done and changed to promote healthy development among these youth. The study has the potential to create a common language that facilitates a public consensus on what LBY need to succeed. It will also leverage collective effort from multiple sectors to promote optimal development among these youth.

Rural Chinese Left-Behind Youth

Rapid urbanization and migration in China mean drastically different developmental experiences for Chinese rural LBY and other youth groups (Cai & Wu, 2019). However, all youth in China share a similar cultural legacy and tend to be influenced by the same historical and social changes. To understand the development of Chinese rural LBY, it is important to examine the sociocultural context of this group.

Adolescent Development in China

Chinese adolescents are inevitably influenced by the cultural legacy that has thrived for thousands of years in China. Rooted in Confucian philosophy in a collectivistic context, the concept of "self" in China is defined in a relational context (Lam, 1997; Lam, 2005). This relational aspect of the self influences nearly all aspects of Chinese adolescent development (Lam, 2005). Specifically, relationships define young people's existence and serve as both the beginning and end goal of personal development (Lam, 1997). Among all the social relationships young people have, family relationships appear to play the most central role (Lam, 1997). Chinese youth are expected to demonstrate *filial piety*, which entails being obedient to parents, living up to parents' expectations, taking care of parents when children get older, and bringing honor to the family (Chuang et al., 2018; Lam, 2005; Shek et al., 2013). The social interactions within the family, which encourage a hierarchy and mutual dependence, shape interpersonal relationships outside of family (Lam, 1997).

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Although collective dependence is emphasized in Chinese society, it cannot be achieved without individual pursuit and thriving. Confucianism establishes a set of moral and social standards that require individuals to live virtuously. Virtuous living is achieved through self-reflection and self-correction (Chen et al., 2012; Shek et al., 2013). Confucianism outlines four step-by-step goals for achieving morality and building a harmonious society, namely self-cultivation ("*xiu shen*"), regulating the family ("*qi jia*"), governing the country ("*zhi guo*"), and bringing peace to the world ("*ping tian xia*"; Chinese Text Project, 2006). According to the Confucian legacy, self-cultivation entails adopting moral values and appropriate conduct (Lam, 2005; Shek et al., 2013). Indeed, education in ancient China emphasized character development. Numerous virtues derived from Confucianism serve as character strengths for Chinese people (Shek et al., 2013). These traditional values reflect the qualities expected from youth who showed optimal development in ancient China.

Chinese youth today continue to be shaped by traditional cultural values, but also by more modern ideologies from China and from the international community (Chen et al., 2012, 2017). Chinese youth today selectively embrace traditional values while they embrace advanced technologies and more modern ideologies. According to a large-scale report on the development of children and adolescents in China, youth in modern society have diversified value systems (Sun, 2010). They identify with both traditional values as well as with modern ideologies.

In addition to cultural values, Chinese youth are shaped by influences from multiple levels of developmental contexts. One of the most important contexts that shape Chinese youth is that of the family. Families are responsible for raising young people, or "*guan,*" which refers to concern, love, and involvement in child-rearing (Chao, 1994). An old saying emphasizes the role parents play in the lives of their youth: "*It's the father's duty on the son's mistake*" (Xu, 1990).

Parents' roles are reflected in parents' investment and involvement in their children's education (Chao, 1996; Lam, 2005; Zhang et al., 2019). Parents expect their children to excel academically, and they engage actively in supporting this outcome (Wang et al., 2019).

In addition to spending time with family, Chinese adolescents also spend an extended amount of time in school. All Chinese youth today are expected to take the national college entrance examination ("*gao kao*"). This exam plays the single most important role in deciding whether youth can attend college and, if they can go to college, which college they can attend. Educational achievement, including attending college, is recognized as a pathway for upward social mobility, especially for those born into lower social statuses (Lam, 2005; Ye et al., 2019; Zhang et al., 2019). A student's preparation for the exam begins in childhood (Ye et al., 2019). Schools in China bear the primary responsibility of preparing students for the exam. Although such a strong focus on educational achievement has the advantage of enhancing students' academic competence (Chen et al., 2017), it has the drawback of not focusing attention on Chinese students' psychological well-being or social-emotional health (OECD, 2019; Schleicher, 2019).

Communities represent another influential developmental context for Chinese youth. Compared to Western youth, Chinese adolescents tend to have weaker connections to their communities (Wang et al., 2022). This is due, in part, to the fact that Chinese youth spend a lot of time on academics in and outside of school (Li, 2018; Ye et al., 2019). As a result, they have little time left over to spend in their communities (Li, 2018). Perhaps as a result of this, few community-based programs are available to Chinese adolescents (Shek et al., 2017). Most after-school activities focus on academic learning and interest cultivation (e.g., playing the piano).

Finally, the ideologies and mainstream culture set the tone for Chinese adolescents' developmental contexts. Establishing noble goals, practicing, innovating, and striving for success are important values in modern China (Jin, 2020). Young people in China today are encouraged to revitalize the nation while they pursue their personal dreams (Jin, 2020). These social and cultural influences have important implications for adolescent development in China.

Development of Rural Left-Behind Youth in China

In addition to the general influences of the Chinese sociocultural context, the LBY in rural China are affected by the historical trend of migration from rural areas to urban centers. This large-scale migration can be attributed to economic reforms, relaxation of migration restrictions, and expanded urbanization that got underway in the 1980s (Chai et al., 2019; Ge et al., 2019; Luo et al., 2009; Wang & Mesman, 2015). As a consequence, the LBY in rural areas have special developmental experiences featured by parental absence.

Due to parental absence, many rural LBY have somewhat aloof relationships with their migrating parent(s). Parental migration can involve both-parent migration and single-parent migration. Therefore, rural LBY usually receive four types of guardianship provided by: (a) a single parent, (b) grandparent(s), (c) other relatives and friends, or (d) the youth him or herself (Li & Yuan, 2014; Zhang & Yuan, 2014). The most common guardians are single parents and grandparents (Wang & Mesman, 2015; Li & Yuan, 2014). Most parents send money home to their children and families in the rural areas, but they may only return home once or twice a year (Duan et al., 2014; Ye & Pan, 2011). In situations like this, the parent-child relationship is maintained through remote communication. Academic performance is typically parents' highest concern, followed by children's' health and safety, and their mood and other daily living concerns (Duan et al., 2014; Hu, 2019; Ye & Pan, 2011).

Besides living without their parent(s), rural LBY also tend to live in less developed regions (Zhang & Yuan, 2014). The overall SES of this population is relatively low, which has a negative impact on educational resources and opportunities. For instance, rural LBY were found to have a much lower entrance rate into high school education compared to non-left-behind peers (Duan et al., 2014; Lv, 2014). This is important as it indicates that most rural LBY are already living in less-than-optimal contexts.

In fact, rural LBY have been labeled "at-risk" by the Chinese public and the research community (e.g., Dong & Yuan, 2013; Su et al., 2012). Although the phenomenon of rural LBY emerged in the early 1980s, it did not draw research attention until the 1990s (Ge et al., 2019). In a review of the research on rural LBY, Ge and colleagues summarized three major paradigms that outline the course of investigations on this population since research began (2019). A majority of the studies reviewed below employed school-based (or class-based) convenience sampling procedure to recruit Chinese rural youth, and non-left-behind youth in the same school or class were used as a reference group for comparison.

The first paradigm, a diagnostic approach, relied on the overly simplified cause-effect assumption about the negative consequences of parent-child separation (Ge et al., 2019). Researchers who adopt this approach have revealed how rural LBY are psychologically and behaviorally different from non-LBY in rural China: compared to Chinese youth growing up with their parents, rural LBY are more likely to report being lonely, anxious, and depressed and less likely to report being engaged in school or excelling academically (e.g., Dong & Yuan, 2013; Su et al., 2012; Su et al., 2017; Sun et al., 2015; Tao & Zhou, 2012; Wen & Lin, 2012; Zhang et al., 2011). Compared to their peers, rural LBY also report having engaged in more problem behaviors, such as lying and breaking the law (Liu et al., 2007). Meta-analytic reviews

confirmed that parental migration was detrimental to youth's emotional well-being. In a review of 111 studies in low-income or middle-income countries (over 90% were done in China), Fellmeth et al. (2018) found that left-behind children and adolescents had a 52% increased risk of depression, a 70% increased risk of suicidal ideation, and an 85% increased risk of anxiety compared with non-left-behind peers. Meta-regression showed that the mean age had no significant effects on the mental health outcomes. Similarly, Liang and colleagues (2017) performed a meta-analysis on six studies and showed that rural LBY had significantly higher levels of depression than non-left-behind youth. Moreover, rural LBY showed less optimal social functioning. A systematic review of 13 studies on both left-behind children and adolescents revealed that rural LBY who were in seventh grade or higher demonstrated worse social adaptation than those with non-migrating parents (Zhang et al., 2018). Finally, Wang and Mesman (2015) conducted a meta-analytic comparison of rural youth left behind (age range 3-18) and their non-left-behind peers across multiple domains of functioning. They found that rural LBY fared worse than their peers in emotional, social, and school functioning, and this effect was not moderated by age. To sum up, researchers who adopt the first paradigm have succeeded in portraying rural LBY as "problematic kids" who demonstrate negative attributes in a range of developmental outcomes. However, this line of research was rarely theory-driven (Ge et al., 2019).

The advanced diagnostic approach, which emerged as the second research paradigm, examined rural LBY in a more comprehensive, nuanced manner (Ge et al., 2019). Researchers who adopt this paradigm consider numerous factors, utilize more sophisticated research methods, and explore the mechanisms through which parental migration influences youth development. An important contribution of this approach was the use of theoretical frameworks, such as the

ecological perspective and ego resilience, in the exploration and interpretation of the rural LBY phenomenon (Ge et al., 2019). Applying theoretical frameworks enabled a broader focus on socially oriented variables in human ecology; it also casted doubt on the negative premise of the consequences brought by parental migration.

A family's socioeconomic status (SES) is one of the most prominent social factors examined under this paradigm. Researchers revealed that the rural LBY were approximately 30% more likely to stay in school than those with parents who remained at home (Yang & Duan, 2008). A possible explanation was that migrant parents were able to improve the family's financial conditions and contribute to their children's education. Indeed, a study found a positive association between parental migration and the child's educational aspiration, with family income being a significant covariate and mediator (Wen et al., 2015). However, the increased monetary resource was not an absolute advantage. For instance, the number of siblings within a family determines how many educational opportunities each child can take advantage of; this is true for rural LBY and youth of non-migrants (Yang & Duan, 2008). Research also suggests that the negative influences of parents' physical absence might outweigh the positive influences of increased financial benefits for the development of rural Chinese youth (Tao & Zhou, 2012; Wen & Lin, 2012). Closer attention to social factors and family dynamics enables the exploration of the underlying mechanisms of positive development for rural LBY.

The final paradigm, the sociological framework, was more refined and elaborate. This framework integrated sophisticated research designs, nuanced theoretical frameworks, and novel as well as broader social dimensions related to the phenomenon of rural LBY (Ge et al., 2019). Representative studies under this framework have examined (1) the influences of child-parent separation on rural LBY's psychological well-being and school performance, (2) ego- resilience

of rural LBY, (3) more social factors, and (4) the developmental trajectory of rural LBY based on life course theory. For instance, a more nuanced picture of the trade-offs between parental absence and financial resources revealed that increased income had a positive effect on school performance only when income increased to a high level (Tao & Zhou, 2012). Different from the first two approaches that primarily focused on factors and consequences related to left-behind phenomenon, the sociological approach placed the left-behind experience within the broader perspectives of societal structures and labor reproduction (Ge et al., 2019).

The left-behind phenomenon involves the interplay of numerous factors from multiple levels of social contexts. Its complexity enables different developmental trajectories among rural LBY. Factors that have contributed to such substantial individual variability include the youth's characteristics, the migration type, the onset time and duration of the separation, and the frequency of contact between the child and the migrating parent(s) (Duan et al., 2014; Wen & Lin, 2012).

Perhaps as a reflection of the larger cultural trends, several studies suggest that parental migration has more negative influences on left-behind boys than left-behind girls. Tao and Zhou (2012) revealed that when both parents were absent, adolescent boys tended to do worse academically compared to both peers from non-migrant family and those from one-parent migrant family; this effect was not significant among left-behind adolescent girls. In another study, Wen and Lin (2012) found that left-behind boys fared significantly worse than girls for positive health behavior, satisfaction with life and study, and school engagement. Both studies focused on rural LBY in middle childhood and adolescents (aged 8-11). Despite these research efforts, relatively few studies have been conducted to understand the gender differences in the

development of rural LBY. More research is needed to explicitly compare left-behind girls and boys in various developmental domains.

In addition to considering gender differences, research has also considered age differences. A larger body of research indicates that age is an important moderator in rural LBY's development. In the study conducted by Wen and Lin (2012), adolescents (aged 12–18), compared to children of mid-childhood (aged 8-11), were less likely to feel satisfied with life and study. They also failed to engage in positive health behaviors as often as younger ones did, and they reported lower levels of school engagement. The authors suggested that left-behind adolescents might have higher risks of suboptimal development compared to left-behind children in middle childhood. Moreover, the rate of LBY staying and completing school decreased substantially in middle school (Luo et al., 2009). Some researchers suggested that rural LBY had better educational opportunities than non-LBY at the compulsory education stage, especially in middle school (Duan et al., 2014; Yang & Duan, 2008). However, it was not until high school when they demonstrated severe educational problems, such as delaying enrollment in school (Duan et al., 2014; Lv, 2014). Findings like these suggest that left-behind adolescents deserve special attention to support their normative development.

In addition to considering features of the individual, research has also considered features of parental migration. For instance, the type of parental migration has been found to have a differential impact on the development of rural LBY. While some studies have found that youth who were left behind by both parents generally had the least favorable developmental outcomes (e.g., Su, et al., 2012), other researchers suggest that mother-only migration is more harmful than father-only and two-parent migration (Murphy et al., 2016; Wen & Lin, 2012). Research generally concludes that youth who have mothers who migrate tend to fare worse than those who

have fathers who migrate (e.g., Wang & Mesman, 2015). It seems that father-only migration may be the least harmful migration pattern. Findings like these may indicate that mothers play a more critical role in supporting children's healthy development whereas fathers are more capable of improving the family's financial status and therefore contributing to their children's education.

Although rural LBY have been studied for more than two decades, substantial gaps remain in the literature, especially in understanding the development of LBY from a positive perspective. Indeed, mixed findings emerged when comparing rural LBY with non-left-behind counterparts. While most studies find worse outcomes (e.g., emotional functioning) for rural LBY, some studies have revealed insignificant results or even favorable findings for rural LBY (e.g., 5C PYD; Wen et al., 2015). This is likely the result of an unbalanced focus on negative outcomes, methodological constraints, and inadequate attention to individual variability (Li & Yuan, 2014; Luo et al., 2009; Zhang et al., 2011).

First, evidence of the negatively valanced research starts with labeling rural LBY as "at-risk population" or "problem youth" (Li & Yuan, 2014; Luo et al., 2009). Therefore, there has been a lack of attention to examine whether and how these youth demonstrate positive developmental outcomes related to thriving, such as PYD features (Wen et al., 2015). Second, the lack of mature and consistent measurement tools, longitudinal studies, and sophisticated statistical methods cast doubt on the quality and credibility of some studies of rural LBY (Luo et al., 2009; Zhang et al., 2011). Third, many studies overlooked the individual variability within the LBY group, and the migration type is one such variable. For instance, father-only migration is likely to bring financial and educational support for LBY who can be cared for by stayed mother. These added benefits of migration may promote LBY's positive development whereas the non-left-behind counterparts cannot obtain these advantages (Murphy, 2022).

The existence of contradictory results may reflect the incompatibility of relying on a deficit-based view while ignoring this groups' potential protective factors (Luo et al., 2009). Some researchers suggest that not all rural LBY are negatively impacted by parental migration; some cope effectively with challenges and flourish despite being left behind (Luo et al., 2009). Thriving rural LBY may access unique environmental resources and possess individual strengths, such as resilience, that allow them to thrive in adverse conditions. However, little is known about how these LBY thrive. Current research rarely identifies rural LBY's strengths and capacities. For these reasons, it is imperative to study LBY from a strength-based perspective. Beyond examining the risks and behavioral problems faced by rural LBY, there is much to learn about the critical factors that allow them to demonstrate normative development despite their less-than-optimal circumstances.

Positive Development of Rural LBY

RDS Metatheory

Both PYD and the contemporary resilience research are frequently framed by the RDS metatheory (e.g., Lerner et al., 2013; Masten, 2019). Consistent with this theoretical framework, human development is conceptualized as dynamic, coactional systems that integrate multiple levels of organization within human ecology, including biological, behavioral, social, cultural, and historical processes (Lerner, 2005; Lerner, Hershberg, et al., 2015; Lerner, Lerner, et al., 2015). The fused, mutually influential individual-context relations (i.e., developmental regulations) are central to this theoretical framework. In particular, the mutually beneficial exchanges between individuals and contexts constitute adaptive developmental regulations that provide mechanisms of positive development across adolescence (Lerner, Lerner, et al., 2015; Lerner, et al., 2016).

In this regulatory process, three elements enable plasticity and the potential for positive developmental trajectories: (1) self-organizing and self-regulating individuals who actively contribute to adaptive developmental regulations, (2) assets and resources from the external environment that support PYD, and (3) the embedded coactions between individuals and contexts (Lerner, Lerner, et al., 2015; Lerner et al., 2016). From this perspective, youth are viewed as "resources to be developed" (Roth & Brooks-Gunn, 2003), and assets embedded in the youth's environment serve as the engines for positive development. The dynamic interchanges between the individual and context (person ← → context) and among different levels of context (level 1 ← → level 2) enable substantial plasticity for youth development (Lerner et al., 2016). History or temporality is integrated within the levels of organization comprising the ecology of human development (Lerner, Lerner et al., 2015; Lerner et al., 2016). Therefore, there is always some potential for systematic change and plasticity for human development. Such potential for plasticity provides the bases for inter- and intraindividual developmental variability that can result in multiple pathways for positive development among diverse groups of youth.

The potential for plasticity in the systematic person-context relations represents a fundamental strength of human development (Lerner, 2005; Lerner, Lerner et al., 2015). While this plasticity can lead to either positive or negative developmental changes, the PYD conception of adolescent development focuses on the diverse pathways that lead to positive developmental trajectories (Lerner, Lerner et al., 2015). Many researchers who study adolescent development have now adopted the PYD perspective that seeks to promote positive changes across adolescence through collaborations with practitioners and policymakers (Lerner, 2005; Lerner & Steinberg, 2009).

Taking a strength-based approach, the PYD framework shifts our understanding of adolescent development from deficit remediation to strength promotion. It transforms our conception of "good" young people from those who are free of problems to those who develop their strengths and use their talents to make a personally meaningful difference in the broader world (Lerner, 2005; Lerner et al., 2018). This new lens has been inspired by work conducted by researchers and practitioners and by the convergence of theory and research regarding human plasticity (Lerner, 2017; Lerner et al., 2018). Western scholars have made substantial progress in understanding and promoting PYD, and their work has important implications for practice and policy.

To date, Western researchers have proposed several influential models of PYD. Some of these include the Five Cs model (Lerner, 2005), the Developmental Assets model (Benson, 2007), and the 15 positive constructs (Catalano et al., 2002). One of the most studied PYD models is the Five Cs model (Lerner, 2005). The Five Cs model posits that PYD is a manifestation of five attributes: *competence, confidence, character, connection,* and *caring*. Youth who are developing in healthy ways demonstrate the Five Cs, and as a result, they are likely to exhibit a sixth C, namely *contribution* (Lerner, 2005). In other words, an important sign of positive development, according to this model, is the young person's active engagement in contributing to the development of oneself, one's family, one's community, and one's civil society. A key assumption of this PYD model is that optimal youth development can be achieved when youth's strengths are aligned with environmental resources in families, schools, and communities. The mutually beneficial relations between individual strengths and ecological assets serve to promote PYD, which enhances youth's positive contributions and reduces their

negative or risky behaviors. This model has been tested widely and has received substantial support (Lerner, 2005; Lerner, Lerner et al., 2015).

In addition to identifying indicators of PYD, researchers in this vein have also identified the individual and the contextual components of the adaptive developmental regulations that provide the basis of positive development. Benson's (2007) developmental assets model identifies 20 internal characteristics and 20 external supports, the more of which are present, the more likely the young person is to be thriving. These 40 developmental assets were grouped into four internal asset categories: academic engagement, positive identity, positive values, and social competencies, and four external assets categories: support, mattering and belonging, boundaries, and extracurricular activity participation (Syvertsen et al., 2019). Existing research also identified other key individual-level components such as intentional self-regulation, hopeful future expectations, school engagement, and spirituality (Gestsdóttir & Lerner, 2007; Gestsdóttir & Lerner, 2008; Lerner et al., 2018; Schmid et al., 2011). The developmental contexts, such as home, school, and community, provide rich ecological resources that facilitate youth development. Common contextual-level components of adaptive developmental regulations include a safe and caring environment, positive relationships with adults who provided ongoing support to youth, developmentally appropriate boundaries and expectations, and engagement in meaningful activities or programs (Berry et al., 2018; Eccles & Gootman, 2002; Gomez & Ang, 2007; Pittman et al., 2001; Theokas & Lerner, 2006). These findings have important implications for interventions and policies dedicated to promoting PYD.

Measuring the positive development of diverse youth has been an important facet of PYD research. The PYD researchers have expressed interest in studying optimal youth development in a range of cultural and socioeconomic backgrounds (Catalano et al., 2019; Lerner et al., 2018).

Despite this trend, most PYD research conducted to date has been conducted with US samples (Lerner et al., 2018). For instance, the 4-H study on the "Five Cs" model has largely focused on rural, middle-class Caucasian youth (Spencer & Spencer, 2014). Findings gleaned by Western PYD researchers may have limited relevance to youth from different ethnic backgrounds, especially those from non-Western countries who have fundamentally different sociocultural contexts. The study of PYD among Chinese rural LBY should reflect the context of Chinese society as well as their unique developmental challenges, and therefore deserve separate research effort.

PYD Research in China

PYD research on Chinese adolescents is in its early stages. The very first exploration was conducted by Shek and colleagues in Hong Kong. Based on the 15 positive constructs identified by Catalano and colleagues (2002), the research team developed the Positive Adolescent Training through Holistic Social Programs (Project P.A.T.H.S.). This curriculum was found to promote positive developmental trajectories (Shek & Sun, 2013). To evaluate the 15 PYD constructs among adolescents in Hong Kong, the researchers developed the Chinese Positive Youth Development Scale (CPYDS). This scale measures PYD along four dimensions: cognitive-behavioral competencies, prosocial attributes, positive identity, and general positive youth development qualities (Shek et al., 2007; Shek & Ma, 2010). Researchers have also applied the Five Cs model among youth in Taiwan (Yang & McGinley, 2021). In this context, the researchers concluded that PYD means something similar to what it means in western contexts. However, the collectivistic nature of the Taiwanese culture might have affected how youth interpreted and rated certain items related to connection and confidence. Although Hong Kong and Taiwan share some cultural heritage with Mainland China, they have political and

economic structures that more closely resemble those in western cultures (Yang & McGinley, 2021). Therefore, findings derived from these two regions may not apply to diverse youth groups in Mainland China.

Two studies have examined the Five Cs model among adolescents in both rural and urban areas in Mainland China. Wen et al. (2015) collected data from both left-behind and non-left-behind rural youth using an adapted measurement of the Five Cs model. Factor analysis revealed that each C showed good or acceptable internal reliability; however, only competence, confidence, and caring fit together forming a second-order factor. The authors suggested that the Five Cs PYD model was generally applicable to Chinese youth but the conception and measurement of specific PYD constructs needed further exploration. Similar findings were reported by Chen et al. (2018) who tested the Five Cs model among adolescents in Shanghai using Exploratory Structural Equation Modeling. In this study, the general structure of the Five Cs model was supported, while variations were observed in terms of the specific items used to construct the scales. For instance, constructs such as connection and caring were well defined by their target indicators, but confidence and competence were not. These variations may begin to reflect what PYD looks like among Chinese youth and point to the necessity of examining PYD using inductive approaches.

An indigenous exploration was conducted by Lin et al. (2017) who took an integrative etic-emic approach to develop the Chinese Four Cs model. They conducted in-depth interviews and focus groups with students (9-18 years old), parents, teachers, social workers, and youth development experts from Chinese cities. Participants were asked to elaborate on what optimal youth development entailed for Chinese adolescents and on what PYD characteristics were unique in Chinese culture. The study findings revealed the core structure of PYD in Chinese

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context, including *competence*, *character*, *confidence*, and *connection* (Chai, Wang et al., 2020; Lin et al., 2017). Specifically, competence encompasses knowledge and skills in academic, social-emotional, and daily living domains. Character includes benevolence (*Ai*, 爱), determination (*Zhi*, 志), trustworthiness (*Xin*, 信), and perseverance (*Yi*, 毅). Confidence is defined as positive self-concept and self-acceptance, and connection includes positive relationships within families, schools, and communities. A measure was developed to verify the four-factor model of PYD for urban Chinese youth (Chai, Wang et al., 2020). This 98-item, self-report measure, called the four-factor Chinese PYD measure, has been found to have strong psychometric properties. Lin's Four Cs model (2017) shares features with Lerner's Five Cs model (Lerner, Lerner et al., 2015), but differences exist as well. For instance, in Lin's model caring is omitted because it was found to overlap other PYD indicators, including character and connection (Chai, Wang et al., 2020). In addition to this significant difference, more subtle differences exist in the meaning of each C (Chai, Wang et al., 2020). The character C is particularly distinct in that it refers to character education ideas embedded in Chinese Confucianism, Daoism, and Buddhism. The Four Cs PYD model provides a useful framework for empirical research examining the positive development of Chinese youth.

Despite the initial effort to develop a measure of Chinese PYD, there remains little research on the pathways to Chinese PYD. This study focused on "how" to promote PYD among Chinese LBY. Two recent studies stand out as exceptions to this rule. Through interviews with college students ($N = 185$), Lan and Gai concluded that a desire for positive development, positive environmental factors, and positive experiences were essential elements of healthy Chinese youth development (2017). Findings, such as these, provided a useful starting point to further conduct a comprehensive investigation of promotive factors of PYD among Chinese

youth. A second study, also a qualitative investigation, identified the promotive factors of PYD for Chinese urban adolescents (Wang et al., 2022). Six individual characteristics and four major environmental assets emerged as the major supports for optimal youth development. The overall structure and broader categories of the promotive factors are similar to those found in Western literature (e.g., Development Asset Model, Benson, 2007), but their content and conception reflect unique sociocultural underpinnings. Specifically, the individual factors exhibit the most characteristics of Chinese culture by encompassing positive attributes and behavioral characteristics such as *goal setting, sparks, self-reliance, goal-oriented hard work, self-improvement,* and *intention to contribute*. Many of them are rooted in Confucianism that emphasizes the aspiration and determination to achieve goals, persevere, and make contributions (Zheng & Huang, 2007). The environmental assets include *supportive relational networks, boundaries and expectations, opportunities and activities,* and *promotive climates*. Embedded in a more comprehensive framework, this study was conducted in a systematic way by involving both the individual-level and environmental-level factors that span across different developmental contexts. Research like this provided important insights into understanding what can be enhanced to enable positive development among LBY in China.

Despite these preliminary explorations, most of the current PYD studies were conducted with urban youth. However, youth in rural areas experience distinct developmental challenges and opportunities that may shape different growth pathways. Indeed, very few studies have been conducted to understand the optimal development of rural LBY who are stereotypically considered "at-risk." This is similar to Western literature that overwhelmingly focuses on white, middle-class, and urban youth than on ethnic minority youth from low SES. The rural LBY constitute one of the largest at-risk youth groups in China. Supporting their positive development

will not only benefit the youth and their families but will also promote economic and social welfare.

The PYD perspective is appropriate for studying Chinese rural LBY for several important reasons. First, PYD represents a shifted focus from deficit remediation to examine the positive aspects of rural LBY in China. This can help address the biased approach in the current research community. Second, PYD considers individual youth as active agents who contribute to their own development. This has been largely ignored in the prevailing view that considers rural LBY as passive victims of parent migration. The PYD perspective allows us to pay attention to rural LBY's initiative and motivation that shape their own development. Third, PYD emphasizes the interactions between individuals and contexts that promote positive developmental trajectories. It directs our focus to discover the protective and promotive factors of rural LBY. Through capitalizing on human potential and building ecological assets, we can find pathways through which rural LBY build resilience and flourish.

Resilience Science Framework

Another research framework that has great merits for understanding the positive development of at-risk population is the resilience science framework. This framework focuses on a class of phenomena characterized by healthy adaptations despite risks or threats (Masten, 2001). Individuals will be considered resilient if (1) there is the presence of risks and (2) the individuals show positive adaptations in the face of risks. Although resilience is broadly defined as positive development in the face of adversity, investigators have referred to resilience in various ways, such as the capacity, processes, or outcomes of positive adaptations in the context of risk (Masten, 2018; Masten & Barnes, 2018). Over the decades, the definition of resilience has become increasingly dynamic and is now grounded in the RDS metamodel (Masten, 2014).

Researchers now define resilience as the capacity of a dynamic system to successfully adapt to adverse conditions that threaten the development of the system (Masten, 2014; Masten, 2019; Masten & Barnes, 2018; Wright et al., 2013). This is a scalable definition that can be applied to both individuals and multiple systems within the human ecology. According to this definition, resilience is not only an adaptive function of an individual person, but it represents dynamic interactions of multiple interrelated systems, linking genes, neurobiological adaptation, brain development, behavior, and context at multiple levels.

A major conclusion from resilience research is that resilience is part of the normal human adaptation process (Masten, 2001). There is nothing extraordinary about the individuals who show positive development in less optimal environments. Indeed, resilience comes from the daily interactions between the person and the developmental context, involving both biological and sociocultural systems (Masten, 2001; Masten, 2019; Masten & Barnes, 2018). This implies that intervention practices that support at-risk youth can promote competence and human capital that help protect or restore the efficacy of basic protective systems for development (Masten, 2001). The same principle applies to rural LBY who are exposed to the risk factor of parent-child separation but who may possess protective processes that help meet their basic developmental needs.

A substantial number of studies on resilience have identified the individual strengths and environmental supports that buffer against risk factors and promote positive developmental outcomes (e.g., the Connor-Davidson resilience scale (CD-RISC), Connor & Davidson, 2003; the Child and Youth Resilience Measure (CYRM-28), Ungar & Liebenberg, 2011). Healthy Kids Resilience Assessment (HKRA) measures a variety of resilience factors associated with optimal youth development among adolescents (Constantine, et al.,1999). HKRA was first developed as

a module of the California Healthy Kids Survey and has now been revised and adapted among Chinese adolescents (Li et al., 2008). This framework covers three external asset clusters, i.e., caring relationships, high expectations, and meaningful participation in the home, school, and community, and three internal asset clusters, i.e., social competencies, autonomy and a sense of self, and a sense of meaning and purpose (Constantine, et al.,1999). The revised scale measures 7 external assets: teachers' care, relatives' care, family equity and autonomy, active engagement in school and society, high expectations of peers, close peer relationships, and high expectations of family; it also measures four internal assets: social competencies, self-awareness, problem solving skills and self-efficacy, and goals and aspirations (Li et al., 2008). The Chinese version of HKRA was validated among middle school aged youth in China and demonstrated good psychometric properties (Li et al., 2008).

While researchers tended to use established measures in Western literature that have been validated with Chinese samples, Hu and Gan (2008) developed an indigenous assessment tool, Resilience Scale for Chinese Adolescents (RSCA), using a sequential, mixed-method design. This scale is rooted in the Chinese cultural context and defines resilience in five domains: target concentration, emotion control, positive thinking, family support, and interpersonal assistance (Dong et al., 2019; Hu & Gan, 2008). This measure emphasizes the protective factors that play significant roles in the positive adaptation process and can be promoted to increase individual resilience.

Both the Chinese version of HKRA and RSCA, along with other resilience scales, have been applied to study LBY in rural China. For instance, a meta-analysis with 14 cross-sectional studies based on RSCA found significant differences in the resilience score between LBY and non-LBY, especially in the aspects of family support (Dong et al., 2019). A study using HKRA,

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however, revealed no difference in resilience between the two groups (Zhou et al., 2011). The use of inconsistent measures might have yielded the mixed results. In addition, studies revealed that a high level of psychological resilience could help LBY cope with negative life events (Gao et al., 2019), present protective effect on self-harm (Tian et al., 2019) and mental health problems (Shi et al., 2016), specifically depression (Wu et al., 2017; Xiao et al., 2020) and loneliness (Cao et al., 2020), and decrease the negative impact of insufficient social support on LBY's psychological health (Ai & Hu, 2016). Despite the general trend of the protective effect of resilience, LBY show individual differences in terms of migration type, duration, and contact with the migrating parent(s). One study indicated that LBY with one parent migrating had a higher resilience score than those with both parents migrating (Dong et al., 2019). As the duration of parental migration increased and the frequency of meeting parents decreased, the LBY's resilience level decreased (Dong et al., 2019; Li et al., 2007; Liu, 2016; Liu et al., 2019; Wang & Liu, 2020).

The abovementioned resilience frameworks and studies provide a good starting point for investigating the individual strengths and environmental supports among LBY in rural China. However, the existing research tends to apply or adapt measures validated among other samples to study LBY. No studies to my best knowledge have tested Chinese LBY's conceptions of these protective factors. The present study sought to examine the assets that promote PYD among Chinese LBY using a combination of inductive and deductive approaches. An integrated framework involving both resilience science and PYD may provide useful guidance for the research on the positive development of rural LBY.

An Integration of the PYD and Resilience Science Frameworks

The PYD and resilience science research programs share several features. First, both

PYD and resilience frameworks have roots in the RDS metamodel. Therefore, both frameworks

recognize plasticity for development and epigenetic changes that are shaped by multiple levels of

interaction among interdependent systems (Masten, 2014). Second, both frameworks focus on

the positive aspects of development, defining and measuring positive adaptation. Third, PYD and

resilience science researchers share a commitment to translating developmental research to

inform interventions and policies that promote positive development. Scholars of both

approaches support both prevention and promotion effort. Finally, both frameworks now direct

attention to address the longstanding research gap on global cultural processes and contexts.

Despite the substantial overlaps between the two approaches, resilience science differs primarily

from the PYD perspective in its focus on adaptive functioning at the high end of the continuum

of risk (Lerner et al., 2013). This is probably because resilience science is more concerned with

understanding the processes of adaptation under extremely challenging conditions (Masten,

2014). Understanding the positive development of Chinese rural LBY requires special attention

to adaptive processes under adverse conditions as well as promotive processes across various

conditions.

Given the shared theoretical roots and features, some researchers recently suggested an

integrated model that combined the resilience and PYD frameworks to promote healthy

development (e.g., Gaylord-Harden et al., 2018; Kia-Keating et al., 2011). This model integrated

two pathways of positive development: the "protecting" pathway in which protective factors

buffer against detrimental effect of risks (drawn from resilience research), and the "promoting

pathway" in which assets directly lead to healthy development (drawn from PYD research). Both

pathways are influenced by individual, family, school, community, and societal factors, and they both lead to developmental competencies (Kia-Keating et al., 2011). This holistic approach not only addresses assets that enable normative development or thriving but considers important contextual factors that are particular to at-risk populations.

An approach that further integrates these two frameworks is to conceptualize PYD and resilience as adaptive developmental regulations, or the mutually beneficial individual-context relations that lead to positive developmental trajectories (Lerner et al., 2013). Resilience refers to a subset of individual-context relations located at the high end of a continuum of risk, which is one portion of the range of concern in PYD. Instead of considering PYD and resilience as two distinct but related pathways, the concept of adaptive developmental regulations regards those two as dynamic processes involving an individual and his or her ecology (Lerner et al., 2013). In this respect, PYD or resilience is likely to occur when individual youth align their strengths with ecological assets in the face of individual-context relations that vary from normative exchanges to those that may be marked by high levels of risks.

The present study aimed to identify the individual and ecological conditions that optimize the chances that rural LBY will demonstrate adaptive developmental regulations. Both PYD and resilience science researchers have examined attributes in the individual and context that foster positive development (Masten, 2014). While the PYD researchers have focused on assets, such as intentional self-regulation skills and a hopeful view of the future, resilience researchers refer to these assets as protective and promotive factors. The assets highlighted in PYD research bear a striking resemblance to the promotive and protective factors repeatedly observed in studies of resilience (Masten, 2014). This study focused on individual strengths and environmental supports that promote LBY's normative development and protect them from adverse conditions.

Applying integrated PYD and resilience science frameworks, the present research provided a

comprehensive depiction of rural LBY's positive developmental experiences.

Resilience Research on Rural Left-Behind Youth

As a shift from a deficit-based view, resilience research has increasingly been applied to

examine the positive development of Chinese rural LBY. An examination of the extant resilience

literature revealed important protective factors for rural LBY. For instance, social support is the

most frequently studied protective factor associated with resilience among these youth (e.g., Fan

& Lu, 2020; Li et al., 2018; Zhao et al., 2015). Despite parents' absence, youth can thrive. A

number of studies have found that maintaining a close relationship with parents, even in the form

of online communication, can effectively mitigate the negative influences of parental migration

(Fan et al., 2018; Fu & Law, 2018; Su et al., 2012; Zhao et al., 2015). As compensation for

parents' absence, multiple social figures from family, school, and community serve as alternative

social support for rural LBY. Peers, siblings, teachers, and neighbors protect rural LBY from

displaying negative development outcomes that they may do when there is not enough support

(Chen et al., 2011; Fan et al., 2018; Li et al., 2018; Liu et al., 2020; Xiao et al., 2019; Zhao et al.,

2015). While peers may not always have a positive impact on rural LBY's resilience (Li et al.,

2018), it is the high-quality friendship and companionship that make a difference (Fan et al.,

2018; Xiao et al., 2019; Zhao et al., 2015). In addition, there is evidence indicating that the

utilization instead of the perception of social support was a stronger predictor of resilience

among Chinese rural LBY (Li, 2009).

In addition to social support, research has identified other environmental factors that

predict a higher level of resilience. These factors include higher educational level of parents,

good marital relationship, strict rules and expectations, aligned rules between the guardian and

parents, and moderate home-school interaction (Chen et al., 2011; Liu et al., 2020; Xiao et al., 2019).

Research has also revealed individual characteristics that help rural LBY make positive adjustments. Two studies highlighted a positive understanding of parental migration and the commitment to education as significant contributors to the resilience of rural LBY (Fu & Law, 2018; Hu, 2019). In qualitative interviews, left-behind adolescents expressed that they made positive meanings of parents' migration by seeing it as a necessary avenue to improve family economic status and to support their education in the long run (Fu & Law, 2018). Two meaning-making strategies were used to make positive appraisals out of the left-behind situation. Resilience-related beliefs imply a faith in oneself to overcome challenges and to obtain desirable results, and goal commitment motivates these youth to sustain effort to achieve their goals, which are mostly "going to college". Similarly, Hu (2019) revealed that adolescents understood parental migration as the best way of demonstrating parental love and care given their economic circumstances. They saw parental migration as a necessary sacrifice for the family. They would take their responsibility of studying hard and doing well in school to strive for a better future with their parents. These individual strengths seem to grow out of the unique living context of rural LBY, which effectively help them overcome the developmental challenges brought by parental absence.

The resilience research for rural LBY in China has been growing during the past decade. Nonetheless, limitations in current literature leave substantial room for future exploration in this research field. First, most studies reviewed here are cross-sectional; researchers have relied on variable-focused analysis to examine the linkages between characteristics of individuals and their environments that contribute to resilience (Wright et al., 2013). Resilience researchers have not

embraced the RDS metatheory by focusing on the dynamic process of resilience, the contextual factors that come into play, the intraindividual and interindividual variability, and the developmental trajectory of resilience pathways.

Second, research on protective factors for rural LBY has extensively examined social support; however, there may be many other types of environmental support out in the rural LBY's living context. Existing studies also tend to address relatively stable individual attributes such as emotional stability. Numerous malleable skills that were shown protecting youth from adversity (e.g., social and emotional learning competencies, Durlak et al., 2011) have been largely overlooked. More studies are needed to expand our knowledge on the rural LBY's individual strengths and environmental supports.

Finally, resilience research has the main focus on adaptive functioning at the high end of the continuum of risk (Lerner et al., 2018); therefore, researchers usually pay attention to the alleviation or absence of negative outcomes. What is missing from resilience research appears to be a step beyond the absence of problems. This is advocated by the PYD framework that promotes optimal functioning beyond "okay" functioning.

PYD Among Rural LBY

While the resilience science framework highlights the "protective pathway" to positive development, the PYD perspective highlights the "promotive pathway" by focusing on developmental nutrients and trajectories that directly lead to thriving. Despite the urgency of adopting a strength-based perspective, there is little empirical research applying PYD to the study of rural LBY in China. Much has been learned about the protective mechanisms for rural LBY; however, fewer researchers have adopted the PYD perspective to focus on positive developmental outcomes, such as happiness and flourishing (Chai et al., 2019; Shen & Zhang,

2018). Indeed, like all youth, rural LBY show some positive developmental signs even in the face of risk and adversity. Framed by the developmental contextual view of PYD (Lerner, 2005; Lerner, Lerner et al., 2015), the thriving process for rural LBY is shaped by mutually influential relations between the individual strengths and ecological assets (Chai et al., 2019). These developmental nutrients are worth exploring to promote optimal development for Chinese rural LBY.

A trend to study the positive development of rural LBY has recently emerged. Researchers have now turned their attention to indicators of psychological well-being and found mixed results. Many studies showed that compared to non-LBY in rural areas, the rural LBY fared worse for subjective well-being (Zhou et al., 2018), life satisfaction in family and school (Zhou et al., 2018; Shen & Zhang, 2018; Su et al., 2017; Sun et al., 2015; Ye et al., 2020), self-esteem (Sun et al., 2015), and school engagement (Murphy et al., 2016; Wen & Lin, 2012). However, a smaller portion of studies indicated that there were no significant differences between the two youth groups in terms of satisfaction with life events (Murphy et al.,2016), the psychological and behavioral adjustment (Song et al., 2018), or school satisfaction and happiness (Su et al., 2012). One study revealed that rural LBY experienced a higher level of school engagement and adaptation than non-left-behind peers (Sun et al., 2015). Similarly, Wen et al. (2015) found that the left-behind group demonstrated better outcomes than their counterparts in academic aspiration, school grades, problem behaviors, and self-rated health. Moreover, father-only migration in particular was found to enhance the rural LBY's aspiration for attaining college (Shen & Zhang, 2018). The encouraging effect of father's migration was stronger than that of parental education or family income. Taken together, left-behind status is not a decisive factor for rural LBY's development. Certain rural LBY may possess unique assets that help them

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make a healthy adjustment. We should focus on identifying the factors and pathways that are essential in sustaining rural LBY's flourishing.

Researchers have started to focus on the factors that predict positive development of rural LBY. Even though this youth group suffers from extended youth-parent separation, parents still play an indispensable role in the youth's psychological growth. Numerous studies have revealed that maintaining frequent, high-quality communication with parents is positively associated with rural LBY's subjective well-being, life satisfaction, and happiness (Niu et al., 2020; Song et al., 2018; Su et al., 2012; Sun et al., 2015; Wang & Mesman, 2015; Wen & Lin, 2012; Ye et al., 2020). Family members of the rural LBY are not physically close, but family cohesion (e.g., stable parental marital status, Guo et al., 2019, 2020), parents' supervision and monitoring (Wen & Lin, 2012), and good family functioning (Zhou et al., 2018) are essential for rural LBY's psychological well-being.

As compensation for parents' absence, support from the social network effectively promote rural LBY's psychological well-being, including nonparental caregivers (e.g., grandparents), peers, and teachers (Chai et al., 2019; Song et al., 2018; Sun et al., 2015; Wen & Lin, 2012). Close neighborhood relationship is also positively associated with rural LBY's subjective well-being (Chai et al., 2019). This corresponds to an old Chinese saying that "distant relatives mean less than close neighbors". Findings like these suggest the essential role of relationships in supporting rural LBY's positive development. This is especially true in Chinese context where interpersonal relationships and mutual dependence are highly valued (Lam, 1997).

Rural LBY's individual characteristics also promote their positive development. Fan and colleagues created a psychological capital scale for LBY, which measures youth's self-reliance and tenacity, understanding and thanksgiving, toleration and friendliness, self-confidence and

enterprise, and optimism (2015). These psychological capital constructs predicted LBY's life satisfaction and academic achievement. Other internal assets include resilience (Chai et al., 2019), gratitude (Niu et al., 2020), self-esteem (Song et al., 2018), good academic performance (Zhou et al., 2018), future orientation (Su et al., 2017), as well as self-efficacy and internal locus of control (Wen & Lin, 2012). Some of the individual strengths have been found to mediate or moderate the relationship between environmental factors and psychological well-being (e.g., Chai et al., 2019; Niu et al., 2020). Findings like his demonstrate mutually beneficial relations between individual strengths and ecological assets that promote PYD among rural LBY in China.

The resilience and PYD researchers have conducted preliminary explorations on the protective and promotive factors for Chinese rural LBY. However, no research has performed a comprehensive investigation by covering a broad range of factors. Also, previous studies are usually framed under either the resilience or the PYD framework. While each framework has its own merits, applying one framework cannot address both protection and promotion of rural LBY. More importantly, although research has identified a few assets or protective and promotive factors for LBY, there is a lack of validated, culturally sensitive measurement tools to assess these factors. Drawing upon the PYD and resilience science frameworks, this study takes a more comprehensive approach to integrate strengths and support from both individuals and their developmental contexts. It also uses a cross-sector approach to examine external support from multiple contexts. As Scales and colleagues suggested (2017), this is a 360-degree strategy; neither individual strength non environmental asset is expendable. Doing so will not only create a common language that facilitates a public consensus on what rural LBY need to succeed, but it will encourage an intentional effort by policy makers, educational practitioners, and youth

worker to implement practices and policies that promote PYD in multiple levels of developmental contexts. (Benson, 2007; Scales et al., 2017).

The Present Research Study

This study aimed to identify and measure the assets, or individual strengths and environmental supports, that enable positive developmental trajectories for rural LBY in China. Individual strengths include young people's positive characteristics, including an individual's beliefs, behaviors, skills, and competencies. Environmental supports encompass relationships, supports, experiences, and opportunities provided by the young person's developmental ecology, including their family, school, and community. Positive development for rural LBY is defined as demonstrating positive developmental outcomes (e.g., the four Cs in Chinese PYD model) and showing relatively few negative problems (e.g., psychological and conduct disorders).

The present study focused on adolescents, as contemporary research suggests adolescents undergo biological, neurological, social, and emotional changes that make this stage of life an ideal "ontogenetic laboratory" for studying the relative plasticity of human development (Lerner, Lerner et al., 2015). These changes include the ongoing development of the adolescent brain, the search for identity and purpose, as well as increasing peer influences and decreasing familial influences (Blakemore & Choudhury, 2006; Brown & Larson, 2009; Côté, 2009; Damon et al., 2003). The developmental need for autonomy encourages adolescents to play a larger role in shaping their own development, making it more likely that the mutually influential relations between individuals and contexts will emerge (Lerner, 2005; Lerner, Hershberg, et al., 2015). In these ways, the second decade of life provides a critical window into the processes that undergird positive development.

An exploratory sequential design was used. Accordingly, the study began with a qualitative investigation featuring a small group of participants to form a preliminary theory and to inform the creation of survey items. This context-specific interview included questions designed to gain insight into participants' conceptions of the internal characteristics and external contexts that enable and support positive development for rural LBY. Based on findings from the interview, a survey was designed, refined, and tested to ensure it has sound psychometric properties. The mixed-methods design was chosen because a combination of words and numbers can provide a more complete understanding of complex developmental phenomena (Yoshikawa et al., 2008). Since very few studies designed to understand the positive development of rural LBY in China have been conducted, a sequenced design that begins with exploratory qualitative data is necessary. Additionally, rural LBY in China face challenges and developmental experiences that set them apart from other Chinese youth. This means that researchers need to use a method that is sensitive to contextual information to develop an instrument that is relevant to the study participants. Taken together, it is clear that conducting a qualitative investigation first and a quantitative survey second, is necessary to fully capture the unique developmental experiences of rural LBY in China (Creswell, 2013).

The study proposed to address two main research questions: (1) *what individual strengths and environmental supports are present among rural LBY in China* and (2) *how do these individual strengths and environmental supports relate to rural LBY's concurrent positive development* (i.e., PYD constructs, subjective wellbeing, academic achievement, and externalizing problem behaviors)? The first question was addressed in the qualitative study (Chapter 2) which was largely hypothesis seeking instead of hypothesis testing. Two scales were created to measure individual strengths and environmental supports separately, which were then

validated through the quantitative study (Chapter 3). The second question was addressed in the quantitative study with the hypotheses that *individual strengths and environmental supports* derived from the present study would be positively correlated with positive developmental outcomes (e.g., subjective wellbeing) and negatively correlated with negative developmental outcomes (e.g., externalizing problem behaviors).

This study was conducted using an exploratory sequential design consisting of three steps: (1) qualitative interviews to generate a preliminary theory and inform the creation of survey items, (2) the development of a survey instrument, and (3) quantitative analyses to validate and to revise the survey instrument utilizing new samples of participants. See Figure 1 for study procedures (Creswell & Clark, 2017). The present research employed a combination of inductive and deductive approaches. The conduct and analyses of interviews were largely inductive, seeking to develop a theory of the positive development of rural LBY in China. A combined bottom-up and top-down approach was used to develop instruments based on both interview findings and existing literature. A native Chinese researcher conducted the study (the author of the dissertation), and developmental scientists from the US and China served as committee members, overseeing the research process. Together this team should ensure the resulting measure, which was written in Mandarin, is culturally sensitive and grounded in research.

Given the mixed methods nature of the study, different assumptions undergird different stages. During the qualitative phase of the study, researchers assume a constructivist worldview to allow multiple perspectives to emerge from the bottom up (Creswell & Clark, 2017). As the researcher moves to the quantitative phase, the guiding assumptions shift to a postpositivist stance that emphasizes measuring variables and testing for statistical significance (Slife &

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Williams, 1995). A dialectical perspective is evident during the instrument development and the final interpretation phases. This perspective requires assuming both constructivist and postpositivist worldviews (Green, 2007). In addition, given the study's focus on marginalized youth, a transformative perspective may guide elements of the investigation (Mertens, 2009). This philosophical stance assumes multiple forms of reality are constructed on the basis of participants' social and cultural positions. It stresses collaboration featured by fairness, justice, and equality to build trust, which will be especially important during the qualitative phase of the study.

Chapter 2: Qualitative Study

An exploratory, sequential mixed-methods design, which involves both qualitative and quantitative data collection and analyses (and integration across both approaches), was used to identify and measure the individual strengths and environmental supports among Chinese LBY. The present chapter describes the first phase of this mixed-methods design, including (1) a qualitative investigation to generate a preliminary theory and inform the creation of survey items, and (2) the development and refinement of survey items.

Semi-structured interviews were conducted to collect information about the perceptions and experiences of rural LBY in China. The interviews were analyzed to help identify critical factors that are important for the positive development of LBY and to inform further measure development. Survey items were then developed based on qualitative findings and existing literature; the instrument was revised through expert review and field tests. The aim of these procedures was to develop a measure that was attended to the unique contexts and experiences of Chinese LBY, which would be validated through the quantitative phase.

Method

Participants

Using a criterion sampling procedure (Palinkas et al., 2015), a selected group of teachers and students were invited to participate in individual interviews. All participants were recruited from Linquan county in the Anhui Province. This area was designated as rural by the urban-rural classification code set forth by the National Bureau of Statistics (2020). The population in Linquan county is around 2.3 million; among the residents in Linquan, 83% live in rural areas ("Linquan County," 2020). Linquan used to be one of the neediest areas in China ("National-

level poor counties," 2020). Therefore, it was common for young parents in Linquan to migrate to urban centers for better job prospects.

I conducted all the interview and stopped the process once data saturation was perceived. Fourteen teachers (age range = 28-54) participated in the interview. One interview was excluded from the sample as the teacher did not focus on the main topic of the interview; this teacher also had a heavy accent while talking in dialect, which made it difficult to accurately capture what he had said. The final sample included five (38%) female teachers (M_{age} = 34, SD = 5.13) and eight (62%) male teachers (M_{age} = 40, SD = 5.40). All of them were head teachers and taught one of the three main subjects (i.e., Chinese, math, and English) for compulsory education in China. Five (38%) were teachers in elementary school and eight (62%) were in middle school. The selected teachers from elementary schools taught fifth-and-sixth graders who were adolescents. The participating teachers had teaching experiences that ranged from three to 22 years. Half of them obtained a college degree while the other half received a junior college degree.

Participating LBY were nominated by teachers during the interview. The nomination criteria included demonstrating positive development, meaning the LBY demonstrate the four Cs in the Chinese PYD model (i.e., *competence*, *character*, *confidence*, and *connection*; Chai, Wang et al., 2020; Lin et al., 2017), being in good academic standing, showing high levels of school engagement, and not suffering from any psychological or conduct disorders. Eleven youth (age range = 10-16) participated in the interview. Two interviews were excluded from the sample as the participating youth did not qualify for the left-behind status (one of both parents migrated elsewhere to work). The final sample included four (44%) female youth (M_{age} = 14, SD = 0.82) and five (56%) male youth (M_{age} = 14, SD = 1.92). Only one (11%) youth attended elementary school at the time of the interview. Most of the interviewed youth (78%) had both parents

migrating to urban cities. All youth talked with their parents via phone every week or every other week. Please see Table 1 for more information about the participating youth.

Procedure

The interviews were conducted with teachers and students in three schools over a week. I interviewed teachers first and then asked the teachers to nominate qualified youth. Face-to-face, semi-structured interviews were conducted in Mandarin Chinese with each participant. Interviews with teachers lasted approximately 40 minutes on average while interviews with youth usually lasted around 20 to 30 minutes. All interviews were recorded and transcribed for data analysis. Each participant's interview recording was given a numerical code, and the coding scheme relating recordings, transcriptions, and names were kept separately from the data.

A semi-structured interview protocol was used to facilitate systematic, comprehensive data collection (Patton, 2015). The protocol started with basic questions that asked about participants' personal background to build rapport and to contextualize their subsequent answers. Participants were then asked to reflect on four major topics: (1) the major challenges or adversities that rural LBY faced in their community; (2) what optimal youth development entailed for rural LBY; (3) the individual characteristics and environmental supports that promoted the positive adjustment of rural LBY; and (4) the individual characteristics and environmental supports that were most helpful when rural LBY faced adversities. See Appendix A for interview protocols. Responses were probed to encourage participants to think deeply about environmental supports in multiple contexts, such as in the family, school, and neighborhood. I pilot tested the interview protocol on the first interview day and made relevant revisions; I continued adapting the interview protocol as I conducted further interviews.

Rural LBY are a vulnerable group due to prolonged parent-child separation; therefore, they may be sensitive to topics related to parental absence. I was aware of this and paid extra attention to topics related to parent-child relationships, parent-child communication, and guardianship. There were one or two cases of emotional turbulence during the youth interview, and I comforted the youth to make sure they were free of negative feelings at the end of the interview.

Reflexivity

In qualitative studies, the researcher is an instrument for data collection and analysis (Nowell et al., 2017). Therefore, the researcher's values, biases, and experiences will influence the way he or she interacts with participants, analyzes the data, and interprets the findings.

As the primary investigator of the study, I am a doctoral student in positive developmental psychology who was born and raised in Mainland China but educated in the US. Given my training and research in RDS-based perspectives, I believe that all youth, including rural LBY in China, have the potential to achieve optimal development. I have seen how PYD research contributes to PYD practice and policy in the US, and I would like to contribute to filling the PYD research gap in China. My academic experience in Western countries allows me to see the fundamental differences between Western and Chinese cultures. Therefore, I am drawn to inductive approaches that unpack PYD from a cultural insider's perspective. However, there are potential drawbacks to having insider knowledge. For instance, I needed to take care to avoid clouding participants' perspectives with my own perspective on the characteristics and external support for positive youth development in this context (Braun & Clarke, 2006). To minimize this risk, I documented my initial beliefs along with any emerging thoughts and insights in memos.

A graduate student in psychology was hired as a research assistant (RA) to conduct the qualitative data analysis with the primary investigator. The RA was born and raised in rural areas in the northwest part of Mainland China. She has conducted qualitative research on rural youth in China to understand their beliefs about poverty and prospects for future. Since 2019, she has been engaged in field investigations in rural schools where she has closely observed rural youth's daily lives and interacted with the youth there, including LBY. Her rural background and research experience allowed her to adopt a positive view of rural youth in China. She believes that rural youth are not merely passive receiver of adverse living conditions; rather, they are able to develop a positive understanding of poverty and plan their future life accordingly.

Three advisors, Dr. Tiffany Berry, Dr. Danhua Lin, and Dr. Kendall Cotton Bronk, served as members of the dissertation committee. They supervised the research process, including developing the proposal, preparing research materials, conducting data analyses, and presenting results. Dr. Berry and Dr. Lin are co-chairs of the dissertation committee. Dr. Berry is a research professor at Claremont Graduate University. She partners with youth development programs and organizations to connect developmental science to real-world practice. She helps stakeholders improve their programs through evaluation research, which in turn informs her research in positive development. Dr. Lin is a professor of developmental psychology in Beijing Normal University. She is experienced in conducting both quantitative and qualitative research on topics such as PYD and resilience. She serves as the primary investigator for several rural left behind research projects funded by the National Social Science Foundation of China. Dr. Bronk is a professor of psychology at Claremont Graduate University. She has deep qualitative and mixed-methods expertise related to the positive development of youth around the world. Her

research seeks to understand and support the moral growth of young people through the lens of young people's purposes in life.

These three dissertation committee members helped hold the primary investigator accountable for her own values and biases throughout the research process. Dr. Lin also served as an auditor during the qualitative phase of the study given that the interviews were conducted and transcribed in Mandarin. Since Dr. Lin is a native Chinese speaker and is experienced in conducting research with Chinese rural LBY, it was appropriate for her to advise the creation of the interview protocol, conducting interviews, and analyzing qualitative data. The rest of the advisors were updated about the research progress throughout the process. Findings derived from the qualitative analyses were summarized in English for them to provide feedback.

Data Analysis

Thematic analysis was used to identify, analyze, and report themes that emerged from the interviews (Braun & Clarke, 2006). This qualitative research method is useful for generating themes and sub-themes for subsequent survey development. Thematic analysis involved six phases: familiarizing oneself with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report (Braun & Clarke, 2006; Nowell et al., 2017). The analyses were performed using ATLAS.ti 9.1.2.

The credibility of the analysis was enhanced by having two researchers who were equally committed to analyze each dataset (Castleberry & Nolen, 2018; Côté & Turgeon, 2005). They held each other accountable for gaining an accurate understanding of the interview data while searching for, reviewing, defining, and naming themes (researcher triangulation; Nowell et al., 2017). This was achieved through regular discussion between the two researchers. As recommended by Nowell and colleagues (2017), researchers also kept an audit trail to ensure that

the research process was logical, traceable, and clearly documented. In addition, Dr. Lin as an auditor for the study provided ongoing guidance and feedback regarding data analysis and interpretation. She discussed emergent findings with the researchers to revise the codebook, define themes, and organize the findings for the final report. The primary investigator kept detailed notes for each research relevant meeting to track the change of codes, the change of theme names, and any questions left for interpretating the qualitative data.

During Phase One, both researchers familiarized themselves with the data through reading through the entire dataset at least once. The goal of this phase was to generate a clear idea of what was interesting and significant about the dataset (Nowell et al., 2017). Researchers actively read the data and noted initial ideas regarding interesting themes that emerged (e.g., the mostly frequently mentioned promotive factor), insights related to the research topic, how to possibly code the data, and how the researchers' personal background, values and assumptions might influence the interpretation of the data.

Once researchers familiarized themselves with the data, they generated initial codes across the entire dataset through an iterative process of coding and discussion (Nowell et al., 2017). Each week, two researchers worked together to code several cases (ranged from two to eight) independently, and then met online to discuss the coded cases to reach consensus on all the codes. The coding process entailed giving full and equal attention to each data item and identifying interesting data aspects that might form the basis of themes across the dataset (Nowell et al., 2017). The initial codes needed to have explicit boundaries, meaning that they were not interchangeable or redundant. Researchers tried to be inclusive at this stage and to code every possible data point. Sections of text were coded in to as many different codes as made sense (Braun & Clarke, 2006).

As researchers started the coding process, they developed a codebook that included detailed definitions and exemplar codes. The codebook was modified as researchers added new codes, deleted unnecessary codes, and combined or split codes. After all interviews were initially coded, both researchers read through all the codes to ensure that each code had clear definition and appropriate interview extracts. Additionally, regular meetings were held throughout the coding process between the two researchers to examine how their thoughts were evolving as they engaged more deeply with the data (Nowell et al., 2017). The primary investigator recorded the meeting minutes as a part of the audit trail to help keep track of the researchers' interpretations of the data and any changes to the analytic approach.

After all data were coded, the next phase involved collating codes into potential themes and subthemes (Nowell et al., 2017). A theme is an abstract entity that brings together components or fragments of ideas that capture something important in relation to the overall research question (Braun & Clarke, 2006; Nowell et al., 2017). It is a significant concept that links substantial portions of the data together (DeSantis & Ugarriza, 2000). Each researcher independently created themes and subthemes, and then the two coders met to discuss points of overlap and difference. They talked through disagreements until they reached a consensus regarding how to categorize the code. At this stage of data analysis, researchers focused on the individual strengths and environmental supports that supported rural LBY.

Generating themes around the individual and environmental assets was a largely inductive process. Researchers first organized initial codes into different themes based on their shared meaning from the original data. They then looked for existing literature as supplementary guidelines to organize codes (e.g., Developmental Assets Model; Benson, 2007), especially when it was difficult to generate clear themes. Codes grouped into the same theme were given the

same color in the analysis software. For codes that did not seem to fit into one of the main themes, Braun and Clarke (2006) recommended the creation of a "miscellaneous" theme, and these codes were not colored in the software. Diagrams were also used to help organize different themes and subthemes. The auditor offered feedback on two drafts of the findings and gave advice around how to improve the coding structure.

During the fourth coding phase, researchers kept research questions in mind to determine if the identified themes adequately described the data. This was again an iterative process of (1) reading all the collated extracts for each theme to consider whether they appeared to form a coherent pattern, and (2) considering the validity of individual themes in relation to the entire dataset (Braun & Clarke, 2006). Researchers inserted new codes when they identified relevant issues in the text not covered by existing codes, or they deleted unnecessary codes and those that substantially overlapped with other codes. Additionally, some themes collapsed into each other as they did not have enough support from the data while other themes were broken down into separate themes when the data were too diverse (Braun & Clarke, 2006). Therefore, themes at this stage were reduced into a more manageable set of significant themes that succinctly and accurately captured ideas contained in each theme (Nowell et al., 2017). There should also be a clear and identifiable distinction between themes. The data within themes should cohere together meaningfully. At the end of this phase, researchers had a good idea of the different themes, how they fit together, and the overall story they told about the data.

Phase Five involved giving clear definitions and names for each theme, which should immediately give readers a sense of what the theme is about (Braun & Clarke, 2006). At this stage, researchers considered how each theme fit into the overall story about the entire data set in relation to the research questions (Braun & Clarke, 2006). There were also instances of renaming

and reorganizing subthemes and lower-level codes to fit into appropriate themes. Special attention was paid for the theme names to reflect the unique living context of rural LBY in China. For the present research, a list of individual strengths and environmental supports for rural LBY were solidified. Researchers consulted relevant literature for appropriate theme names that accurately captured the assets identified by study participants. In cases where participants pointed out unique factors that were particular to their context and that had not been studied in existent research, researchers created theme names based on participants' descriptions. During this process, researchers deeply engaged the auditor to finalize the theme names given her knowledge and research experiences working with rural LBY. This process of defining and naming the themes was complete when all research questions were adequately and completely addressed. King (2004) also suggested that themes should not be considered final until all the data have been read through and the coding scrutinized at least twice. Regular meetings were held to allow time for researchers reaching consensus on the final names of the themes. The team meetings regarding themes and any modification of theme names were documented as a part of the audit trail.

Although identifying challenges and descriptors of positive development among rural LBY provided important contextual information, the present study primarily focused on the individual strengths and environmental supports that were critical for LBY's positive development. Subsequent data analyses and the survey development focused on these individual and environmental factors.

To establish the fit between respondents' views and the researcher's representation of them (Lincoln & Guba, 1985; Tobin & Begley, 2004), the primary investigator conducted member checks. Research findings were shared with the participating teachers, and these

teachers were asked whether the findings were an accurate reflection of their experiences

(Creswell & Clark, 2017). The primary investigator reached out to teachers of whom she had

contact information and those who provided rich information during the interview. She invited

the selected teachers via social media platforms to give feedback on current findings. Teachers

were given a synthesized summary of the emerging themes along with interview quotes that

represented each theme. The summary was written using non-scientific wording and was kept

short and concise (Birt et al., 2016). Space was left for teachers to provide feedback on the

following questions: (1) Do the results accurately represent what you said during the interview?

(2) Do the findings resonate with your experiences? (3) Is there anything that surprises you? Is

there anything that you disagree with? and (4) Do you want to change or add anything? See

Appendix B for the written document. Four teachers returned their written feedback, mostly

indicating that the interview findings accurately reflected the development of LBY in rural

China. Teachers emphasized a few factors in their written notes, such as a sense of belonging and

caring support, most of which were already incorporated into the qualitative findings.

The final phase of thematic analysis entailed providing a concise, coherent, and logical

report of the analysis (Braun & Clarke, 2006). Vivid, compelling quotes were selected to

demonstrate each research finding. The findings of the qualitative study were presented in the

section below.

Findings

The interviews identified five individual strengths and four categories of environmental

support that participants said promoted the healthy development of Chinese LBY.

Individual strengths included *achievement motivation*, *self-control*, *positive coping*, *academic*

engagement, and *prosocial orientation*, and environmental supports included *social support*,

caring and belongingness, *rules and high expectations*, and *extracurricular activity participation*. Within each of the environmental support categories except for *extracurricular activity participation*, sub-category assets emerged. For instance, within social support, *teachers' support*, *support of parents and caregivers*, *positive peer relationships*, *siblings' support*, and *home-school collaboration* emerged as environmental support factors. Within caring and belongingness, *caring school climate*, *harmonious family climate*, and *positive societal influences* emerged as environmental support factors. Within rules and expectations, *role models*, *high expectations and expectation alignment*, *moral and conduct edification*, and *school standards* emerged as environmental support factors. Table 2 and 3 include a summary of the interview findings. Below I discuss each factor in individual strengths and environmental supports emerged from the interviews. Given that the qualitative investigation was conducted to help inform survey dimensions and items that were created during the next phase, the discussion of qualitative findings focused on presenting the meaning of each asset with relevant quotes.

Individual Strengths

Individual strengths include Chinese LBY's positive characteristics, including their beliefs, behaviors, and competencies that support positive development. Many of the factors emerged here reflect LBY's unique living context.

Achievement motivation. Achievement motivation refers to LBY's motivation and aspiration to succeed in academics and career and to create a better life in the future. The LBY's achievement motivation encompasses both self-directed and social-oriented motivation. Participants in the interviews mentioned that setting clear goals inspire youth to work hard in school despite difficulties. The goals include academic ones (e.g., going to the best local high school, going to college), professional ones (e.g., becoming a teacher), and broad goals to

contribute to the society and to serve others. A female, elementary school teacher talked about how setting firm goals enhanced a left-behind girl's positive development:

There is a left-behind girl in my class whose family situation is very special. She has never seen her mother...and her father has migrated away from home for years. Although she loses a lot from her family, she does very well in school. I think she has a tough mind... I think she has a firm goal in her mind. She knows what she wants. Based on what teachers say and her own experiences, she knows that she must study hard to change her life.

Besides making an effort to achieve important goals, participants pointed out that LBY needed to show a great amount of proactivity to engage in things that benefit their development. For instance, a thriving left-behind adolescent may be self-directed to study ahead of others and to actively participate in extracurricular activities. As a female, elementary school teacher said, "*(This student) is willing to participate in activities. He is very active in various aspects. This is the type of students who have extra time besides studying.*" An internal locus of control and hopeful future expectation also emerged as important parts of LBY's achievement motivation. Participants talked about the importance of LBY believing that they could control their own destiny and being hopeful for their future life. A middle school girl stated:

I think I am the factor that is most helpful for me (my own development)... I know studying is very important and I have expectations (for myself). I think the main reason why my parents must work really hard is that they did not have the conditions to study well. They had the intention to study but had no way to do so. Now since that I have this condition, I will try my best to pave the way for my own future and to live the life I want.

The final self-directed motivation that promoted LBY's positive development was interests and sparks. This asset refers to youth's passion for a self-identified interest, skill, or

capacity that brings youth energy, joy, and sense of purpose (Benson & Scales, 2009). Teachers talked about the importance of developing students' extracurricular interest to enrich their lives and to enhance their holistic development. A male, middle school teacher provided an example, "*Playing chess trains one to think more widely and comprehensively. A student who plays chess is not impetuous while studying. He has developed the habit of being patient and contemplating…He won't give up easily on difficult problems.*"

Participants also mentioned several types of social-oriented achievement motivation among LBY. In addition to achieving personal success, Chinese LBY work hard to meet parents' expectations regarding their academic achievement. They aim to improve their family's current conditions and to repay their parents through academic pursuit. As a male, middle school student said, "*Every time I see them (my family members) fighting, I feel very sad. My dream is to study hard to change this situation and to let them all live a good life.*" Living up to teachers' expectations emerged as another important motivator. LBY work very hard in school to not let their teachers down. Finally, participants mentioned a motivation to avoid failure. Some LBY work very hard as they are afraid that others do better than them; they do not want to fail in school to let others look down on them or to have their parents lose face.

Self-control. Since LBY have one or both parents migrating to work away from home, it is important for them to develop strong self-control. This individual strength includes four components emerged from the interviews: self-discipline, setting high standards for oneself, having good living habits, and being obedient to teachers. Participants mentioned that to achieve positive development, LBY need to be self-disciplined, which means that they do things that they are supposed to do, show delay of gratification, and won't get addicted to internet or cell phones. As a female, elementary school teacher mentioned, "*Some students are very self-disciplined…*

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They know what they are studying for, so they finish schoolwork no matter if their parents are present." Self-control also means that LBY set high standards for themselves to behave well and to make high academic achievement. In addition, these LBY have healthy living habits such as eating healthy food. Lastly, participants talked about being obedient as a critical promotive factor for LBY's healthy development. Many thriving LBY follow the rules and guidance set by adults, especially teachers, and do what they are told to do. A female, elementary school teacher stated, "*He (the student) listens to what teachers say. He knows what is right or wrong. And he does what teachers tell him to do.*"

Positive coping. LBY tend to face more challenges in their daily life compared to non-LBY youth, and therefore the ability to effectively deal with adversities becomes an important individual strength. As mentioned during the interviews, LBY who demonstrate positive development usually show high levels of resilience. They are optimistic while facing difficulties and they try to find ways to solve problems themselves or actively seek for help. A female, elementary school teacher commented on how LBY reacted to difficulties, "*Although these youth do not have parent(s) around, they have developed independence to face and solve problems on their own.*" These youth are also persistent to accomplish goals despite obstacles. "*I feel that after setting a clear goal, they also show perseverance*," a male, middle school teacher mentioned, "*Even if they encounter setbacks, they are willing to overcome difficulties and move on.*" When they make mistakes, they reflect on their own problems to make improvement next time. More importantly, thriving LBY may have a positive understanding about parents' migration. Rather than complaining about their parent(s)' absence, they make positive meanings out of their challenging situations by seeing parent(s)' migration as a necessary avenue to earn long-term benefits for the whole family. As a male, middle school teacher said, "*Children can*

understand why their parent(s) leave home and work so hard. Thinking of their parent(s)'

difficulties, children may find motivation to study hard and repay their parents."

Academic engagement. Academic engagement emerged as another individual asset that

fosters the positive development of Chinese LBY. This factor entails academic grit, proper

learning attitude, good learning habits, and love for reading. Participants mentioned that thriving

LBY work hard in school. They pay close attention to schoolwork and make effort to solve

difficult problems. A middle school girl described how she dealt with challenges in her

schoolwork:

I am interested in learning itself. If I can't solve a problem, I will dig into it by myself. If I

can't do it on my own, I will ask my classmates. If I still can't do it, I think this problem is truly

difficult, so I need to improve myself and then ask the teacher.

These youth also show positive attitude toward schoolwork. They are serious about

studying and are willing to learn new things. In addition, LBY who show positive developmental

trajectories have good learning habits, such as paying attention in class, finishing homework on

time, previewing lessons in advance, etc. Lastly, thriving LBY love to read and often do reading

outside of class. As a male, middle school teacher said:

I think a small number of students who show positive development have a common

feature: they love reading. They read books and as they concentrate on this, they are less likely

to engage in other bad habits such as playing mobile phones. They can develop a positive

attitude and learn a lot from reading books. They also develop stronger living and learning

abilities.

Prosocial orientation. The last individual strengths identified by participants is a

prosocial orientation of Chinese LBY. This factor entails a sense of responsibility, helping

others, a willingness to interact with others, and showing gratitude. Participants expressed that thriving LBY tend to show a strong sense of responsibility to the group. They are willing to make contribution to their class and take family responsibilities. A male, middle school student showed his sense of responsibility to this class, "*No one is eager to do class labor in my class... Therefore, I do most of the class work by myself... I'd love to make contributions to my class.*" A male, middle school teacher echoed this sentiment:

(These youth) care about the group. They take group tasks as their own things to do. They are not only concerned about things in front of themselves. They consider the overall interests of the class and have a strong sense of group honor.

These youth are also willing to help others, such as helping classmates with their schoolwork. They are grateful for those who have helped them and will try their best to help others in return. As mentioned by the participants, thriving LBY are also those who are willing to communicate and interact with others.

Environmental Supports

Environmental support encompasses relationships, experiences, and opportunities provided by LBY's developmental ecology, including their family, school, community, and the larger society.

Social support. One of the most important categories of environmental support emerged from the interviews is social support. Participants talked about social support LBY usually receive from school (e.g., teachers and peers) and home (e.g., parents, caregivers, and siblings).

Teachers' support. Since one or both parents of LBY are away from home, participants noted that teachers tend to play a larger role in promoting these youth's development compared

to non-LBY. Teachers not only show great care about LBY's schoolwork, but they also care for youth's daily life and take care of them when necessary. As a female, middle school student said:

I remember once when I returned to school from a holiday, my father couldn't take me to school. My Chinese teacher picked me up. There was another time when I need to buy trousers and my father didn't have time. My math teacher took me for shopping. He also took me to take a shower and took me for dinner.

In addition, the emotional support provided by teachers is important for LBY's healthy development; teachers attend to youth's psychological wellbeing and offer support when youth are met with difficulties. A female, elementary school teacher talked about how she cared for LBY:

As a head teacher, I think we should care more about the left-behind youth… Sometimes they are unwilling to express themselves, but you should observe them, for example, when they do not feel comfortable or have conflicts with their classmates. The older they grow, the more reluctant they are willing to talk. If you observe something, you can take the initiative to ask them and see how to deal with the issue from a caring perspective.

Besides caring for LBY, participants mentioned that teachers need to employ effective educational methods to guide students' behaviors and help them establish right values. Teachers use reasoning instead of scolding, and guide students through major difficulties or challenges. For instance, a male, middle school teacher guided students to overcome challenges:

I told him to break down the big difficulties into smaller ones and solve them one by one. Don't try to bite a fat man with one mouthful (Roman was not built in one day). If I memorize all the words correctly today, I will give myself a reward to gradually build the confidence of learning.

Having teachers acknowledge LBY's strengths and achievements is also critical for these youth's development. As mentioned during the interviews, these youth tend to have low self-esteem and therefore they are eager for positive acknowledgement. When these youth fail in school or they are afraid of doing something, it is important for teachers to encourage them. A female, elementary school teacher echoed, "I *think it is important to help them establish confidence. I feel very few people will praise them. They are all good students. They don't have as many shortcomings as the media says.*" Finally, some participants mentioned that teachers should offer students enough room to try out different things and provide support when needed. This support for autonomy is likely to promote LBY's positive development.

Support of parents and caregivers. In addition to teachers' support, LBY receive important support and care from their family or extended family. Even though parent(s) may be physically absent, they still play critical roles in shaping LBY's development through emotional support and effective parenting. Participants mentioned that when parent(s) migrated to work in urban cities, they can still contact their child frequently using cell phones to care about youth's health, daily life, and schoolwork. Having the migrating parent(s) show their love and care toward LBY is vital for these youth's healthy development. Parents may ask youth about what happens in school, listen to what bothers them, and provide support and comfort when youth are met with difficulties. As a middle school girl said:

I video chat or call my mom very often when I'm free. She really cares about me. I also talk to my dad to share my life in school… They don't just ask me about my study. They also ask if anything bothers me and care about my health. I feel that they still care about my grades, but they care more about my healthy development.

Other ways of showing concern by parents are to acknowledge their child's strengths and achievements (e.g., perform well in an exam) and provide encouragement when their child fails in school. As indicated by the participants, parents who think highly of their child's education tend to promote youth's academic success by helping with their child's schoolwork or providing extra learning resources such as books and tutoring classes.

Besides providing love and care, parents who employ effective parenting strategies tend to foster LBY's optimal development. The effective parenting strategies, as noted by the participants, include not forcing a lot of pressure on their child, having good communication with their child, and helping their child establish good learning and living habits when they were younger so they can have better adjustment when parent(s) are absent. A middle school boy shared the parenting style of his family, "*They (parents) didn't put too much pressure on me… They were not particularly harsh on me or set any goals for me.*"

When parent(s) are away from home, LBY receive support and care from their caregivers, including the single parent, grandparent(s), and other relatives. Similar to parents' support, caregivers need to show care for LBY and provide emotional support when needed. Since caregivers live with LBY, they will take great care of these youth's daily life. As a middle school boy stated, "*My grandparents really care about me. They let me wear clothes when it's getting cold, and the food is ready when I get home... Since they don't know much about my study, they can only help me in these aspects.*" Additionally, caregivers should supervise the child with clear rules and do not spoil the child. As mentioned by the participants, LBY who demonstrate positive development tend to live with caregivers who provide guidance and use reasoning instead of scolding. "*His grandparents love him but do not spoil him. They may have some ground rules to follow,*" mentioned by a male, elementary school teacher.

Positive peer relationships. The positive relationship between youth and their peers was identified as an important factor that promotes LBY's positive development. Participants indicated that peers provide help when LBY meet difficulties in their schoolwork or daily life. They help come up with problem-solving ideas and provide emotional support when needed. A middle school boy mentioned, "*I can ask my classmates for help when I have difficulties with my schoolwork. And if anything happens to me, I can talk to them.*" Peers also support LBY by providing daily company, especially when they feel bored or lonely. Lastly, peers acknowledge youths' strengths and achievements; they are a great source of encouragement when LBY fail in doing something or face challenges.

Home-school collaboration. The collaboration between home and school emerged as an environmental asset for LBY. Participants talked about how teachers serve as the communication bridge between students and parents. Teachers contact parents to let them know their child's performance in school, not just when their child gets in trouble, but also when their child does well and deserves praise. Teachers also encourages the migrating parent(s) to talk to their child more frequently. A female, elementary school teacher talked about how she communicated with parents of LBY:

Sometimes I call or text parents to tell them that the child is going home and ask them to call the child if they are free. (I tell them) to ask the child if you have finished your homework, what you want to eat at home, and ask your grandparents to make them for you. (I tell them) to ask if the child have any wishes, for example, if he/she wants clothes or shoes, buy them to meet their need... If the child's grades get improved by even five or ten points, I tell parents that your child is make progress and you should pay more attention to them. Give them a small reward to motivate them to study harder.

Alternatively, parents contact teachers to know about their child's performance in school. It was mentioned in the interviews that some parents fully support teachers to supervise their child in school as they cannot reach their child physically.

Siblings' support. The last type of social support that emerged from the interviews is siblings' support. Participants mentioned that siblings had positive influences on LBY. Some LBY stay close with their siblings; siblings can provide company, help with their schoolwork, and help them face life challenges. Some siblings are not physically present, but they provide emotional support and inspiration for LBY, especially among older siblings. As a middle school girl said, "*My older sister will call me when I get back home. Since she is in high school right now, she tells me to study hard so that I can attend the same school as she does.*"

Caring and belongingness. The positive climate in school, family, and society was identified as another important category of environmental support.

Caring school climate. Participants pointed out that a positive climate in LBY's classroom and in their school promoted these youth's healthy development. A positive climate in the classroom means that classmates get along with each other. There are very few instances of fighting or argument, and students help and learn from one another. Participants also noted that LBY should feel safe and perceive positive energy in class; they feel accepted and believe that they are a part of the group. As a male, middle school teacher stated:

The biggest thing that left-behind youth lack is love of their parents. If they are seen by the group, if their teachers and classmates can see their strengths, they will have a sense of satisfaction and achievement… This will make them feel that they can leave parents and that they are not that dependent (on their parents). They gradually become part of the group and make progress rapidly.

A positive school climate also involves positive relationships between teachers and students. LBY trust their teachers and will turn to them for help. Teachers should treat each student equally and create a fair environment that benefit each student's development. Besides, teachers and school leadership may offer extra care and attention toward LBY, such as holding special events for them. A female, elementary school teacher discussed how her school paid extra attention to LBY:

The school should pay more attention to the left-behind youth. For example, the school may organize more events to let these youth feel that their school is a big family. They can feel love and grow up in this caring environment... Our school hold group birthday celebration for left-behind youth. The teachers also lean toward these youth subtly. For instance, when we share some things in class, we tell other students in advance that the left-behind student will receive an extra share, and everyone agrees. These youth already lack the care from their parents so we hope that they can receive extra care when we are able to give them.

Harmonious family atmosphere. Participants also pointed to the importance of a positive family atmosphere for LBY's healthy development. A positive family atmosphere involves close relationships between parents and the child. Thriving LBY usually get along with their parents and have good communication with them. As a male, middle school teacher mentioned, "*This girl has been communicating with her parents very well. She communicates with her parents directly whenever something happens, and they solve the problems very soon.*" In addition, the marital relationship in a family plays a significant role; parents would get along with each other and have effective communication.

Positive societal influences. Finally, participants noted that the surrounding community and the larger society should pay more attention to the LBY group. Neighbors and community

members can express more care for these youth by taking effective actions to care for them. And government or institutions may take special actions to create an environment that supports the positive development of LBY. In addition to the care for LBY, a positive societal climate in general will benefit LBY's development as they feel inspired and hopeful for future life. As a middle school boy stated, "*I feel that my future is promising. (Interviewer: how do you feel that?) I feel my country is getting richer and stronger.*"

Rules and expectations. Based on the interviews, LBY not only need substantial care and support and to live in positive environments, but they also require reasonable limits that guide their healthy development. These limits include role models, high expectations and expectation alignment, moral and conduct rules, and school standards.

Role models. Participants mentioned that it is important for LBY to have role models to look up to and learn from. At home, youth can learn from their family members, including parents, grandparents, siblings, and other relatives. It is said that parents are the first teachers for their child, and therefore parents' words, deeds, and characters all have strong influences on the child. Participants also pointed out that older siblings, especially those who have attended college, provide great inspiration that encourages LBY to work hard and achieve what their siblings have accomplished. For instance, when asked if he wanted to be like his older brother who went to college, an elementary school boy said, "*Yes, I want to be at least like my older brother.*" In school, LBY learn from high-achieving peers. They encourage one another and make academic progress together. A middle school girl talked about how she got inspired by her like-minded peers, "*We have been hanging out for a long time and found that we all have our own dreams and goals. We are like-minded and can inspire one another.*" Participants also

mentioned that LBY can learn from their teachers. A female, middle school student described how she was inspired by her math teacher who worked diligently as a teacher:

When I saw his desk full of notes, I felt that he worked so hard as a teacher. He is also the head teacher, so he comes earlier and leaves later than students every day. When we are in class, he works on math problems and prepares lessons in his office. As the head teacher, he also manages the class affairs…His influence on me is that, as an adult, he still works hard even though the best time for hard work has already passed. And now I am at the best point to study hard. I should make good use of this time to improve myself and achieve (my goals) as soon as possible

High expectations and expectation alignment. The high expectations from adults, including parents, other family members, and teachers, serve as a motivator for LBY's positive development. Participants mentioned that parents of LBY usually have high expectations for their child's academic achievement. Parents and other family members expect that youth perform well in school to attend college, find a good job, and give back to family in the future. A middle school girl described the expectations of her father:

My dad always has high expectations for me. He often asked me about how I did in the exam. He is very strict with me as he hopes I could succeed. He had a dream of going to a good college; however, since he did not have good living conditions, he wasn't able to. Therefore, he hopes that his children could have a good future.

These expectations inspire LBY to work hard in school. As youth perceive these expectations, they adopt them, and form aligned expectations with their parents. Teachers' high expectations for LBY in school also encourage them to work hard, especially for elementary school students.

Moral and conduct edification. LBY's development is also enhanced when parents and teachers provide guidance on morality and conduct rules. Participants emphasized that adults should educate youth on what is right, what is wrong, and help them correct their mistakes. Since parent(s) of LBY are away from home, teachers play a large role in edifying youth on how to be a good person. As a female, elementary school teacher said, "*Maybe it's important for the teacher to guide the student... He/she doesn't understand certain things. I would tell him/her about values and add things that their parents won't talk about.*"

School standards. Lastly, the school should have clear rules that guide students' behaviors. As mentioned in the interviews, the boarding schools where LBY attended set strict schedules and rules to help these youth live a well-regulated life. Participants noted that such school helped them develop independence and self-discipline. As a middle school girl described:

Since I live in school, I have developed independence. I have to do my own laundry at school, do the housekeeping, and make my bed every day. In fact, I used to let my mom do all these things when I was at home, but I have been doing all these since I came to school.

Extracurricular activity participation. The opportunities to participate in extracurricular activities emerged as the final environmental support. Participants noted that taking part in meaningful after-school activities, such as art, sports, and field trips, will help develop LBY's abilities and broaden their horizon. A male, middle school teacher talked about the extracurricular activities offered in his school, "*We have the "Home of Left-Behind Youth" in our school, which holds events regularly, such as labor practice activities, visiting the nursing home to comfort the elderly, or participate in dissemination for drug control...*"

Based upon the list of individual strengths and environmental supports identified from the interviews, a new quantitative instrument was developed to measure the assets for rural LBY. In addition to the qualitative results, the development of the new measure was informed by existing frameworks and scales in PYD and resilience research. The instrument was created following five steps: (1) develop an item pool for assets identified through interviews; (2) revise the instrument to make it ready for expert review; (3) conduct expert reviews to receive feedback; (4) revise the instrument structure and items; and (5) conduct field tests and cognitive interviews to finalize the instrument. Each step is discussed in more details below. The instrument was developed in Mandarin Chinese and translated into English for review by American advisors and experts when necessary.

Step 1: Develop an Item Pool for Assets Identified Through Qualitative Interviews

To create a set of items that are theoretically relevant and contextually sensitive to LBY, I searched for candidate items from two major sources: established measurements and relevant statements from the interviews. I created a document including themes, codes, items from established measurements, and participants' statements that are particularly useful for specifying the content to be included on the quantitative instrument.

Based on the themes and codes emerged from the qualitative analysis, I looked for existing scales that measure constructs that map onto the individual strengths and environmental supports identified among Chinese LBY. The selected scales were developed or validated at least among adolescent population, and preferably applied to Chinese youth or the LBY group. The main purpose of this step was to find relevant items that have been validated empirically so that I could directly use or adapt them in my new instrument. The established measurement tools that I

referred to included: Developmental Assets Profile (Chang et al., 2019; Syvertsen et al., 2021), Adolescent Social Support Scale (Ye & Dai, 2008), School Climate Survey of middle school students (Ge & Yu, 2006), Parenting Evaluation Scale (Perris et al., 1980; Yue, 1993), Sibling Relationship Questionnaire (Furman & Buhrmester, 1985), My Class Survey (Jiang, 2004), Psychological Sense of School Membership Scale (Zhang et al., 2021), Student Perceived Teachers' Expectations Questionnaire (Zhang, 2009), Friendship Quality Questionnaire (Parker & Asher, 1993; Zou et al., 1998), The Parents' Expectation Perception Questionnaire (Cheng, 2010; Jin, 2014), Self-Control Scale (Tangney et al., 2004), Middle School Students Self-Control Questionnaire (Wang & Lu, 2004), Academic Grit Scale (Clark & Malecki, 2019), Middle School Students Coping Scale (Zhu et al., 2003), Rural Left-Behind Children Psychological Capital Scale (Fan et al., 2015), Resilience Scale for Chinese Adolescents (RSCA; Hu & Gan, 2008), Healthy Kids Resilience Assessment (HKRA; Constantine, et al.,1999; Li et al., 2008), Study Habits Scale (Mo, 2020), Questionnaire for Teenagers' Future Orientation (Liu et al., 2011), Achievement Motivation Scale (Yu & Yang, 1989), Adolescent Time Management Scale (Huang & Zhang, 2001), Youth Responsibility Questionnaire (Cheng, 2002), and Search Institute Thriving Profile (Benson & Scales, 2009).

In addition to locating existing scales, I also read through quotes coded under each asset category to identify relevant statements. I extracted the core ideas across the coded quotes and rewrote interview statements into simple, complete sentences. I also rephrased the statements that were too long, incomplete, or had dual or multiple meanings into simple complete sentences so that they could be used as candidate survey items. Finally, I merged duplicate items generated within and across interviews.

After identifying candidate items from both existing scales and interview statements, I created the initial item pool using the following procedures:

1. If the established scales or sub-scales fit the qualitative findings well, I selected appropriate items from those scales.

    a) The selected items should closely resemble interview themes and codes and reflect the core ideas of the coded theme.

    b) In some cases, items from multiple established scales were combined to form the item pool for a single asset factor. This happened when similar scales were reviewed, or when the coded asset contained multiple aspects.

2. When no established measurements were found, for instance, measurements to assess LBY's communication with the migrating parent(s), the qualitatively informed items were used.

The initial item pool consisted of 243 items, including both self-developed items and established measurements that assessed each theme identified from the qualitative interviews. This instrument contained two scales that measured the individual strengths (the IS Scale) and the environmental supports (the ES Scale) separately. Each type of individual strength and environmental support were represented by subscales of the newly developed measurement. The item pool then went through a series of review and revision for the finalization of the new instrument.

Step 2: Initial Revision of the Instrument

A thorough review of the original 243 items was conducted to refine the instrument. This was done through deleting or combining items that expressed similar meanings, deleting items that were less relevant, and revising items that had inappropriate expressions (e.g., double-

barreled items). I tried to use short items with an appropriate reading level. I also used participant language identified in the qualitative findings when possible. These procedures resulted in a 180-item instrument.

At this stage, informal expert reviews were conducted with two scholars who are experienced in studying Chinese LBY and survey research. Each scholar was provided with items of the two scales. Written feedback was requested from the scholars regarding the content validity of the instrument, that is the extent to which the items can accurately measure what they intend to measure. They were also asked to comment on the scale structures. Both scholars provided feedback on individual items, including deleting similar or repetitive items, revising unclear or controversial expressions, revising items that were inducive to social desirability, and adding items that reflected other important aspects of LBY's assets. They also suggested three major revisions regarding the survey subscales: (1) address the overlap between *social support* and *caring and belongingness*; (2) relocate the subscale of *home-school collaboration*; and (3) make the scale structure of individual strengths clearer and more concise.

Based on their feedback, I revised individual survey items and refined the survey subscales. The subscale name "caring and belongingness" was changed to "positive climates," which only included items that focused on the positive attributes of the environment. Items that described care and support from interpersonal relationships went under the subscale of *caring support*. *Home-school collaboration* was relocated under the subscale of *positive climates*. Finally, the scale of individual strengths was revised; subscales that contained multiple meanings were split so that each subscale was given a clear and concise definition. For instance, *interests and sparks* and *proactivity* were split out of *achievement motivation*. The revised instrument included eight individual strengths (i.e., *achievement motivation*, *self-control*, *positive coping*,

academic engagement, *proactivity*, *interests and sparks*, *a positive understanding of parental migration*, *and prosocial orientation)* and four categories of environmental support (i.e., *social support*, *rules and expectations*, *positive climates*, *and extracurricular activity participation*), containing 137 items.

The revised instrument was then reviewed by dissertation advisors to evaluate whether the survey dimensions and items were theoretically and developmentally appropriate. The instrument was translated into English for American advisors to review. Advisors gave feedback on revising specific items, including double-barreled items and unclear as well as inappropriate expressions. They also suggested revising the instrument to reflect the unique contexts of Chinese LBY. Therefore, I rephrased some items and added additional items pertaining to the developmental experiences of rural LBY. For instance, under the subscale of *teachers' support*, several items addressed how teachers' care might compensate for the lack of parental care among LBY. Also, while measuring LBY's *achievement motivation*, an item was added to assess youth's future aspiration related to parental migration: "*I hope to get a well-paid job, so I don't need to migrate to work like my parents.*" The revised instrument included 135 items.

The rating scale of the instrument was also developed at this stage. A 5-point Likert scale was used with the following response options: 1 = not at all like me; 2 = mostly not like me; 3 = partly like me, partly not like me; 4 = mostly like me; and 5 = completely like me. Higher scores represent higher levels on the measured construct, except for a few reverse coded items. Explanations for each response option were provided in the survey to be administered.

Step 3: Expert Reviews

Expert reviews were conducted to evaluate the content validity of the 135-item refined instrument. Experts were asked to first complete an online survey by rating the extent to which

each item was suitable to measure the assets identified for Chinese LBY (1 = not at all suitable to 4 = very suitable). Space was provided at the end of each survey segment for experts to share feedback regarding their ratings and any issues that they found salient. At the end of the survey, experts were asked if they were willing to participate in an online interview to further discuss their feedback for the instrument.

Six Chinese scholars were invited to conduct the expert review through emails. Four experts replied with consent while two experts did not reply. All participating experts were born and raised in China. Two of the experts were postdocs and the other two experts were assistant professors in psychology. They were all familiar with research in the field of PYD and had experiences studying Chinese LBY. Among the experts who conducted the review, two of them completed both the survey and the interview; the rest of the two experts only completed either the survey or the interview.

Based on the three survey results, 38 items (28%) were identified as either "not at all suitable" or "not quite suitable" by at least one expert. Items with an average rating equal to or higher than 3 might be considered suitable to be items in the new instrument. Ten items (7%) have an average rating smaller than 3. Experts who completed the survey all gave written feedback to explain their ratings. During the interviews, experts further explained their ratings and written feedback from the online survey and gave additional suggestions to improve the instrument. The interview took about one hour for each participating expert. Given that only three experts completed the survey, the quantitative results were used in corroboration with the qualitative findings from experts' written notes and interviews.

Experts made two major suggestions during the survey and the interview. The first suggestion was to improve the theoretical structure of the instrument to make it more clear and to

better capture what promoted the positive development of rural LBY. Experts advised me to refer to more existing frameworks and scales. They acknowledged that the present instrument was comprehensive in assessing factors that might benefit LBY's healthy development; some of them pointed out additional factors, such as neighborhood support and belief in social mobility. A helpful advice was to consider the applicability of this instrument to Chinese LBY and how to represent their special developmental contexts and experiences.

The second major suggestion given by experts was to revise and refine individual items. All three experts during the interviews recommended me to use items from established scales as much as possible and to keep self-developed items at a minimum amount. They also suggested me to keep each item clear and simple, avoiding items that might induce different explanations among participants. For instance, experts pointed to a few items that might need reconsideration, such as "*I can talk with my teacher like a friend*" and "*My caregiver(s) supervise my schoolwork.*" Items like these, indicated by experts, might not fit the cultural context of LBY and lead to controversial interpretations (e.g., youth may interpret the word "supervise" as control instead of support). Items written in abstract, general language should be rephrased into specific, objective expressions. And each item should be phrased in a way that applies to every LBY. A final suggestion was to avoid making assumptions about how parental migration might have influenced LBY's perceptions of these individual and environmental assets. For example, an item states that "*Since my parent(s) are away from home for a long time, I usually take the initiative to do things for my family (such as doing chores and farm work).*" It is possible for LBY to do things for their family even if their parents stay at home. Items like this should be considered with caution and revised to avoid introducing researchers' biases. Based on experts' feedback, a second revision of the instrument was performed.

Step 4: A Second Revision of Instrument Structure and Items

Guided by experts' feedback, the qualitative findings were reviewed again in combination with relevant frameworks from existing literature. The major reviewed frameworks included a PYD model—developmental assets model (Benson, 2007), two resilience frameworks—the Resilience Scale for Chinese Adolescents (RSCA; Hu & Gan, 2008) and the Healthy Kids Resilience Assessment (HKRA; Constantine, et al.,1999), and a framework from the field of positive psychology—the psychological capital model for rural LBY (Fan et al., 2015). I did thorough comparisons across different frameworks to identify the common constructs as well as the unique focus of each framework. In addition to reviewing established frameworks, I went back to empirical studies that examined the individual strengths and environmental supports of Chinese LBY. Some of the reviewed studies addressed promotive factors of LBY, such as meaning-focused coping with prolonged parental migration (Fu & Law, 2017). The study used inductive approaches and therefore did not include an established framework or measurement. Studies like these pointed to important directions for the development of the present instrument and provided empirical support to compose self-development items.

The revision of the instrument aimed to capture the full range of factors that might promote the positive development of LBY, as indicated by existing literature and as deemed relevant by interview participants. Based upon experts' feedback and my review, several major changes were made to refine the instrument: (1) split *support of parents and caregivers* into *support of residential caregivers* and *support of the migrating parent(s)* to avoid overlap between parents and caregivers; (2) add *support of other adults* under the construct of *social support*; (3) change *siblings' support* into *support of peer relatives* as some LBY may be the

only child in their family; (4) divide *rules and expectations* into *trust and acknowledgement* and *rules and role models*. Trust was considered to have a more positive connotation than high expectations, which may imply pressure; (5) *sparks and interests* was combined with *extracurricular activity participation* to form an environmental support factor of *extracurricular support*. This factor emphasizes the external resources and opportunities provided for LBY to develop their interests and to enrich their afterschool lives; (6) a new construct of *academic pursuit* was added to encompass *achievement motivation* and *academic engagement*. A focus on academic achievement and pursuit has long been a critical motivator for Chinese youth, especially for LBY who need to study hard to change their destiny; (7) the construct of *proactivity* was enriched and revised into *internal locus of control* and *hopeful future expectation* based on existing scales; and (8) the construct of *intention to contribute* was added to encompass *prosocial orientation*, *a positive understanding of parental migration*, and parts of *achievement motivation* that addressed LBY's intention to repay family and contribute to the society. The revised instrument included six individual strengths (i.e., *achievement pursuit, self-control, positive coping, internal locus of control, hopeful future expectation, and intention to contribute)* for the IS Scale, and five categories of environmental support (i.e., *social support, trust and acknowledgement, rules and role models, positive climates, and extracurricular support*) for the ES scale.

To revise individual items, I reviewed existing measurements and qualitatively informed items based on the refined instrument structure. If items from existing scales accurately reflected the core ideas of the assets of LBY, I kept the original items or modified the language to improve the quality of the items. For example, I revised an original item from Developmental Assets Profile (Chang et al., 2019) "I feel safe and relieved at home" to "I feel safe at home" to avoid

double-barreled items. However, if items from established scales reflected the same positive aspect of the survey construct, but these items expressed slightly different meaning than what the instrument constructs intended to measure, I rephrased the original items to make it as close to the definition of the constructs as possible. For example, I rephrased the item "When I do something well, teachers and other adults in school will praise me" from HKRA (Constantine, et al.,1999) to "My teachers will praise me when I make academic progress." Such expression echoed what participants described in the interviews. For aspects of individual strengths or environmental supports that have not been studied using established scales, I created my own items based on qualitative interviews and relevant literature. The self-developed items included those that pertained to the developmental contexts and experiences of Chinese LBY, especially those under the constructs of *social support* and *intention to contribute*. These revisions resulted in a 169-item instrument, with 31 items that specifically applying to LBY's situation.

Demographic questions were also developed to capture LBY's age, gender, parents' education levels, and left-behind status. Several questions were devoted to ask youth's migration type (mother migration, father migration, both-parent migration, and non-parent migration), parental migration duration, youth's age at the onset of parental migration, the frequency of online communication between the child and the migrating parent(s), and the frequency of the migrating parent(s) going back home. These questions plus the 169 items that measured LBY's assets were programmed into an online survey for field test.

Step 5: Field Tests and Cognitive interviews to Finalize the Instrument

After making several rounds of changes to the instrument, field tests and cognitive interviews were conducted with target youth to evaluate the face validity and readability of the instrument items. Five LBY (age range = 13-17, average age = 14.8) were invited to take the

draft online survey through an online survey website. Space was provided at the end of each survey segment for youth to note down any questions that they did not understand and any questions that they did not know how to answer. After completing the survey online, these youth were invited to participate in an interview to discuss their experiences of taking the survey and their interpretation of certain survey items. The interviews were conducted via cell phones with teachers' facilitation. The interviews were conducted at the youth's earliest convenience. Interviews lasted from 14 minutes to 45 minutes. Two youth were male and three were female. Three youth had both parents migrating while the other two youth had either father or mother migrating.

Most youth in the interviews expressed that the length of the survey was appropriate, except for the youngest participant who felt that the survey was too long. Most of them finished the survey within 20 to 30 minutes. Overall, participating youth felt that the survey questions were easy to understand, and the instructions were easy to follow. They thought their classmates should be able to understand these questions and instructions as well. I asked some youth to explain the response options; all of them understood the response options in the way as intended. Participants stated that it was moderately easy or easy to answer each question based on their own situations. Two stimulating pictures were inserted in the online survey to encourage participating youth to keep completing the survey. Youth mentioned that these pictures were pleasant and inspired them to continue answering questions.

When asked about whether they liked answering these survey questions, some youth gave a positive answer. They stated that these questions really addressed what mattered in their daily lives and captured multiple aspects of their development comprehensively. One youth even acknowledged that this survey asked about LBY from a strength-based perspective:

These questions are very detailed and can represent what we think in our mind. Since our parents work away from home, many people think that we are lacking love. But in fact, we don't, and we can understand our parents very well. This questionnaire asked if we understand our migrating parent(s)…So I think this questionnaire is very considerate.

Participating youth also mentioned times when they found questions hard to answer or when they felt discouraged as their own situations deviated from what the questions described. For instance, a few items in the survey asked the extent to which migrating parent(s) cared about youth in various aspects. One youth said that her parents only cared about her study. Another youth mentioned that it took her longer to answer questions about *positive coping* as she thought she was not strong and brave enough while facing challenges. Regarding issues like these, I added a few sentences in the survey introduction to reassure participants that questions asked here reflected developmental experiences of many youth like them, which might or might not apply to their own situations. They were encouraged to give honest answers as much as possible.

All participating youth indicated that they did not have any questions that they found hard to understand or answer while completing the survey. Therefore, I read questions that I selected in advance and asked youth to verbalize their interpretation of these questions. Some of the questions included words or terms that I was not sure if the target participants could understand. Others might induce different ways of interpretation or could not apply to situations of all LBY. Given that the survey contained 169 items, each youth was asked to explain a slightly different set of items. Participating youth could accurately explain the majority of items being asked. When youth were hesitating or paused, I used gentle probes to encourage them to verbalize what they were thinking. I also repeated what they have said to make sure I understood them correctly.

Based on youth's feedback, a final revision of the instrument was performed. Most changes made at this stage were minor. For instance, some youth mentioned that they did not know if any of their adult caregivers or relatives were communicating with their teachers in school. Therefore, a relevant response option was added for youth who were in such situation. Two items asked about whether peers who also had migrating parent(s) could understand their feelings and empathize with them. However, one youth in the interview mentioned that he did not have any peers like this. Therefore, this item was rephrased as "When I miss my parent(s), my peers will cheer me up" so that all LBY should be able to answer. Survey instructions regarding *support of peer relatives* was also revised. Participants used to be asked about their closest sibling or cousin. However, most youth in the interviews indicated that they were actually thinking of a group of peer relatives; they tended to consider different persons while answering different questions. Therefore, the survey instruction regarding the closest sibling or cousin was removed. In addition to these changes based on field tests and cognitive interviews, two constructs, *social competency* and *obedience* were split out of the larger constructs (i.e., *prosocial orientation* and *self-control*) as independent individual strengths. Doing so allowed the instrument constructs to have more clear definitions that make sense based on both existing literature and qualitative interviews.

The refined instrument included eight individual strengths (i.e., *positive coping*, *academic pursuit*, *internal locus of control*, *hopeful future expectation*, *self-control*, *intention to contribute*, *social competency*, and *obedience)* and five categories of environmental support (i.e., *social support*, *trust and acknowledgement*, *rules and role models*, *positive climates*, and *extracurricular support*), containing 166 items. This instrument consists of two scales: the Individual Strengths Scale (IS Scale; 75 items) and the Environmental Supports Scale (ES Scale;

91 items). See Appendices C and D for items (in both English and Chinese) in each scale. This finalized instrument was programmed into an online survey for quantitative data collection.

Discussion

The qualitative phase of the study was conducted to extract information about assets that promote PYD among Chinese rural LBY and to create items for the instrument. Semi-structured interviews were first conducted to collect information about the individual strengths and environmental supports that promote positive development of these youth. Through thematic analysis of 22 interviews from teachers and youth, five individual strengths (i.e., *achievement motivation*, *self-control*, *positive coping*, *academic engagement*, and *prosocial orientation*) and four categories of environmental support (i.e., *social support*, *caring and belongingness*, *rules and high expectations*, and *extracurricular activity participation*) were identified. An initial item pool of 243 items was developed based on qualitative findings and existing literature. The instrument went through an iterative process of reviewing and revising through expert reviews and field tests to refine its structure and individual items. The revisions were performed to obtain clear and theoretically sound instrument constructs, and to reflect the unique contexts and experiences of Chinese LBY. The finalized measure contained 166 items that assessed eight individual strengths (i.e., *achievement pursuit*, *self-control*, *positive coping*, *internal locus of control*, *hopeful future expectation*, *intention to contribute*, *social competencies*, and *obedience)* and five categories of environmental support (i.e., *social support*, *trust and acknowledgement*, *rules and role models*, *positive climates*, *and extracurricular support*), which would be validated through the quantitative phase.

The qualitative interviews helped identified assets that might play a role in promoting positive development of Chinese LBY using an inductive approach. Many of the factors that

emerged in the present study were consistent with those identified by established PYD and resilience frameworks, as well as those that were widely studied in existing research on LBY (e.g., social support, rules and high expectations, and academic engagement). Though similar factors were extracted, they were contextualized in the present investigation to understand the multiple dimensions of the constructs and the nuances in their meanings when applied to Chinese LBY. For instance, within the *social support* category, the care and support LBY receive from the migrating parent(s) differ from those provided by the stayed parents or caregivers. When parent(s) are absent, youth receive care from the migrating parent(s) mainly through online communication. Therefore, the frequency and quality of the communicate matter a lot. The caregiver, who is either the single parent or other adults, takes the duty of taking care of LBY's daily lives, supervising them, and providing emotional support. Teachers may also need to care for LBY's lives in addition to responsibilities that are normally assigned to teachers in school. Another factor that exemplifies LBY's uniqueness is their *achievement motivation*. They not only aim to study hard for personal success, but also for improving their family's conditions and repaying parents. This is common for youth in rural China, especially LBY, who live in low-SES families and strive to change their destiny through studying. This qualitative study represents one of the very few attempts to understand the assets that support PYD of Chinese LBY from insiders' perspectives. Findings derived from the interviews informed the development of the quantitative instrument.

Some factors emerged from the present study have not been widely studied among the left-behind youth group, such as *siblings' support*, *home-school collaboration*, and *extracurricular activity participation*. Participants discussed the positive influences that siblings might have on LBY, especially those who have older siblings. Older sister or brother who do

well in school or who attend college provide spiritual support for LBY. They serve as important role models from which LBY can look up to. Older siblings may also help take care of the youth and provide company when parents are not around. *Home-school collaboration* was mentioned as promotive factor for LBY. Due to long-term migration, LBY are left for a single parent, grandparents, or other adults who may not be able to supervise the child as close as parents do. Therefore, it is essential for teachers and parents to maintain regular communication to monitor youth's performance and address any issues that come up. Since parent(s) are away from home, teachers may know about the youth better and can serve as a communication bridge between youth and their parents. Finally, *extracurricular activity participation* was mentioned as an environmental support for LBY. Although schools where these youth attend may lack the resources to hold various extracurricular activities, they were seen as important resources to promote holistic development of these youth. It is worthwhile to explore whether these factors fit into the newly development instrument to promote positive development of LBY through quantitative studies.

The instrument was initially developed to measure factors identified in the interviews using validated scales and qualitatively informed items. Given that the qualitative findings were derived from a relatively small sample of teachers and LBY, existing frameworks and relevant literature were reviewed in search of assets that might complement what emerged from the interview. For instance, *support of other adults* was added under the *social support* category to assess the support LBY may receive from neighbors and other relatives. This factor has been shown positively associated with rural LBY's subjective well-being (Chai et al., 2019) and is present in frameworks such as HKRA (Constantine, et al.,1999) and Developmental Assets Model (Benson, 2007; Syvertsen et al., 2019). Existing literature also helped me refine the

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constructs included in the instrument to make them more clearly defined. Several constructs were split out of the larger constructs to form independent factors, such as *internal locus of control*, *social competencies*, and *obedience*. The constructs were then adapted through construction and revision of survey items so that they were reflective of LBY's developmental experiences. These procedures enabled the development of an instrument that comprehensively measured assets deemed critical from qualitative investigation and representative across relevant frameworks on the positive development of at-risk youth. The instrument resulted from this study phase was subjected to validation through quantitative analyses.

While developing and revising the instrument, multiple ways of organizing the scale constructs emerged. For instance, categories of environmental support can be organized into the present structure, i.e., social support, positive climates, etc., or get organized by contexts, such as school, family, and community support. The present scale was finalized in a way that best represented qualitative findings as well as existing literature. However, it was open for re-organization informed by quantitative results. The final scale was refined balancing between the hypothesized structure and survey data.

Limitations and Implications

The qualitative phase of this study has several limitations. First, only selected teachers and LBY were included in the interviews. More diverse populations may be invited to triangulate the information obtained regarding what promote Chinese LBY's healthy development. The original plan was to also recruit community social workers in local places; however, they were not included in the present study due to the difficulty of identifying and contacting them. Parents or caregivers were also excluded as they were hard to reach. Future studies may invite these

groups to hear opinions from perspectives that differ from those of teachers or youth. In addition, participating LBY were selected for demonstrating positive development at the time of the study. Future research may include youth with different positive developmental trajectories (e.g., those who struggled at first but later demonstrated optimal development, or those who showed stable positive developmental trajectories) to understand how different individual and environmental assets interact to produce different developmental pathways.

Second, given that the present qualitative analysis primarily focused on extracting information on assets that enhance positive development of LBY, there might be a lack of contextual information in the coding process (e.g., how might certain assets, such as self-control, work in different situations). Future in-depth analyses are needed to explore these individual and environmental assets in relation to their variations in different contexts, how they might have developed, and how they relate to one another. Also, findings should be interpreted in light of the qualitative method used. The present qualitative research relied on a relatively small, intentionally selected sample, which cautions against making claims about the prevalence or generalizability of the findings. Quantitative studies are needed to test the utility, generalizability of the qualitative findings, which was described in the next study phase.

Third, the expert reviews were conducted with four scholars using an online survey and interviews. Due to the relatively small number of experts involved and the variations in the review format, quantitative ratings of instrument items could not be used as a decisive criterion to remove items. Instead, they were evaluated in corroboration with the qualitative feedback and interview. More experts may be included to do the review in a more standard and consistent procedure. Also, it may be good to do another round of expert review once the survey is finalized before going into field tests.

Finally, an iterative process of reviewing and revising scale structure and items was performed to refine the instrument, especially for the scale of individual strengths which had considerable changes. The overlaps among different constructs could be better addressed at the earlier stages of instrument development. And more nuanced themes or subthemes may be derived from qualitative data analysis to inform the survey development.

Despite these limitations, the qualitative phase of the study identified important constructs to be used in developing the instrument that measured individual strengths and environmental supports of Chinese LBY. The instrument may be used to understand the dynamic individual by context interactions that enable positive developmental trajectories among these youth. To evaluate the quality and applicability of the newly developed instrument, a series of quantitative analyses were conducted and presented in the next chapter.

Chapter 3: Quantitative Study

During the second stage of the study, two independent samples were recruited to first perform exploratory factor analysis (EFA) in Study One to identify factor structure and reduce items. Confirmatory factor analysis (CFA) was then conducted in Study Two to further refine the structure of the instrument and to test the reliability and validity of both scales.

Study One

Method

Participants. Among 1,506 youth who participated in the online survey, 1,431 provided consent and completed the survey. This sample included 754 LBY and 677 non-LBY. The present study only focused on LBY, which are youth who have one or both parents migrating to work elsewhere, for the purpose of measurement development. After removing 147 cases who did not pass a single attention check (three in a total) and one case who had taken the pilot survey, the original sample that went through the following analyses included 606 LBY (Sample 1; *mean age* = 13.59, *SD* = 0.84; 48.7% were male). Participating LBY were recruited from elementary and middle schools in rural communities in Shanxi, Neimenggu, Jiangsu, and Anhui Province. In terms of youth's parental migration type, 60.9 % of them had father migrating to work elsewhere and 31% of them had both parents migrating to urban areas; only 8.1% of youth had mother migrating away from rural hometown. The average age when parent(s) started to migrate, as reported by 83% of the participating youth who could still remember, was 7.51 (*SD* = 4.58). Almost 80% of youth said that their migrating parent(s) contacted them through phone calls, text messages or video chat at least once a week. When one or both parents migrated for work, the primary caregiver was mother for 46.7% of the participating youth and grandparent(s) for 25.9% of them. As for parents' education levels, 60.3% of youth's fathers graduated from

elementary or middle school while 20.6% of them graduated from a high school or a technical secondary school, as reported by the youth. Only 4.8% of youth's fathers had a college-level degree or above. Similarly, 63% of youth's mothers graduated from elementary or middle school and 16% of them graduated from a high school or a technical secondary school. Only 5.2% of youth's mothers had a college-level degree or above.

Given that two scales were created to measure the individual strengths and environmental supports of LBY separately, the subsequent analyses were performed onto two samples derived from the original sample of 606 youth. These two samples slightly differed in terms of sample size, depending on the specific variables included in each scale. The sample used for the scale of individual strengths included a total of 597 youth (Sample 1-IS; *mean age* = 13.58, *SD* = 0.83; 47.9% were male), after removing 9 cases with more than 21% of missing responses. The sample used for the scale of environmental supports included a total of 553 youth (Sample 1-ES; *mean age* = 13.60, *SD* = 0.78; 47.6% were male), after removing 9 cases with more than 21% of missing responses and 44 cases that did not qualify to answer certain questions in the scale (e.g., those who did not have any siblings or cousins).

Procedure. I recruited participants from elementary and middle schools through contacting teachers and educational practitioners who might have contact with the LBY group. I sent them a recruitment letter with information of the research, what the school would be involved, and potential compensation for the school (e.g., students' gifts, free lecture on youth development). These contacts distributed the letter to school principals and teachers who might be interested in the study. Once the school leadership agreed to participate in the study, I communicated with the school contact to set up a time for survey administration. I provided the online survey link, instructions for survey administration, and consent forms.

Since the target youth participants had parent(s) migrating away from home, especially those who came from families with both-parents migration and were raised by grandparents who might not be qualified to read the consent form and understand what the research was about, it would be challenging to obtain written informed consent from the parents or guardians. Therefore, I provided an alteration of informed consent that allowed not only parents or guardians, but also teachers to provide consent for students to participate in the study. The alternative informed consent was presented as an information sheet about the study that I shared with teachers or school principals who acted as the goalkeepers of the data collection. I asked if they agreed to allow their students to participate into the study, and if they did, I put their name as well as their relationships with the participating student on the information sheet. I then signed my name to indicate that I had gone through the consent process. Teachers and principals were free to share the information sheet with parents. Consent was obtained from at least a teacher of the students. In addition, youth themselves were given the opportunity to indicate if they wanted to participate in the study at the beginning of the survey, and were allowed to withdraw from the survey, stop at any time, or skip any questions (excluding some demographic questions) that they did not feel comfortable answering. All study procedures were approved by the Institutional Review Board at Claremont Graduate University.

The original plan was to only select LBY into the study. However, given that it was difficult for teachers to identify LBY in advance, and only including LBY might make them feel they were different from others, students of the whole class or grade were invited instead, and parents' migration status was identified using a survey question. Student participants filled out an online survey through Wenjuanxing (wjx.cn) in a computer classroom in school at a designated time, such as a computer or psychology class. It took them less than 20 minutes on average to

complete the survey. Each student received a bookmark as an appreciation for participating in the study. And the school received a report about students' average performance on the survey questions. All survey data were kept confidential, with no identifying information retained or linked to youth responses.

  Measures. Participants answered questions on the individual strengths and environmental supports that promote the positive development of LBY. Items were rated on a 5-point scale: 1 = not at all like me, 2 = mostly not like me, 3 = partly like me, partly not like me, 4 = mostly like me, and 5 = completely like me. They also reported basic demographic information and characteristics of parental migration.

  Individual Strengths (IS Scale). A total of 75 items were included to assess eight individual strengths. *Positive coping* was assessed by nine items for positive cognition (4 items) and problem-solving skills (5 items). *Academic pursuit* was assessed by 23 items for academic goals (4 items), academic achievement motivation (11 items), and academic engagement (8 items). *Internal locus of control* was assessed by five items. *Hopeful future expectation* was assessed by four items, including one reverse-coded item ("I cannot see any hope for my future"). *Self-control* was assessed by eight items, including one reverse-coded item ("I am addicted to something, e.g., playing on my cell phone, surfing on the internet"). *Intention to contribute* was assessed by 15 items to measure this construct related to class (5 items), family (6 items), and society (4 items). *Social competency* was assessed by five items and *obedience* was assessed by six items.

  Environmental Supports (ES Scale). A total of 91 items were included to assess five types of environmental support. *Social support* was assessed by 40 items to measure the support from teachers (6 items), residential caregivers (9 items), migrating parent(s) (10 items), other

adults (5 items), peers (5 items), and peer relatives (5 items). *Positive climate* was assessed by 20 items for positive class and school climate (6 items), positive family climate (5 items), home-school collaboration (5 items), and positive societal climate (4 items). Seven items were included to measure *trust and acknowledgement*. Fourteen items were included to measure *rules and role models* for rules and edification (6 items) and role models (8 items). Finally, *extracurricular support* was assessed by 10 items for interest development (5 items) and extracurricular activity participation (5 items).

Several screening questions were included before asking participants about support they received from residential caregivers and peer relatives as well as questions related to home-school collaboration (e.g., "Do you have any siblings or cousins?"). Youth who did not qualify for answering certain questions were directed to skip those questions. A sixth response option "I don't know" was added to questions assessing *home-school collaboration* as youth might not know the communication between parents and teachers.

Demographic Information. Participants reported basic demographic information, including grade level, year of born, sex, and parents' education levels. They also answered questions related to parental migration, including migration type (i.e., mother-only, father-only, or both-parents migration), parent(s)' migration duration, youth's age at the onset of migration, contact frequency between youth and the migrating parent(s), and the frequency of the migrating parent(s) coming back home.

Attention Check. Three attention check questions were spread across the survey. Participants were asked to choose a certain answer to indicate that they were paying attention to take the survey. A sample question is "Please choose 'not at all like me' for this question."

Data Analysis

Subsequent data cleaning and analyses were performed on two slightly different samples to obtain factor structures of the IS Scale (Sample 1-IS) and the ES Scale separately (Sample 1-ES).

Missing Data. In Sample 1-IS, 207 (out of 597, around 34.7%) youth had at least one missing response. The missing rate of individual questions ranged from 0 % to 6.4%. To test the missing data mechanism, Jamshidian and Jalal's Non-Parametric MCAR Test (2010) indicated that the data could be assumed to be missing completely at random while the assumption of multivariate normality is likely to be violated ($p = .375$).

In Sample 1-ES, 292 (out of 553, 52.8%) youth had at least one missing response. Four items that measured "home-school collaboration" had missing rates ranging from 12.3% to 18.4%. This might be explained by the fact that youth were offered an additional "I don't know" option while answering these questions, which might have caused biased missing rates for these items. The "I don't know" responses were deliberate responses, which indicated that youth did not have the information available to answer the questions. It would be inappropriate to impute values for these missing responses. Therefore, these four items were removed from the scale and the refined ES Scale contained 87 items. A total of 185 (out of 553, 33.5%) youth had at least one missing response in the revised dataset. The missing rate of the remaining questions ranged from 0 % to 4.3%. Similarly, Jamshidian and Jalal's Non-Parametric MCAR Test (2010) indicated that the data could be assumed to be missing completely at random while the assumption of multivariate normality is likely to be violated ($p = .452$). Multiple imputation was performed on both samples with 35 imputations and 10 iterations, according to a rule of thumb

that the number of imputed datasets should be at least equal to the percentage of incomplete

cases (White et al., 2010).

Model Estimation. In this study, participants answered all question in the newly

developed scales on a 5-point Likert-type response scale. The inherently ordinal nature of the

response scale combined with the lack of normality suggested by Non-Parametric MCAR Test

increased the potential for a non-positive definite covariance matrix. Accordingly, polychoric

correlations were used for EFA, which were found to be more likely to recover the true factor

model than Pearson correlations (Watkins, 2018). Polychoric correlations were first calculated

from each of the 35 imputed datasets and then averaged to obtain a single correlation matrix that

later was used for factor analysis. The same procedure was performed for both samples. A

weighted least squares (WLS) estimator was used for EFA.

Exploratory Factor Analysis. EFAs were conducted to identify the underlying factors of

the IS Scale and the ES Scale separately. Bartlett's test of sphericity (1954) and the Kaiser-

Meyer-Olkin (KMO; Kaiser, 1974) were used to evaluate the appropriateness of data for

conducting the EFA. Bartlett's test should produce a statistically significant chi-square value to

justify the application of EFA (Watkins, 2018). The overall KMO values ≥.70 are desired but

values less than .50 are generally considered unacceptable. Common factor analysis was

employed as the purpose was to identify latent constructs responsible for the variation of

measured variables (Watkins, 2018). Oblique rotation (Direct Oblimin Rotation) was used as this

rotation method generally produces accurate and statistically sound factor structures for multi-

factor measures by accounting for inter-factor correlations (Schmitt, 2011; Watkins, 2018). I

used RStudio 2022.02.2 to run the EFA and largely relied on the fa function in psych v2.2.5

(Revelle, 2022). I also used a large number of additional packages for uploading data, data cleaning, multiple imputation and more.

I utilized an iterative process of factor identification and item deletion. To determine the number of factors retained, a set of adequacy criteria were considered: (1) eigenvalues > 1; (2) conduct parallel analysis to examine the number of factors that have an eigenvalue larger than randomly generated eigenvalues; (3) each factor extracted should contain at least 3 items; (4) item loadings > 0.40; (5) no or few items cross-load; and (6) factors make theoretical sense regarding the individual strengths and environmental supports of Chinese LBY. EFAs started with the largest number of factors suggested by either parallel analysis or eigenvalues. Next, one fewer factor was extracted, and its solution evaluated against criteria three through six listed above. This process continued until the complete range of plausible factor solutions had been evaluated and the best model was identified based on those criteria.

The EFAs were performed with the intention to test the factor structures of both scales derived from the qualitative study. The IS Scale was hypothesized to produce an eight-factor model and the ES Scale was hypothesized to produce a five-factor model. Notably, some factors in the ES Scale, such as *social support*, contained too many items which made it difficult to have all proposed items converged onto a single factor. Additionally, multiple ways of organizing the scale constructs might exist. For example, as mentioned earlier, categories of environmental support may get organized by social contexts, such as school, family, and community support. Therefore, I was open for alternative factor models and the instrument was finalized in consideration of both theoretical models and the results of EFAs.

Results

  Individual Strengths Scale. Multiple imputation was first performed with 35 imputations and 10 iterations. Next descriptive analyses were conducted to check the univariate normality of Sample 1-IS. All the skew values were between negative two and positive two and all the kurtosis values were below seven across 35 imputed datasets, indicating a normal distribution (Watkins, 2018). Next polychoric correlations were obtained from each imputed dataset. And the averaged polychoric correlation matrix from imputed datasets was entered for the following analyses. The Bartlett's test of sphericity was significant ($p <.001$), and the overall KMO was .89, well above the desired value of .70 (Kaiser, 1974). These tests indicated that the correlation matrix was appropriate for EFA.

  Next, the number of factors was determined through calculating eigenvalues and conducting parallel analysis. Eight factors had an eigenvalue that was greater than one while parallel analysis suggested that there might be nine factors. Therefore, EFAs started with nine factors and then one fewer factor was extracted. Each EFA model was evaluated to see if each factor extracted contained at least 3 items with factor loadings that were greater than 0.40, there was no or few item cross-loadings, and factors as well as items loading onto each factor made theoretical sense. The nine-factor model and the eight-factor model were both eliminated as at least one of the factors did not have at least three items that saliently loaded onto it (meaning that the factor loadings were greater than 0.4 and there was no cross-loading). This might indicate overfactoring. Next, a seven-factor model was conducted, which was found to meet all the adequacy criteria. A six-factor model was then conducted and compared with the seven-factor model. The seven-factor model was chosen as the better model given that it made more theoretical sense.

The final EFA model indicated that seven factors emerged from the IS Scale. Ten items were removed due to low factor loadings or theoretical misrepresentation. The refined IS Scale contained 65 items, including seven subscales: *goals and future expectation* (12 items), *academic engagement* (12 items), *intention to contribute* (11 items), *prosociality* (10 items), *positive coping toward parental migration* (7 items), *positive coping* (7 items), and *academic motivation* (6 items). Please see Table 4 for factors and item loadings. These factors explained 15%, 15%, 13%, 10%, 10%, 7%, and 4% of the variance respectively. The seven-factor solution cumulatively accounted for 74% of the total variance. Factor correlations ranged from 0.11 (between *positive coping* and *academic motivation*) to 0.66 (between *goals and future expectation* and *intention to contribute*).

The refined IS Scale contained factors and items loaded onto each factor somewhat different from the original scale. Items that were designed to measure internal locus of control, hopeful future expectation, and the goal aspect of academic pursuit formed a single factor of *goals and future expectation*. Items that measured academic engagement (as part of academic pursuit) were kept to form a single factor of *academic engagement* with three items that assessed self-control and one item that assessed academic motivation (as a part of academic pursuit). The subscale of *self-control* was removed from the refined scale. Both the *intention to contribute* and *positive coping* were kept in their original form except that a few items loaded onto a newly emerged factor called *positive coping toward parental migration*. This new factor addressed LBY's understanding of parental migration from a positive perspective and the ability to be self-disciplined and independent. It contained items from intention to contribute in the context of family, positive coping, and self-control from the original scale. *Academic motivation* emerged as a single factor to tap into LBY's aims of studying hard for personal success and meeting

expectations of significant others. Lastly, items that assessed obedience and social competency formed one factor of *prosociality*. Further analyses were conducted to evaluate the factor structure emerged from EFAs.

Environmental Supports Scale. Multiple imputation was first performed with 35 imputations and 10 iterations. Next descriptive analyses were conducted to check the univariate normality of Sample 1-ES. Three items that were substantially non-normal (absolute univariate skew > 2 and/or absolute univariate kurtosis > 7; Watkins, 2018) across all imputations were excluded prior to conducting the analysis. Next polychoric correlations were obtained from each imputed dataset. Smoothing was performed to covert the non-positive definite matrix into a positive one while calculating polychoric correlation matrix. This is a relatively frequent correction method used to render indefinite polychoric correlations suitable for EFA (Debelak & Tran, 2016; Lorenzo-Seva & Ferrando, 2021). The eigenvector (principal components) smoothing was employed using the cor.smooth function in the R package *psych* (Revelle, 2022).

The averaged polychoric correlation matrix from imputed datasets was entered for the following analyses. The Bartlett's test of sphericity was significant ($p <.001$), but the overall KMO was .62, below the desired value of .70 (Kaiser, 1974). Therefore, six items with a KMO value of less than 0.5 (the bare minimum proposed by Kaiser) were excluded. The remaining items were entered to calculate polychoric correlations from the imputed datasets, which were then used to obtain the measure of sampling adequacy. The updated KMO value was .66, still below the desired value of .70. Three additional items with a KMO value of less than 0.5 were removed and the procedures described above were repeated with the refined scale. The overall KMO value reached 0.76, with a range of 0.58 to 0.92 for individual items. These tests indicated that the correlation matrix was appropriate for EFA.

Next, the number of factors was determined through calculating eigenvalues and conducting parallel analysis. Twelve factors had an eigenvalue that was greater than one and parallel analysis suggested the same result. Therefore, EFAs started with 12 factors and then one fewer factor was extracted. Each EFA model was evaluated to see if each factor extracted contained at least 3 items with factor loadings that were greater than 0.40, there was no or few item cross-loadings, and factor as well as items loading onto each factor made theoretical sense. Models with nine through 12 factors were all eliminated as at least one of the factors did not have at least three items that saliently loaded onto it. An eight-factor model was conducted, which was found to meet all the adequacy criteria. A seven-factor model was then conducted and compared with the eight-factor model. The eight-factor model was chosen as the better model given that it made more theoretical sense and had few cross loadings.

The final EFA model indicated that eight factors emerged from the ES Scale. Seven items were removed due to low factor loadings or theoretical misrepresentation. The refined ES Scale contained 68 items, including eight subscales: *school support* (16 items), *support of migrating parent(s)* (11 items), *positive community and societal environment* (10 items), *support of caregiver(s)* (7 items), *extracurricular support* (8 items), *family support* (7 items), *peer support* (5 items), and *support of peer relatives* (4 items). Please see Table 5 for factors and item loadings. These factors explained 13%, 12%, 10%, 9%, 7%, 7%, 6%, and 5% of the variance respectively. The eight-factor solution cumulatively accounted for 70% of the total variance. Factor correlations ranged from 0.24 (between *extracurricular support* and *support of peer relatives*) to 0.63 (between *support of migrating parent(s)* and *support of caregiver(s)*).

The refined ES Scale showed a factor structure different from the original scale developed based on interviews and existing literature. Items designed to measure *social support*,

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positive climate, trust and acknowledgement, and *rules and role models* were regrouped based on social relationships and contexts to assess *school support*, *family support*, *positive community and societal environment*, *support of migrating parent(s)*, *support of caregiver(s)*, *peer support*, and *support of peer relatives*. To be more specific, all items that were relevant to teachers and school formed a single factor of *school support*, including teacher's support, caring school climate, teachers' trust and acknowledgement, as well as school rules and teachers' moral guidance. All items that asked about migrating parent(s) formed a single factor of *support of migrating parent(s)*. Items that addressed positive societal climate, role models from surrounding environment and the social media, and trust and acknowledgement from surrounding people formed a single factor of *positive community and societal environment*. Items that assessed caregivers' support were kept as a single factor. Items that assessed positive family climate, family rules and moral guidance, as well as trust and acknowledgment from family members formed a single factor of *family support*. *Peer support* contained items that measured support, trust and acknowledgement, as well as inspiration from peers. Finally, *support of peer relatives* contained items that assessed support and inspiration from siblings and cousins. *Extracurricular support* stayed the same to measure LBY's interest development and opportunities available to take part in extracurricular activities. Further analyses were conducted to evaluate this factor structure emerged from EFAs.

Study One Discussion

In this study, a series of EFAs were conducted to reduce the number of items used to capture the constructs of individual strengths and environmental supports that were hypothesized to promote positive development among Chinese LBY. Independent analyses were performed on two slightly different samples to obtain factor structures of the Individual Strengths Scale

(Sample 1-IS) and Environmental Supports Scale (Sample 1-ES) separately. The EFA process resulted in a 65-item scale for individual strengths with seven subscales: *goals and future expectation*, *academic engagement*, *intention to contribute*, *prosociality*, *positive coping toward parental migration*, *positive coping*, and *academic motivation*. Overall, the scale accounted for 74% of the total variance. The analyses resulted in a 68-item scale for environmental supports with eight subscales: *school support*, *support of migrating parent(s)*, *positive community and societal environment*, *support of caregiver(s)*, *extracurricular support*, *family support*, *peer support*, and *support of peer relatives*. The scale accounted for 70% of the total variance.

The refined scales of both individual strengths and environmental supports showed factor structures that were different from those derived from the qualitative study. Eight factors were hypothesized to emerge from the scale of individual strengths. However, a seven-factor model was found to produce the best results and make the most theoretical sense. Subscales and items included in each subscale therefore showed some deviations from the hypothesized scale. This might be explained by the fact that some of the hypothesized constructs overlap in some important aspects. For instance, the subscale of *goals and future expectation* contained items that were originally designed to measure internal locus of control, hopeful future expectation, and the goal aspect of academic pursuit. These items were common in asking youth about goals, future plans, and their belief in having a bright future. Also, the subscale of *academic engagement* contained items that measured academic engagement (as a part of the academic pursuit), self-control, and academic motivation. These items all addressed specific academic behaviors, such as studying, finishing homework, and reading. The subscale of *self-control* was removed from the refined scale probably because the majority of items in the original scale addressed academic-related self-control and therefore overlapped with academic engagement. *Positive*

coping toward parental migration emerged as a new factor, including items that measured LBY's family responsibility, self-control, and positive coping related to parental migration. This subscale addressed LBY's understanding of parental migration from a positive perspective and the ability to be self-disciplined and independent while parent(s) were absent. The emergence of *positive coping toward parental migration* as a distinct factor echoed studies that highlighted a positive understanding of parental migration as a significant contributor to the resilience of rural LBY (Fu & Law, 2018; Hu, 2019). Interestingly, items that assessed obedience and social competency formed one factor of *prosociality*. These two constructs might be common in addressing the extent to which LBY engage in socially accepted behaviors (e.g., helping others, following rules). Further analyses were needed to evaluate the factor structure resulted from this study.

The refined Environmental Supports Scale also showed a factor structure different from the original scale developed based on the qualitative study. Five factors were hypothesized to emerge from this scale. However, an eight-factor model was chosen to present the best factor structure based on EFAs. Items designed to measure *social support*, *positive climate*, *trust and acknowledgement*, and *rules and role models* were regrouped based on social relationships and contexts to assess these constructs relevant to migrating parent(s), caregiver(s), peers, and peer relatives as well as school, family, community, and society. Only *extracurricular support* was kept as a single factor as hypothesized. This alternative way of organizing factors was expected as it was consistent with the Bioecological model (Bronfenbrenner & Morris, 2006). This might indicate that LBY youth tended to perceive environmental support in relation to different people and social contexts.

A potential reason for the deviated results might be that since the survey was relatively long to take for adolescents, the survey questions were intentionally presented in a way in which items asking about similar topics showed up together. For example, items that were relevant to school, such as teachers' support and school climate, were grouped into one survey block. And items that were relevant to family, such as family rules and climate, were grouped into another survey block. This design was done to reduce cognitive load for participants. However, as youth answered questions about their teachers and school altogether, or answered questions about family climate and family rules altogether, they might tend to answer questions within the same block in a similar way. This might lead to correlated variances. The same issue might apply to the Individual Strengths Scale as participants answered questions that were grouped into certain topics (e.g., academics, future expectation, etc.). The inconsistency between the hypothesized factor structure and EFA results might also be due to the great number of items included in each scale. Further confirmation of the factor structures of both scales were performed with another independent LBY sample. To address the potential limitations of the survey design in Study One, items of each subscale were presented in a randomized order in Study Two.

Study Two

In this study, the factor models of both the IS and the ES scales generated from EFAs were tested using CFAs. I also examined the concurrent criterion validity of both scales using extant validated scales. The goal of this second study was to find support for the reliability and validity of the scales as an accurate measure of individual and environmental assets that promote positive development among Chinese LBY.

Method

Participants. Among 3,249 youth who participated in the online survey, 3,063 provided consent and completed the survey. This sample included 1,866 LBY and 1,197 non-LBY. The present study only focused on LBY for the purpose of measurement development. A total of 782 cases who did not pass a single attention check (three in a total) were excluded from the sample. In addition, a close examination of participants' identification information was conducted to find cases who took the survey for more than one time. Eight cases were removed as they had the same identification and demographic information (e.g., name, IP address, sex, grade, migration type, etc.) as another person in the sample. These youth were also able to take the survey twice within the time frame given how long it took and when they submitted the survey each time. Duplicate cases with a later submission time were excluded and the original sample that went through the following analyses included 1,076 LBY (Sample 2; *mean age* =13.08, *SD* =1.50; 43.3% were male).

Participating LBY were recruited from elementary and middle schools in rural communities in Anhui, Sichuan, Neimenggu, and Shandong Province. In terms of youth's parental migration type, 44.3% of them only had father migrating to work elsewhere and 48.1% of them had both parents migrating; only 7.5% of youth had mother migrating to urban areas. The average age when parent(s) started to migrate, as reported by 86.6% of the participating youth who could still remember, was 6.10 (*SD* = 4.17). A total of 78% of youth said that their migrating parent(s) contacted them through phone calls, text messages, or video chat at least once a week. When one or both parents migrated for work, the primary caregiver was mother for 34.2% of the participating youth and were grandparent(s) for 56.7% of them. As for parents' education levels, 74.6% of youth's fathers graduated from elementary or middle school while

13.5% of them graduated from a high school or a technical secondary school, as reported by the youth. Only 1.9% of youth's fathers had a college-level degree or above. Similarly, 71.2% of youth's mothers graduated from elementary or middle school, and 11.8% of them graduated from a high school or a technical secondary school. Only 2.4% of youth's mothers had a college-level degree or above. Finally, around 75% of LBY indicated that their parents were married; others reported that their parents divorced, remarried, or one parent passed away.

Given that two scales were created to measure the individual strengths and environmental supports of LBY separately, CFAs were performed onto two samples derived from the original sample of 1,076 youth. These two samples slightly differed in terms of sample size, depending on the specific variables included in each scale. The sample used for the IS Scale included a total of 1,057 youth (Sample 2-IS; *mean age* = 13.08, *SD* = 1.50; 43% were male), after removing 19 cases with at least 20% of missing responses. The sample used for the ES Scale included a total of 995 youth (Sample 2-ES; *mean age* = 13.08, *SD* = 1.48; 41.5% were male), after removing 9 cases with more than 20% of missing responses and 72 cases who did not qualify to answer certain questions from the scale (e.g., those who did not have any siblings or cousins, or those who did not have any caregivers).

Procedure. The same procedures were followed to recruit participants as described in Study One. Student participants again filled out an online survey through Wenjuanxing (wjx.cn). Most students completed the survey in a computer classroom in school at a designated time, such as a computer or psychology class. However, students in one area started to take online classes at home due to COVID outbreak when they were approached to participate in the study. Therefore, these students were given the survey link and instructions by psychology teachers to finish the survey on their own. Most of the duplicate cases came from this area, probably because students

had the survey link and were free to take the survey more than one time. It took them around 20 minutes on average to complete the survey. The school received a report about students' average performance on the survey questions. All survey data were kept confidential, with no identifying information retained or linked to youth responses.

Measures. Participants answered questions on the individual strengths and environmental supports that promote the positive development of LBY. Items were rated on a 5-point scale: 1 = not at all like me, 2 = mostly not like me, 3 = partly like me, partly not like me, 4 = mostly like me, and 5 = completely like me. They also answered questions related to several developmental outcomes and reported basic demographic information.

Individual Strengths (IS Scale). A total of 65 items were included to assess seven individual strengths: *goals and future expectation* (12 items), *academic engagement* (12 items), *intention to contribute* (11 items), *prosociality* (10 items), *positive coping toward parental migration* (7 items), *positive coping* (7 items), and *academic motivation* (6 items).

Environmental Supports (ES Scale). A total of 68 items were included to assess eight types of environmental support: *school support* (16 items), *support of migrating parent(s)* (11 items), *positive community and societal environment* (10 items), *support of caregiver(s)* (7 items), *extracurricular support* (8 items), *family support* (7 items), *peer support* (5 items), and *support of peer relatives* (4 items).

Several screening questions were included before asking participants about support they received from residential caregivers and peer relatives (e.g., "Do you have any siblings or cousins?"). Youth who did not qualify for answering certain questions were directed to skip those questions.

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Additional items were included to assess the criterion validity of the instrument, or the extent to which a measure relates to other measures that are theoretically related (DeVellis, 1991). Since this study aimed to develop an instrument to measure the assets that lead to PYD, it logically follows to measure PYD of rural LBY. Additionally, prior studies have extensively used subjective wellbeing as an important indicator of positive adaptation of rural LBY (e.g., Chai et al., 2019; Ye et al., 2020). Also, academic achievement was examined to evaluate the development of rural LBY (e.g., Murphy et al., 2016; Wen & Lin, 2012). This variable is a critical aspect of positive development, especially in China where educational achievement is emphasized more than anything for Chinese youth. On the contrary, externalizing problem behaviors are frequently assessed negative developmental outcomes (e.g., Fellmeth et al., 2018).

PYD. The four-factor Chinese PYD scale was used to measure positive development among LBY (Chai, Wang et al., 2020; Lin et al., 2017). A shortened version of the survey, including 48 items, were used to assess *competence*, *confidence*, *connection*, and *character* among these youth (Chai, Li et al., 2020). *Competence* had nine items and was comprised of three subscales: academic, social-emotional, and living competence (e.g., "I know how to make more friends."). *Confidence* had six items (e.g., "When I think of myself, I feel proud."). *Connection* had nine items and was comprised of three subscales: family, school, and community connection (e.g., "I was very happy when I was with my family members."). Finally, *character* had 24 items with four subscales: benevolence (Ai), determination (Zhi), trustworthiness (Xin), and perseverance (Yi). Example questions included "I can resist temptation well." and "When I see that others are in need, I will do my best to help." Items were all scaled on a five-point Likert-type scale ranging from 1 = "not at all like me" to 5 = "completely like me." The

Cronbach's alpha for the PYD scale overall was 0.98 and alphas for each subscale (character, competence, confidence, and connection) were 0.97, 0.92, 0.93, and 0.93.

Subjective Well-Being. The Oxford Happiness Questionnaire (shorter version; Hills & Argyle, 2002) was used to assess LBY's subjective well-being. The scale included eight items, rated from 1 (strongly disagree) to 6 (strongly agree). Examples of the items included "I feel that life is very rewarding." and "I am well satisfied about everything in my life." In this study, the Cronbach's alpha was 0.73.

Academic achievement. A self-developed item was used to ask LBY to report their academic achievement level. Participating youth was asked the question "Where do you usually stand in your class in terms of school grades?" The following response options were provided: 1 = at the top, 2 = above average, 3 = in the middle, 4 = below average, and 5 = at the bottom. The response options were reverse coded so that larger numbers indicated better academic achievement.

Externalizing Problem Behaviors. An adapted Chinese version of the Child Behavior Checklist (Achenbach, 1991; Chi & Xing, 2003) was used to measures LBY's externalizing problems, including aggression (e.g., argues, fights, threatens, and cruelty) and delinquency (e.g., lies, vandalism). The scale included 16 items. An additional item asking about cheating behaviors in exams was added. Items were rated on a 4-point scale: 1 = never, 2 = sometimes, 3 = often, 4 = always. In this study, the Cronbach's alpha was 0.92.

Demographic Information. Participants reported basic demographic information, including grade level, year of born, sex, whether they have siblings, parents' marital status, and parents' educational levels. They also answered questions related to parental migration, including the migration type, migration duration, youth's age at the onset of migration, contact

frequency with the migrating parent(s), and the frequency of the migrating parent(s) coming back home.

Attention Check. Three attention check questions were spread across the survey. Participants were asked to choose a certain answer to indicate that they were paying attention to take the survey. A sample question is "Please choose 'not at all like me' for this question."

Data Analysis

CFAs were performed on two slightly different samples to examine the factor structures of the IS Scale and the ES Scale derived from Study One separately. The validity tests were performed on Sample 2 using pairwise deletion to maximize available information.

Missing Data. In Sample 2-IS, 216 (out of 1057, around 20.4%) youth had at least one missing response. The missing rate of individual questions ranged from 0.1 % to 1.3%. To test the missing data mechanism, Jamshidian and Jalal's Non-Parametric MCAR Test (2010) indicated that the data was not missing completely at random ($p = .006$). Correlational and ANOVA analyses indicated that a variety of demographic variables were related to variables having missing data (i.e., age, grade level, sex, migration type, caregiver, parents' marriage status, single child or not, have peer relatives or not, and contact frequency with the migrating parent(s)). Therefore, this dataset was presumed to be missing at random and sociodemographic variables were included in the multiple imputation model to avoid bias of the sample. Multiple imputation was performed with 21 imputations and 10 iterations.

In Sample 2-ES, 185 (out of 995, 18.59%) youth had at least one missing response. The missing rate of individual questions ranged from 0 % to 1%. Jamshidian and Jalal's Non-Parametric MCAR Test (2010) indicated that the data could be assumed to be missing

completely at random while the assumption of multivariate normality is likely to be violated (p = .606). Multiple imputation was performed with 20 imputations and 10 iterations.

Confirmatory Factor Analysis. CFAs were conducted to further validate the factorial structure of each scale. Model indices used to determine the model fit include the chi-square to degrees of freedom ratio, the root mean square error of approximation (RMSEA), the comparative fit index (CFI), and the standard root mean square residual (SRMR). For an acceptable model fit, the ratio of chi-square and its degrees of freedom (i.e., χ^2/df) should be less than three (Kline, 2015). Additionally, the RMSEA should be equal to or less than .08; the SRMR should be equal to or less than .08; and the CFI should be larger than .90 (McDonald & Ho, 2002; Schreiber et al., 2006). I utilized diagonally weighted least squares estimation as this estimation method works better with non-normal data (Rhemtulla et al., 2012). Since there was around 20% of cases with missing data and large-scale imputation can introduce more bias than a complete case analysis, I performed an analysis of the complete cases analogously to provide reassurance if similar results were obtained (Lee & Carlin, 2012; White & Carlin, 2010).

I used RStudio 2022.02.2 to run the CFAs and largely relied on lavaan and semTools packages that allow CFA on imputed datasets (Rosseel, 2012; Jorgensen et al., 2022). I also used additional packages for uploading data, data cleaning, multiple imputation and more.

Reliability and Validity. The internal consistency reliability of each scale and subscale was evaluated using Cronbach's alpha. Criterion validity of the survey items were tested through their correlations with PYD, subjective wellbeing, academic achievement, and externalizing problem behaviors. The score of each scale and subscale was calculated by averaging the scores of all items in a scale or subscale. It was hypothesized that the scale and subscale scores of *individual strengths and environmental supports* derived from the present study would be

positively correlated with PYD, subjective wellbeing, and academic achievement; they would be negatively correlated with externalizing problem behaviors.

Results

Confirmatory Factor Analysis. Multiple imputation was first performed in each dataset. The descriptive statistics averaged across imputed datasets for the manifest variables in the IS Scale and the ES Scale were shown in Table 6 and Table 7. CFAs were then performed on factor models derived from Study One on imputed datasets. Rubin's (2004) rules were used to pool estimates across imputed datasets.

Individual Strengths Scale. CFA was performed on the seven-factor model of the IS Scale. All model indices suggested good model fit except for CFI: $\chi^2 = 3346.183$, df = 1994, χ^2/df = 1.68; RMSEA = 0.026, 90% CI: 0.024–0.027; SRMR = 0.041; CFI = 0.898. All factor loadings were statistically significant, ranging from 0.44 to 0.87 ($p < 0.001$). To improve model fit, two items with a factor loading below 0.5 were removed. CFA was then performed on the revised dataset and showed acceptable model fit: $\chi^2 = 3164.377$, df = 1869 =, χ^2/df = 1.69; RMSEA = 0.026, 90% CI: 0.024–0.027; SRMR = 0.041; CFI = 0.90. All factor loadings were statistically significant, ranging from 0.61 to 0.87 ($p < 0.001$). See Table 8 for factor loadings of each item. CFA performed on 846 complete cases revealed similar model fit and factor loadings except for that CFI was a little bit lower than the 0.90 cut off.

Cronbach's alphas were calculated for each scale and subscale as measures of internal consistency. The internal consistency for the overall scale was $\alpha = 0.98$ and the internal consistencies for the subscales (*goals and future expectation*, *academic engagement*, *intention to contribute*, *prosociality*, *positive coping toward parental migration*, *positive coping*, and *academic motivation*) were $\alpha = 0.94, 0.94, 0.93, 0.90, 0.89, 0.90$, and 0.88 respectively.

Environmental Supports Scale. CFA was performed on the eight-factor model of the ES Scale. All model indices suggested good model fit: CFI: $\chi^2 = 3188.608$, df = 2182, χ^2/df = 1.46; RMSEA = 0.022, 90% CI: 0.020–0.023; SRMR = 0.037; CFI = 0.931. All factor loadings were statistically significant, ranging from 0.59 to 0.87 ($p < 0.001$). See Table 9 for factor loadings of each item. CFA performed on 810 complete cases revealed similar model fit and factor loadings. The internal consistency for the overall scale was $\alpha = 0.98$ and the internal consistencies for the subscales (*school support*, *support of migrating parent(s)*, *positive community and societal environment*, *support of caregiver(s)*, *extracurricular support*, *family support*, *peer support*, and *support of peer relatives*) were $\alpha = 0.95$, 0.95, 0.91, 0.94, 0.89, 0.90, 0.90, and 0.88 respectively.

Validity. The criterion validity of the IS Scale and the ES Scale was assessed using correlational analyses between the two scales and PYD, subjective well-being, academic achievement, and externalizing problem behaviors. I used IBM SPSS 28 for these analyses. Table 10 and Table 11 present the information about the criterion validity of the measure. The subscale scores of the individual strengths were correlated at 0.66 to 0.90. The subscale scores of the environmental supports were correlated at 0.43 to 0.86. The scores of the two scales were correlated at 0.83. The subscale scores of the individual strengths and environmental supports were correlated at 0.47 to 0.76.

The IS Scale total score and subscale scores of the seven individual strengths were positively correlated with the PYD total score (r: 0.73 to 0.88, $p < 0.01$) and with scores of each of the four dimensions of PYD: character (r: 0.73 to 0.86, $p < 0.01$), competence (r: 0.67 to 0.81, $p < 0.01$), confidence (r: 0.65 to 0.79, $p < 0.01$), and connection (r: 0.66 to 0.77, $p < 0.01$). They were also positively correlated with subjective well-being (r: 0.37 to 0.45, $p < 0.01$) and

academic achievement (r: 0.14 to 0.22, $p < 0.01$), and were negatively correlated with external problem behaviors (r: –0.32 to –0.38, $p < 0.01$).

The ES Scale total score and subscale scores of the eight categories of environmental support were positively correlated with the PYD total score (r: 0.64 to 0.82, $p < 0.01$) and with scores of each of the four dimensions of PYD: character (r: 0.56 to 0.74, $p < 0.01$), competence (r: 0.61 to 0.76, $p < 0.01$), confidence (r: 0.59 to 0.75, $p < 0.01$), and connection (r: 0.66 to 0.83, $p < 0.01$). They were also positively correlated with subjective well-being (r: 0.33 to 0.45, $p < 0.01$) and were negatively correlated with external problem behaviors (r: –0.26 to –0.35, $p < 0.01$). The ES total score were positively correlated with academic achievement at r = 0.10, $p < 0.01$. Four subscale scores of the ES Scale (i.e., *school support*, *support of migrating parent(s)*, *positive community and societal environment*, and *peer support*) were positively correlated with academic achievement (r: 0.10 to 0.11, $p < 0.01$). Family support was positively correlated with academic achievement at r = 0.07, $p < .05$. The subscale scores of *support of caregiver(s)*, *support of peer relatives*, and *extracurricular support* did not show significant correlations with academic achievement.

Study Two Discussion

In this study, I sought to confirm the factor models of the IS Scale and the ES Scale created in Study 1 and to test the reliability and validity of both scales. Independent CFAs were performed on two slightly different samples to validate the factor structures of the IS Scale (Sample 2-IS) and the ES Scale (Sample 2-ES). The 68-item measure of environmental supports was supported, while the 65-item measure of individual strengths was slightly adjusted to a 63-item scale. The Cronbach's α of each scale and subscale ranged from 0.88 to 0.98, indicating strong internal consistency reliability.

The concurrent criterion validity of both scales was supported. The scale and subscale scores of both individual strengths and environmental supports were positively correlated with the PYD total score, PYD subscale scores, subjective wellbeing, and were negatively correlated with externalizing problem behaviors. In addition, the scale and subscale scores of individual strengths were positively correlated with LBY's self-reported academic achievement. The environmental supports total score was positively correlated with academic achievement whereas five out of eight subscales (i.e., *school support*, *support of migrating parent(s)*, *positive community and societal environment*, *peer support*, and *family support*) showed significant relationships with academic achievement.

Although the total scores and subscale scores of individual strengths and environmental supports showed positive correlations with academic achievement, most of these correlations were below 0.2, which was between the commonly used small (0.1) and medium (0.3) correlations cutoff. LBY's individual strengths tended to have stronger correlations with academic achievement than environmental supports. This might be explained by the fact that individual strengths contained multiple assets that directly addressed LBY's academic pursuit, such as *academic engagement* and *academic motivation*. Nevertheless, the correlations between LBY's assets and academic achievement were relatively small compared to correlations with other criterion variables. The use of self-reported measure of academic achievement might be responsible for some of these weak correlations. Youth were asked to report their school grades rank in their class. A closer look at the data revealed that over 80% of youth who answered the question chose the first three options: 1 = at the top, 2 = above average, and 3 = in the middle. Fewer students reported that they stood below average or at the bottom in their class. Participating youth might be reluctant to give an honest answer to this question due to social

desirability. It might also be the case that the question did not ask about a specific exam, so it was hard for youth to give an accurate answer. Objective measures such as grades obtained from a final exam might be a better indicator of academic achievement. The reason why official school grades were not collected in this study was that LBY took the survey at the beginning of the semester when they had not taken any major exams. It was also a challenge to obtain a consistent measure of academic achievement for youth coming from different grade levels; youth in different areas might also take exams using different scoring systems. Future studies may consider this challenge and use objective measures in corroboration with the self-reported data. Other than that, this study provided evidence that both the IS Scale and the ES Scale were valid and reliable measures of critical assets that promote positive development among Chinese LBY.

Chapter 4: Discussion

A large proportion of young people under 18 in rural China are left alone at their rural homes when one or both of their parents migrate to urban areas in search of work (Ge et al., 2019; Luo et al., 2009). Left-behind youth (LBY) represent a vulnerable population given that they undergo a critical transitional period between childhood and adulthood without adequate parental support. Similar to adolescent development research for the past few decades, a deficit-based view of Chinese rural LBY has been prevalent among the public and research community (Chai et al., 2019; Ge et al., 2019). With the rise of the RDS-based research framework, researchers began to consider LBY from a positive developmental perspective. Existing research on resilience and PYD among Chinese rural LBY represents a groundbreaking shift from a passive, negative view of adolescents' shortcomings to a more hopeful view of adolescents' strengths. The field is developing and still little is known about how rural LBY thrive. The present study embraced both the resilience science framework and PYD perspective to conduct a comprehensive investigation of the assets that enable positive adaptions for LBY. A cross-sectional, exploratory sequential design was used to create and validate an instrument that measures multiple assets for this youth group. This newly developed instrument includes two scales: the Individual Strengths (IS) Scale, and the Environmental Supports (ES) Scale. To the best of my knowledge, this study represents the first attempt to develop a validated, culturally sensitive measure that examines critical assets for Chinese LBY's healthy development.

Review of the Individual Strengths Scale

Based on the RDS metamodel, the mutually beneficial exchanges between individuals and contexts constitute adaptive developmental regulations that provide mechanisms of positive development across adolescence (Lerner, Lerner, et al., 2015; Lerner, et al., 2016). Accordingly,

this study examined the individual strengths and environmental supports as critical assets for LBY's positive development. Individual strengths refer to young people's positive characteristics, including an individual's beliefs, behaviors, skills, and competencies. The qualitative interviews revealed five individual strengths for LBY: *achievement motivation*, *self-control*, *positive coping*, *academic engagement*, and *prosocial orientation*. Through a series of item development and revision procedures, including literature review, expert review, and field tests, the original factor structure derived from the interviews was refined and expanded to include eight individual strengths: *positive coping*, *academic pursuit*, *internal locus of control*, *hopeful future expectation*, *self-control*, *intention to contribute*, *social competency*, *and obedience*. The revised scale was meant to be theoretically relevant and contextually sensitive to the developmental contexts and experiences of Chinese LBY, reflecting both interview findings and existing literature.

Through quantitative analyses, the IS scale was refined to contain 63 items that assessed seven individual strengths: *goals and future expectation*, *academic engagement*, *intention to contribute*, *prosociality*, *positive coping toward parental migration*, *positive coping*, and *academic motivation*. The refined factor structure was somewhat different from the factor model derived from the qualitative investigation probably because of the overlaps among some of the hypothesized constructs. A typical example is the subscale of *goals and future expectation*, which contained items that were originally designed to measure internal locus of control, hopeful future expectation, and academic goals. It was not surprising that these items formed a single factor as they all addressed LBY's perception and belief about life in the future. Another example is the subscale of *academic engagement*, which contained items assessing academic engagement (in the original scale) and self-control. Although the subscale of *academic pursuit*

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was meant to include all academic related items, including academic behaviors and motivation, the items that addressed specific academic behaviors, such as finishing homework and reading, were grouped to form one factor. *Academic motivation* was kept as its own factor. The subscale of *self-control* was removed from the refined scale probably because the majority of items addressed academic-related self-control behaviors and therefore overlapped with academic engagement. Interestingly, social competence and obedience formed a single factor of *prosociality*. These two constructs might not be as distinct as I originally conceived. The concept of prosociality has been studied as a disposition that consists of two aspects: dispositional sympathy and respect for rules (Mikolajewski et al., 2014). The emergence of this factor aligns with items designed to measure LBY's positive social behaviors (e.g., helping others, showing gratitude) and the tendency of obeying the rules as well as conforming to socially accepted behaviors (e.g., following parents and teachers). Lastly, *positive coping toward parental migration* emerged as a new factor that measures LBY's understanding of parental migration from a positive perspective and the ability to be self-disciplined and independent while parent(s) are absent. This factor collects items spanning across multiple subscales that specifically address youth's positive responses toward parental migration.

Many of the individual strengths that emerged from this study were similar to those identified in existing literature. However, nuanced differences in meaning were present when these individual assets were applied to Chinese LBY. For instance, *academic engagement* is listed as one of the four internal assets in Development Asset Model (Benson, 2007). Both qualitative and quantitative studies in the present research indicated that academic achievement was an important predictor of LBY's optimal development. This echoes the heavy focus on pursuit of academic achievement among Chinese students. Moreover, the emergence of *goals*

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and future expectation as well as *intention to contribute* maps onto findings of the qualitative

study on promotive factors of PYD among Chinese youth (Wang et al., 2022). This study found

that goal setting, goal-oriented hard work, and an intention to contribute were critical factors that

promote Chinese youth's positive development. It seems that similar findings apply to rural

LBY, which is a subgroup of Chinese youth. The individual strength of *goals and future*

expectation also echoed PYD research that identified intentional self-regulation and hopeful

future expectations as important antecedents of optimal youth development (Gestsdottir &

Lerner, 2007; Gestsdottir & Lerner, 2008; Lerner et al., 2018; Schmid et al., 2011). This asset

may be especially important for LBY who aim to change their destiny and repay their family

through working hard in school. Additionally, the *intention to contribute* reflects Chinese

society's collectivistic orientation that promotes group prosperity (Chuang et al., 2018). A

typical way for LBY to make contribution is to repay their families, which reflects filial piety as

an important Chinese cultural value (Chuang et al., 2018; Lam, 2005; Shek et al., 2013). This

may be more salient for LBY who know that their parents sacrifice a lot for them to have better

living conditions and educational opportunities. Besides, LBY who are likely to achieve positive

development also care for their class and are willing to make contribution to the larger society.

Findings like these suggest that thriving LBY not only strive for their own success, but they are

willing to make positive connections with and contribute to the greater world in a meaningful

way.

Positive coping toward parental migration emerged as a distinct factor that specifically

applied to rural LBY in China. The emergence of this factor echoed studies that highlighted a

positive understanding of parental migration as a significant contributor to the resilience of rural

LBY (Fu & Law, 2018; Hu, 2019). The subscale created in the present study may be used to

assess this important construct while conducting research on LBY. Future research is needed to examine how this factor may be related to other important assets of LBY and meaningful developmental outcomes.

Academic motivation emerged as a distinct individual strength for LBY. What motivates Chinese LBY to study hard include both self-oriented achievement motivation (e.g., change one's own destiny) and social-oriented achievement motivation (e.g., change one's family condition; Yu & Yang, 1989). According to the self-determination theory (Deci & Ryan, 1985), LBY seems to be more externally motivated to work hard in school rather than being internally motivated (e.g., study hard as it is interesting and meaningful). LBY may have personally identified with the importance or value of these social expectations and motivation. This makes sense as educational achievement is recognized as the most legitimate pathway for upward social mobility in China, especially for those born into lower social statuses (Lam, 2005; Ye et al., 2019; Zhang et al., 2019). As reported in the interviews, LBY are raised to live up to their parents' expectations and to contribute to their family's financial well-being when they grow up. This is consistent with research that showed traditional Chinese cultural values (e.g., filial piety) constrained the development of intrinsic motivation among adolescents in rural China (Guo et al., 2021). The influence of traditional cultural tends to be stronger among rural youth, including LBY, compared to that influence among urban peers (Guo et al., 2021). Nonetheless, intrinsic motivation has been found to contribute to adolescents' positive development, such as enhancing the passion for learning and engagement (e.g., Waterschoot et al., 2019) and promoting academic achievement (e.g., Areepattamannil et al., 2011) among western youth, and supporting positive school functioning among rural Chinese children (Zhou et al., 2009). Items that were originally designed to assess intrinsic motivation for learning were excluded in the quantitative analyses.

More studies are needed to examine LBY's intrinsic motivation for learning and how it interacts with extrinsic motivation to influence the positive development of these youth. Given the extensive benefits of intrinsic motivation, teachers and parents should consider cultivating LBY's intrinsic motivation to study and help them balance between fulfilling social expectations and learning for its own sake.

Finally, the factor of *prosociality* combined items from social competency and obedience. This factor maps onto the concept of prosociality which has been conceptualized as two facets: dispositional sympathy and respect for rules (Mikolajewski et al., 2014). Notably, the *prosociality* for LBY focuses on malleable social skills instead of dispositional qualities that show strong genetic influences; it also emphasizes obeying rules or orders of authority figures. Although being obedient to adult authority may not be considered as a positive attribute in western society, it seems to be adaptive for LBY who need the discipline and guidance to help them stay on track for positive development. As discovered among Mexican American youth, higher affiliative obedience was associated with lower depression and lower internalizing problems and was not related to social anxiety or loneliness (Antonio & Steven, 2009). Future research could examine prosociality as an individual strength of Chinese LBY in relation to other important developmental outcomes.

Review of the Environmental Supports Scale

Environmental supports encompass relationships, supports, experiences, and opportunities provided by the young person's developmental ecology, including their family, school, and community. The qualitative interviews revealed four categories of environmental support: *social support*, *caring and belongingness*, *rules and high expectations*, and *extracurricular activity participation*. Through a series of item development and revision

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procedures, the original factor structure derived from the interviews was refined to include five categories of environmental support: *social support*, *trust and acknowledgement*, *rules and role models*, *positive climates*, and *extracurricular support*. Through quantitative analyses, the ES scale was refined to contain 68 items that assessed eight types of environmental support: *school support*, *support of migrating parent(s)*, *positive community and societal environment*, *support of caregiver(s)*, *extracurricular support*, *family support*, *peer support*, and *support of peer relatives*.

The hypothesized factor structure was not supported. Instead of grouping scale items by different environmental support elements (e.g., rules, climates, etc.), most items were regrouped based on social relationships and contexts. This alternative way of organizing factors was consistent with the Bioecological Model that depicts individual development in various contexts with relevant social figures in each context (Bronfenbrenner & Morris, 2006). The original factor structure was created based on frameworks such as Developmental Assets Model (Benson, 2007) to present psychosocial factors and environmental resources that were critical for LBY's development. However, the quantitative findings indicated that youth tended to perceive environmental support in relation to different social figures and social contexts (i.e., who provides me with different types of support). Findings like these echo the collectivistic cultural context in which the concept of "self" is conceived in a relational context (Lam, 1997; Lam, 2005). Relationships define one's existence and serve as both the beginning and end goal of personal development (Lam, 1997). This might have influenced the way Chinese LBY perceive environmental support provided to them. Another reason for the deviated factor structure might be that there were a great number of items included in some of the originally designed subscales (e.g., social support contained 40 items). Therefore, it was hard to have all items loading onto a single factor in EFAs. To test the factor structure derived from the qualitative study, the number

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of items included in some subscales should be reduced, or separate EFAs could be performed on each subscale.

Many of the emerged environmental support assets were social support provided by various interpersonal relationships. This is consistent with existing literature showing that social support is one of the most frequently studied protective factors associated with resilience among LBY, including support from the migrating parent(s), caregiver(s), peers, and peer relatives (e.g., Chen et al., 2011; Fan et al., 2018; Fu & Law, 2018; Li et al., 2018; Liu et al., 2020; Su et al., 2012; Xiao et al., 2019; Zhao et al., 2015). Findings like these suggest the essential role of relationships in supporting rural LBY's positive development. Although many of these types of social support have been identified in existing PYD studies (e.g., Syvertsen et al., 2019; Wang et al., 2022), they were contextualized to reflect LBY's developmental experiences. For instance, two subscales were included to measure *support of migrating parent(s)* and *support of caregivers* separately. The migrating parent(s) and residential caregiver(s) were two main sources of social support in LBY's family. This scale did a nice job distinguishing support provided by migrating parent(s) and caregiver(s) as they were likely to offer support in different ways and degrees. The present study provided a research tool to further investigate LBY's relationships with their migrating parents and caregivers at home.

Other types of social support were organized by contexts, such as *family support*, *school support*, and *positive community and societal environment*. Existing literature has shown that a positive family climate promotes LBY's positive development. Even though family members may not be physically close, family cohesion (Guo et al., 2019, 2020) and good family functioning (Zhou et al., 2018) are essential for rural LBY's psychological well-being. School also plays an important role in rural LBY's development, especially for those who attend

boarding schools. As reported in the interviews, teachers of LBY in school not only care for their study, but they also take care of these youth's daily life when needed. Besides teachers' support, positive climates in class and in school overall are critical components of school support. LBY need to be treated equally and feel cared for by adults and peers in school. Future research could examine both teachers' support and positive climates as important facets of school support to promote the positive development of LBY in rural China. Finally, *positive community and societal environment* emerged as an environmental asset for LBY. This factor includes the close neighborhood relationship, which has been found to predict rural LBY's subjective well-being (Chai et al., 2019). A positive community and societal environment also contains positive role models and those who have faith in LBY's potential for positive development and are willing to acknowledge their accomplishments. Studies have found that role models promote the healthy development of western youth (e.g., Development Assets Model; Benson, 2007; Syvertsen et al., 2019) and among urban youth in China (e.g., Wang et al., 2022). More research is needed to understand how trust and acknowledgement for LBY may enhance their positive adjustment. Moreover, LBY perceived positive societal environment as an important asset. This echoes research on promotive factors of PYD among Chinese urban youth, which also speaks to the importance of creating a healthy social environment at the macrosystem level to support the optimal development of Chinese youth (Wang et al., 2022). As expressed in the interviews, policies and actions are needed from the government, institutions, and communities to remove the stigma of the LBY group and to advocate a strength-based perspective to create a caring, welcoming societal environmental for these youth's development.

Lastly, *extracurricular support* was identified as a critical environmental asset. This subscale focused on LBY's perception of opportunities and resources available for them to develop interests and participate in extracurricular activities. Pursuing sparks is when people are really energized and passionate about their talents, interests, or hobbies, which brings them joy, energy, and purpose (Benson & Scales, 2009). It has been considered as one of the indicators of PYD for both western youth (Benson & Scales, 2009) and Chinese adolescents (Wang et al., 2022). Available resources and opportunities for extracurricular interest development seemed to be critical assets for Chinese LBY. The emergence of extracurricular support is also consistent with the Development Assets Model that includes extracurricular activity participation as one of the external assets (Syvertsen et al., 2019). With limited resources in rural areas, schools could try to increase the variety of extracurricular activities for youth to participate and offer more time as well as guidance to help them cultivate personal interests.

Two types of environmental support from the original scale were removed in the quantitative analyses. The first one was *support of other adults*, including neighbors and other relatives. Youth in the present study did not seem to receive substantive support (e.g., take care of youth when their caregivers are absent) from neighbors or other relatives. Home-school collaboration was also removed, mostly due to survey design issue that caused a large amount of missing data. Nonetheless, this factor was found to be critical for Chinese youth's positive development (Wang et al., 2022). Future studies may continue examining this asset in relation to LBY's healthy development while considering appropriate ways to obtain accurate responses regarding the communication between teachers and parents (or caregivers).

Review of Correlational Analysis

Correlational analyses were conducted between LBY's assets (i.e., individual strengths and environmental supports) and selected criterion variables. The concurrent criterion validity of both scales was supported by most of the criterion variables. Both individual strengths and environmental supports were positively correlated with the PYD total score, PYD subscale scores, and subjective wellbeing, and were negatively correlated with externalizing problem behaviors.

Notably, the correlations between youth's assets and PYD were strong (ranged from 0.56 to 0.88). This was especially true for the individual strengths. Overlaps exist between the instrument developed in this study and the four-factor Chinese PYD scale. For instance, items in the character and competence subscales overlap with some items in the IS Scale, and items in the connection subscale overlap with some items in the ES Scale. While the PYD scale aims to describe features of optimal youth development among Chinese adolescents (Chai, Wang et al., 2020; Lin et al., 2017), the present study developed scales to assess the individual and environmental assets that are likely to promote the features of PYD. Therefore, the instrument created in this study focused on the positive attributes of youth themselves as well as their living contexts that will lead to positive development, instead of assessing the end state of achieving positive development. In theory, the individual strengths and environmental supports in this study are antecedents of PYD, which makes sense for them to be strongly correlated. Nonetheless, there are inevitably overlaps between the two instruments, especially for the Individual Strengths Scale. As indicated by the RDS metamodel, human development is embedded in the complex, dynamic individual ← → context relationships (Lerner, Lerner et al., 2015). Individuals actively contribute to their own development by bringing personal strengths

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and successful application of these strengths in multiple contexts. Therefore, it is challenging to decide whether certain personal qualities are individual assets present to promote positive development or features indicating positive development. Future investigations, such as longitudinal studies, is needed to examine the complex relationships between the antecedents of PYD and PYD features. Clear definitions and operationalization may be needed to further support research and practices on how to promote PYD among LBY as well as among other youth groups. Despite the potential overlaps, the instrument derived from the present study was designed and adapted specifically for Chinese LBY. Using both inductive and deductive approaches, this instrument was refined to represent the specific needs of rural LBY.

Study Limitations

The present study has several limitations. To begin with, some methodological limitations in both the qualitative and quantitative studies need to be addressed in future research. As already mentioned in the Discussion sections of the qualitative investigation (Chapters 2), only teachers and youth were included in the interviews to provide insights regarding how to promote PYD among Chinese LBY. It was important to understand the critical factors for LBY's healthy development from youth's own perspective and from teachers who play a significant role in these youth's development. However, both groups might inevitably emphasize some factors over others based on their own experiences. More diverse populations, such as caregivers and community social workers, may be invited to address the interview questions from perspectives different from those of teachers or youth. In addition, youth with more diverse developmental pathways (e.g., those who struggle at first but later demonstrate optimal development) may be included in future research to understand how different factors interact to produce different developmental trajectories.

One limitation during the instrument development phase was that relatively small number of experts were involved in reviewing the content validity of the scales. There was also inconsistency in the way experts provided evaluation and feedback. Therefore, quantitative ratings of instrument items were used in corroboration with the qualitative feedback and interviews. More experts may be included to do the review in a more standardized procedure so that there could be consistent, objective criteria used to revise the scales. Also, it may be necessary to do another round of expert review once the survey was finalized before going into field tests.

Additionally, the factor structures emerged from the quantitative analyses were somewhat different from those derived in the qualitative study. There was reorganization among subscales due to overlaps of constructs, which was especially true for the IS scale. These overlaps could have been better addressed during the qualitative study phase by creating themes and subthemes with more detailed and clearer boundaries.

Second, regarding the quantitative studies, the sample sizes used in CFAs were relatively small given the number of items included in each scale. Although the present sample size met the rule of thumb that the ratio of the number of people to the number of measured variables is 10:1 (Kyriazos, 2018), it may not be large enough to get reliable estimates of all model fit indices given the large number of parameters included in the models. Moreover, the measurement invariance of either scale was not examined in this study given the relatively small sample size and the large number of items. Future studies could examine whether the factor structures identified for the individual strengths and environmental supports among LBY differ by age, gender, migration type, and other meaningful demographic variables. Such analyses could be conducted with a larger sample including enough participants from different subgroups.

Besides, the study design was cross-sectional. There was no evidence for test-retest reliability or predictive validity. Longitudinal studies are needed to further examine the psychometric properties of both the IS and the ES scales. As mentioned in the Discussion section of the quantitative study (Chapter 3), the use of self-reported measure of academic achievement might have brought the weak relationships between LBY's assets and academic achievement. With longitudinal designs, researchers can obtain the assets score earlier in a semester and then get youth's school grades in the end of the semester to examine the validity of the instrument. Additionally, future studies should test longitudinal invariance of both scales and explore changes in these assets across time and place.

Finally, the present study aimed to integrate the resilience science and PYD frameworks to create a new instrument for LBY in China. This was reflected in the qualitative interviews in which participants were asked to talk about individual strengths and environmental supports that were critical for promoting the positive adjustment of rural LBY (promotive factors) and for supporting them when facing adverse conditions (protective factors). However, the distinction was not reflected in the finalized instrument. By definition, protective factors refer to characteristics of individuals and contexts that buffer against negative developmental outcomes (Kia-Keating et al., 2011; Masten, 2014; Masten & Barnes, 2018). They have the added effect when the risk level is high. In contrast, promotive factors have a direct impact on individual development without necessarily the presence of risk factors. They have the same effect across risk levels. Based on qualitative findings, it was unclear which of the mentioned assets promoted PYD among these youth or protected them from adversities. In fact, the assets emerged from the interviews tended to apply for both situations. This is consistent with empirical research showing that some factors may serve either a promotive or a protective function, depending on the

specific developmental context and individual characteristics (e.g., Furlong et al., 2011). Indeed, there is considerable overlap between protective and promotive factors. For instance, African American boys were found to have protective factors such as self-regulation and healthy beliefs that were also considered to promote positive development (Gaylord-Harden et al., 2018). Moreover, the quantitative analyses in the present study could not help distinguish between promotive and protective factors, as no specific risk factors were assessed. Future research could include risk factors relevant to LBY's developmental context (e.g., low family SES, discrimination, and divorce) and examine whether the assets interact with risk factors to enhance positive developmental outcomes. It is also imperative to distinguish between positive adjustment despite risks (e.g., reduced loneliness) and thriving (e.g., satisfaction with life) for Chinese LBY.

Potential Implications

Despite its limitations, the present study provides an important research tool for future research to continue understanding the positive development of Chinese LBY. First, the instrument can be used to examine the dynamic individual by context interactions that enable positive developmental trajectories among these youth. Future research is needed to explore the relative value of each asset, the interactions among different individual and environmental assets, and the manner through which each asset relates to positive and negative developmental outcomes. Second, the instrument developed in this study can be used to examine the cumulative effect of individual and environmental assets on LBY's developmental outcomes. Similar to Developmental Assets Profile (Benson, 2007; Chang et al., 2019), a cutoff point can be set to indicate whether certain asset is present or not among LBY. This allows researchers to examine whether and how the number of assets relate to the protection from negative outcomes (e.g.,

problem behaviors) and the promotion of positive outcomes (e.g., subjective wellbeing). Third, more person-centered approaches may be used to examine the longitudinal trajectories and individual variability among LBY. Longitudinal studies may be conducted to examine whether and how these assets change across time, as well as how these changes influence LBY's development. Latent profile analysis may be used to explore sub-groups among LBY with different asset profiles (e.g., high in individual assets and low in environmental assets).

From a practical perspective, the present study provides a common language with vocabularies to describe LBY's positive development. Such research effort expands our understanding of how to promote positive adjustment among LBY. For instance, some teachers may tend to emphasize family's role in supporting LBY's healthy development; this study provides insights into a wide range of social support and interpersonal as well as intrapersonal strengths that can be promoted to support LBY. This is likely to foster a strength-based view of this youth group and to facilitate a public consensus on what LBY need to succeed. The newly developed scales highlight a range of individual strengths and environmental supports that are critical for promoting LBY's healthy development. Policy makers, educators, and practitioners may use the assessment tool derived from this study to identify LBY who lack certain assets (e.g., the average score of certain assets is below 4.0) and provide relevant support to enhance the assets needed to achieve positive development. More importantly, the focus on identifying LBY's assets may lead practitioners and policy makers to seek not only to focus on fixing problems, but also on developing LBY's strengths and offering support that promote their positive development beyond being free of problems. Findings of this study may be used to leverage collective effort from multiple sectors to promote optimal development among Chinese

LBY. Interventions and policies may be developed to enhance the critical assets identified in this study among Chinese LBY.

The RDS metamodel proposes that the mutually beneficial relations between individual strengths and environmental supports serve to promote optimal youth development (Lerner, 2005; Lerner, Lerner, et al., 2015). When youth's strengths are aligned with environmental supports in families, schools, and communities, positive development will be reached, which enhances youth's positive contributions and reduces their negative or risky behaviors. (Lerner, Lerner, et al., 2015; Lerner, et al., 2016). The present study was conducted to identify the critical individual strengths and environmental supports for rural LBY in China. As a result of qualitative followed by quantitative investigation, two scales were created to measure the individual strengths and environmental supports among LBY. A large majority of RDS-based PYD studies have been conducted among western youth and researchers have called for greater attention to the positive development of youth around the world (Lerner et al., 2018). The current study represents an important research effort to investigate the positive development of a large population of non-western youth living in less optimal contexts. Through uncovering the individual and environmental assets that specifically apply to these youth's optimal development, this study demonstrates the importance of considering developmental contexts (e.g., cultural context) for understanding optimal youth development. Findings derived from the qualitative and quantitative studies may provide essential insights for understanding optimal youth development among other non-western populations and worldwide left-behind youth and their families.

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Table 1

Demographic Information for Youth Who Participated in Individual Interviews

Participant Number	Gender	Age/Grade	Guardian	Siblings	Migration type	Migration duration
0201	Female	9th (~14)	Grandparents	1 older sister, 1 younger sister, and 1 younger brother	Both parents	Stay with parents in Hangzhou before; go back here alone several months
0202	Male	16	Self	1 older brother	Both parents	Parents were somewhere else (outside Anhui) before, came back to Linquan this year
0203	Male	9th (~14)	Grandparents	1 younger sister	Both parents	Since he was one year old
0206	Male	11	Grandparents	1 older brother	Both parents	Since he was young
0207	Female	15	Grandparents	1 older brother	Both parents	Since she was 13
0208	Male	15	Mother	1 younger brother	Father	Not mentioned
0209	Female	13	Father (divorce)	None	Father	Not mentioned
0210	Male	15	Grandma and sisters	Two older sisters	Both parents	Not mentioned
0211	Female	14	Grandparents	Two older brothers	Both parents	2 years

Table 2

Frequencies of Themes and Codes Emerged for Individual Strengths

Themes/Codes	Participants (*N* = 22)	Students (*n* = 9)	Teachers (*n* = 13)	Frequency
Achievement motivation	**19**	**6**	**13**	**67**
goal setting	12	4	8	20
proactivity	8	1	7	17
goal-oriented hard work	5	2	3	6
motivation to improve current conditions and repay parents	5	2	3	6
avoiding failure	4	3	1	4
live up to parents' expectations	3	2	1	4
Interests and sparks	3	0	3	6
internal locus of control	2	1	1	2
live up to teachers' expectations	1	0	1	1
hopeful future expectation	1	1	0	1
Self-control	**15**	**4**	**11**	**56**
self-discipline	11	1	10	32
being obedient to teachers	8	3	5	14
setting high standards for oneself	4	1	3	6
having good living habits	3	0	3	4
Positive coping	**15**	**6**	**9**	**41**
optimistic attitude	8	3	5	9
seeking for help	6	1	5	8
perseverance	4	1	3	7
solving problems independently	4	0	4	5
resilience	4	2	2	4
self-reflection	3	2	1	5
positive understanding of parental migration	2	0	2	3
Academic engagement	**13**	**3**	**10**	**27**
academic grit	8	3	5	11
proper learning attitude	5	2	3	8
good learning habits	5	1	4	6
love for reading	2	0	2	2
Prosocial Orientation	**12**	**2**	**10**	**21**
a sense of responsibility	10	2	8	15
helping others	3	1	2	3
willingness to interact with others	2	0	2	2
expressing gratitude	1	0	1	1

Table 3

Frequencies of Themes and Codes emerged for Environmental Supports

Themes/Subthemes/Codes	Participants (*N* = 22)	Students (*n* = 9)	Teachers (*n* = 13)	Frequency
Social Support				
Teachers' support	**20**	**8**	**12**	**101**
teachers' care	15	6	9	31
teachers' guidance, mentor	12	3	9	29
teachers' acknowledgement	9	1	8	19
teachers' encouragement	6	4	2	14
teachers' support in general	5	1	4	7
autonomy support	1	0	1	1
Support of parents and caregivers	**22**	**9**	**13**	**92**
effective parenting	12	3	9	19
frequent parent-child communication	11	4	7	16
parents' care	10	2	8	17
parents' encouragement	6	4	2	10
effective supervision of caregivers	5	0	5	9
caregivers' care	5	3	2	5
parents value their child's education	5	1	4	5
support in general	4	2	2	5
parents' acknowledgement	3	0	3	6
Positive peer relationships	**12**	**5**	**7**	**22**
peers' help	9	4	5	12
peers' company	3	2	1	3
peers' care	3	2	1	3
peers' acknowledgment	2	0	2	2
peers' encouragement	2	1	1	2
Home-school collaboration	**8**	**0**	**8**	**16**
teacher-parent communication	8	0	8	12
support of parents for teachers	2	0	2	4
Siblings' support	**8**	**5**	**3**	**11**
Caring and Belongingness				
Caring school climate	**13**	**3**	**10**	**34**
positive class atmosphere	7	2	5	8
extra school care	6	0	6	10
good teacher-student relationship	4	1	3	5

fair treatment of each student	3	0	3	8
a sense of belongingness in class	1	0	1	3
Harmonious family atmosphere	**9**	**4**	**5**	**14**
Positive societal influences	**8**	**2**	**6**	**15**
care of community and society	6	0	6	11
positive societal climate	4	2	2	4
Rules and High Expectations				
Role models	**16**	**7**	**9**	**26**
family role models	10	4	6	12
peer role models	8	4	4	10
teachers as role models	2	1	1	3
role models from the society	1	0	1	1
High expectations and expectation alignment	**8**	**4**	**4**	**12**
high expectations from family members	7	4	3	9
aligned expectations between students and parents	2	1	1	2
teachers' high expectations	1	0	1	1
Moral and conduct edification	**7**	**1**	**6**	**8**
School standards	**5**	**3**	**2**	**5**
Extracurricular Activity Participation	**11**	**3**	**8**	**18**

Table 4

Factor Loadings of the 65 Items in the Individual Strengths Scale (N = 597)

Variables	F1	F2	F3	F4	F5	F6	F7
I am confident about my future.	.81						
I am enthusiastic about my future life.	.78						
My goal is to get into an ideal college.	.74						
I look forward to my future.	.74						
I plan to continue to go to school after graduation.	.72						
I believe that I can do better as long as I work hard.	.72						
I think I can master my future life.	.70						
I plan to finish high school.	.69						
I believe that I am able to create a nice tomorrow.	.69						
I believe I can improve my social status through working hard.	.67						
My future destiny is in my own hands to a large extent.	.67						
I have clear goals for my future.	.60						
Even if my teacher does not ask, I take the initiative to study.		.87					
No matter whether teachers will check, I will finish my schoolwork with high quality.		.79					
Even if no one is monitoring me, I will finish my schoolwork on time.		.78					
When I didn't do well on an exam, I will reflect on how to improve learning strategies.		.77					
When I encounter difficulties in my schoolwork, I usually consider solutions patiently.		.77					
I finish my schoolwork no matter how hard it is.		.75					
When I encounter problems in my study, I will ask teachers or classmates.		.74					
Even if there is TV show or game that I like, I will finish my schoolwork first.		.72					
I set high standards for my own study.		.71					
I often read after class.		.69					
I listen carefully in class.		.66					
I complete my homework on time.		.57					
I am willing to do things that benefit my class even if my classmates are not willing to do so.			.84				
I take the initiative to do things for my class.			.80				
Class honor is important to me.			.80				
I am willing to contribute to my class.			.79				
I do my best in collective affairs in class.			.77				
I hope to make this world a better place.			.70				
I hope to make meaningful contribution to this world.			.68				
I care about the future development of China.			.68				

Item					
I hope to contribute to my country and society.	.65				
I want to repay my parents and other family members in the future.	.62				
I often take the initiative to do chores in my family.	.60				
I listen to the guidance of my parents and other relatives.		.73			
I follow what my teachers have said.		.72			
I follow what my parents and other relatives have said.		.71			
I am grateful for those who have helped me.		.70			
I try my best to help those who have helped me.		.68			
I listen to my teachers' guidance.		.66			
In school, I take the initiative to communicate with others.		.57			
I try my best to do the right things.		.56			
I do not do things that I'm not supposed to do.		.48			
I am good at making friends.		.42			
I understand that my parents migrate to improve the financial conditions of my family.			.87		
I can deeply feel my parents' hard work while migrating to work elsewhere.			.84		
I understand that my parents migrate to provide me with better educational opportunities.			.82		
My parents' hard work inspires me to study hard.			.81		
After my parent(s) migrated to work elsewhere, I become more independent to solve problems on my own.			.79		
I see my parent(s)' migration as an opportunity for me to become independent.			.65		
Even if my parent(s) are absent, I can be self-disciplined.			.57		
When I am in trouble, I tell others.				.69	
When I meet difficulties, I make plans to overcome difficulties.				.66	
I usually face difficulties with an optimistic attitude.				.61	
When I am in trouble, I seek help from others.				.57	
I see setbacks as opportunities to toughen myself and gain experience.				.55	
I think setbacks inspire people.				.53	
When I meet difficulties, I consider the problems carefully.				.53	
I study hard so others won't look down on me.					.56
I aspire to change my destiny through studying.					.55
I study hard so I won't let my teachers down					.47
I'm willing to work hard for my personal success.					.47
I study hard so I won't let my parents down.					.44
I aspire to change my family's conditions through studying.					.43

Note. F1 = Goals and Future Expectation; F2 = Academic Engagement; F3 = Responsibility and Intention to Contribute; F4 = Prosociality; F5 = Positive Coping toward Parental Migration; F6 = Positive Coping; F7 = Academic Achievement.

Table 5

Factor Loadings of the 68 Items in the Environmental Supports Scale (N = 553)

Variables	F1	F2	F3	F4	F5	F6	F7	F8
When I didn't feel confident about my study, my teacher will encourage me.	.78							
When I meet difficulties with my schoolwork, my teacher will help me.	.75							
Teachers in my class treat each student equally.	.74							
There is teacher in school who truly cares about me.	.74							
My teacher instructs me on how to be a good person.	.71							
If I do something wrong, my teacher will guide me to correct the mistake.	.70							
My school cares about students.	.68							
I sincerely feel that I am a part of my class.	.67							
My school fairly enforces school rules.	.61							
In school, there is teacher who believes that I can get good grades.	.59							
In school, there is teacher who believes that I will be successful.	.59							
Noticing that I am in a bad mood, my teacher will cheer me up.	.58							
I feel safe at school.	.56							
In my class, students are united and friendly.	.52							
My class has a positive learning atmosphere.	.51							
My teacher takes care of my life.	.48							
Although being absent for a long time, I can still feel that my migrating parent(s) really love me.		.83						
Even though we don't live together, I feel close to my migrating parent(s).		.83						
My migrating parent(s) contact me frequently (via phone calls, video chat, etc.).		.81						
My migrating parent(s) care about necessities of my life.		.80						
My migrating parent(s) cheer me up when something goes wrong with me.		.76						
My migrating parent(s) contact my teacher regularly to ask about my performance in school.		.76						
My migrating parent(s) provide me with support when needed.		.73						
My migrating parent(s) often encourages me.		.72						
My migrating parent(s) understand my feelings.		.67						
My migrating parent(s) respect my opinions.		.62						
My migrating parent(s) rarely scold me.		.56						
I know role models who do not give up easily.			.84					

I have role models to learn from in the social media.	.81		
I know role models who show diligence.	.81		
Among adults around me, someone can be a good role model for me.	.73		
My community and surrounding environment are safe.	.68		
I feel the societal environment is overall positive.	.67		
People around me can see my strengths.	.67		
In my residential areas, neighbors help one another.	.66		
People around me acknowledge my achievement.	.65		
The present societal environment makes me hopeful for my future.	.61		
My main caregiver(s) often encourage me.		.85	
My main caregiver(s) understand my feelings.		.85	
My main caregiver(s) respect my opinions.		.81	
My main caregiver(s) cheer me up when something goes wrong with me.		.77	
My main caregiver(s) rarely scold me.		.74	
My main caregiver(s) provide me with support when needed.		.73	
My main caregiver(s) take good care of my daily life.		.54	
There are adults who guide me to develop extracurricular interest.		.78	
There are adults who inspire me to develop extracurricular interest.		.73	
I have enough time to engage in extracurricular interest.		.70	
I have opportunities to take part in extracurricular activities outside of school (e.g., community activities, spring tour, summer camp, etc.).		.69	
In school, I have many opportunities to take part in extracurricular activities (e.g., sports, interest groups, competitions, etc.).		.59	
I have extracurricular interest that I am passionate about.		.53	
Participating in extracurricular activities has helped me develop skills.		.51	
Participating in extracurricular activities has broadened my horizon.		.51	
I get long well with my residential parent(s) or relatives.			.72
Family members have good communication.			.67
I feel safe at home.			.65
If I do something wrong, my parents (or other adults in my family) will help me correct the mistake.			.60
Parents or relatives will ask for my opinion regarding some family matters.			.57

My family set up a reasonable code of conduct for me.	.53	
My parents and other relatives believe that I will succeed in the future.	.51	
Extraordinary peers around me inspire me to be a good person.		.83
My peers believe that I will succeed in the future.		.83
I have peers who truly care about me.		.79
Extraordinary peers around me inspire me to study hard.		.72
When I am in a bad mood, my peers will be at my side.		.70
My siblings (and cousins) give me spiritual support.		.86
My siblings (and cousins) and me care about each other.		.83
My siblings (and cousins) and me have fun together.		.71
I have someone to look up to among my siblings and cousins.		.56

Note. F1 = School Support; F2 = Support of Migrating Parent(s) F3 = Positive Community and Societal Environment; F4 = Support of Caregiver(s); F5 = Extracurricular Support; F6 = Family Support; F7 = Peer Support; F8 = Support of Peer Relatives.

Table 6

Descriptive Statistics for Items in the Individual Strengths Scale in Study 2 (N = 1,057)

Manifest Variables	Mean	SD
I am confident about my future.	4.22	1.01
I am enthusiastic about my future life.	4.24	1.00
My goal is to get into an ideal college.	4.47	0.87
I look forward to my future.	4.29	0.99
I plan to continue to go to school after graduation.	4.32	0.92
I believe that I can do better as long as I work hard.	4.31	0.93
I think I can master my future life.	4.08	1.00
I believe that I am able to create a nice tomorrow.	4.20	0.98
I believe that I can improve my social status through working hard.	4.24	0.94
My future destiny is in my own hands to a large extent.	4.33	0.90
I have clear goals for my future.	4.17	1.03
Even if my teacher does not ask, I will take the initiative to study.	4.04	0.99
No matter whether teachers will check, I will finish my schoolwork with high quality.	4.25	0.91
Even if no one is monitoring me, I will finish my schoolwork on time.	4.18	0.93
When I didn't do well on an exam, I will reflect on how to improve learning strategies.	4.05	1.03
When I encounter difficulties in my schoolwork, I usually consider solutions patiently.	4.15	0.95
I finish my schoolwork no matter how hard it is.	4.14	0.94
When I encounter problems in my study, I will ask teachers or classmates.	3.98	1.08
Even if there is TV show or game that I like, I will finish my schoolwork first.	4.05	1.07
I set high standards for my own study.	4.02	0.97
I often read after class.	3.84	1.15
I listen carefully in class.	4.21	0.86
I complete my homework on time.	4.37	0.83
I am willing to do things that benefit my class even if my classmates are not willing to do so.	4.02	1.01
I take the initiative to do things for my class.	4.12	0.92
Class honor is important to me.	4.12	1.00
I am willing to contribute to my class.	4.14	0.97
I do my best in collective affairs in class.	4.18	0.92
I hope to make this world a better place.	4.39	0.88

I hope to make meaningful contribution to this world.	4.31	0.91
I care about the future development of China.	4.35	0.87
I hope to contribute to my country and society.	4.37	0.88
I want to repay my parents and other family members in the future.	4.55	0.75
I often take the initiative to do chores in my family.	4.24	0.89
I listen to the guidance of my parents and other relatives.	4.31	0.87
I follow what my teachers have said.	4.26	0.86
I follow what my parents and other relatives have said.	4.11	0.91
I am grateful for those who have helped me.	4.47	0.76
I try my best to help those who have helped me.	4.42	0.81
I listen to my teachers' guidance.	4.36	0.85
In school, I take the initiative to communicate with others.	4.05	1.07
I try my best to do the right things.	4.40	0.82
I do not do things that I'm not supposed to do.	4.28	0.94
I am good at making friends.	3.97	1.16
I understand that my parents migrate to improve the financial conditions of my family.	4.61	0.71
I can deeply feel my parents' hard work while migrating to work elsewhere.	4.57	0.75
I understand that my parents migrate to provide me with better educational opportunities.	4.57	0.77
My parents' hard work inspires me to study hard.	4.50	0.83
After my parent(s) migrated to work elsewhere, I become more independent to solve problems on my own.	4.30	0.88
I see my parent(s)' migration as an opportunity for me to become independent.	4.21	1.00
Even if my parent(s) are absent, I can be self-disciplined.	4.12	0.98
When I am in trouble, I tell others.	3.73	1.28
When I meet difficulties, I make plans to overcome difficulties.	4.03	1.03
I usually face difficulties with an optimistic attitude.	4.10	1.04
When I am in trouble, I seek help from others.	4.05	1.02
I see setbacks as opportunities to toughen myself and gain experience.	4.15	0.97
I think setbacks inspire people.	4.04	1.06
When I meet difficulties, I consider the problems carefully.	4.13	0.94
I aspire to change my destiny through studying.	4.35	0.89
I study hard so I won't let my teachers down	4.15	1.01
I'm willing to work hard for my personal success.	4.28	0.91
I study hard so I won't let my parents down.	4.21	0.94
I aspire to change my family's conditions through studying.	4.38	0.87

Table 7

Descriptive Statistics for Items in the Environmental Supports Scale in Study 2 (N = 995)

Manifest Variables	Mean	SD
When I didn't feel confident about my study, my teacher will encourage me.	4.12	1.08
When I meet difficulties with my schoolwork, my teacher will help me.	4.25	0.98
Teachers in my class treat each student equally.	4.26	1.02
There is teacher in school who truly cares about me.	4.09	1.09
My teacher instructs me on how to be a good person.	4.50	0.84
If I do something wrong, my teacher will guide me to correct the mistake.	4.42	0.85
My school cares about students.	4.21	1.03
I sincerely feel that I am a part of my class.	4.36	0.95
My school fairly enforces school rules.	4.36	0.98
In school, there is teacher who believes that I can get good grades.	4.19	0.98
In school, there is teacher who believes that I will be successful.	4.13	1.02
Noticing that I am in a bad mood, my teacher will cheer me up.	3.73	1.24
I feel safe at school.	4.20	1.01
In my class, students are united and friendly.	4.16	0.99
My class has a positive learning atmosphere.	4.05	1.01
My teacher takes care of my life.	3.95	1.13
Although being absent for a long time, I can still feel that my migrating parent(s) really love me.	4.46	0.88
Even though we don't live together, I feel close to my migrating parent(s).	4.36	1.00
My migrating parent(s) contact me frequently (via phone calls, video chat, etc.).	4.42	0.96
My migrating parent(s) care about necessities of my life.	4.49	0.87
My migrating parent(s) cheer me up when something goes wrong with me.	4.21	1.12
My migrating parent(s) contact my teacher regularly to ask about my performance in school.	4.10	1.13
My migrating parent(s) provide me with support when needed.	4.41	0.91
My migrating parent(s) often encourages me.	4.36	0.99
My migrating parent(s) understand my feelings.	4.16	1.13
My migrating parent(s) respect my opinions.	4.14	1.10
My migrating parent(s) rarely scold me.	3.96	1.11
I know role models who do not give up easily.	4.16	1.04
I have role models to learn from in the social media.	4.20	1.03
I know role models who show diligence.	4.23	0.98
Among adults around me, someone can be a good role model for me.	4.16	1.03

My community and surrounding environment are safe.	4.36	0.89
I feel the societal environment is overall positive.	4.14	0.93
People around me can see my strengths.	3.94	1.09
In my residential areas, neighbors help one another.	4.15	0.99
People around me acknowledge my achievement.	3.96	1.06
The present societal environment makes me hopeful for my future.	3.99	1.09
My main caregiver(s) often encourage me.	4.25	1.04
My main caregiver(s) understand my feelings.	4.10	1.16
My main caregiver(s) respect my opinions.	4.14	1.12
My main caregiver(s) cheer me up when something goes wrong with me.	4.13	1.16
My main caregiver(s) rarely scold me.	3.85	1.19
My main caregiver(s) provide me with support when needed.	4.36	0.96
My main caregiver(s) take good care of my daily life.	4.44	0.88
There are adults who guide me to develop extracurricular interest.	3.81	1.25
There are adults who inspire me to develop extracurricular interest.	3.89	1.16
I have enough time to engage in extracurricular interest.	3.71	1.26
I have opportunities to take part in extracurricular activities outside of school (e.g., community activities, spring tour, summer camp, etc.).	3.11	1.46
In school, I have many opportunities to take part in extracurricular activities (e.g., sports, interest groups, competitions, etc.).	3.93	1.21
I have extracurricular interest that I am passionate about.	4.15	1.10
Participating in extracurricular activities has helped me develop skills.	4.22	1.02
Participating in extracurricular activities has broadened my horizon.	4.15	1.06
I get long well with my residential parent(s) or relatives.	4.29	0.98
Family members have good communication.	4.16	1.06
I feel safe at home.	4.46	0.89
If I do something wrong, my parents (or other adults in my family) will help me correct the mistake.	4.35	0.97
Parents or relatives will ask for my opinion regarding some family matters.	3.87	1.15
My family set up a reasonable code of conduct for me.	4.18	1.03
My parents and other relatives believe that I will succeed in the future.	4.19	0.99
Extraordinary peers around me inspire me to be a good person.	4.10	1.05
My peers believe that I will succeed in the future.	3.97	1.06
I have peers who truly care about me.	4.13	1.05
Extraordinary peers around me inspire me to study hard.	4.08	1.06
When I am in a bad mood, my peers will be at my side.	4.04	1.07
My siblings (and cousins) give me spiritual support.	4.11	1.14
My siblings (and cousins) and me care about each other.	4.23	1.09

My siblings (and cousins) and me have fun together.	4.25	1.03
I have someone to look up to among my siblings and cousins.	3.90	1.32

Table 8

Factor Loadings of the 63 items in the Individual Strengths Scale (N = 1,057)

Variables	F1	F2	F3	F4	F5	F6	F7
I believe that I am able to create a nice tomorrow.	.82						
I believe that I can do better as long as I work hard.	.81						
I am confident about my future.	.80						
I have clear goals for my future.	.80						
I look forward to my future.	.79						
I am enthusiastic about my future life.	.79						
I think I can master my future life.	.76						
My future destiny is in my own hands to a large extent.	.76						
I plan to continue to go to school after graduation.	.74						
I believe I can improve my social status through working hard.	.73						
My goal is to get into an ideal college.	.70						
When I encounter difficulties in my schoolwork, I usually consider solutions patiently.		.82					
When I didn't do well on an exam, I will reflect on how to improve learning strategies.		.81					
Even if my teacher does not ask, I take the initiative to study.		.81					
I set high standards for my own study.		.80					
Even if no one is monitoring me, I will finish my schoolwork on time.		.79					
I listen carefully in class.		.78					
No matter whether teachers will check, I will finish my schoolwork with high quality.		.78					
I finish my schoolwork no matter how hard it is.		.77					
When I encounter problems in my study, I will ask teachers or classmates.		.76					
I complete my homework on time.		.75					
I often read after class.		.69					
Even if there is TV show or game that I like, I will finish my schoolwork first.		.67					
I take the initiative to do things for my class.			.81				
I am willing to contribute to my class.			.80				
I do my best in collective affairs in class.			.80				
I hope to make meaningful contribution to this world.			.77				
I often take the initiative to do chores in my family.			.76				
I hope to contribute to my country and society.			.76				
Class honor is important to me.			.72				
I care about the future development of China.			.71				

I want to repay my parents and other family members in the future.	.70				
I hope to make this world a better place.	.69				
I am willing to do things that benefit my class even if my classmates are not willing to do so.	.69				
I listen to the guidance of my parents and other relatives.		.80			
I listen to my teachers' guidance.		.76			
I try my best to do the right things.		.75			
I am grateful for those who have helped me.		.72			
I follow what my parents and other relatives have said.		.71			
I try my best to help those who have helped me.		.71			
I follow what my teachers have said.		.69			
In school, I take the initiative to communicate with others.		.69			
I do not do things that I'm not supposed to do.		.62			
I am good at making friends.		.61			
Even if my parent(s) are absent, I can be self-disciplined.			.87		
After my parent(s) migrated to work elsewhere, I become more independent to solve problems on my own.			.79		
My parents' hard work inspires me to study hard.			.76		
I see my parent(s)' migration as an opportunity for me to become independent.			.75		
I can deeply feel my parents' hard work while migrating to work elsewhere.			.69		
I understand that my parents migrate to provide me with better educational opportunities.			.66		
I understand that my parents migrate to improve the financial conditions of my family.			.62		
When I meet difficulties, I consider the problems carefully.				.83	
I see setbacks as opportunities to toughen myself and gain experience.				.80	
I usually face difficulties with an optimistic attitude.				.78	
When I meet difficulties, I make plans to overcome difficulties.				.78	
When I am in trouble, I seek help from others.				.72	
I think setbacks inspire people.				.70	
When I am in trouble, I tell others.				.61	
I aspire to change my destiny through studying.					.81
I study hard so I won't let my teachers down					.79
I'm willing to work hard for my personal success.					.78
I study hard so I won't let my parents down.					.75
I aspire to change my family's conditions through studying.					.75

Note. F1 = Goals and Future Expectation; F2 = Academic Engagement; F3 = Intention to Contribute; F4 = Prosociality; F5 = Positive Coping toward Parental Migration; F6 = Positive Coping; F7 = Academic Achievement.

Table 9

Factor Loadings of the 68 Items in the Environmental Supports Scale (N = 995)

Variables	F1	F2	F3	F4	F5	F6	F7	F8
When I didn't feel confident about my study, my teacher will encourage me.	.80							
In school, there is teacher who believes that I will be successful.	.80							
When I meet difficulties with my schoolwork, my teacher will help me.	.80							
Noticing that I am in a bad mood, my teacher will cheer me up.	.79							
In my class, students are united and friendly.	.79							
There is teacher in school who truly cares about me.	.77							
My teacher takes care of my life.	.75							
In school, there is teacher who believes that I can get good grades.	.75							
I sincerely feel that I am a part of my class.	.73							
My class has a positive learning atmosphere.	.73							
My school cares about students.	.72							
If I do something wrong, my teacher will guide me to correct the mistake.	.69							
I feel safe at school.	.68							
My teacher instructs me on how to be a good person.	.66							
My school fairly enforces school rules.	.63							
Teachers in my class treat each student equally.	.63							
My migrating parent(s) understand my feelings.		.87						
Even though we don't live together, I feel close to my migrating parent(s).		.85						
My migrating parent(s) cheer me up when something goes wrong with me.		.85						
My migrating parent(s) often encourages me.		.83						
My migrating parent(s) respect my opinions.		.83						
My migrating parent(s) provide me with support when needed.		.82						
Although being absent for a long time, I can still feel that my migrating parent(s) really love me.		.82						
My migrating parent(s) care about necessities of my life.		.81						
My migrating parent(s) contact me frequently (via phone calls, video chat, etc.).		.73						
My migrating parent(s) contact my teacher regularly to ask about my performance in school.		.71						
My migrating parent(s) rarely scold me.		.59						
The present societal environment makes me hopeful for my future.			.76					

Among adults around me, someone can be a good role model for me.	.75			
People around me acknowledge my achievement.	.75			
People around me can see my strengths.	.72			
I know role models who do not give up easily.	.71			
I feel the societal environment is overall positive.	.70			
In my residential areas, neighbors help one another.	.69			
I know role models who show diligence.	.68			
My community and surrounding environment are safe.	.66			
I have role models to learn from in the social media.	.59			
My main caregiver(s) understand my feelings.		.87		
My main caregiver(s) provide me with support when needed.		.87		
My main caregiver(s) cheer me up when something goes wrong with me.		.86		
My main caregiver(s) respect my opinions.		.86		
My main caregiver(s) take good care of my daily life.		.84		
My main caregiver(s) often encourage me.		.84		
My main caregiver(s) rarely scold me.		.65		
There are adults who inspire me to develop extracurricular interest.			.78	
There are adults who guide me to develop extracurricular interest.			.75	
Participating in extracurricular activities has broadened my horizon.			.73	
Participating in extracurricular activities has helped me develop skills.			.73	
I have enough time to engage in extracurricular interest.			.72	
In school, I have many opportunities to take part in extracurricular activities (e.g., sports, interest groups, competitions, etc.).			.69	
I have extracurricular interest that I am passionate about.			.69	
I have opportunities to take part in extracurricular activities outside of school (e.g., community activities, spring tour, summer camp, etc.).			.63	
If I do something wrong, my parents (or other adults in my family) will help me correct the mistake.				.78
Family members have good communication.				.77
My family set up a reasonable code of conduct for me.				.75
Parents or relatives will ask for my opinion regarding some family matters.				.75
My parents and other relatives believe that I will succeed in the future.				.74

I get long well with my residential parent(s) or relatives.				.73			
I feel safe at home.				.65			
Extraordinary peers around me inspire me to be a good person.						.84	
My peers believe that I will succeed in the future.						.82	
Extraordinary peers around me inspire me to study hard.						.80	
When I am in a bad mood, my peers will be at my side.						.79	
I have peers who truly care about me.						.77	
My siblings (and cousins) give me spiritual support.							.88
My siblings (and cousins) and me care about each other.							.82
My siblings (and cousins) and me have fun together.							.81
I have someone to look up to among my siblings and cousins.							.74

Note. F1 = School Support; F2 = Support of Migrating Parent(s) F3 = Positive Community and Societal Environment; F4 = Support of Caregiver(s); F5 = Extracurricular Support; F6 = Family Support; F7 = Peer Support; F8 = Support of Peer Relatives.

Table 10

Correlations among Factors in the Individual Strengths Scale and Environmental Supports Scale (N = 1,076)

Scales	1	1.1	1.2	1.3	1.4	1.5	1.6	1.7	2	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8
1. IS	-																
1.1 goals and future expectation	.94	-															
1.2 academic engagement	.94	.84	-														
1.3 intention to contribute	.95	.88	.86	-													
1.4 prosociality	.94	.85	.86	.90	-												
1.5 coping toward migration	.78	.69	.68	.70	.69	-											
1.6 positive coping	.92	.85	.87	.84	.84	.67	-										
1.7 academic motivation	.91	.86	.84	.85	.83	.66	.79	-									
2.ES	.83	.79	.76	.79	.81	.73	.81	.73	-								
2.1 school support	.74	.70	.71	.74	.74	.55	.69	.67	.88	-							
2.2 support of migrating parent(s)	.66	.59	.57	.58	.59	.82	.62	.54	.77	.48	-						
2.3 positive community and societal	.77	.76	.72	.76	.76	.59	.75	.71	.92	.86	.58	-					
2.4 support of caregiver(s)	.56	.52	.50	.49	.52	.59	.56	.47	.71	.43	.69	.51	-				
2.5 extracurricular support	.70	.64	.67	.67	.68	.51	.70	.60	.86	.82	.52	.83	.44	-			
2.6 family support	.70	.68	.63	.66	.69	.61	.68	.63	.87	.70	.67	.80	.64	.69	-		
2.7 peer support	.72	.68	.66	.70	.71	.53	.70	.62	.85	.79	.52	.85	.48	.74	.71	-	
2.8 support of peer relatives	.63	.59	.56	.59	.60	.59	.63	.54	.70	.47	.65	.56	.58	.48	.58	.54	-

Note. coping toward migration = positive coping toward parental migration; positive community and societal = positive community and societal environment. All analyses were conducted with Sample 2. All correlations are significant at the *p* < 0.01 level (2-tailed).

Table 11

Correlations among Criterion Variables and Factors in the Individual Strengths Scale and Environmental Supports Scale (N = 1,076)

Scales	PYD	PYD Character	PYD Competence	PYD Confidence	PYD Connection	Subjective well-being	Problem behaviors	Academic achievement
IS	.88	.86	.81	.79	.77	.45	-.38	.19
goals and future expectation	.82	.80	.76	.76	.72	.42	-.33	.19
academic engagement	.81	.81	.76	.74	.70	.43	-.37	.22
intention to contribute	.83	.83	.76	.73	.72	.40	-.35	.15
prosociality	.82	.81	.77	.73	.73	.42	-.34	.14
coping toward migration	.73	.73	.67	.65	.66	.37	-.32	.15
positive coping	.83	.77	.79	.78	.77	.44	-.34	.14
academic motivation	.77	.77	.71	.69	.67	.41	-.32	.18
ES	.82	.74	.76	.75	.83	.45	-.35	.10
school support	.67	.63	.61	.59	.66	.39	-.28	.10
support of migrating parent(s)	.69	.62	.64	.64	.73	.35	-.31	.10
positive community & societal	.73	.67	.68	.67	.73	.41	-.31	.11
support of caregiver(s)	.64	.56	.61	.59	.68	.33	-.27	.05[a]
extracurricular support	.66	.59	.63	.61	.67	.38	-.26	.06[a]
family support	.69	.63	.63	.61	.70	.36	-.34	.07[*]
peer support	.69	.63	.66	.64	.69	.37	-.31	.10
support of peer relatives	.66	.60	.61	.61	.68	.35	-.30	.03[a]

Note. All analyses were conducted with Sample 2. coping toward migration = positive coping toward parental migration; positive community & societal = positive community and societal environment. * $p < .05$, [a] $p > .05$; all other correlations are significant at $p < .001$ (2-tailed).

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Research Phase	**Procedures**	**Products**

Phase I **(Qualitative Study)** Qualitative Exploration	• Criterion Sampling (*N* = 15~20) • One-on-one semi-structured interviews • Coding and thematic analysis	• Interview transcripts • Coded individual strengths and environmental supports among rural, left-behind youth in China

Inform

Phase II **(Qualitative Study)** Instrument Development	• Determine how qualitative findings will inform the development of survey items • Generate an item pool • Conduct expert reviews • Perform field tests • Revise and finalize the instrument	• An instrument containing two scales: the Individual Strengths Scale, and the Environmental Supports Scale

Validated by

Phase III **(Quantitative Study)** Quantitative Validation	• Recruit two groups of youth participants • Administer the new instrument to one group of youth • Examine factor structure and revise the instrument • Administer the refined instrument and other related measures to the second group of youth • Test reliability and validity of the instrument	• Validated instrument to assess individual strengths and environmental supports among left-behind youth

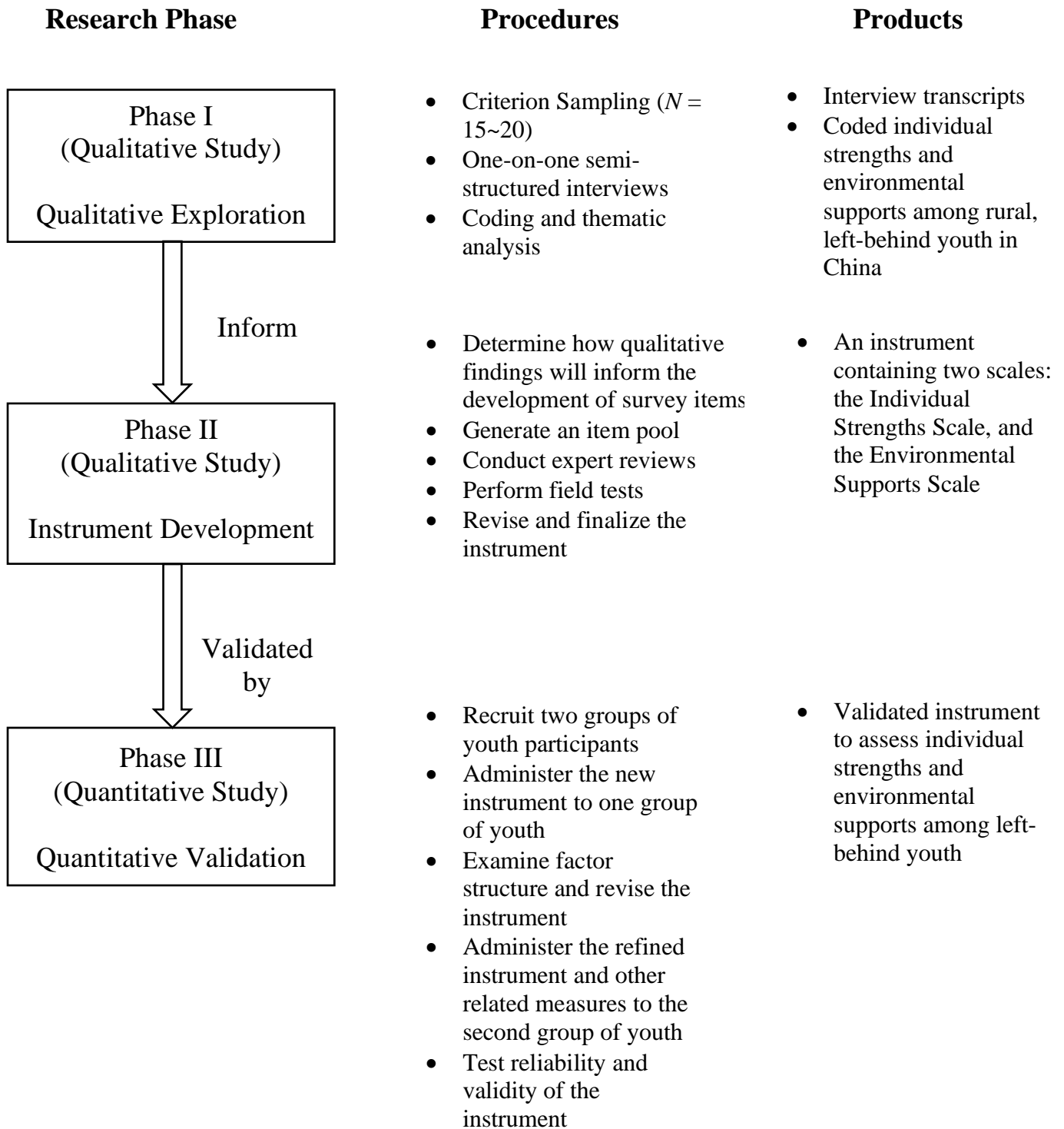*Figure 1*. Diagram of the Study Design

Interview Protocol for Adults (English Version)

Hello! Thank you very much for your time. I'm Yaqiong from Claremont Graduate University. I'm conducting a study on the positive development of left-behind youth in China. I'd like to know some basic information about the development of left-behind youth. More importantly, I'm interested in knowing the factors that promote their positive development. This interview should take about 30 minutes of your time. Your ideas will help me have a more in-depth understanding of the development of this youth group.

During the interview, I will ask you some questions to understand your personal views. The content of the interview is mainly used for research. I will not evaluate your work performance, and I will strictly protect your confidentiality. Your supervisor, colleagues, or students will not know what you have said today.

Before the interview, I would like you to read this consent form. I hope to get your consent to participate in the interview and to record this interview. The purpose for this is to not take extensive notes during our conversation and ensure that I maintain a free-flowing conversation with you. Please read the consent form carefully. If you would like to participate, please sign your name and date on it.

(*if the interviewee does not accept the request for recording, let him or her know that the interviewer will need to take notes during the interview.)*

(After he/she signs the consent) Do you have any questions for me? (wait a moment, answer questions if there's any) If you don't have any more questions, we'll get started.

[Part I: Basic Information]
1. First of all, I would like to know about some of your personal background.
   - If you don't mind, could you tell me your age and educational background?
   - What grade level(s) do you teach?
   - What subject(s) do you teach?
   - How many years have you been a teacher?
   - Are you a head teacher?
   - How long have you worked in this school?
   - Do you have any other positions besides being a teacher?

2. Now I would like to know about your experiences working with left-behind youth.
   - How many years have you been working with them?
   - What is the proportion of left-behind youth in your school?
   - Do you work with left-behind youth mainly in school?
   - Do you have any other work experience with left-behind youth (e.g., community service)?

[Part II: Development Status of Left-Behind Youth]
3. Can you describe in detail what the group of left-behind youth look like based on your experiences of working with them? What are the prominent characteristics of this group?
   - Some social media consider left-behind youth as "problematic youth" and focus on their deficiencies. I'm curious about your thoughts on this issue.

4. What do you think are the main challenges and difficulties faced by left-behind youth in rural areas?

[Part III: Positive Development of Left-Behind Youth] We just discussed the negative view on left-behind youth. Let's now talk about the characteristics of left-behind youth who show positive development. Positive development may mean that a student performs well in various aspects, such as schoolwork, conduct, character, etc. You can think about your definition of "a good student." What do they usually look like?

5. In your teaching career, have you ever met any left-behind youth who are facing all kinds of difficulties you just described (such as...), but they still grow well to become good students? Perhaps among the students you have taught, there is someone who makes you feel that she/he has developed very well in different aspects, despite all the challenges.
    o Can you describe one or two examples?
    o If you think about the student(s) you just talked about and other similar examples, could you summarize what these students look like? What makes you think they are good students? In other words, what does positive development look like for these left-behind youth?

[Part IV: Factors Influencing the Positive Development of Left-Behind Youth]
6. You just talked about some left-behind youth whom you think demonstrate positive development. My next question is why these left-behind youth instead of other youth can achieve positive development?
    • What may be some of their own characteristics or qualities that help them achieve positive development?
    • In addition to their own qualities, what environmental factors do you think support them? Environmental factors refer to things that are outside of one's own ability or control.
        o Given that students' parents migrate to urban cities, who will provide the main support for these youth? For the left-behind youth who achieve positive development, do their families share some positive characteristics?
        o Schools may be a second home for left-behind youth. Who provides the main support in school? What kind of support, resources, and opportunities are available in school to promote their positive development?
        o In addition to family and school, do these well-developed left-behind youth receive service or support from the local communities, such as the town or the county? What kind of support do they receive?
        o Is there any institution or non-profit organization that provides support? What kind of support do they offer?
        o Can you think of anything else that we haven't discussed yet?

7. Among the influencing factors you just mentioned, which factors are particularly helpful to the left-behind youth when they face difficulties? In other words, what protects the left-behind youth from the negative influences of the adverse environment?
    • We may start with an example: Can you think of an example of a student overcoming difficulties? What difficulties did this student encounter in this experience? How did

the student overcome them? What personal strengths and environmental supports did the student use to overcome the difficulties?

- Now if you think about multiple examples that are similar to this, what are some of the individual strengths that left-behind youth usually use to overcome difficulties?
- What are the critical environmental factors that have protected them?
  - o Who do you think gives the most support to left-behind youth when they encounter difficulties?
  - o What resources, activities or opportunities are available to protect left-behind youth when they encounter difficulties?
- Can you think of anything else that we haven't discussed yet?

8. What resources or support that you wish to see or have more to support left-behind youth's healthy development?

[Closing]
That's all my questions. Do you have any comments you want to add? Do you have any questions for me?

<u>Thank you very much for your participation! Have a great day!</u>

Interview Protocol for Students (English Version)

Hello! I'm Yaqiong from Claremont Graduate University. I'm conducting a study on the positive development of rural children in China and your teacher recommended you. I would like to learn about some of your basic information and the factors that may have affected your development. This interview should take about 30 minutes of your time. Your responses will help me have a more in-depth understanding of the development of rural children in China.

During the interview, I will ask you some questions to understand your personal views. There is no right or wrong answer to these questions. The content of the interview is mainly used for research. I will strictly protect your confidentiality. In other words, your teachers, classmates, and parents will not know what you have said today.

Before the interview, I would like you to read this consent form. I hope to get your consent to participate in the interview and to record this interview. The purpose for this is to not take extensive notes during our conversation and ensure that I maintain a free-flowing conversation with you. Please read the consent form carefully. If you would like to participate, please sign your name and date on it.
(if the interviewee does not accept the request for recording, let him/her know that the interviewer will need to take notes during the interview.)

(After he/she signs the consent) Do you have any questions for me? (wait a moment, answer questions if there's any) If you don't have any more questions, we'll get started.

[Part I: Basic Information]
1. First of all, could you talk about some basic information about yourself?
   - What's your age? (or what grade level are you in?)
   - What are your hobbies?
   - Can you tell me something about your family?
     - Who do you live with?
     - Do you have any siblings?
     - What are your parents' jobs? Where do they work (in rural areas or urban cities)?
       - (if parent(s) migrate to urban cities for work) how often do you see them?

[Part II: Positive Development of Left-Behind Youth] Now I'd like to talk about the positive development of rural youth. Positive development means that a student performs well in various aspects, such as schoolwork, conduct, character etc. Does this make sense to you?

2. Your teacher recommended you participate in this interview. I assume you are a student who demonstrates positive development in school, right? Can you tell me in what aspects you usually perform well? Or what are you satisfied with yourself?

3. Now, please think about your classmates or peers. Can you think of someone whom you think demonstrate positive development? What do they look like?

[Part III: Factors Influencing the Positive Development of Left-Behind Youth]

4. You've talked about some characteristics of yourself and of other people that show you are well-developed adolescents. Now I would like you to think about why you and your peers achieve positive development. In other words, what factors have helped you achieve positive development?
    o What may be some of your own characteristics or qualities that help you achieve positive development?
    o Apart from your own qualities, let's talk about the environmental factors that support you. Environmental factors can be things that are outside of your own ability or your control.
        ▪ Who provides lots of support for you in your family? What else in your family do you think are good for your development?
        ▪ Who are helpful and supportive for you in school? What resources or opportunities are available to promote your positive development in school?
        ▪ In addition to people in your family and school, have you received support from anyone else? Where do these people come from? How do they support you?
            • Have you received any support from your local communities, such as your town or the county? What kind of support have you received?
            • Have you received any support from any institution or non-profit organization? What kind of support have you received?
        ▪ Can you think of anything else that we haven't discussed yet?

5. This question is a little different. I'd like you to talk about any challenges or difficulties you have encountered or those that you are facing now in your life. Do you have something that really bothers you?
    • Do you know if other students have similar troubles or difficulties?
    • What troubles or difficulties do others have?

6. Among the factors you just mentioned that help you obtain positive development (such as...) Which factors are particularly helpful to you when you meet difficulties?
    • We can start with an example: Can you think of a memorable experience of overcoming difficulties? What difficulty did you encounter in this experience? How did you overcome it? What personal strengths and environmental supports did you use to overcome the difficulty?
    • Now if you think about multiple experiences of you overcoming difficulties, what are some of your own strengths that have helped you face these difficulties?
    • What are some of the environmental factors that have helped you face difficulties?
        o In your life, especially when you face difficulties, is there anyone who has a particularly important influence on you? Who is he (she)? How does he (she) help you?
        o What other resources and opportunities do you have to help you face difficulties?
    • Can you think of anything else that we haven't discussed yet?

7. What resources or support that you wish to see or have more to support your own development?

[Closing]
That's all my questions. Do you have any comments you want to add? Do you have any questions for me?

Thank you very much for your participation! Have a great day!

Interview Protocol for Adults (Chinese Version)

　　XX 老师，您好！非常感谢您抽出宝贵的时间和我进行交流。我是美国克莱蒙特研究大学的王雅琼。我正在进行一项关于中国留守儿童积极发展的调查研究，想向您了解留守儿童发展的基本情况，以及促进他们各方面良好发展的影响因素。您的想法将有助于我们更全面且深入地了解中国留守儿童的发展样貌，为制定和实施改善留守儿童发展现状的干预提供重要的支持。

　　在访谈过程中，我会问您一些问题，了解您的个人观点和真实想法。访谈的内容主要用于研究，我们不会对您的工作表现作出任何评价，并对您的个人信息进行严格的保护，您的上司、同事、学生等都不会知道您具体说了什么。所以您可以尽量坦诚地表达您的观点。

　　在访谈开始前，我想请您看一下这份同意书，希望能够征得您对参与这次访谈并对访谈进行录音的同意。录音的目的是为了在访谈的过程中，不会因为大量的访谈记录影响我们的正常交谈。请您先仔细阅读上面的内容。（等看完后，说）如果您愿意和我们交谈，请在上面签上您的姓名和日期。

　　（如果被访谈者同意录音，则在他签完同意书后，说）您有什么问题想问我吗？（等一会儿，如有问题问，则给予解答）如果您没有问题，我们就开始了。

【第一部分：教师基本信息】

1. 首先，我想了解一下您的个人信息。
    a. 如果您不介意的话，可以告诉我您的年龄和教育背景吗？
    b. 您教几年级的学生？
    c. 您教什么科目？
    d. 您的教龄是多长？
    e. 您是班主任吗？
    f. 您在这个学校工作了多长时间？
    g. 除了任课老师，您还担任其他职务吗？

2. 下面，我想了解您接触留守儿童的经历是怎样的。
    a. 您和留守儿童一起工作多少年了？
    b. 您所在的学校有多大比例的留守儿童？
    c. 您主要通过学校工作接触留守儿童吗？
    d. 您有没有其他工作接触过留守儿童？（比如社区服务）

【第二部分：留守儿童发展现状】

3. 请您详细描述一下您所接触到的留守儿童这个群体。您觉得他们是怎样的一群孩子？他们身上有什么特点？
    a. 有些媒体把留守儿童看成是"问题儿童"，关注他们的发展缺陷和不足，对此您怎么看？

4. 您觉得目前农村留守儿童面临的主要挑战和困难是什么？

【第三部分：留守儿童积极发展的特点】刚才我们探讨了对待留守儿童的消极和积极的看法，下面我们来具体谈一下您观察到的那些表现良好的，或者说实现积极发展的留守儿童身上的特点。积极发展可以指一个学生在各个方面表现优异，比如学业、行为习惯、品德等。您可以想一想自己对于一个好学生的定义，他们通常是什么样的？这里我们没有一个固定的标准。

5. 在您的教学生涯中，有没有遇到过一些留守儿童，他们虽然面临着您刚刚所描述的各种困难（比如……），但在您眼中依然成长得还不错？也许在您教过的学生里面，有某一个人让您觉得他的各方面都发展得特别好，让您的印象特别深刻。
   a. 您能描述一两个例子吗？
   b. 如果您想一想刚才谈到的学生和其他类似的例子，您能总结一下这些学生的特点吗？他们有哪些表现让您觉得他们"还不错"？换句话说，这些留守儿童的积极发展是什么样子的？

【第四部分：影响留守儿童积极发展的因素】
6. 您刚刚讲到了一些您觉得发展良好的留守儿童，您觉得这些留守儿童为什么能实现积极发展呢？
   a. 他们自身有哪些优秀的特点或品质帮助他们获得积极发展？
   b. 除了自身品质外，您觉得有哪些环境中的因素给他们提供了支持？环境因素可以指任何不受留守儿童本身能力影响或控制的因素。
      i. 鉴于留守儿童的家长移居城市，在家里谁为这些留守儿童提供主要的照顾和支持？这些实现良好发展的留守儿童的家庭有哪些共同的积极的特点？
      ii. 学校可能算是留守儿童的第二个家。谁在学校里为留守儿童提供的支持比较多？学校为这些留守儿童提供了什么样的支持、资源和机会，促进他们的良好发展？
      iii. 除了家庭和学校之外，这些发展良好的留守青年是否得到了当地社区的服务或支持，例如他们所在的镇或县城？他们获得了什么样的支持？
      iv. 是否有任何组织或非盈利机构提供支持？他们提供了什么样的支持？
      v. 你还能想到其他我们还没有讨论过的影响因素吗？

7. 在您刚刚讲到的那些影响因素中，有哪些因素是在留守儿童面对特殊困境时特别有帮助的？也就是说，哪些因素保护了留守儿童在不利环境中受到较小的负面影响？
   a. 我们可以从一个例子讲起：您能想到某个学生克服困难的例子吗？这个学生在这次经历中遇到了什么困难？他（她）是如何克服的？这个学生运用了哪些个人优势和环境支持来克服困难？
   b. 现在，如果您思考多个类似的例子，留守儿童通常利用哪些个人优势来克服困难？
   c. 那些在不利环境中保护留守儿童的关键环境因素是什么？
      i. 您认为在留守儿童遇到困难时，谁给予他们最多的支持？

ii. 有哪些资源、活动或机会，在留守儿童遇到困难时对他们的保护性作用比较大？

d. 还有什么我们刚刚没有讲到的因素吗？

8. 您希望看到或拥有哪些资源或支持来促进留守儿童的积极发展？

【收尾】

以上就是我全部的问题，您最后还有什么想要补充或者想问我的问题吗？如果后面我有问题想向您请教，还可以联系您吗？

非常感谢您的参与！祝您生活愉快！

  XX（同学），你好！我是美国克莱蒙特研究大学的王雅琼。我们正在进行一项关于中国农村儿童积极发展的调查研究，你的老师推荐了你。我今天主要想向你了解你的基本情况，以及对你的成长和发展可能有影响的因素。你的想法将有助于我们更全面且深入地了解中国农村儿童的发展状况。

  在访谈过程中，我会问你一些问题，了解你的个人观点和真实想法，这些问题的回答没有对错之分。访谈的内容主要用于研究，我们会对你的个人信息进行严格的保护，也就是说，你的老师、同学和家长都不会知道你具体说了什么。所以你可以放心地说出自己的想法。

  在访谈开始前，我想请你看一下这份同意书，希望能够征得你对参与这次访谈并对访谈进行录音的同意。录音的目的是为了不在访谈过程中，因为大量地记录访谈内容而影响我们自然的交流。请你先仔细阅读上面的内容。（等看完后，说）如果你愿意和我们交谈，请在上面签上你的姓名和日期（访谈者指着需要他签名和写日期的地方）。

（被访谈者签完同意书后，说）你有什么问题想问我吗？（等一会儿，如有问题问，则给予解答）如果你没有问题，我们就开始了。

【第一部分：学生基本信息】

1. 首先，我们来谈谈你自己的基本情况好吗？
   a. 你的年龄？（你的年级？）
   b. 你有哪些爱好？
   c. 可以简单说一下你家里的情况吗？
      i. 你跟谁住在一起？
      ii. 你有兄弟姐妹吗？
      iii. 爸爸妈妈做什么工作？在哪里工作？
         1. （如果父母外出务工）你多久见一次他们？

【第二部分：留守儿童积极发展的特点】

下面我想和你聊聊农村儿童积极发展的话题，积极发展就是指一个学生在各个不同的方面，比如学业、体育、品德等当面，都表现得比较好。可以理解吗？

2. 你的老师向我推荐了你参加这次访谈，我想你平时在校应该表现不错吧？可以说一说自己在哪些方面表现得比较好吗？或者，你对于自己的哪些方面比较满意？

3. 现在请你想一下周围的同学，或者你认识的同龄人，他们中有哪些人让你觉得成长发展得不错？他们在哪些方面表现很好？

【第三部分：影响留守儿童积极发展的因素】

4. 你刚刚讲到了自己和其他人发展良好的一些特点，下面我想请你思考一下，你觉得为什么你们能在这些方面表现优异呢？换句话说，是什么因素帮助你们获得了积极的发展？
   a. 你们自身有哪些优秀的特点或品质帮助你们获得了积极的发展？

b. 除了自身品质外，你觉得有哪些环境中的因素给你们提供了支持？环境因素可以指任何不受你自身能力影响或控制的因素。

    i. 在你家里面，谁给你的支持比较多？你觉得自己的家庭里还有什么对你的成长发展有帮助？

    ii. 在学校里，谁对你的支持和帮助比较大？你在学校里有哪些资源或机会促进你的积极发展？

    iii. 除了家庭和学校，你还收到过来自其他人的帮助吗？这些人来自哪里？他们是如何帮助你的？

        1. 你是否得到过当地社区的支持，例如你所在的城镇或县城？你得到了什么样的支持？

        2. 你是否得到过任何机构或公益组织的支持？你得到了什么样的支持？

    iv. 你还能想到其他我们没有讨论过的事情吗？

5. 下面这个问题有点不一样，我想请你说一下，自己生活中有没有让你比较烦恼或觉得困难的事情？可以是曾经的也可以是现在的困难。

  a. 你了解到其他同学也有类似的烦恼或困难吗？

  b. 其他人有什么烦恼或困难？

6. 在你刚刚讲到的那些帮助你们获得积极发展的因素中（比如……），有哪些因素对你的烦恼或困难特别有帮助？

  a. 我们可以尝试先从一个例子说起：你可以描述一次让你印象深刻的克服困难的经历吗？在这个经历中，你遇到了什么困难？你是怎么克服它的？你使用了哪些自身的优势和外部力量克服这个困难？

  b. 现在，你想一下类似的很多克服困难的经历，你经常使用自身的哪些优势帮助你更好地面对困难？

  c. 外部环境中有哪些因素帮助你克服了困难？

    i. 在你的生活中，尤其是当你面对困难的时候，有没有一个人对你有特别重要的影响？他（她）是谁？他（她）是如何帮助你的？

    ii. 在你自身以外，有哪些外部的资源和机会帮助你面对困难？

  d. 你还能想到其他我们没有讨论过的事情吗？

7. 你希望看到或拥有哪些有利条件来促进自己的积极发展？

【收尾】

以上就是我全部的问题，你最后还有什么想要补充或者想问我的问题吗？

<u>非常感谢你的参与！祝你生活愉快！</u>

Appendix B

Member Check (Chinese Version)

老师您好！我正在进行一项关于留守儿童积极发展的研究，我曾经邀请您进行过一次面对面的访谈，您在访谈中提供了很多有价值的信息，对我的研究很有帮助。现在我对所有老师和学生的访谈进行了初步的分析，总结提炼出以下一些促进留守儿童积极发展的个体因素和环境因素。*注：表格中下划线标注的部位为主要因素。*

我想再次邀请您给我的分析结果一些反馈意见和建议，具体我希望知道如下内容：
1. 以下结果在多大程度上能准确反映您在访谈中提供的信息？（如果您还记得访谈的内容）
2. 根据您和留守儿童接触的经验，您觉得以下结果在多大程度上准确地描述了促进留守儿童积极发展的因素？
3. 以下结果中有什么让您觉得惊讶或不赞同的信息吗？
4. 针对以下结果，您希望添加什么信息？您希望做什么改动？
   也欢迎您提出其他以上没有提到的问题或建议！

您的反馈将极大地帮助我完善对访谈结果的分析，非常感谢您的帮助！

留守儿童的个体因素	访谈原文示例（来自老师和学生）
自我控制能力 发展良好的留守儿童通常有很强的自我控制能力，包括自制力（自律）、学生对自己的高要求、听老师的话和良好的生活习惯	1.我们班有一个男生，就是从我接这个班以来，他就表现得比较突出，在学习这方面特别的自律，基本上不用老师的监督，他会自觉的去完成老师布置的每项任务，就即使是老师在没有布置任务，他自己会提前去预习这个功课，他认为老师会留下来的作业他自己会提前去做。（老师） 2.他自律，其实就是自己对自己要求很严格，你比如说老师今天布置作业，老师无论检查与不检查，他都能保质保量的按时给你完成。（老师）
学业上的高投入 表现优秀的留守儿童在自己的课业和教育目标上投入很大，他们学习态度端正、有良好的的学习习惯、学习勤奋努力刻苦，遇到难题不轻易放弃，并且阅读广泛，致力于考上重点高中、大学	1.我对学习是那种，反正就是自己比较感兴趣，比如说有一道题我不会，然后我要是再不会我就自己研究，自己研究再不会我再去问同学，如果再不会的话，我就觉得这个题真的很难，然后我需要再研究一下，把自己培优，然后我再去问老师。（学生） 2.我的目标就是，现阶段的目标是能够考上临泉一中统招，然后将来的目标是考上理想的大学，然后有一份好的工作，然后能让父母过上好的日子。（学生）

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以目标为导向的自我管理 实现积极发展的留守儿童<u>有坚定的目标</u>，比如他们会有未来考学或职业规划的目标，这个目标会激励他们努力学习。他们<u>为了自己的目标坚持努力，不轻易放弃</u>，并且会<u>对自己的行为和失败进行反思</u>	1. 你看那一些发展比较好的，他往往呢都是，可以说有自己的这个人生目标追求，坚定了这个信念。（老师） 2. 我感觉他们目标明确之后，他们还有非常有那种韧性，就是坚韧，他们能够朝着这个目标去走……即使遇到一些挫折，他们错了之后他们还愿意去继续前进。（老师） 3.采访者：那你一般遇到挫折困难的时候你会怎么做呢？ 学生：写日记……就是反省自己这段时间的不足，然后吸取一下教训，然后作为自己的前进的一个动力。（学生）
自我奋斗的动力 这些留守儿童还有一个共同的特点是拥有很强的<u>主观能动性</u>，他们会主动、积极地学习和参加对自己有益的活动。因为家庭困境，<u>他们想要改变现状、回报父母</u>；<u>努力学习不让父母和老师失望</u>；并且<u>为了不被嘲笑想要超过别人，变得更好，不想丢父母的脸</u>。这些留守儿童有自己的课外兴趣爱好，<u>认为自己能主宰自己的命运</u>，并且<u>对未来充满希望</u>。	1.我觉得我如果落后的话，我可能会内心比较焦急，然后我会努力地找到自己的错误，努力的赶上去。（学生）采访者：嗯，很有上进心。 2.还有一种激励我前进的方向动力的就是有时候在某些方面我应该是不如别人，就像我们班的我们班吧，像之前我的成绩就是在靠后面一点儿，别人都会嘲笑我，所以说我在自己的心里面就会下一个目标，然后决心我一定要超过他们，让他们不再笑话自己，这就是我前进的动力。（学生） 3. 但他年龄大了，他觉得我的爸爸妈妈之所以离开我，他们是去打工了，然后是为了以后能让我有一个好的未来，然后我要好好的学习，对得起爸爸妈妈。（老师） 4. 我的梦想就是好好学习，然后改变这种现状，然后让他们都过上好日子。（学生） 5. 所以这样的情况下我们老师应该是，要求我们老师不是说帮我培养小孩儿去学习，要在生活当中引导小孩去其他的爱好、运动，这个其他的业余生活，这样小孩儿他可能走的更远。（老师）
逆境中的积极应对 发展良好的留守儿童有很强的<u>抗挫折、抗打击能力</u>，他们面对困难时会有以下几种表现：（1）<u>用积极乐观的心态面对</u>；（2）<u>主动求助</u>；（3）<u>积极、自主地解决问题</u>；和（4）<u>坚持不懈，有毅力</u>。此外，他们<u>能理解父母外出的目的，体谅父母的难处</u>	1. 孩子呢也能够明白家长出外的这个目的，以及这个劳累，所以说这孩子呢，想到这个父母这么劳累去工作，有些时候呢，孩子呢也能够去体谅自己父母的这个难处，然后呢，既而能够寻找学习的一些动力，好好学习，回报自己的这个父母。（老师） 2. 我觉得有些挫折方面，我觉得我比较能克服一下，我能把那个挫折就是变为我前进的动力。（学生） 3. 这 1/3 的孩子，我感觉他们敢于直面问题……他知道如何去化解问题，直视问题化解问题，解决问题提升自己，他们心态非常的积极向上，对待生活呀，他们时刻保持那种积极的心态。（老师）
亲社会倾向/社会能力 最后，这些留守儿童表现出强烈的<u>集体责任感</u>，他们有担当，不论在家里或是班级里都主动承担责任，做出贡献。他们<u>愿意和别人交往，乐于助人</u>并且<u>懂得感恩</u>。	1. 还有一个愿意与人交流，这 1/3 的人当中，绝大部分就是愿意与人家交往。现在小孩大多数就很孤僻，都不愿意交友，但这些学生就咱们说这个情商要比他们高一些，会交流会玩。（老师） 2.关心集体，能够把这个集体当作自己的事情去做，就是为人的，不是只顾自己眼前的一些东西，他们能顾及到一个团体，一个班级的一个整体利益，有集体荣誉感。（老师）

关于留守儿童的个体因素：您有什么反馈意见和建议？（欢迎您的任何反馈，尤其是您的疑问和不同意见！）

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环境因素	访谈原文示例（来自老师和学生）
社会支持 留守儿童的积极发展离不开各方的支持： • 老师的支持：老师日常的关爱和帮助、引导和教诲、老师的肯定和鼓励、对学生的自主支持（鼓励学生独立完成一些事情，老师在一旁提供支持） • 父母和家中照料者的支持：父母有效的教育方式、父母和孩子频繁的沟通、父母的关心、鼓励和肯定、父母对孩子教育的重视、照料者有效的监管和关心 • 兄弟姐妹的支持：主要是哥哥姐姐的陪伴和帮助 • 同伴的支持：同学和朋友的帮助、陪伴和关心 • 家校合力的支持：父母对老师工作的支持、父母和家长相互沟通	1. 我刚才谈的跟现在的班主任一样，其实我这两个班主任他都是，就在我需要帮助的时候，或我生病的话他们都会帮我，我生病的时候他们也会带我去看病什么的。（学生） 2. 往往你看成绩好，往往带来了一些，老师的也表扬比较多，你们表扬他不光要表扬他的成绩，还要表扬他的相对的一些其他的言行，其实在正向引导方面对小孩还是很有帮助的。（老师） 3. 父母在处理孩子管理的时候，不要老是棍棒棍棒......多一些沟通，最主要要学会与学生进行有效的积极的沟通，真正促进他们成长的交流沟通。（老师） 4. 平常我放假会跟我妈妈就是经常视频呀，打电话呀，然后就是她很关心我，然后我跟我爸的话，反正就是每次放假也会联系一下，然后我会跟他分享一下我在学校的生活。（学生） 5. 有可能在家里他爷爷奶奶爱而不溺，是吧，有某方面一种习惯，比如回家如果布置作业了，首先完成作业是先学后玩是吧，或者这种习惯他已经培养的非常好了，或者是在爷爷奶奶的督促下，他养成这种习惯，他的品质慢慢就会跟着走上来。（老师） 6. 同学平时说他有什么不会的问题呀，都可以问他们......然后有时遇到什么事情也能跟他们说，就是跟他们交流什么的。（学生） 7. 采访者：所以您这么做算是起了一个沟通的桥梁作用是吗？ 老师：对，必须要起到沟通的作用，有时候你不沟通，家长还是看不到孩子的成长和这个学习状况的，老师只有去传播，告诉家长这些。（老师）

关爱和归属感 留守儿童需要充满关爱的学校氛围，包括<u>积极向上的班级氛围</u>、<u>学校给予的额外关爱</u>、<u>良好的师生关系</u>和老师为学生创造的<u>平等的环境</u>，让他们感受到集体的<u>归属感</u>。此外，<u>和谐的家庭氛围</u>和<u>积极、关爱的社会氛围</u>也很重要。	1. 留守儿童缺少一个最大的，就是感觉缺乏一个父母的爱那种感觉，如果在这个集体中逮到他的这个闪光点了，大家老师学生承认他闪光点了，他这种满足感、成就感，慢慢的就是他成长的一个经历，心里慢慢的感觉我离了父母还可以，他那种没有依赖性了，那个自主性，你为我、我为你那种状态慢慢的跟集体融合了，所以他的进步非常快。（老师） 2. 学生：感觉我的未来很好。 采访者：这个你是怎么感觉到的？ 学生：国家越来越富强了 采访者：就是感觉国家越来越好，所以你对未来更憧憬是吧？（学生：嗯） 3. 我的家庭就是特别的和睦。（学生）
规范和高期望 促进留守儿童的积极发展需要<u>家人</u>、<u>老师</u>和<u>同伴</u>的榜样示范，成年人以身作则、潜移默化地影响留守儿童，同伴间则相互促进，共同进步。<u>家长和老师对留守儿童的高期望</u>也有促进作用。此外，家长和老师对留守儿童的<u>德道教育</u>和<u>行为规范的约束</u>也很重要。住校的留守儿童因为学校各项事物的安排管理（<u>校园规范</u>）也培养了独立、自律的品质。	1. 他可能有一些榜样，比如他的姐姐，他的哥哥呀，已经考上大学了，他心中有榜样，所以他容易成才一些。（老师） 2. 其他的就比如行为什么的话，感觉一样就是不错，有的老师对我影响比较大，我初一的老师他就是比较善良，他说过成绩可以不好，但是不能抄，但我记得当时有次考试我是抄了，就后来我再也没有抄过，我就开始努力学。（学生） 3. 我爸他对我一直期望很高，然后他经常问我考的怎么样，反正就是对我要求还是蛮严格，因为他比较希望我能成才，因为他的以前的梦想就是上一个好大学，但是因为条件不好没有上成，他就希望他自己的子女能够就是有一个好的成长。（学生） 4. 因为我是住宿生，然后更多的是培养了一个独立的这种品质。因为我在学校里面要自己洗衣服，然后自己做做内务，然后每天要铺床啊什么的，其实我以前在我的家里都是我妈妈做的，然后我到学校之后才会这样，然后我以前在家里就是偶尔会打扫一下卫生，就是很费劲儿，感觉就是很累，然后到学校之后每天都要打扫嘛，然后就感觉，久而久之就习惯，就是这种劳动的习惯培养的。（学生）
课外活动参与 校内外的课外活动为学生的积极发展提供了机会，可以让学生锻炼自己，获得更全面的发展	1.比如说他们平常除了学习之外，业余生活也比较丰富，可以打打球呀，锻炼呀，还有一些这个班级搞一些活动呀，他们都会积极主动的去参加。（老师） 2.之前我参加过一些六一儿童节的一些活动，然后锻炼自己的胆量，然后也是有一些自信......后来就是前段时间就去北京那边儿，然后那个印象比较深刻，就开阔眼界。（学生）

关于环境因素：您有什么反馈意见和建议？（欢迎您的任何反馈，尤其是您的疑问和不同意见！）

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Appendix C

Survey Items for the Individual Strengths Scale

Positive coping (9 items)
Positive cognition

I usually face difficulties with an optimistic attitude.	我通常用乐观的态度对待挫折。
I think setbacks inspire people.	我认为逆境对人有激励作用。
I see setbacks as opportunities to toughen myself and gain experience.	我把挫折看作是锻炼自己的好机会，从中获取经验。
I see parental migration as an opportunity for me to become independent.	我把父母外出打工当成是锻炼自己独立能力的机会。

Problem-solving skills

When I am in trouble, I seek help from others.	当遇到麻烦时，我会主动寻求别人的帮助。
When I am in trouble, I tell others.	当有烦恼时，我会主动向他人倾诉。
When I meet difficulties, I consider the problems carefully.	当遇到困难时，我会仔细分析问题。
When I meet difficulties, I make plans to overcome difficulties.	当遇到困难时，我会制定出克服困难的计划。
After my parent(s) migrated to urban cities, I become more independent to solve problems on my own.	父母外出打工后，我更加能够独立解决问题。

Academic pursuit (23 items)
Academic goals

I have clear goals for my future.	我对未来有明确的目标。
I plan to continue to go to school after graduation.	我毕业后打算继续接受更高等的教育。
I plan to finish high school.	我打算完成高中学业。
My goal is to get into an ideal college.	我的目标是将来考上理想的大学。

Academic achievement motivation

I think learning is interesting in itself.	我认为学习本身就有乐趣。
I think learning is meaningful in itself.	我觉得学习本身很有意义。
I have high standards for my own study.	我对自己的学习有高的要求。
When I did not do well in an exam, I feel sorry for myself.	考试成绩不理想时，我会觉得对不起自己。
I'm willing to work hard for my personal success.	为了个人的成功，我愿意专心学习。
I aspire to change my destiny through studying.	我立志通过学习改变自己的命运。
I study hard so I won't let my parents down.	为了不让父母失望，我会按照他们的期望去努力学习。
I study hard so I won't let my teachers down	老师对我的期望与要求，是我努力读书的动力。
I study hard so others won't look down on me.	我努力学习是为了让别人看得起我。
Seeing my classmates work harder, I'm afraid that I will fall behind.	发现其他同学学习更用功时，我就会担心成绩落后于人。
I aspire to change my family's conditions through studying.	我想通过努力学习改变家庭现状。

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Academic engagement

I listen carefully in class.	我上课认真听讲。
I complete my homework on time.	我按时完成家庭作业。
I often read after class.	我经常进行课外阅读。
When I encounter problems in my study, I will ask teachers or classmates.	学习上有疑问时，我会主动询问老师或同学。
When I encounter difficulties in my schoolwork, I usually consider solutions patiently.	在学习中遇到难题时，我会耐心思考解题方法。
I finish my schoolwork no matter how hard it is.	不管功课有多难我都会完成。
When I didn't do well on an exam, I will reflect on how to improve learning strategies.	考试成绩不理想时，我会主动反思改进学习的方法。
Even if teachers do not ask, I study actively.	即使老师没有要求，我也会主动学习。

Internal locus of control (5 items)

My future destiny is in my own hands to a large extent.	我未来的命运在很大程度上掌握在我自己手里。
I think I can master my future life.	我觉得我可以掌握自己将来的生活。
I believe that I can do better as long as I work hard.	我相信只要我努力就会做得更好。
I believe that I am able to create a nice tomorrow.	我相信我有能力创造美好的明天。
I believe that I can improve my social status through working hard.	我相信通过努力可以提高自己的社会地位。

Hopeful future expectation (4 items)

I cannot see any hope for my future.	我对自己的前途看不到希望
I am confident about my future.	我对未来充满了信心。
I look forward to my future.	我对未来充满了期待。
I am enthusiastic about my future life.	我对未来生活抱有热情。

Self-control (8 items)

Even if my parent(s) are absent, I can be self-disciplined.	即使父母外出打工不在家，我也能对自己严格自律。
Even if no one is monitoring me, I will finish my schoolwork on time.	即使没有人督促我，我也会按时完成学习任务。
No matter whether teachers will check, I will finish my schoolwork with high quality.	不管老师是否检查，我都能保证质量地完成作业。
Even if there is TV show or game that I like, I will finish my schoolwork first.	即使有我喜欢的电视或游戏，我也会先完成作业。
I can use my time efficiently every day.	我每天能够有效地利用自己的时间。
When I stay at home for weekends or holidays, I will properly allocate my time for studying and having fun.	周末或放假回家时，我能够合理地安排自己学习和玩耍的时间。
I have healthy eating habits.	我的饮食健康。
I am addicted to something (e.g., playing on my cell phone, surfing on the internet.).	我会对一些事情上瘾(比如玩手机、上网等)。

Responsibility and intention to contribute (15 items)

Class

Class honor is important to me.	班集体的荣誉对我很重要。
I am willing to contribute to my class.	我乐于为班集体做贡献。
I do my best in collective affairs in class.	我对集体的事尽心尽力。
I take the initiative to do things for my class.	我会主动为班集体做一些事情。
I am willing to do things that benefit my class even if my classmates are not willing to do so.	其他同学不愿意做的对班级有利的事情，我也愿意去做。

Family

I can deeply feel my parents' hard work while migrating to urban cities.	我能深刻感受到父母外出打工的辛苦。
I understand that my parents migrate to improve the financial conditions of my family.	我知道父母外出打工是为了改善家里的经济状况。
I understand that my parents migrate to provide me with better educational opportunities.	我知道父母外出打工是为了给我提供更好的教育机会。
My parents' hard work inspires me to study hard.	父母的辛苦工作激励我也要努力学习。
I often take the initiative to do chores in my family.	我经常主动做一些力所能及的家务。
I want to repay my parents and other family members in the future.	我想将来好好报答父母和其他长辈。

Society

I care about the future development of China.	我关心中国未来的发展。
I hope to contribute to my country and society.	我希望能为为国家、社会做贡献。
I hope to make meaningful contribution to this world.	我想为这个世界做出有意义的贡献。
I hope to make this world a better place.	我想要让这个世界变得更美好。

Social competency (5 items)

I help my classmates with their study.	我会在学习上帮助其他同学。
I am grateful for those who have helped me.	我对帮助我的人心怀感激。
I try my best to help those who have helped me.	我尽力帮助那些曾经帮助过我的人。
In school, I take the initiative to communicate with others.	在学校里,我会主动和他人交流。
I am good at making friends.	我擅长与他人交朋友。

Obedience (6 items)

I listen to my teachers' guidance.	我听从老师的教导。
I follow what my teachers have said.	我照老师说的做。
I listen to the guidance of my parents and other relatives.	我听从父母或其他长辈的教导。
I follow what my parents and other relatives have said.	我照父母或其他长辈说的做。
I try my best to do the right things.	对的事情我会努力去做。
I do not do things that I'm not supposed to do.	我不会做不应该做的事情。

Appendix D

Survey Items for the Environmental Supports Scale

Social support (40 items)
Teacher

There is teacher in school who truly cares about me.	学校里有老师真正关心我。
When I meet difficulties with my schoolwork, my teacher will help me.	学习上遇到困难的时候，老师会及时地帮助我。
When I didn't feel confident about my study, my teacher will encourage me.	当学习上没有信心时，老师会鼓励我。
Noticing that I am in a bad mood, my teacher will cheer me up.	留意到我心情不好时，老师会来安慰我。
My teacher takes care of my life.	老师会在生活上照顾我。
Teachers pay extra attention to students who have parent(s) migrated to work in urban cities.	老师对父母外出打工的学生有额外的关注。

Residential caregivers

My caregivers...respect my opinions.	尊重我的意见。
rarely scolding me.	很少苛责我。
often encourages me.	经常鼓励我。
understand my feelings.	理解我的感受。
care about my study.	关心我的学习。
care about necessities of my life.	关心我的衣食住行。
cheer me up when something goes wrong with me.	当我遇到不顺心的事时安慰我。
provide me with support when needed.	在我需要时给我提供支持。
take good care of my daily life.	对我的生活照顾得很细致。

Migrating parent(s)

My migrating parent(s)...respect my opinions.	尊重我的意见。
rarely scolding me.	很少苛责我。
often encourages me.	经常鼓励我。
understand my feelings.	理解我的感受。
care about my study.	关心我的学习。
care about necessities of my life.	关心我的衣食住行。
cheer me up when something goes wrong with me.	当我遇到不顺心的事时安慰我。
provide me with support when needed.	在我需要时给我提供支持。
contact me frequently (via phone calls, video chat, etc.).	经常和我联系（打电话、视频等）。
Although being absent for a long time, I can still feel their love for me.	虽然长期不在身边，但我能感觉到他（们）非常爱我。

Other adults

Besides parents, relatives, and teachers, there are other adults who truly care about me.	除了父母、长辈亲人和老师,还有其他成年人真正关心我。
I have neighbors who truly care about me.	我有邻居真正关心我。

Among my neighbors, someone can help take care of me.	我的邻居中，有人能够帮忙照看我。
I have adult relatives who truly care about me.	我有成年亲戚真正关心我。
Among my adult relatives, someone can help take care of me.	我的成年亲戚中，有人能够帮忙照看我。

Peers

I have peers who truly care about me.	我有同伴真正关心我。
When I meet difficulties, my peers will help me.	当我有困难时，我的同伴会帮助我。
When I am in a bad mood, my peers will be at my side.	当我心情不好时，我的同伴会出现在我身旁。
I often spend time with my peers.	我和同伴经常花时间在一起。
When I miss my parent(s), my peers will cheer me up.	当我想念父母的时候，我的同伴会来安慰我。

Peer relatives

My peer relatives…and me care about each other.	和我关心彼此。
and me have fun together.	和我开心地玩耍。
help me with my schoolwork.	会在学习上帮助我。
give me spiritual support.	会给我精神上的支持。
If anything happens to me when my parents are not around, I will tell them.	父母不在身边时，如果我遇到什么事情会告诉他/她。

Positive climates (20 items)
Positive class and school climate

In my class, students are united and friendly.	我们班同学团结友爱。
My class has a positive learning atmosphere.	我们班有良好的学习氛围。
Teachers in my class treat each student equally.	班里的老师对学生都很公平。
I sincerely feel that I am a part of my class.	我从内心里觉得我是班级的一份子。
My school cares about students.	我的学校关心学生。
I feel safe at school.	我觉得在学校是安全的。

Positive family climate

I get along well with my residential parent(s) or relatives.	我和同住的父母或长辈亲人相处融洽。
Even though we don't live together, I feel close to my migrating parent(s).	即使我们不住在一起，我和外出打工的父母之间的关系依然亲密。
Family members have good communication.	家庭成员之间有良好的沟通。
I feel safe at home.	我在家里感到安全。
Parents or relatives will ask for my opinion regarding some family matters.	家庭的一些事情，父母或长辈亲人会征求我的意见。

Home-school collaboration

If anything happens to me in school, my teacher will contact my parents (or caregivers).	如果我在学校有什么事情，老师会及时地联系我的家长。
My teacher praises me to my parents (or caregivers).	老师会向家长表扬我。

If anything goes wrong with my study, my parents (or caregivers) will communicate with my teacher.	如果我的学习有什么问题，我的家长会私下和老师沟通。
My parents (or caregivers) attend parents' meetings or other events in school.	我的家长会去参加学校的家长会或其他活动。
My migrating parent(s) contact my teacher regularly to ask about my performance in school.	外出打工的父母会定期向老师询问我在学校的表现。

Positive societal climate

My community and surrounding environment are safe.	我的社区和邻里环境是安全的。
In my residential areas, neighbors help one another.	在我居住的地方，邻里之间互相帮助。
I feel the societal environment is overall positive.	我觉得社会上的整体环境是积极向上的。
The present societal environment makes me hopeful for my future.	现在的社会环境让我对自己的未来有信心。

Trust and Acknowledgement (7 items)

My parents and other relatives expect me to have good academic performance.	我的父母或长辈亲人期望我有好的学业表现。
My parents and other relatives believe that I will succeed in the future.	我的父母或长辈亲人相信我将来会是一名成功者。
In school, there is teacher who believes that I can get good grades.	在学校，有老师相信我能够取得好成绩。
In school, there is teacher who believes that I will be successful.	在学校，有老师相信我会成功。
My peers believe that I will succeed in the future.	我的同伴相信我将来会成功。
People around me can see my strengths.	我身边的人能发现我的优点或特长。
People around me acknowledge my achievement.	我身边的人会肯定我的成就。

Rules and role models (14 items)
Rules and edification

My family set up a reasonable code of conduct for me.	我的家庭给我设立合理的行为规范。
If I do something wrong, my parents (or other adults in my family) will help me correct the mistake.	如果我做错了事，父母或其他长辈会帮助我改正。
My teacher instructs me on how to be a good person.	老师教我如何做人做事。
If I do something wrong, my teacher will guide me to correct the mistake.	如果我做错了事，老师会引导我改正。
My school has clear rules.	我的学校有明确的校纪校规。
My school fairly enforces school rules.	我的学校能够公平地执行校纪校规。

Role models

Among adults around me, someone can be a good role model for me.	我身边有些成年人能为我树立良好的榜样。
I know role models who show diligence.	我身边有努力刻苦的榜样。
I know role models who do not give up easily.	我身边有遇到困难不放弃的榜样。

I have role models among my siblings and cousins.	我的兄弟姐妹中有我学习的榜样。
I have someone to look up to among my siblings and cousins.	我的兄弟姐妹中有我追赶的目标。
Extraordinary peers around me inspire me to study hard.	我身边优秀的同伴激励我好好学习。
Extraordinary peers around me inspire me to be a good person.	我身边优秀的同伴激励我成为一个更好的人。
I have role models to learn from in the social media.	社会媒体中的人物有我学习的榜样。

Extracurricular support (10 items)
Interest development

I have extracurricular interest that I am passionate about.	我有自己非常有热情的课外兴趣爱好。
I have enough time to engage in extracurricular interest.	我有充足的时间进行课外兴趣活动。
There are adults who guide me to develop extracurricular interest.	有成年人指导我发展课外兴趣爱好。
There are adults who inspire me to develop extracurricular interest.	有成年人激励我发展课外兴趣爱好。
Engaging in extracurricular interest keeps me busy when my parents are gone.	进行课外兴趣活动帮我度过了父母不在家的时间。

Extracurricular activity participation

In school, I have many opportunities to take part in extracurricular activities (e.g., sports, interest groups, competitions, etc.).	在学校里，我有很多机会参加课外活动（比如体育锻炼、兴趣小组、特长比赛等）。
In school, I have many opportunities to take part in activities held for students whose parent(s) migrated to work in urban cities.	在学校里，我有很多机会参加为父母外出打工的学生举办的活动。
I have opportunities to take part in extracurricular activities outside of school (e.g., community activities, spring tour, summer camp, etc.).	我有很多机会参加学校外面的课外活动（比如社区活动、春游、夏令营等）。
Participating in extracurricular activities has broadened my horizon.	参加课外活动开阔了我的视野。
Participating in extracurricular activities has helped me develop skills.	参加课外活动锻炼了我的能力。

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