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Diverse Pathways from Adolescence to Early Adulthood among China's Rural Youth: A New Perspective

Abstract

Past studies examining the transition to adulthood within the Chinese context often implicitly or explicitly assume that the rural population is a homogeneous group and suggest that rural individuals tend to enter the workforce and marry at younger ages than their urban peers. This assumption overlooks the distinct challenges faced by rural youth, who often confront higher poverty risks and greater uncertainties compared to urban counterparts, yet empirical research on these unique challenges is limited. Using both a national survey and a unique longitudinal sample of rural youth in one of the poorest regions of China, this study demonstrates that rural youth experience a greater diversity of pathways from adolescence to early adulthood than do urban youth, which contradicts many earlier studies in Western contexts. In addition, this study identifies a variety of childhood environment factors that structure the transition pathways of rural youth. This study highlights the growing rural-urban disparity in China and has important implications for research on social stratification and rural youth development.

Introduction

Rural areas are home to an estimated 600 million youth, accounting for half of the total youth population, and this number is expected to grow over the next 35 years (International Fund for Agricultural Development 2022). Moreover, globally, extreme poverty overwhelmingly affects rural populations (United Nations Statistics Division 2023). Despite the demographic significance of rural youth, few empirical studies have focused on the particular challenges of transition to adulthood among this population. In this study, we investigate links between childhood environments and the transition to adulthood for a sample of youth growing up in rural communities in one of China's poorest provinces. The context of transition to adulthood in China has transformed dramatically in recent decades, with the shift from a socialist to a market economy, accompanied by a period of dramatic economic growth and sharply rising inequality. Much research has investigated changing dynamics in the transition to adulthood and family formation behaviors in this period, on a national scale and among the urban population (Cai and Feng 2014; Qian and Qian 2017; Tian 2016; Yu and Xie 2015). A common observation in the literature is that the urban population typically follows a trajectory marked by extended periods of education, stable employment, and delayed marriage and childbearing (Wang and Zhao 2021; Yeung and Hu 2013; Van Winkle and Wen 2023). In contrast, the rural population tends to follow a different trajectory characterized by lower levels of education, earlier entry into the workforce, and earlier marriage. Furthermore, the transition pathway of the rural population often adheres to a traditional sequence of schooling, entering the workforce, and marriage, unlike their urban counterparts, among whom the percentage following nontraditional sequences has been increasing (Tian 2016).

However, few empirical studies have focused on the particular challenges and heterogeneity of the transition to adulthood among rural youth, who experience elevated risks of poverty and more uncertainties, on average, compared to their urban counterparts. From a cross-cohort comparison perspective, it is possible that the urban population

has undergone deeper ideational and institutional transformations as a result of rapid urbanization and industrialization, leading to an increase in non-standardized transition to adulthood pathways. However, in a within-cohort comparison, more diversified and complex patterns of transition to adulthood might be expected among rural youth, compared to their urban peers, for a number of reasons.

First, many rural children experience absentee parents, due to patterns of labor migration to metropolitan regions (Liang 2016; Xiang 2007). Children of migratory workers may have the possibility of traveling between their natal communities and their parents' places of employment (Chiang et al. 2012). However, due to institutional and economic restrictions, such as the household registration system (*hukou*), which limits rural children's ability to attend school in urban regions, many of those children must remain in rural regions for education and live with single parent or extended family members. Studies of the impact of parental migration on left-behind children compared to other rural children show mixed results, reflecting complicated selection factors, the benefits of remittances, and the harm of lost supervision, guidance, and support (Lu 2012; Shen et al. 2021; Wen et al. 2015; Xu and Xie 2015; Zhou et al. 2014) (for a review, see Liang (2016)). Recent studies indicate that the detrimental effects of parental migration on their children's health and education depend on factors such as the emotional well-being and parenting behaviors of the primary caregiver (Lu et al. 2019), the age of the children when the parents migrate (Huang et al. 2018), and the cumulative duration of parental absence (Meng and Yamauchi 2017).

Second, early dropout, among other factors, may position the most disadvantaged rural youth for a very tenuous attachment to the labor market (Shi et al. 2015; Yi et al. 2012). Many youth may be involved in nonstandard employment or economic sectors with high turnover rates. A concerning development in a number of countries has been the large number of youth who are excluded from economic opportunities—characterized as not being in education, employment, or training (NEET) (Yeung and Yang 2020). A significant proportion of young individuals, particularly in Asia, "opt out" of the competitive education system and standard employment with the expectation of having

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little opportunity to advance in social class. According to a recent study on China, the total NEET rate for people aged 16 to 35 was 8% in 2012 (Yang 2020). Individuals with lower educational attainment, migrants, and women are more likely than others to experience NEET during young adulthood.

Third, various factors influence rural adolescent family formation behaviors in opposing directions. Rural youth, on the one hand, are more likely than their urban counterparts to marry and have children at a younger age due to normative expectations or family pressures. On the other hand, the rising trend of hypergamy in marriage predisposes socioeconomically disadvantaged male adolescents toward exclusion from the institution of marriage. Rural marriage markets may be further complicated by sex ratio imbalances, which may provide divergent paths for men and women in their relationship and marriage patterns.

In this study, we investigate the variation in timing and sequence of Chinese rural millennials (born between 1987 and 1991) in reaching a series of life milestones. We also utilize the post-70s and post-80s birth cohorts from the China Labor-Force Dynamic Survey 2014 as a supplement, as discussed later in the Data and Methods section.. This group, known as the the post 80s/90s generation in China, has been exposed to profound social changes in China, such as rapid economic development, massive parental migration, and widening rural-urban inequalities in many domains. Following norms in the research on the transition to adulthood, we define the essential milestones for reaching adulthood as graduating from school, starting first job, entering into marriage, and becoming a parent (Macmillan and Copher 2005; Yeung and Hu 2013). We demonstrate that rural youth in China experience a higher degree of uncertainty and diversity in their transition pathways during early adulthood compared to their urban counterparts. This finding differs from what modernization theory or the second demographic transition theory predicts and contrasts with empirical findings in the West. The destandardization of transition paths for rural youth, rather than urban youth, may reflect China's growing rural-urban educational and economic opportunity disparity. While urban youth have benefited from educational expansion and economic prosperity in recent

decades, many rural youth remain deprived of basic education and enter adulthood at a younger age. Additionally, we discover that the transition pathways to adulthood for rural girls are more responsive to sibship structure and family economic conditions than those of rural boys. In contrast, rural boys are more influenced by family disruption and parental expectations regarding support in their elderly years.

This article is organized as follows: We begin with a review of the literature on the transition to adulthood, focusing on the differences between rural and urban areas and discussing the limitations of previous studies. Following that, we discuss cultural and rural contexts of China. Next, we provide an overview of our data and the study site before proceeding to the analyses. In the analytic results section, we first employ the entropy index to study rural-urban differences in the uncertainty and diversity of life course trajectories from adolescence to early adulthood (ages 16-24). We use both a nationally representative survey and a 15-year longitudinal study of rural children in one of the least developed provinces in China. Additionally, we apply latent class analysis to this rural panel data to identify different transition pathways of Chinese rural millennials (born between 1987 and 1991). We then use various childhood environmental factors in the rural context to predict the membership of these pathways using multinomial regression analysis. Finally, we conclude with a discussion of the implications and limitations of our findings.

Transition to Adulthood: the Rural-Urban Divide

Since the 1990s, research on transition to adulthood has documented a de-standardization of the family-life trajectory of young adults (Billari and Liefbroer 2010; Elzinga and Liefbroer 2007; Furstenberg 2013; Juárez et al. 2013; Rindfuss et al. 1987; Settersten and Ray 2010; Shanahan 2000). Geographically, the de-standardization in the pathway to adulthood tends to start in developed areas rather than isolated areas. For example, Lesthaeghe and Neidert (2006) found that the components of second demographic transitions such as premarital cohabitation and postponement of marriage and childbearing are more pronounced in metropolitan areas than in the rural areas in the US. The mech-

anisms explaining the rural-urban differences are that urban residents are less reliant on family ties, and thus less controlled by the role of traditional norms.

Institutionalization theory, on the other hand, maintains that institutional regulation has the power to standardize the pathways to adulthood (for a review, see Shanahan (2000)). For youth in particular, institutional changes facilitated compulsory school attendance, extended their time spent at school, and thus had delaying implications for leaving the parental home and family formation. In countries experiencing rapid educational expansion, the heterogeneity of the life course transitions in early adulthood tended to decline (Fussell and Furstenberg 2005; Park 2013). For instance, Park (2013) found that the life courses of Korean urban youth were highly standardized before high school graduation because of the rapid expansion of the education system. Because the institutionalization process in rural areas tends to lag behind that in urban areas, there is reason to expect a more standardized life course transition for urban youth than for rural youth in early adulthood.

Existing research on transition to adulthood in rural areas mainly focuses on describing the trends over periods or birth cohorts and contrasting the differences with urban areas using multiple waves of cross-sectional surveys or censuses (Fussell and Furstenberg 2005; Pesando et al. 2021; Tian 2016; Yeung and Hu 2013). For instance, Pesando et al. (2021) investigate the transition to first sexual intercourse, first union, and first birth across 69 low- and middle- income countries by birth cohorts. They found little variation between rural and urban areas except for South America and Southeast and Central Asia where urban residents had a higher proportion than rural residents in the "delay rapid transition" and "gradual transition" clusters. Along these lines, research relying on the heterogeneity index often found that urban youth display a higher level of diversification in transition to adulthood than rural youth did (Fussell and Furstenberg 2005; Tian 2016).

However, the limitation of using cross-sectional data is that it sometimes conflates rural-to-urban migrants with urban residents. While urban residents may follow a standardized path in the school-to-work transition in their young adulthood, the pathways

to adulthood of rural-to-urban migrants are expected to vary depending on their reasons for migration. In addition, as Fussell (2005) has pointed out, the definition of urban and rural regions also changed with time because of the rapid urbanization and industrialization processes in developing countries. That is, the de-standardization of transition to adulthood found in urban regions may represent the variation contributed by both rural-to-urban migrants and urban residents.

Even less is known about factors shaping the rural youth transition to adulthood. In the Chinese context, children from rural areas have limited social and financial resources at both the family and community levels, especially when compared to urban youth (Cherng and Hannum 2013; Hannum 2003). Because of scant public support and large family size, rural youth may have greater responsibilities to take care of their parents and other family members. Rural youth's perception and anticipation of family economic difficulties may alter their decisions in regard to school, employment, and family formation (J. Crockett and Bingham 2000). Furthermore, parents in rural areas are more likely to be influenced by traditional gender norms and thus invest more in boys than girls (Li and Lavely 2003). In China, with more education, rural young men are experiencing the "individualization" expected by second demographic transition theory: they are more likely to outmigrate for work, eschew certain traditional gender and family attitudes, and by necessity substitute material support for traditional family co-residence (Zhang et al. 2023).

Childhood Environments on Transition to Adulthood in Rural Context

Gender Equity and Parents' Old-age Support

Previous studies have found that parental attitudes have independent impacts on children's attitudes and behaviors towards premarital sex, cohabitation, marriage, and childbearing (Barber 2001; Cunningham 2001; Jennings et al. 2012). Gender attitudes are important because traditional gender values emphasize the gendered division of labor.

Girls from families who are less supportive of gender equality may complete their education and start a family earlier.

In rural settings in many Asian countries, it is also important to consider parents' attitudes toward old-age support. In a patriarchal society, sons are viewed as permanent members and have the responsibility to continue the family lineage, whereas daughters will eventually marry out and become members of their husbands' family (Cain 1991; Li and Lavely 2003; Yu et al. 2012). Thus, parents may invest more in sons for better economic returns and old-age support. According to research conducted in rural northwest China, the majority of parents maintained egalitarian attitudes about girls and boys having equal opportunity, but half of parents still agree that sons are the ones to provide old-age support (Hannum et al. 2009; Zhang et al. 2007). We hypothesize that girls who come from families that are less supportive of gender equality and prefer sons for old-age for old-age support are more likely to end up on a disadvantaged pathway.

Sibship Structure and Pathways to Adulthood

The negative effect of sibship size on educational attainment is well documented (Steelman et al. 2002). One dominated explanation is the resource dilution hypothesis. This hypothesis suggests that the family resources that each child can share were diluted as the number of children increased. Empirical studies in the United States and Western Europe confirmed that the sibship size was inversely associated with children's participation in extracurricular activities, educational performance, parents' time and financial investments on each child (Steelman et al. 2002).

Research in East and South Asian contexts extends the resource dilution hypothesis by emphasizing the gender- asymmetrical nature of resources transfer within the family (Chu et al. 2007; Liu 2023; Kugler and Kumar 2017; Yu and Su 2006). Specifically, the cultural norm of son preference tends to prioritize boys instead of girls. For girls, the presence of a younger brother in the family may dilute their resources, especially in rural areas where the family resources are tight. Older sisters with younger siblings may do more chores and caregiving labor. In addition, older sisters may find themselves under

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pressure to enter the labor market earlier and remit to their family and younger siblings.

Despite the existence of the one-child policy, having siblings is very common in rural China. One reason is that rural families are allowed to have a second child, and the other is that they are not strictly regulated in some rural areas. In the rural context of extreme poverty, the existence of siblings creates an environment for sibling competition. We hypothesize that girls who have younger brothers are more likely to end up on a disadvantaged pathway to adulthood. On the other hand, boys with older sisters are more likely to be in an advantageous pathway to adulthood.

Family Background and Socioeconomic Status

Social inequality and poverty experienced in early life could predict future life trajectories. Research on social mobility has recognized the ascriptive features from the family of origin such as parent's education and financial resources can affect offspring's status attainment (Blau and Duncan 1967; Hout 2018). Parents from the top socioeconomic strata not only invest more money and time on their children but also adopt a more active parenting style than parents from lower strata (Bianchi et al. 2004; Lareau 2011; McLanahan 2004). As a result, children from affluent families are more likely to pursue higher education, and postpone union formation and childbearing, and avoid risky behaviors.

In addition to financial resources, family stability is essential for child development. A large body of research has documented the negative impact of family instability on the transition to adulthood. Children who experienced family instability are more likely to have early union formation, childbearing, and early labor force participation (Amato and Patterson 2017; Fomby and Cherlin 2007; Goldberg 2013; McLanahan et al. 2013).

In East Asian societies, the adverse effects of parental divorce on children's education are generally less pronounced compared to Western contexts (Park 2007; Yeung Jean and Park 2016). Research indicates that academic disadvantages are more commonly observed in children raised by single fathers, rather than those raised by single mothers (Cheung and Park 2016; Park 2008; Zhang 2020). This difference is partly attributed to

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the active involvement of mothers and the supportive role of grandparents, which act as buffers to mitigate the negative impacts of divorce on children's educational outcomes (Zhang 2020). Most studies on family instability in China primarily examine its effects on child well-being and academic performance, with only a few exploring its impact on other outcomes during the transition to adulthood. One exception indicates that children from divorced families typically begin sexual intercourse earlier than those from intact families, yet their ages of first marriage remain similar (Zhang 2022). In the rural China context, we hypothesize that children from the lowest socioeconomic statuses, and those experiencing family instability, are more likely to be in disadvantageous pathways to adulthood.

Data and Methods

Data

We use two sets of data, the 2014 China Labor-force Dynamic Survey (CLDS) and the Gansu Survey of Children and Families (GSCF), for our empirical analysis. The CLDS, conducted by the Centre for Social Science Surveys at Sun Yat-Sen University, is a nationally representative social survey targeted at the labor force in both urban and rural areas. The 2014 wave included 23,594 respondents aged 15 and older from 404 communities across 29 of the 31 mainland provinces in China. We restricted our study population to individuals born between 1970 and 1989, affording us a sample size of 8,376. We apply cross-sectional sampling weights throughout our analysis.

The GSCF is a multilevel, longitudinal survey aimed to investigate the education, health, psychosocial development, and adult outcomes of rural children. Gansu, located in northwest China, is mostly an agricultural province with large mountainous and desert areas. Since 1990, Gansu has been one of the least developed provinces in China in terms of GDP per capita. Unsurprisingly, Gansu has one of the highest rates of rural poverty and economic instability in China.

A multi-stage cluster was employed to target a sample of 2,000 rural children in

Gansu in the year of 2000, and followed in 2004, 2007, 2009, and 2015. In addition to the targeted children, detailed information about the children's households, parents, communities, and a supplement sample of targeted children's siblings was collected. In this analysis, we used the education, employment, migration, and family formation histories from the 2009 and 2015 children surveys. We also used household surveys from 2000 and 2004 to obtain data on family socioeconomic status, childhood adverse experiences, and community context.

In our analysis, we first apply the entropy index to study the rural-urban difference in uncertainty and diversity of life course trajectories from adolescence to early adulthood (age 16-24) using both CLDS and GSCF. During this period, individuals often experience significant life changes, such as completing education, entering the workforce, and forming long-term relationships.[1] Following norms in the research on the transition to adulthood, we define the essential milestones for reaching adulthood as graduating from school, starting a first job, entering into marriage, and becoming a parent as dichotomous variables (Macmillan and Copher 2005; Yeung and Hu 2013). We use the distribution of different status combinations of these four variables to calculate the age-specific entropy index. At one age, an individual could have 16 different statuses ($2 \times 2 \times 2 \times 2$) based on their education, employment, marital, and childbearing status. Because the CLDS only asked about women's childbearing history, we cannot calculate the year when a man first became a father. Therefore, we only use the other three statuses to calculate the entropy index for men. We first compare the age-specific entropy index between rural and urban hukou statuses using the 1980-1989 cohort from CLDS and the 1987-1991 cohort from GSCF [2]. Next, we compare the differences between the 1970-1979 cohort and

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[1]Note that the age of 24 may be considered too young for many individuals to enter into marriage or start childbearing. We have set the age limit at 24 due to data limitations, as the most recent wave of GSCF concluded in 2015. Yet, theoretically, ages 16 to 24 represent a crucial period known as adolescence to early adulthood in transition to adulthood literature. Even at 24, as we will demonstrate later, a substantial portion of individuals in our GSCF dataset possess multiple years of working experience, have married, and even initiated parenthood.

[2]The urban 1980-1989 cohort and rural 1980-1989 cohorts from CLDS are directly comparable, but they are not directly comparable to the 1987-1991 cohort from GSCF. We anticipate that the Gansu rural cohort may display a lower entropy index compared to the 1980-1989 rural cohort because there may be more educational opportunities for the later cohort, which could stabilize their transition pathway.

the 1980-1989 cohort using only CLDS data. Finally, we employ the latent class analysis to identify different transition pathways of Chinese rural millennials (born between 1987 and 1991) using the GSCF, a 15-year longitudinal study of rural children in one of the least developed provinces in China. We then use a variety of childhood environment factors in rural contexts to predict the pathways' membership using multinomial regression analyses.

Measures

Gender attitudes. In the 2000 survey, mothers were asked how much they agree, disagree, or have no opinion on a battery of questions regarding their gender attitudes. Using exploratory factor analysis (EFA), we generated a gender equity index from five questions: 1) if working hard, girls can do as well as boys in school; 2) girls should enjoy the same opportunities of being educated as boys, 3) given equal opportunities women can make achievements as men do; 4) couples should share the housework if they both work full-time; 5) parents should encourage girls to think as independently as boys.

We performed EFA based on a matrix of polychoric correlation. Previous research indicates that this approach works better than using classical Pearson's correlations to recover the factor model when the ordinal variables are measured by fewer than five categories and when distributions of the ordinal variables are asymmetrical (Watkins 2018). In modeling analysis, we standardized the predicted factor scores to ease interpretation (Cronbach's Alpha: 0.613; McDonald's Omega: 0.676).

We included another question to capture the gender attitude regarding inter-generational support. Mothers were asked how much they agree, disagree, or have no opinion on the statement: parents should rely on sons for care-giving when they get old. We generated a binary variable with one for "agree" and zero for either "disagree" or have "no opinion". In our final sample, 57.5% of mothers agree with this statement.

Sibship structure. In the 2000 household survey, household respondents were asked to report demographic characteristics of all the household members, including the siblings of focus children who were not residing in the household during the interview.

Although China adopted a one-child policy in 1982, rural families were allowed to have one additional child if their first one was a girl. In our sample, only 6.5% of focus children have no siblings, 61.5% have one sibling, and 32% have more than one sibling. We generated four continuous variables measuring the number of older brothers, older sisters, younger brothers, and younger sisters, respectively.

Educational aspirations. Children were asked the highest level of schooling they want to complete in 2000. Likewise, mothers were asked the highest grade they wished their children to achieve. We translated the grade to the years of schooling necessary for that grade and generated two continuous variables on the educational aspirations of children and mothers.

Family background and socioeconomic status. We included a set of measurements on family socioeconomic status using parents' educational attainment, household wealth, and mother's reported income insufficiency. Parents' educational attainment was a three-category (below junior high school, junior high school, high school and above) variable with below junior high school as reference. The household wealth is a summation of the total value of the household's house, fixed assets, and durable goods. We created a wealth quintile and contrasted the middle three categories with the poorest and richest quintile. The income insufficiency variable represents whether family income was insufficient in the past year. We coded one for this variable if the family had not sufficient income and zero if the mother reported having barely sufficient or with some surplus.

We included two binary variables indicating whether the father was absent (19.42%) and whether the original family was disrupted (4.2%). Following prior literature, we defined father absence as those who lived at home for less than six months in the past year. Family disruption was coded one if at least one parent had divorced, separated, or died before the year 2000. All family background and socioeconomic variables are reported in 2000 before the transitions occurred.

Analytic Approach

Heterogeneity of Transition to Adulthood: The Entropy Index

We first compute the age-specific entropy index by *hukou* status at birth and by gender. The entropy index measures the level of heterogeneity of demographic status combination at a specific age. The formula can be expressed as:

$$\sum_{S=1}^{S} p_s log \frac{1}{p_s}$$

Where S denotes the number of status combinations, and p_s represents the proportion of population in status combination s. A higher score suggests that the transition pathway is more de-standardized and individualized. We convert the entropy index into a percentage of the maximum index, which is calculated when the population is equally distributed over all conceivable status combinations (0.903 for men and 1.24 for women). This measure has been used to examine the level of heterogeneity of status distributions by age across time and space and between population subgroups (Billari 2001 Fussel 2005; Park et al. 2010; Tian 2016).

Identification of Transition Profile

We included four transition markers that were widely used in transition to adulthood literature in our latent class analysis: school attendance, first job, first marriage, and first parenthood. Using the retrospective reports on life history in the 2015 survey, we constructed personal year records for men and women from the age of 16 to 24. First job, first marriage, and first parenthood was a non-recurring event and were coded as zero before the event and one after the event. School attendance was a recurring event with one coded as being in school and zero coded as out of school. To improve the model fit, we chose transition status at ages 16, 20, and 24 to build latent class models. We began by fitting a single cluster model and gradually increased the number of clusters up to eight. The selection of the models involves balancing the goodness of fit, parsimony of the model, and interpretability of the resulting classes. The Appendix

includes tables of goodness-of-fit statistics that present the relationship between the Bayesian information criterion (BIC) and the number of clusters for both men and women. Based on these results, we adopted a 4-class model for both men and women because adding one additional class either increased the BIC or did not improve the BIC considerably.

Class Membership Prediction

In order to investigate the relationship between latent classes and childhood environment factors, we adopted the bias-adjusted three-step approach for the latent class analysis (Bakk et al. 2013; Bolck et al. 2004; Vermunt 2010). In our study, the three steps involve (1) building a latent class model based on variables of transition markers; (2) assigning each individual to latent classes based on their posterior class membership; (3) examining the association between latent classes and external childhood environment predictors. This approach avoids complex model-building processes compared to the one-step approach. It also outperforms traditional approaches in producing unbiased and efficient estimation by properly accounting for classification errors that arise from class membership assignment (Bakk et al. 2013; Bolck et al. 2004; Vermunt 2010).

Results

Analytic Results

Heterogeneity in the Transition to Adulthood: Rural-Urban Differences

Figure 1 presents the results of age-specific entropy index by *hukou* origin and by gender. The upper panel shows the 1980-1989 cohort from CLDS and the 1987-1991 cohort from GSCF. Although not directly comparable, the age-specific entropy index for male and female youth in the GSCF sample closely aligns with that of the rural sample from CLDS. Men with urban *hukou* at birth have a more standardized life course trajectory on average than men with rural *hukou* from 15 to 21. After the age of 21, the age-specific

entropy index overlaps, with rural males displaying a slightly larger degree of variability. In contrast, women with urban *hukou* at birth had lower entropy than those with rural *hukou* throughout adolescence and early adulthood. The age-specific entropy for the rural Gansu sample is broadly comparable with the rural sample in CLDS, with the exception of men aged 16 to 19, who had a lower entropy than the CLDS rural sample but a higher entropy than the CLDS urban sample. These findings are consistent with our hypothesis that the life course trajectory during adolescent and early adulthood years are more structured and organized for urban kids than rural kids. The lower panel in Figure 1 presents the age-specific entropy for youth in the 1970-1979 birth cohort from the CLDS sample only. For both male and female youth, rural youth have a higher entropy index across almost all ages from 16 to 24 than urban youth. Yet, the rural-urban gap is not as large as observed in the post-1980 cohort shown in the upper panel in Figure 1.

Figure 2 visualizes the cohort differences in the age-specific entropy index for post-1970 and post-1980 cohorts using the CLDS samples. Except for rural men, we found that the post-1980 group shows a lower level of variability than the post-1970 generation in transition to adulthood pathways. Women with urban *hukou* have had the greatest decline of these four categories, likely because of marriage postponement and increased education opportunities experienced by urban women in the latest cohort.

Identification of Transition Profile

Figure 3 depicts the four transition profiles for adolescent boys based on the age-specific conditional probabilities from the four-cluster latent class model using the GSCF sample. The *keep in school* cluster represents 47% of the men's sample and is composed of individuals who have an extended school enrollment history. The majority of them remained unmarried until the age of 24, consistent with literature suggesting that education has a delaying effect on family formation (Yu and Xie 2015). The *work first late marriage* cluster includes 33% of men who had an early employment history and a pattern of late family formation. The *marriage first* cluster, accounting for 8% of the

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men's sample, displays similar transition trajectories in education and family formation compared to the work first and late marriage cluster. However, they started their employment late, and by the age of 24, only around 60% had started working. The *early transition* cluster comprises 12% of men. They left school and started work early. By the age of 24, nearly all of them had married and had children.

Figure 4 illustrates the transition profiles for adolescent girls, using a four-cluster latent class model similar to that employed for boys. The *keep in school* cluster, comprising 41% of the female sample, echoes the boys' pattern with extended school enrollment and delayed family formation. The *early transition* cluster is the second largest, accounting for 23% of girls, a figure that is double that of the boys, highlighting a significant gender difference in early departure from education and swift progression into family life. The *marriage first* cluster is significantly more prevalent among girls, representing 20% of the sample, which is 12% higher than that of boys, indicating a stronger inclination towards prioritizing family formation over career at an early stage. Finally, the *work first late marriage* cluster includes 16% of girls, indicating a pattern for establishing a career before family, although this group is notably smaller than the equivalent male cluster. In the next section, we utilize individual, family, and community characteristics to predict the transition profile membership identified here for the GSCF sample.

Class Membership Prediction

Men's class membership prediction. Table 2 presents estimates from a three-step, bias-adjusted multinomial logistic model analyzing the impact of a man's family background and demographic characteristics on his class membership.

Mothers who strongly believe in relying on sons for support in their old age are more likely to have sons in the *early transition* class rather than the *keep in school* class. Specifically, men's likelihood of entering early employment and marriage is 142% higher than remaining in school if his mother holds this belief. This belief is also positively associated with men's likelihood of being in the *work first, late marriage* class; however, this effect is only marginally significant. Both the children's and the mother's educational

aspirations are negatively related to the likelihood of belonging to any class other than the *keep in education* class. An increase in the men's educational aspirations notably decreases the probability of him being in the work first late marriage class. Similarly, a rise in the mother's educational aspirations significantly lowers the men's probability of being in the *marriage first* class. However, factors like the gender equity index and family size do not significantly impact the men's class membership.

Results from Table 2 also indicates that fathers' education significantly influences men to keep in school rather than entering the labor market or marriage at early ages. In addition, a man who has experienced a family disruption is more likely to be in the *marriage first* class and the *work first late marriage* class, although the latter is just marginally significant. Additionally, the men's class membership appears unaffected by the mother's education, early academic skil household wealth, and income sufficiency.

Women's class membership prediction. Table 3 presents a parallel model focusing on predictors of class membership for women. The analysis indicates that mothers' support of gender equity correlates with a reduced likelihood of their daughters being in the *work first late marriage* and *early transition* classes.

In contrast to boys, whose class memberships are insensitive to sibship structure, sibship structure significantly affects girls' class memberships. The presence of one additional younger brother significantly increases the likelihood of women falling into the *work first late marriage* and *early transition* classes by 172% and 109%, respectively.

Both women's and their mothers' own educational aspirations play a crucial role in keeping women in school. While mothers with higher educational aspirations exert a protective influence, reducing the likelihood of their daughters being in any class other than *keep in school*, women's own educational aspirations significantly reduce their probabilities of being in the *early transition* class.

Both fathers' and mothers' educational attainments exhibit a similar protective effect. Having a father with a high school or higher degree and having a mother with a junior high school degree are negatively associated with daughters' probability of being in the *early transition* or *work first late marriage* classes. The effect of a mother having a high

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school or higher degree is in the same direction, although it is not statistically significant, mainly because only a small number of mothers have attained this level of education.

Contrary to the results observed for men, women are more sensitive to household wealth and income insufficiency when determining their class memberships. Women from families with better wealth conditions are less likely to be in classes other than the 'keep in school' class. Additionally, having insufficient family income in 2000 significantly increased women's probability of being in the *marriage first* class.

Discussion and Conclusions

The pathways to adulthood in China have become protracted, more diverse, and less predictable. Both the second demographic transition and modernization theories suggest that the more economically developed a region is, the more complex and diverse the transition pathways are. These theories are grounded in a culturalist perspective, contending that evolving norms and beliefs initiate in urban areas before disseminating to rural regions. Drawing from social stratification literature, we argue that structural forces, such as poverty, and gender norms, play an equally important role, if not more, in shaping the pathways to adulthood. This is demonstrated through a comparative analysis of urban and rural Chinese youth during the adolescent to early adulthood period. Our findings reveal that throughout this age span, rural youth in China navigate more diverse pathways, indicative of a turbulent life course pattern. In contrast, urban youth, benefiting from educational expansion, experience a more stable and institutionalized trajectory from adolescence to early adulthood.

Yet, we also found substantial heterogeneity within rural youth in their transition to adulthood pathway from adolescence to early adulthood. Nearly 47% of boys and 41% of girls in our sample have extended school enrollment history, and thus have postponed employment and family formation. The remaining youth leave school earlier and follow different pathways in employment, marriage, and parenthood. Furthermore, the association between early childhood environment and latent classes shows that rural youths' paths to adulthood are stratified by parents' education, household economic

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status, and are influenced by individual's educational aspirations, sibship structure, and social and gender norms.

This study contributes to existing research in three ways. Firstly, it reveals that China's post-80s and post-90s generations of rural youth experience more diverse or de-standardized pathways from adolescence to early adulthood compared to their urban counterparts. This study thus aligns with recent comparative literature to challenge the prevailing assumption that transition to adulthood pathways mimic the Western model: the transition pathway becoming diversified first in developed regions and then spreading to developing regions driven by ideational changes (Van Winkle 2018; Van Winkle and Wen 2023). Instead, the de-standardization in the experiences of rural youth likely stems from a scarcity of resources in their families and communities, coupled with elevated economic uncertainties and institutional setting divide the rural and urban population, rather than from ideational changes suggested by the second demographic transition theory. A comparable observation was made by Van Winkle and Wen (Van Winkle and Wen 2023). They used Chinese birth cohorts spanning the years 1930 to 1978 and identified educational attainment as a significant driver, explaining a substantial portion of the cross-cohort differences in diversity. Our results complement their findings in showing that dropping out from school in early adulthood contributed to more diverse pathways for disadvantaged rural youth. Indeed, our study cannot address urban and rural differences in life course trajectories after the age of 24. Nevertheless, rural and urban differences are evident even when focusing on this early transition period (Figure 1), and the gap increases from the post-70s to the post-80s cohort, as shown in Figure 2. whether youth with rural *hukou* origin exhibit more diverse pathways to adulthood when considering a broader age range is one empirical question for future study.

Secondly, using a unique 15-year longitudinal dataset from impoverished rural communities in northwestern China, this study is among the first to empirically distinguish unique pathways to adulthood for both rural boys and girls. A substantial proportion of rural youth maintains a lengthy education history and delays their marriage or childbearing until the age of 24 (above 40% for both female and male). This group, which

may later obtain urban *hukou* through educational migration, can be easily conflated with urban residents in a cross-sectional study design. Previous research often simplifies the transition to adulthood by broadly categorizing populations into rural and urban groups, typically concluding that rural individuals are more inclined to enter the labor market and marriage at an earlier age compared to their urban counterparts. This generalization, however, tends to overlook the heterogeneity within the rural youth population. Our findings imply that rural youth cannot be universally labeled as having completed their transition to adulthood early; such an empirical pattern may simply reflect that the remaining rural population represents the most selected individuals facing disadvantages.

Finally, this study explores key childhood environment factors influencing the transition to adulthood and uncovers notable gender differences. Parental education emerged as a protective factor, reducing the likelihood of both boys and girls entering disadvantageous pathways. However, family structure and economic conditions distinctly affect the pathways of boys and girls. Girls, especially those with younger brothers and from low-income families, are more likely to leave school early, while these factors do not significantly impact boys' transitions. Conversely, family disruptions like divorce have a negative impact on boys in shaping their transition pathways, but this effect is not observed in girls. This study also underscores the continued influence of cultural norms in rural areas, such as old-age support and son preference. On one hand, rural girls from families that strongly support gender equality are more likely to remain in school. On the other hand, rural boys face an enduring expectation to care for aging parents—a responsibility that often extends to their wives as well. The tendency for mothers to prefer sons for old-age support, resulting in earlier marriages for these sons, exemplifies the continuation of these traditional norms.

This study highlights the importance of local context in interpreting and understanding the transition to adulthood research. The de-standardization of transition to adulthood pathways among rural youth may exacerbate rural-urban inequalities in the accumulation of social capital. This issue stems not just from reduced educational op-

portunities, but also from the challenges rural youth face in forming and maintaining stable social networks.

Our study has several limitations. First, although this study utilizes a unique longitudinal dataset focusing on rural youth from one of the poorest provinces in northwestern China, the unique economic, social, and cultural factors of northwestern China's rural areas might not be representative of rural areas in other parts of China or in other countries. Secondly, even though the study identifies substantial heterogeneity within rural communities, there might still be nuances and subgroups that are not fully captured or understood. This can lead to an incomplete understanding of the diverse experiences of rural youth. Furthermore, we can only utilize childhood environmental factors dating back to ages 9-12 for children in the GSCF sample. The study might overlook important early developmental factors occurring in early childhood, which can significantly influence later life course events. Similarly, by focusing only on youth life trajectories from ages 16 to 24, it may not capture the full trajectory of adulthood transitions that continue beyond the age of 24. A recent related study employing a broader age range and including birth cohorts before 1978 found that urban *hukou* origin was associated with less diverse life courses (Van Winkle and Wen 2023). Future research could explore whether the rural-urban divide persists for more recent cohorts, as we have considered in our study.

The pathways followed by rural youth can significantly influence their future economic prospects and contributions to the workforce. Extended education, for example, could lead to a more skilled workforce, whereas early entry into the labor market might result in a workforce with limited formal education. This dynamic can affect not only individual livelihoods but also the overall economic development of rural areas and the country. Future research should focus on the long-term impacts of the diverse adulthood transition pathways identified in our study, particularly how they influence economic stability, career development, social relationship dynamics, and individual wellbeing.

Tables and Figures

Table 1. Descriptive statistics

Variable	Men (n=734)				Women (n=588)			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
Gender equity index	0.03	0.95	-5.20	0.55	-0.04	1.07	-5.55	0.55
Rely on sons	0.59	0.49	0	1	0.55	0.50	0	1
Number of older brothers	0.23	0.43	0	2	0.50	0.54	0	2
Number of older sisters	0.53	0.76	0	5	0.31	0.59	0	4
Number of younger brothers	0.26	0.47	0	3	0.37	0.54	0	2
Number of younger sisters	0.20	0.42	0	2	0.29	0.54	0	4
Child's educational aspirations	13.83	2.78	6	16	13.44	3.08	6	16
Mother's educational aspirations	14.73	2.24	6	16	13.93	2.91	6	16
Father's education								
Below junior high	0.46	0.50	0	1	0.49	0.50	0	1
Junior high	0.34	0.47	0	1	0.32	0.47	0	1
High school and above	0.20	0.40	0	1	0.19	0.39	0	1
Mother's education								
Below junior high	0.76	0.43	0	1	0.77	0.42	0	1
Junior high	0.20	0.40	0	1	0.19	0.39	0	1
High school and above	0.04	0.20	0	1	0.04	0.19	0	1
Wealth quintile								
Poorest	0.19	0.39	0	1	0.22	0.41	0	1
Middle	0.59	0.49	0	1	0.61	0.49	0	1
Richest	0.22	0.42	0	1	0.18	0.38	0	1
Insufficient income	0.39	0.49	0	1	0.42	0.49	0	1
Father absence	0.20	0.40	0	1	0.19	0.39	0	1
Family disruption	0.04	0.20	0	1	0.04	0.19	0	1
Early academic skills	18.16	9.80	0	43	17.08	10.06	0	68
Chronic disease	0.02	0.13	0	1	0.03	0.16	0	1

Data sources: Gansu Survey of Children and Family Waves 2000, 2004, 2007, 2009, and 2015

Table 2. Multinomial logit results for the pathways to adulthood among young men (ages 16-24), with 'Kept in School' as the reference

Covariates	Work first late marriage	Marriage first	Early transition
Gender equity index	-0.099	-0.107	-0.060
	(0.104)	(0.123)	(0.128)
Rely on sons	**0.350+**	0.342	**0.885****
	(0.197)	(0.259)	(0.286)
Number of older brothers	0.062	-0.177	-0.006
	(0.261)	(0.354)	(0.327)
Number of older sisters	-0.169	-0.014	0.075
	(0.138)	(0.212)	(0.17)
Number of younger brothers	0.042	-0.463	-0.438
	(0.234)	(0.328)	(0.387)
Number of younger sisters	-0.074	0.091	**-0.742+**
	(0.27)	(0.358)	(0.406)
Child's educational aspirations	**-0.083***	**-0.086+**	-0.062
	(0.038)	(0.047)	(0.051)
Mother's educational aspirations	-0.080	**-0.154****	-0.059
	(0.049)	(0.058)	(0.062)
Father's education (ref=Below junior high)			
Junior high	**-0.699****	**-0.629***	-0.452
	(0.225)	(0.29)	(0.308)
High school and above	**-0.964*****	**-0.812***	**-0.743***
	(0.262)	(0.354)	(0.367)
Mother's education (ref=Below junior high)			
Junior high	-0.054	-0.103	0.033
	(0.253)	(0.32)	(0.341)
High school and above	-0.094	-1.372	0.353
	(0.462)	(1.098)	(0.564)
Wealth quintile (ref=lowest quintile)			
Middle quintile	-0.146	-0.009	-0.418
	(0.281)	(0.364)	(0.35)
Richest quintile	-0.273	-0.375	-0.681
	(0.322)	(0.422)	(0.436)
Insufficient income	**0.263**	0.067	0.290
	(0.2)	(0.262)	(0.281)
Father absence	-0.177	-0.043	0.069

	(0.253)	(0.308)	(0.308)
Family disruption	**0.993+**	**1.423***	-0.452
	(0.542)	(0.576)	(1.103)
Early academic skill	**-0.021+**	-0.001	-0.008
	(0.011)	(0.014)	(0.014)
Chronic disease	1.514	1.371	1.430
	(1.323)	(1.304)	(1.313)
Intercept	**2.973****	**2.870****	**1.014**
	(0.951)	(1.107)	(1.171)

Data sources: Gansu Survey of Children and Family Waves 2000, 2004, 2007, 2009, and 2015
Notes: + p < .1, * p < .05, ** p < .01, ***p < .001; Standard error in parentheses

Table 3. Multinomial logit results for the pathways to adulthood among young women (ages 16-24), with 'Kept in School' as the reference

Covariates	Work first late marriage	Marriage first	Early transition
Gender equity index	**-0.319****	-0.169	**-0.284***
	(0.124)	(0.128)	(0.129)
Rely on sons	0.160	0.021	-0.003
	(0.271)	(0.253)	(0.271)
Number of older brothers	0.210	-0.071	0.187
	(0.331)	(0.296)	(0.328)
Number of older sisters	**0.487***	0.078	-0.177
	(0.231)	(0.249)	(0.248)
Number of younger brothers	**0.999****	-0.086	**0.735***
	(0.332)	(0.326)	(0.338)
Number of younger sisters	-0.027	-0.132	0.084
	(0.307)	(0.228)	(0.26)
Child's educational aspirations	-0.023	0.003	**-0.111****
	(0.045)	(0.047)	(0.043)
Mother's educational aspirations	**-0.123***	**-0.120***	**-0.146****
	(0.049)	(0.051)	(0.051)
Father's education (ref=Below junior high)			
Junior high	0.070	-0.103	-0.510
	(0.294)	(0.284)	(0.314)
High school and above	**-0.780***	-0.474	**-0.940***
	(0.378)	(0.345)	(0.385)
Mother's education (ref=Below junior high)			
Junior high	**-0.755***	-0.386	**-0.778***
	(0.381)	(0.306)	(0.396)
High school and above	-0.489	-1.278	-0.874
	(0.655)	(0.937)	(0.797)
Wealth quintile (ref=lowest quintile)			
Middle quintile	**-1.086****	**-0.913***	**-0.870***
	(0.373)	(0.367)	(0.371)
Richest quintile	**-1.472****	**-1.212****	**-1.307****
	(0.472)	(0.461)	(0.486)
Insufficient income	0.265	**0.560***	0.446
	(0.275)	(0.276)	(0.272)
Father absence	0.439	-0.048	0.046

	(0.331)	(0.351)	(0.353)
Family disruption	0.057	-0.028	0.405
	(0.877)	(0.760)	(0.738)
Early academic skill	**-0.027+**	**-0.022+**	**-0.027+**
	(0.015)	(0.013)	(0.015)
Chronic disease	0.710	0.950	-0.046
	(0.760)	(0.698)	(1.004)
Intercept	**2.316***	**2.494***	**4.1912*****
	(1.044)	(1.015)	(1.005)

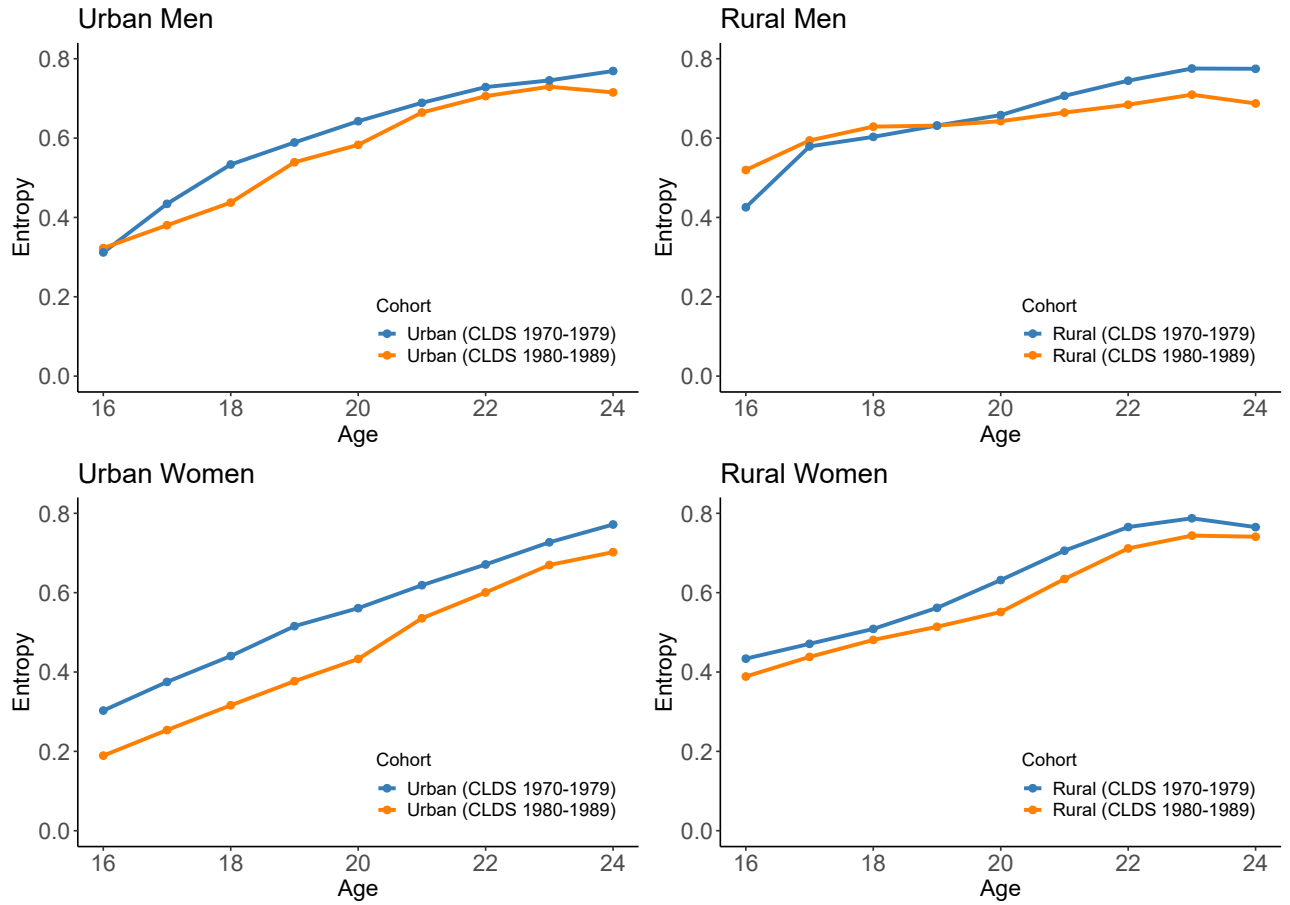*Data sources*: Gansu Survey of Children and Family Waves 2000, 2004, 2007, 2009, and 2015
Notes: + p < .1, * p < .05, ** p < .01, ***p < .001; Standard error in parentheses

Figure 1. Age-specific entropy index by residence and gender, age 16-24
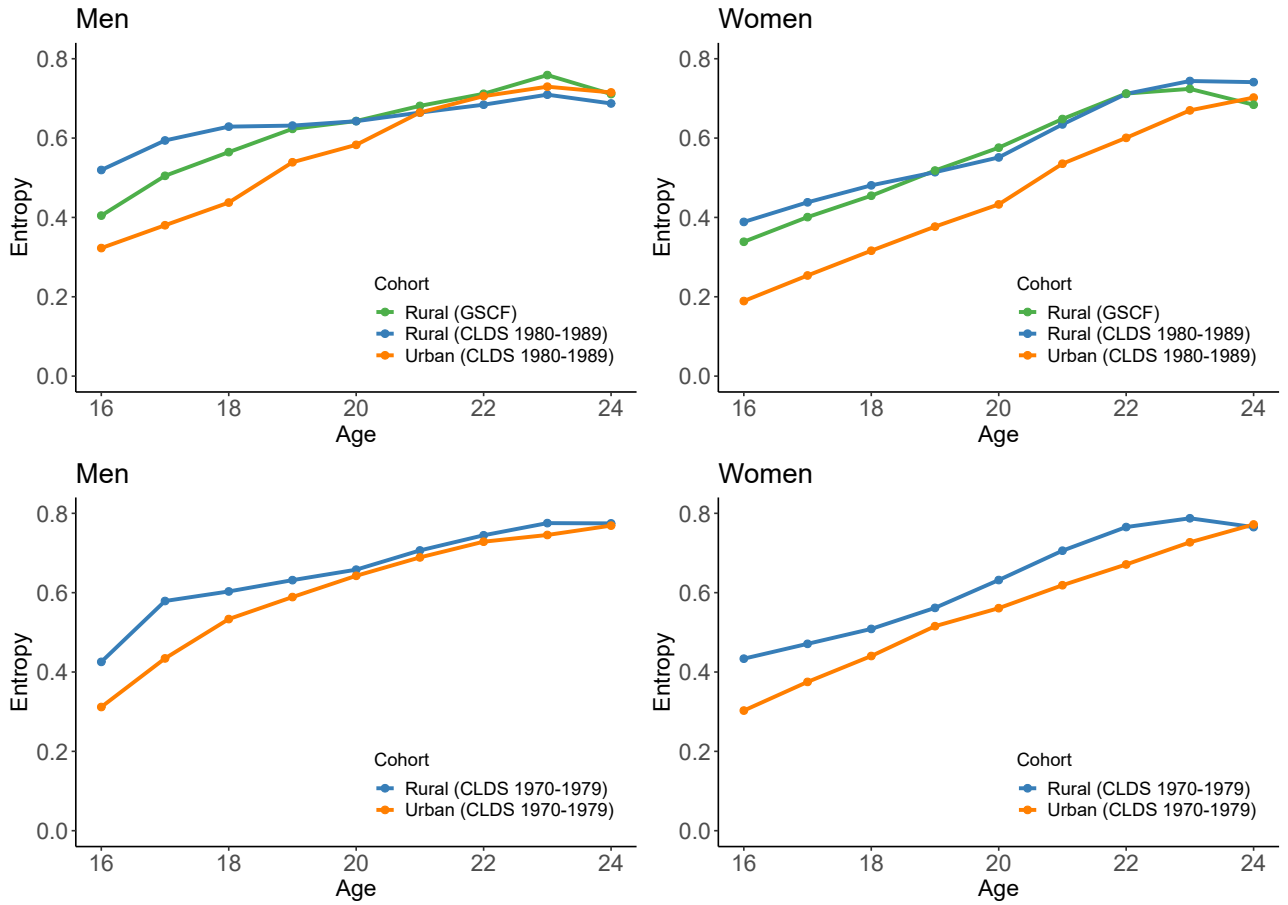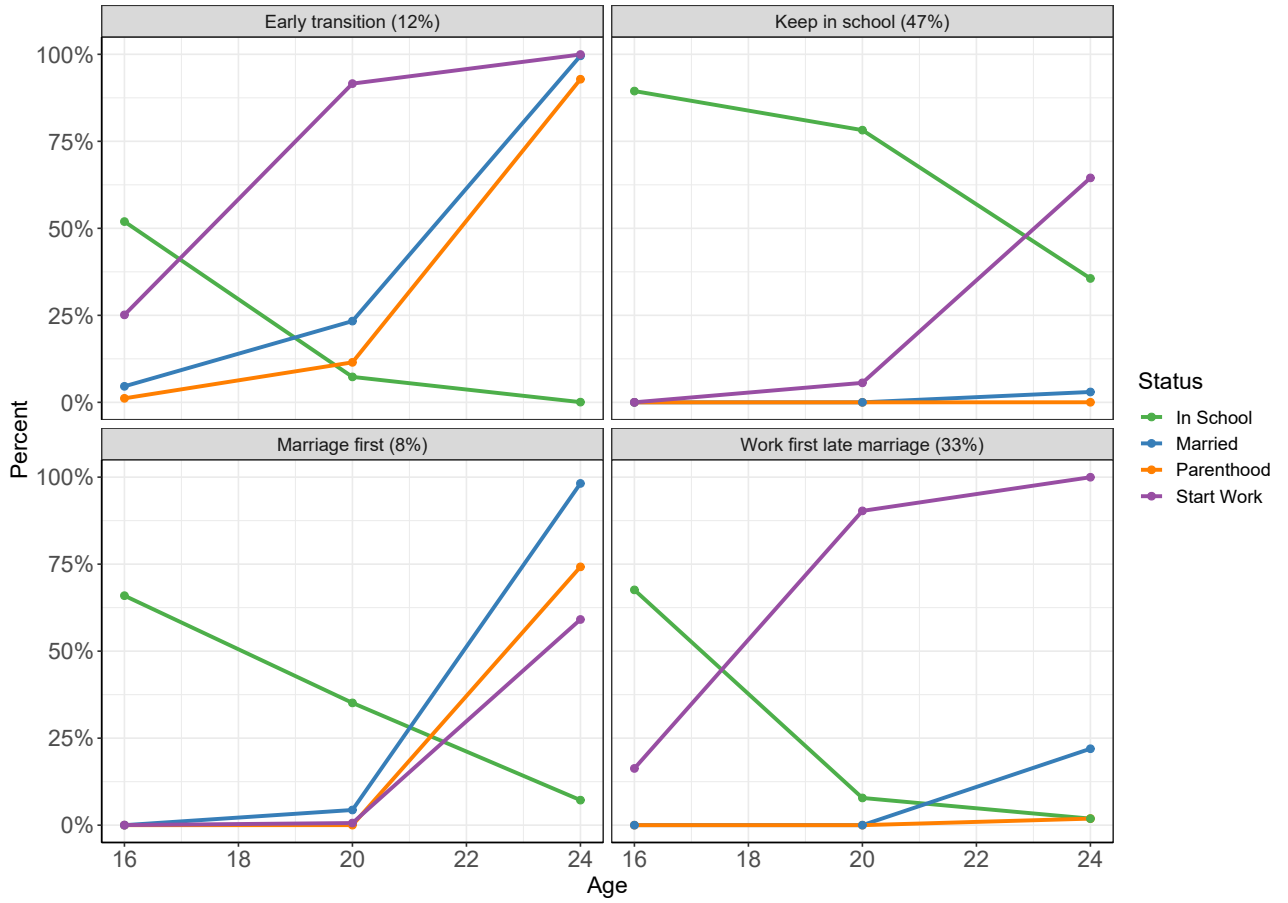

Data sources: Gansu Survey of Children and Family (GSCF) Waves 2000, 2004, 2007, 2009, and 2015; China Labor-Force Dynamic Survey (CLDS) 2014

**Figure 2.** Age-specific entropy index by cohort, residence, and gender, age 16-24

Data sources: China Labor-Force Dynamic Survey (CLDS) 2014

Figure 3. Estimated population prevalence and conditional age-specific probabilities for latent pathways to adulthood, men

Data sources: Gansu Survey of Children and Family (GSCF) Waves 2000, 2004, 2007, 2009, and 2015

Figure 4. Estimated population prevalence and conditional age-specific probabilities for latent pathways to adulthood, women
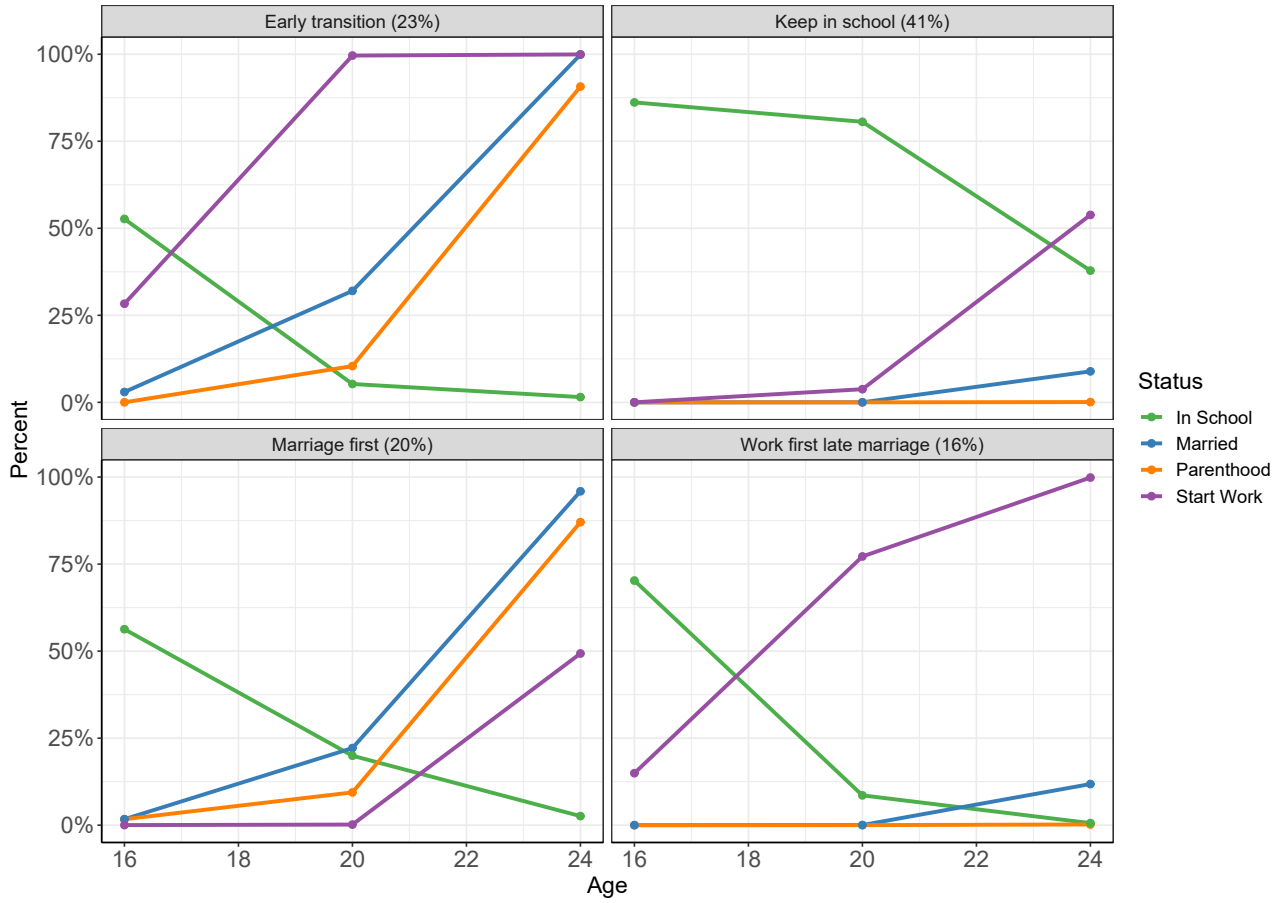
Data sources: Gansu Survey of Children and Family (GSCF) Waves 2000, 2004, 2007, 2009, and 2015

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Appendix Tables and Figures

Rural Youth's Diverse Pathways from Adolescence to Early Adulthood in China: A New Perspective

Table A1. Goodness-of-fit statistics for latent class model selection, men

Men	LL	BIC(L²)	df
1-Cluster	-3305.27	-3111.09	722
2-Cluster	-2876.29	-3883.27	709
3-Cluster	-2703.53	-4143.01	696
4-Cluster	-2651.39	-4161.51	683
5-Cluster	-2607.71	-4163.08	670
6-Cluster	-2576.63	-4139.46	657
7-Cluster	-2546.48	-4113.97	644
8-Cluster	-2533.39	-4054.38	631

Data sources: Gansu Survey of Children and Family (GSCF) Waves 2000, 2004, 2007, 2009, and 2015

Table A2. Goodness-of-fit statistics for latent class model selection, women

Women	LL	BIC(L²)	df
1-Cluster	-3097.07	-1821.91	576
2-Cluster	-2592.38	-2748.38	563
3-Cluster	-2476.52	-2897.21	550
4-Cluster	-2387.38	-2992.60	537
5-Cluster	-2350.28	-2983.90	524
6-Cluster	-2320.81	-2959.93	511
7-Cluster	-2292.41	-2933.83	498
8-Cluster	-2263.10	-2909.55	485

Data sources: Gansu Survey of Children and Family (GSCF) Waves 2000, 2004, 2007, 2009, and 2015