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ORIGINAL RESEARCH

Parental Incarceration and School-to-Work Trajectories: A Life Course Perspective

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Abstract

Although previous studies suggest that parental behavior is associated with children's adulthood outcomes, few studies have focused on the role of parental incarceration in School-to-Work transitions. Based on a life course perspective, this study constructs the School-to-Work trajectories of Chinese young adults born between 1940 and 1979 to examine the effect of parental incarceration on these transitions and the mediating role of family support. We found that adolescents whose parents were incarcerated transitioned from School-to-Work earlier and had more vulnerable transition trajectories than those of children whose parents were not incarcerated. Moreover, the former was more likely to engage in agricultural labor, enter the labor market with low education, and experience long-term unemployment after leaving school. We also found that family support mediated the effect of parental incarceration on School-to-Work transitions. Parental incarceration led to low levels of family support, further increasing the likelihood of affected adolescents embarking on a vulnerable transition trajectory. These findings underscore the long-term effect of positive parental behaviors and family support on young adults' School-to-Work trajectories and provide crucial policy implications for developing a young adult-friendly family environment and young adult support programs to promote effortless transitions from School-to-Work.

Keywords Parental incarceration · Family support · School-to-Work transition · Life course · China

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Introduction

Studies based on different cultural contexts suggest that in the family environment, parental incarceration is an important factor affecting family functioning. The occurrence of these adverse events and the resulting family dysfunction have negative consequences for young adults when transitioning to adulthood (Foster & Hagan, 2007; Jin & Ji, 2015; Mears & Siennick, 2016; Miller & Barnes, 2015; Murray et al., 2007), such as an underprivileged socioeconomic status, poorer health, and a higher likelihood of crime (Guo et al., 2021; Lee et al., 2013; Mears & Siennick, 2016; Turney & Goodsell, 2018). The School-to-Work transition is crucial in an individual's life course, determining whether the individual can transition smoothly from completing their school education to entering the labor market. Parental incarceration may also significantly affect School-to-Work trajectories: children who experience parental incarceration may have an increased risk of unsuccessful School-to-Work transitions or have irregular transition trajectories, such as unemployment and precarious employment.

In China, statistics show that at least 300,000 teenagers grow up in an incomplete or dysfunctional family annually owing to their parents' crimes (Xie, 2012). With one or both parents in prison, fulfilling guardianship and parenting obligations becomes difficult. This often leads to the dysfunction or disintegration of families with dependent children. As a result, children are left unsupervised and face challenges. They are more likely to drop out of school, less likely to attend college, and prone to behavioral and psychological problems during their transition to adulthood. In some cases, they may even become "second-generation" criminals (Yan et al., 2009). Therefore, with increasing young adults experiencing parental incarceration in China, it is of great significance to study the relationship between parental incarceration and Chinese young adults' transition from School-to-Work. This can provide more empirical evidence for the relationship between parental incarceration and School-to-Work transition and also help reveal the mechanism underlying such associations, further clarifying the cumulative process of the vulnerable school-to-work trajectories caused by parental incarceration.

This study adopted a holistic approach on course of life—that is, the transition in states and roles from School-to-Work as a trajectory—using the sequence analysis method to examine the effect of experiencing parental incarceration during childhood on the School-to-Work transition and the mediating role of family support in the context of China.

Theoretical Background

Parental Incarceration and School-to-Work Transition

School-to-Work transition refers to the period when an individual discontinues school and begins employment (Ng & Feldman, 2007). The smoothness of

this transition helps determine an individual's willingness to switch jobs, organizations, and occupations later in life, and ability to deal with subsequent career changes (Ng & Feldman, 2007; Taylor, 2005). A successful School-to-Work transition is conceptualized as the transition between the end of formal, secondary, or higher education and obtaining an entry-level job or continuing work-related training (Stone, 1992). Scholars also believe that a successful School-to-Work transition is a criterion for individuals finding employment after leaving school, performing to a level acceptable to their employers, and having a positive attitude toward their work environment and job requirements (Ng & Feldman, 2007). Most of these definitions and standards emphasize the environmental adaptability and employment stability of young adults during their early career transitions. When individuals fail to make a smooth transition from School-to-Work, they risk facing high unemployment, excessive job turnover, and weak links between schooling and employment (Ryan, 2001).

Several empirical studies in the United Sates found that parental incarceration significantly affected the risk of adverse outcomes of School-to-Work transition during adulthood (Chung, 2012; Uggen & McElrath, 2014; Wakefield & Wildeman, 2011). For example, several longitudinal studies in the country showed that experiences of parental incarceration during individuals' childhood affected their adulthood outcomes (Mears & Siennick, 2016; Uggen & McElrath, 2014; Young et al., 2020), with adverse consequences in multiple areas, including participation in criminal behavior, drug use, social bonds, and mental and physical health (Foster & Hagan, 2007; Miller & Barnes, 2015; Roettger & Swisher, 2011). Some studies, based on data from European countries, including England, Netherlands, and Sweden, also found that children who have experienced parental incarceration are more likely to be arrested (Besemer et al., 2011; Murray et al., 2007; Rakt et al., 2012), commit crimes, use marijuana, have poor physical health, and suffer from depression (Gaston, 2016; Mears & Siennick, 2016; Osgood et al., 2005; Turney, 2014). A study based on data from the Ohio Life Course Study found that parental incarceration can lead to romantic relationship problems in their adulthood (Giordano, 2010). Experiencing parental incarceration in childhood was also associated with disadvantaged socioeconomic status in adulthood. For example, Foster and Hagan (2007), based on the National Longitudinal Study of Adolescent Health (Add Health), found that American young adults who were children of incarcerated fathers had a higher incidence of low socioeconomic status. Moreover, based on data from Add Health, studies showed that parental incarceration reduces children's educational attainment and earning potential in adulthood (Mears & Siennick, 2016; Miller & Barnes, 2015). In addition, a study on American adolescents found that experiencing parental incarceration during childhood can influence one's life trajectory into careers (Young et al., 2020), resulting in, for example, an unsuccessful first-time entry into the labor market.

The Chinese Context

Before 1978, the crime rate in China remained at 30 to 60 criminal cases per 100,000 persons, which was relatively low compared to that of other countries (Lu, 2018).

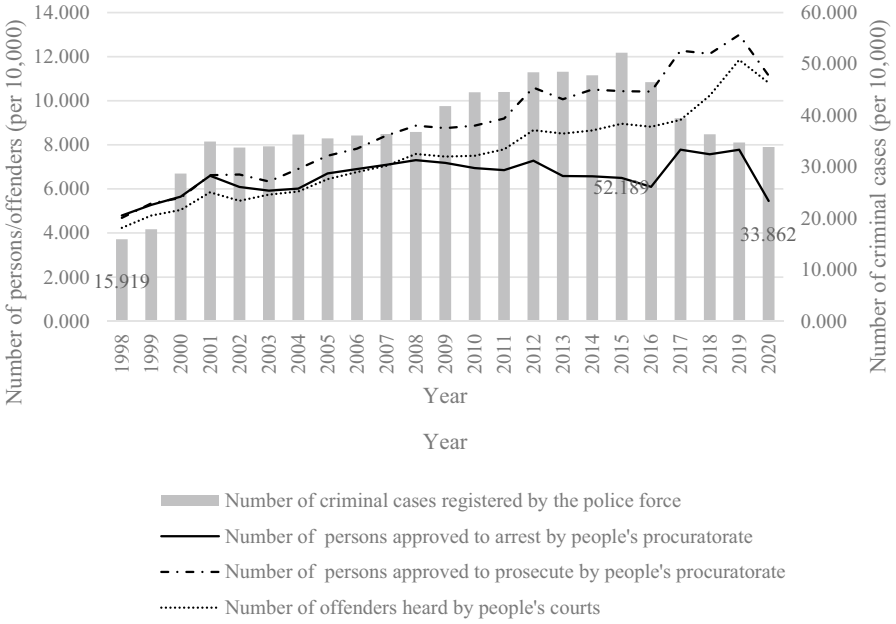

Fig. 1 The overall situation of crime in China (1998–2020). *Source* The China Statistical Yearbook 1998–2020. https://data.stats.gov.cn/publish.htm?sort=1

However, since the reform and opening up of China in 1978, the number of criminal cases in the country has increased, and this concern has become increasingly severe. Especially since 1998, the crime rate in China has grown rapidly, exhibiting an overall upward trend. According to Fig. 1, the arrest rate rose from 4.794 per 10,000 people in 1998 to 7.775 per 10,000 people in 2019 (+62.18%); the prosecution rate rose from 4.687 per 10,000 people in 1998 to 11.142 per 10,000 people in 2020 (+137.72%); the number of offenders in criminal cases heard by the people's courts rose from 4.235 per 10,000 people in 1998 to 11.854 per 10,000 people in 2020 (+179.91%). In addition, according to the World Prison Brief, the prison population rate rose from 107 per 100,000 of the national population in 1990 to 165[1] per 100,000 of the national population in 2018.

This overall increase in crime rates has led to increasing numbers of adolescents experiencing the adverse events of parental incarceration and growing up in home environments where one or both parents are absent. According to a survey conducted by the research group of the Institute for Crime Prevention of Ministry of Justice of China (2006), by the end of 2005, among the 1.56 million inmates serving sentences in prisons, about 30% had minor children, and these minor children numbered more than 600,000.

The children of incarcerated parents are disadvantaged in terms of living conditions, health status, and educational access. Regarding living conditions, due

[1] The prison population rate is based on a total prison population of 2.34 million; derived from https://prisonstudies.org/country/china.

to parental sentencing and property confiscation following the Chinese Criminal Law, the family's income becomes unstable, making it difficult to ensure the economic conditions and housing stability required for children to live and healthily grow. According to the survey data of the research group of the Institute of Crime Prevention for the Ministry of Justice of China (2006), the living conditions of the minor children of 45.9% of prisoners were poor, and those who received social assistance only accounted for 5.2% of the total. A survey in 2018 also showed that 42.8% of families with minor children of prisoners had an average annual income of less than 3000 yuan and lived in relatively poor conditions (Tan, 2021). Compared with children whose parents were not serving a sentence, these children had poorer health outcomes, poorer mental health, and were more likely to be affected by poor social interactions and negative events such as beatings and scolding by their supporters (Guo et al., 2021).

With respect to education attainment, children of incarcerated parents are at higher risk of dropping out. According to the survey data, 13.1% of children of prisoners dropped out of school, and the dropout rate increased significantly after their parents were imprisoned, reaching 82.43% (Research Group of the Institute for Crime Prevention of Ministry of Justice, 2006). Studies have also found that having mothers who served prison sentences during children's early and late childhood significantly reduced the likelihood that the children would attend or complete college in the future (Jin & Ji, 2015). In addition, parental incarceration increases the likelihood of deviance or crime among children. For example, a study showed that substantial juvenile offenders had one or both parents previously detained or sentenced by the court; that is, parental incarceration was a significant predictor of offspring criminality (Shi et al., 2011). A 2012 survey also found that left-behind children (children left behind in their rural or urban homes because their parents are migrant workers) accounted for approximately 70% of juvenile delinquency, with this trend increasing annually (Chen, 2016). Therefore, regarding rapid population migration in China, the population size affected by parental incarceration is enormous, and these populations face multiple vulnerabilities for health status, education level, and job opportunities, highlighting the uniqueness of the Chinese sample.

A life Course Perspective

The life course framework conceptualizes a personal life as the life events and trajectories relevant to others that unfold over time (Elder et al., 2003), providing an additional perspective to understand the effect of parental incarceration on offspring's adulthood. First, the life course principle of linked lives states that individuals' life trajectories intersect and interact with the life trajectories of their social ties (Carr, 2018; Elder et al., 2003). The concept of linked lives primarily refers to intimate social ties, such as those with parents and neighbors, that interconnect with the life courses of different individuals. Based on the interrelation of life courses, parents' life course trajectories and key life events may significantly affect the life course of their children. For example, research shows that parental

incarceration can adversely affect their children's life course (Young et al., 2020). Therefore, the linked lives principle provides a relevant perspective to examine the relationship between parental incarceration and children's life course transitions.

Furthermore, life course theory emphasizes the importance of "turning points," such as marriage and military service. Such turning points may change or deflect long-term pathways or trajectories that began at an earlier juncture (Sampson & Laub, 2005). When life events trigger discontinuity in prior adjustments, these events become turning points, subsequently sustaining or expanding through a dynamic process of cumulative and self-reinforcing consequences (Mortimer & Shanahan, 2007; Sampson & Laub, 1997). Parental incarceration may also constitute as a turning point event; offspring who experience parental incarceration may develop a pathway of cumulative disadvantage adversely affecting their achievements across their life course. This can cause significant changes in their social role trajectories (Wethington, 2005), especially among adolescents who are at the crucial life stage of transitioning from School-to-Work.

Over the past decade, a holistic approach to life course has been widely applied. The development of this new perspective allows us to adopt a more comprehensive approach to understanding young adults, considering their educational and employment experiences, and also other aspects of life, including family and peer relationships (Pallas, 1993). The transition from school to employment is a process. To view labor market entry as a single event has hindered efforts to identify varied employment statuses and their transitions and observe closely the School-to-Work trajectory; that is, the holistic perspective considers the transition as a sequential trajectory involving life course states and roles, and considers the type, number, duration, and sequence of events (Billari, 2005). From this perspective, parental incarceration may affect not only the timing of the affected children's School-to-Work transitions, but also their entire trajectory from School-to-Work. Therefore, to understand the mechanisms determining the trajectory from School-to-Work, labor market entry cannot be viewed as a single event (Wolbers, 2007) or be confined to narrow age ranges (Cheetham et al., 2015). However, previous research primarily focused on the effect of parental incarceration on specific outcomes in adulthood, such as educational achievement and income (Foster & Hagan, 2007). Few studies have examined the effect of parental incarceration on young adults' school-to-work trajectories in the Chinese context based on a holistic perspective of life course.

The Role of Family Support

Scholars have conducted considerable empirical research to understand how parental incarceration affects their offspring. These studies found that the effects of parental incarceration on children are often attributed to problems in the care of young children, such as parenting practices, family support, and family instability. For example, parental incarceration leads to separation from children, thereby increasing the risk of family instability. It also significantly reduces parental care and support for young children and increases the children's risk of economic deprivation and need for public assistance (Geller et al., 2011; Schwartz-Soicher et al., 2011; Xu &

Feng, 2005). Parental support remains crucial as children transition from childhood to adulthood. Many young adults rely on their parents for living conditions while completing their education and seeking employment (Fingerman et al., 2012; Swartz, 2009). Inequalities in access to parental support in late adolescence creates disparities among young adults' socioeconomic outcomes and life opportunities (Johnson & Benson, 2012; Swartz, 2009). Parental incarceration may also undermine the offspring's ability to acquire the skills, resources, and foundations needed for a successful School-to-Work transition (Foster and Hagan, 2007; Johnson & Easterling, 2012; Sampson & Laub, 2005). Specifically, parental incarceration may prevent parents from providing offspring with the resources, support, and social capital required to complete school, find employment, and address crises such as unemployment or homelessness during their transition to adulthood (Arditti, 2012; Siennick, 2016; Uggen & McElrath, 2014). In addition, scholars have found that educational resources provided by families have a strong positive relationship with successful School-to-Work transitions, especially in attaining stable jobs (Absor & Utomo, 2017). Therefore, family support may play a mediating role between parental incarceration and children's transition from School-to-Work. Incarcerated parents are more likely to neglect their children's care and education and unable to provide significant support for their children, potentially with devastating effects on the children during their transition from School-to-Work (Osgood et al., 2005; Swartz et al., 2011). This may result in higher unemployment, substandard salaries, and incomplete education (Raphael & Stoll, 2009; Western & Muller, 2013).

The Current Study

Existing studies on School-to-Work transitions often focus on single events or single status changes, such as the timing of first employment and the transition between education and unemployment (Brzinsky-Fay, 2014; Wolbers, 2007), without investigating them as a segment of a holistic sequence. Moreover, how parental incarceration affects offspring's School-to-Work transition trajectories lacks clarity, and more research is needed to fill this gap in the literature. Therefore, based on the holistic life course approach, this study examined the impact of parental incarceration on the transition from School-to-Work by positioning the transition in a holistic trajectory that changes over time and identifying patterns of these trajectories. We also hypothesize that parental incarceration is associated with young adults' transition from school to employment; that is, adolescents with one or more incarcerated parents are at risk of being disadvantaged or unsuccessful in their School-to-Work transitions compared with those whose parents are not incarcerated. This study further hypothesizes that early family support (including emotional and financial support) may mediate parental incarceration and children's transition from school to employment. Specifically, adolescents with incarcerated parents receive less emotional and financial support from their families and may experience vulnerable transition trajectories, such as long-term unemployment, than those with non-incarcerated parents. Figure 2 shows the hypothesized relationship between parental incarceration, family support, and School-to-Work trajectories. In sum, this study analyzes the

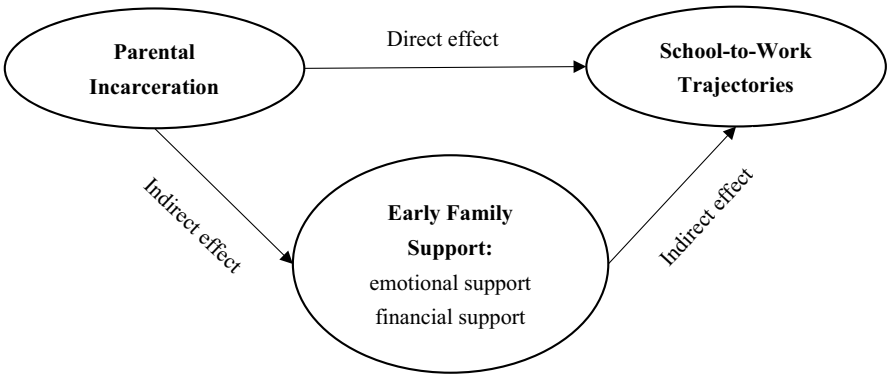

Fig. 2 An analytical framework for the relationship between parental incarceration, early family support, and school-to-work trajectories

pattern of the school-to-work trajectories of Chinese young adults and the mediating role of family support between parental incarceration and School-to-Work transition based on empirical data from China.

Analytical Strategy

Data

The data employed in this study were derived from the China Health and Retirement Longitudinal Study (CHARLS) conducted by National School of Development at Peking University in 2014. The 2014 CHARLS survey was conducted in 28 provinces, 150 counties or districts, and 450 villages or urban communities in China from June to September 2014, and a total of 20,543 individuals were interviewed. Ethical approval for this study was granted by the Institutional Review Board of Peking University. As a large-scale nationwide survey, CHARLS adopts a stratified (by per capita gross domestic product [GDP] of urban districts and rural counties) multi-stage (county, district-village, community, or household) probability proportional to size (PPS) random sampling strategy to ensure sample representativeness. In the first stage, all county-level units were sorted (stratified) by region, within the region by urban district or rural county, and by per capita GDP. After this sorting (stratification), 150 counties or urban districts were chosen with probability proportional to population size (Zhao et al., 2013). For each county-level unit, three PSUs (villages and urban neighborhoods) were randomly chosen with probability proportional to population (Zhao et al., 2013). CHARLS designed a mapping or listing software (CHARLS-GIS) that utilizes Google Earth map images to list all dwelling units in each residential building to create sampling frames. In each sampled household, a short screening form was used to identify the members to be interviewed. Thus, CHARLS is nationally representative and representative of both rural and urban areas within China. This survey examines the life course of

Chinese people; hence, we collected data on the crucial areas of their life course, including their education, marriage, child-bearing, and employment histories, as well as any criminal experiences of the respondents' parents.

As only a few respondents in the survey sample were born before 1930, this study excluded individuals from that particular age group. We also did not include respondents who reached the age of 35 before the mid-1970s, before which the crime rates were minimal. The remaining respondents were divided into four cohorts: 1940–1949 (cohort 1), 1950–1959 (cohort 2), 1960–1969 (cohort 3), and 1970–1979 (cohort 4). The reason for this division was primarily determined by the different context of each cohort. The School-to-Work transition of the 1940–1949 cohort was mainly completed after the founding of the People's Republic of China, and this cohort experienced economic recovery and development and grew up in a relatively stable social environment. The education and employment of the 1940–1949 cohort were also related to the popularization of primary education in the 1950s and the succession replacement system (wherein children replace their parent's position when they retire). The education and employment of the 1950–1959 cohort may be associated with the interruption of primary education and the closure of higher education during the Cultural Revolution (1966–1976). The School-to-Work trajectories of the 1960–1969 cohort may have been affected by the resumption of the college entrance exam system in 1978 and the graduate employment arrangement system. The transition from School-to-Work for the 1970–1979 cohort was completed against the backdrop of reform and opening up in the 1980s, which was mainly affected by the expansion of higher education, abolition of the employment arrangement system, and reform of the "Danwei" system in the late 1990s.

Regarding the sample distribution of the original data, there were 9750 males, accounting for 47.46% of the sample, and 10792 females, accounting for 52.54%. The mean age of respondents was 58.87. There were 2005 urban residents, accounting for 9.97% of the sample, and 18,114 rural residents, accounting for 90.03%. There were 18,876 Han people, accounting for 91.89% of the sample, and 1667 ethnic minorities, accounting for 8.11%. When testing the model, we deleted the cases with responding errors and missing values, and only kept those with valid data on the key variables.[2] The final sample consisted of 14,742 individuals.

Methods

This study employed the sequence analysis method. Sequence analysis was introduced to social sciences by Abbott (1995) and was originally used to study deoxyribonucleic acid (DNA) sequence in biology (Aisenbrey & Fasang, 2010). Sequence analysis treats each life course sequence as a string of characters, similar to those used in biological sciences to code DNA molecules (Billari, 2001). It enables the

[2] In this study, samples with missing values were directly excluded from the analysis due to a large sample size and the assumption that the missing cases occurred at random. We conducted Little's Chi-squared test for Missing Completely at Random (MCAR), which yielded a result of $P=0.11$, indicating that the missing values can be considered random.

Table 1 Example of school-to-work trajectories

Age Trajectories	Age 16	Age 17	Age 18	…	Age 29	Age 35
Trajectory 1	ED	AG	AG	…	AG	AG
Trajectory 2	ED	NA	NA	…	NA	NU
…						
Trajectory 40	ED	MS	MS	…	NA	NA

comparison of individual life course sequences using a holistic perspective; the most similar life course trajectories are grouped into clusters using the hierarchical clustering method (Aisenbrey & Fasang, 2010; Gauthier et al., 2010). Pertaining to this study, the use of sequence analysis enabled the construction of School-to-Work trajectories and the identification of typical trajectories.

This study operationalized School-to-Work transitions into life course sequences of individuals aged 16 to 35 and constructed the state trajectories of School-to-Work transition based on when an individual had experienced life events or roles in the two domains of education and employment, with each year of age contributing one observation.

First, the life course states of School-to-Work transition were identified. We selected one life course state within the education domain and five life course states within the employment domain during the School-to-Work transition. This study merged education and employment into one life domain with six states: education (ED), agricultural employment (AG), non-agricultural employment (NA), military service (MS), no paid work (NP), and not employed (NU),[3] to form trajectories from School-to-Work. Therefore, based on the six states defined above and the education and employment histories of respondents, this study used years as the unit of time to construct School-to-Work trajectory sequences of Chinese young adults born between 1940 and 1979, who were between 16 and 35 years of age during data collection. An example of the constructed School-to-Work trajectory sequences is shown in Table 1. Each row represents the trajectory sequence of a respondent transitioning from School-to-Work between the ages of 16 and 35.

Second, we calculated the distance matrix between the paired trajectory sequences from School-to-Work using the optimal matching method, and subsequently performed cluster analysis based on the distance matrix to obtain the type of trajectory sequence. We also set a one-unit of insertion and deletion costs, and the transition rate between states of substitution cost to match different sequences. Following the optimal matching, this study used the Ward algorithm to achieve hierarchical clustering to reduce data dimensionality. Cluster analysis is based on the similarity of trajectory sequences, as shown in Table 1. This similarity (distance matrix) is achieved through optimal matching. The School-to-Work trajectory sequences of each individual are organized into different groups,

[3] "No paid work" refers to unpaid household help, and "not employed" refers to those who are not working in the labor market and are unemployed.

in which the similarity of the sequences within the groups was maximized and between the groups was minimized. For example, trajectory 1 and trajectory 40 in Table 1 have a high similarity; hence, they are likely to be classified into one group. Different categories identified by the cluster analysis have different state distribution characteristics. The cluster validity was tested by multiple indicators, and the optimal number of clusters was determined according to these test indicators.

Third, using the clusters of trajectory sequences from School-to-Work as the dependent variable, this study estimated a multinomial logistic regression model to examine the relationship between parental incarceration and the probability of belonging to each of the clusters. The Stata command KHB was used to conduct mediation analysis, which was developed for application in logit and probit regression models (Kohler et al., 2011). This command decomposes the total effect into the direct effect of parental incarceration and the indirect effect of the mediator (early family support). All data analyses were conducted using R (packages TraMineR and WeightedCluster) and STATA.

Variables

The clusters of trajectories from School-to-Work formed by the earlier cluster analysis act as the dependent variable in our model. The independent variable is parental incarceration. In the questionnaire, respondents were asked, "When you were a child, which one of the following did your parents ever have?" One of the options was whether the parents were ever sent to prison. The independent variable had two options of "yes (=1)" or "no (=0)".

The mediating variable is early family support, which was assessed through emotional and financial support according to previous research (Roksa & Kinsley, 2019). Emotional support is measured by respondents' subjective ratings of how much emotional support they received from the parent–child relationship interactions as children. The three questions asked in the survey were: "How much love and affection did your parent(s) give you while you were growing up?" "How would you rate the level of parent–child emotional support for you in your relationship with your mother as a child?" and "How would you rate the level of parent–child emotional support in your relationship with your mother as a child?" The emotional support score was obtained by summing the above items, which formed a continuous variable. The Cronbach's alpha of this scale is 0.711. Economic support was measured by the question, "When you were young, did any of your family members provide you with financial support for your work, such as when starting a business?" The answer to this question comprised "yes" or "no." Early family support variables were standardized before being included in the mediation analysis.

The control variables of participants' gender, hukou (categorization based on one's household registration), birth cohort, ethnicity, political status, and religious beliefs were also included in the models. Demographic variables, such as respondents' gender, birth cohort, and ethnicity, affected an individual's educational attainment and occupational status (Absor & Utomo, 2017; McGinnity et al., 2005). Hence, this study

Table 2 Descriptive statistic of the sample ($N = 14742$)

Variable	Frequency	Percent (%)	Variable	Frequency	Percent (%)
Gender			Politics status		
Male (=0)	7005	47.52	Party member (=0)	1445	9.80
Female (=1)	7737	52.48	Non-party member (=1)	13297	90.20
Birth Cohorts			Have religious belief		
1940–1949 (=1)	3063	20.78	No (=0)	13344	90.52
1950–1959 (=2)	5163	35.02	Yes (=1)	1398	9.48
1960–1969 (=3)	5384	36.52	Parental incarceration		
1970–1979 (=4)	1132	7.68	No (=0)	14413	97.77
Hukou			Yes (=1)	329	2.23
Rural (=0)	11720	79.50	Financial support		
Urban (=1)	3022	20.50	No (=0)	13420	91.03
Ethnicity			Yes (=1)	1322	8.97
Minorities (=0)	1169	7.93	Emotional support:		
Han (=1)	13573	92.07		10.729	2.643

Because emotional support is a continuous variable, its mean and standard deviation could be calculated

included these as control variables in the analysis. Gender is a dummy variable with male as the reference category. Ethnicity includes two categories with the minorities as the reference category. We also included five birth cohorts: 1940–1949, 1950–1959, 1960–1969, and 1970–1979.

In the Chinese context, hukou (urban or rural) and Communist Party membership are vital dimensions to consider, both as important indicators of social stratification and socioeconomic status in China (Dickson & Rublee, 2000; Wu & Treiman, 2004), and may affect the transition of adolescents from education to work. For example, studies have found that differences in urban and rural hukou can lead to uneven distribution of higher education opportunities and resources (Wu, 2019). Hukou status can also lead to exclusion from the labor market. Young adults with rural hukou have fewer job opportunities and income returns than those with urban hukou (Wu et al., 2020). Party membership can also improve an individual's transition from education to employment. For example, studies have found that Communist Party membership has a significant positive effect on individuals obtaining formal jobs in state-owned units (Yan, 2017). Hukou was represented by a dummy variable, where "0" is rural hukou and "1" is urban hukou. Political status includes non-party membership and party membership. Religious belief consists of two categories: those with religious beliefs and those without. Descriptive statistics of all variables are shown in Table 2.

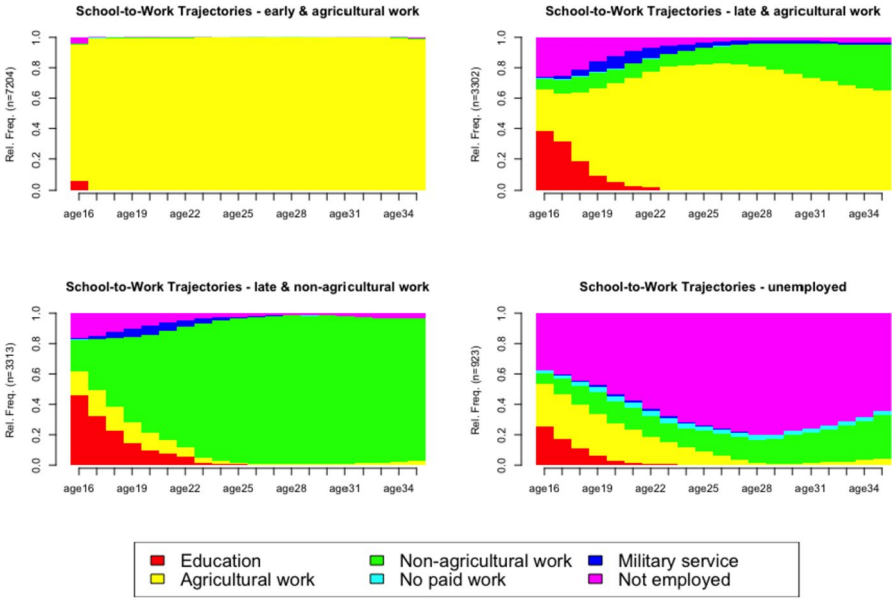

Fig. 3 Four clusters of school-to-work trajectories identified by cluster analysis

Results

Four Clusters of School-to-Work Trajectories

Sequence analysis identified four clusters of trajectories from School-to-Work (see Fig. 3).[4] Cluster 1 (the Early and Agricultural Work cluster) accounted for the largest proportion of our sample (48.87%) and was characterized by a relatively low level of education and early entry into agricultural work (mainly at the age of 16). Approximately half of the individuals in the sample were primarily engaged in agricultural work and had transitioned at a young age from School-to-Work. Cluster 2 (the Late and Agricultural Work cluster) accounted for 22.40% of the sample; most individuals in this cluster were occupied in free-form agricultural work after a duration of education. Most sample in cluster 2 were employed in the agricultural sector at various ages, with members undergoing a transition from education to agricultural work. Cluster 3 (the Late and Non-Agricultural Work cluster) accounted for 22.47% of the sample and was characterized by a relatively high level of education and late entry into the labor market, with most members engaged in stable non-agricultural work. Cluster 3 exhibited delayed transitions from School-to-Work manifested by longer periods spent in school, with non-agricultural work as the dominant form of

[4] The validity of the cluster analysis results of education–employment trajectories: Hubert's Gamma (HG) = 0.933; Point Biserial Correlation (PBC) = 0.708; Pseudo R^2 = 0.717; Average Silhouette Width (ASW) = 0.538; Calinski–Harabasz index (CH) = 7961.767. In addition, the clustering process is provided in Figure A1 (tree diagram) in the appendix.

Table 3 Multinomial logistic regressions on the probability of being in each cluster of School-to-Work trajectories ($N=15777$)

Base outcome (Cluster 1: early & agricultural work)	Model 1			Model 2			Model 3		
	Cluster 2: late & agricultural work	Cluster 3: late & non-agricultural work	Cluster 4: unemployed	Cluster 2: late & agricultural work	Cluster 3: late & non-agricultural work	Cluster 4: unemployed	Cluster 2: late & agricultural work	Cluster 3: late & non-agricultural work	Cluster 4: unemployed
	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)
Gender: (Ref: Male)	0.398*** (0.017)	0.203*** (0.011)	1.300*** (0.106)	0.398*** (0.017)	0.203*** (0.011)	1.300*** (0.106)	0.400*** (0.018)	0.209*** (0.011)	1.361*** (0.114)
Hukou: (Ref: Rural)	2.767*** (0.203)	26.757*** (1.800)	8.491*** (0.755)	2.767*** (0.203)	26.752*** (1.799)	8.489*** (0.1754)	2.787*** (0.205)	26.578*** (1.799)	8.698*** (0.781)
Cohort: (Ref:1940–1949)									
1950–1959	1.303*** (0.076)	1.409*** (0.107)	1.115 (0.122)	1.305*** (0.076)	1.411*** (0.107)	1.117 (0.122)	1.307*** 0.077)	1.404*** (0.108)	1.100 (0.122)
1960–1969	1.514*** (0.090)	3.589*** (0.266)	2.142*** (0.224)	1.518*** (0.091)	3.593*** (0.266)	2.147*** (0.225)	1.504*** (0.091)	3.524*** (0.263)	2.116*** (0.225)
1970–1979	2.121*** (0.208)	7.785*** (0.829)	5.055*** (0.683)	2.127*** (0.209)	7.797***(0.831)	5.067*** (0.685)	2.094*** (0.207)	7.544*** (0.810)	4.999*** (0.686)
Ethnicity: (Ref: Minorities)	1.136 (0.089)	1.559*** (0.156)	1.790*** (0.275)	1.138 (0.090)	1.560*** (0.156)	1.793*** (0.275)	1.157[a] (0.092)	1.564*** (0.158)	1.890*** (0.301)
Politics status: (Ref: Party member)	0.847 (0.069)	0.517*** (0.045)	0.892 (0.104)	0.845 * (0.069)	0.517*** (0.045)	0.890 (0.104)	0.850 (0.070)	0.518*** (0.046)	0.896 (0.106)
Religious belief: (Ref: No)	1.055 (0.078)	1.214* (0.105)	1.555*** (0.182)	1.055 (0.078)	1.214* (0.105)	1.555*** (0.182)	1.054* (0.078)	1.225* (0.107)	1.598*** (0.189)

Table 3 (continued)

Base outcome (Cluster 1: early & agricultural work)	Model 1			Model 2			Model 3		
	Cluster 2: late & agricultural work	Cluster 3: late & non-agricultural work	Cluster 4: unemployed	Cluster 2: late & agricultural work	Cluster 3: late & non-agricultural work	Cluster 4: unemployed	Cluster 2: late & agricultural work	Cluster 3: late & non-agricultural work	Cluster 4: unemployed
	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)
Parental incarceration: (Ref: No)				2.043* (0.705)	1.406 (0.640)	1.903[a] (0.487)	2.149* (0.743)	1.484 (0.675)	2.001[a] (0.545)
Financial support: (Ref: No)							1.325*** (0.109)	1.793*** (0.158)	1.602*** (0.208)
Emotional support:							1.034*** (0.008)	1.006 (0.009)	0.997 (0.013)
Constant:	0.524*** (0.062)	0.228*** (0.032)	0.029*** (0.006)	0.522*** (0.062)	0.228*** (0.032)	0.029*** (0.006)	0.351*** (0.053)	0.203*** (0.036)	0.026*** (0.006)
Observations	14742			14742			14742		
LR chi2	5268.11***			5290.66***			5307.17***		
-2LL	29918.214			29913.662			29501.038		
Pseudo R2	0.150			0.150			0.153		

[a]$p < 0.10$, *$p < 0.05$, **$p < 0.01$,***$p < 0.001$; China Health and Retirement Longitudinal Study (CHARLS) in 2014

employment. Cluster 4 (the Unemployed cluster) accounted for 6.26% of the sample and predominately comprised unemployed members; most members in this cluster may not have joined the labor market during their transition from School-to-Work.

Multinomial Logistic Regression Model Results

Table 3 shows the probability of belonging to each cluster of School-to-Work trajectories. Model 1 included only control variables. Compared with the Early and Agricultural Work cluster, females are more likely to be classified into the Unemployed clusters ($OR = 1.300$, $SE = 0.106$), and less likely to be classified into the Late and Agricultural Work and Late ($OR = 0.398$, $SE = 0.017$) and Non-Agricultural Work clusters ($OR = 0.203$, $SE = 0.011$). Respondents with urban hukou are more likely to belong to the Late and Non-Agricultural Work ($OR = 26.757$, $SE = 1.800$) and Unemployed clusters ($OR = 8.491$, $SE = 0.755$), that is, those with rural hukou are more likely to belong to the Early and Agricultural Work. The cohort 1950–1959 (cohort 2) had a higher probability of falling into the clusters of Late and Agricultural Work ($OR = 1.303$, $SE = 0.076$) and Late and Non-Agricultural Work ($OR = 1.409$, $SE = 0.107$), and a lower probability of being in the Early and Agricultural Work cluster. The 1960–1969 and 1970–1979 cohorts (cohorts 3 and 4, respectively) were more likely to fall into the Late and Non-Agricultural Work cluster ($OR = 3.589$, $SE = 0.266$; $OR = 7.785$, $SE = 0.829$) and Unemployed cluster ($OR = 2.142$, $SE = 0.224$; $OR = 5.055$, $SE = 0.683$), and less likely to be in the Early and Agricultural Work. Han Chinese young adults were more likely to fall into the clusters of Late and Non-Agricultural Work ($OR = 1.559$, $SE = 0.156$) and Unemployed ($OR = 1.790$, $SE = 0.275$) than ethnic minorities. Non-Party members have a higher probability of falling into the Late and Non-Agricultural Work cluster ($OR = 0.517$, $SE = 0.045$) than party members. Compared with the Early and Agricultural Work cluster, those who held religious beliefs were more likely to fall into the clusters of the Late & Non-agricultural Work ($OR = 1.214$, $SE = 0.105$) and the Unemployed ($OR = 1.555$, $SE = 0.182$).

Model 2 incorporated control variables and parental incarceration variables. The results for the control variables were similar to Model 1. From the independent variable, those whose one of parents' committed crimes are more likely to be included in the Late and Agricultural Work cluster ($OR = 2.043$, $SE = 0.705$) and the Unemployed cluster ($OR = 1.903$, $SE = 0.487$) than those with non-criminal parents. In other words, we found that respondents with one of incarcerated parents are more likely than respondents without incarcerated parents to enter clusters characterized by low levels of education, disorderly and frequent changes in work, and long-term unemployment, such as the Early and Agricultural Work cluster and the Unemployed cluster.

Model 3 further incorporate financial support and emotional support variables. We found that young adults who received financial support from their families were more likely to be categorized under the clusters of Late and Non-Agricultural Work ($OR = 1.793$, $SE = 0.158$) and Late & Agricultural work ($OR = 1.325$, $SE = 0.109$), and less likely in the Early and Agricultural Work cluster. Young adults with

significant emotional attachment to their parents were more likely to fall into the Late and Agricultural work cluster ($OR = 1.034$, $SE = 0.008$), and less likely in the Early and Agricultural Work cluster. In other words, adolescents with weak family support were more likely to enter clusters characterized by low education, agricultural work, or frequent change of work states and even long-term unemployment than those with significant family support, and were less likely to be classified into the clusters characterized by higher education and stable work in comparison.

The Mediation Effect of Family Support

The KHB method was used to decompose the total effect of parental incarceration on the transition from education to employment (See Table 4). We found that only the mediating effect of those in the Late and Agricultural Work cluster was statistically significant. The total effect of parental incarceration on the probability of being categorized in the Late and Agricultural Work cluster was 0.708; that is, parental incarceration increased the probability of being in the Late and Agricultural Work cluster by 0.708, relative to the Early and Agricultural Work cluster. The direct effect of parental incarceration was 0.765, and the effect of parental incarceration decreases to 0.765 after controlling for early family support. The indirect effect of parental incarceration was 0.057. Parental incarceration led to decrease in family support for the child, affecting the likelihood of belonging in the various clusters. An increase in early family support increased the likelihood of falling into the Late and Agricultural Work cluster, whereas a decrease in family support increased the likelihood of falling into the Early and Agricultural Work cluster. In other words, parental incarceration led to reduced family support for the child, increasing the likelihood of the offspring falling into the Early and Agricultural Work cluster, which was characterized by entering the labor market with low education and engaging in agricultural work. In fact, due to the different directions of indirect and direct effects, social support plays a suppression effect on the relationship between parental incarceration and School-to-Work trajectory. After controlling for social support, the effects of parental incarceration on the School-to-Work trajectory are amplified.

Subsequent to decomposing total effects by the KHB method, we calculated the contribution of suppressor variables to total and indirect effects (see Table 5). Relative to the Early and Agricultural Work cluster, we found the following: the Late and Agricultural Work cluster, financial support and emotional support contributed 38.69% and 61.31%, respectively, to the indirect effect. However, in the Late and Non-Agricultural Work cluster, financial support and emotional support contributed 87.94% and 12.06%, respectively, to the indirect effect. In the Late and Agricultural Work cluster, the suppressor variable of financial support contributed 3.13% to the total effect, while emotional support contributed 4.96%. Finally, in the Late and Non-Agricultural Work cluster, the suppressor variable of financial support contributed 13.44% to the total effect, while emotional support contributed 1.84%. These results show that the suppression effect of emotional support was slightly higher than that of economic support in all clusters dominated by agricultural work.

Table 4 Direct and indirect effects of parental incarceration and mediators on school-to-work transition

Effect	Cluster 2 vs Cluster 1				Cluster 3 vs Cluster 1				Cluster 4 vs Cluster 1			
	Coef	SE	95% CI		Coef	SE	95% CI		Coef	SE	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Total effect	0.708*	0.345	0.030	1.385	0.342	0.454	− 0.549	1.233	0.660	0.572	− 0.461	1.781
Direct effect	0.765*	0.345	0.087	1.442	0.395	0.455	− 0.497	1.286	0.694	0.573	− 0.428	1.816
Indirect effect	− 0.057**	0.019	− 0.096	− 0.018	− 0.052 *	0.025	− 0.102	− 0.002	− 0.034	0.025	− 0.083	0.015

Coef. coefficient, *SE* standard error, Pseudo R2 = 0.15; *$p < 0.05$, **$p < 0.01$

Table 5 Contribution of suppressors on the association between parental incarceration and School-to-Work transition

	Mediating variables	Coef	SE	Contribution (%) to the indirect effect	Contribution (%) to the total effect
Cluster 2 vs Cluster 1	Financial support	− 0.022	0.012	38.69	− 3.13
	Emotional support	− 0.035	0.015	61.31	− 4.96
Cluster 3 vs Cluster 1	Financial support	− 0.046	0.023	87.94	− 13.44
	Emotional support	− 0.006	0.010	12.06	− 1.84
Cluster 4 vs Cluster 1	Financial support	− 0.037	0.020	110.04	− 5.62
	Emotional support	0.003	0.014	− 10.04	0.51

Coef. coefficient, *SE* standard error

However, for clusters characterized by higher education and stable jobs (e.g., the Late Non-Agricultural work cluster), the effect of financial support was evidently higher than that of emotional support.

Discussion

Based on a life course perspective, this study used retrospective life history data to construct the School-to-Work trajectories of Chinese young adults born between 1940 and 1979 to examine the effect of parental incarceration on their School-to-Work transitions and the mediating role of early family support. First, we identified four clusters of trajectories from School-to-Work: (a) the Early and Agricultural Work cluster characterized by low education and early work, (b) the Late and Agricultural Work cluster dominated by agricultural work, (c) the Late and Non-Agricultural Work cluster characterized by high education and late work, and (d) the Unemployed cluster. Second, we found that young adults with one of parents who were incarcerated were at greater risk of vulnerabilities in their School-to-Work transition trajectories and more likely to engage in agricultural manual work, switch frequently between work states, and become victims to long-term unemployment. Third, this study also examined the mediating effect of early family support between parental incarceration and school-to-work transition. We found that parental incarceration directly impacts school-to-work trajectories and indirectly affects the transition of individuals from school to employment through early family support. To reduce the early family support may further exacerbate the adverse impacts of parental incarceration on young adults' transition from School-to-Work. The findings of this study have critical implications for focusing on the long-term effects of parental incarceration on their children and identifying possible family and social support pathways.

This study found that parental incarceration had significant long-term effects on young adults' transitions from School-to-Work. Compared with offspring who did not experience parental incarceration in their childhood, those who did may have a challenging and unsuccessful transition from School-to-Work, manifesting as a

lower educational level upon their first-entry in the labor market and a School-to-Work transition, resulting in unemployment. This finding is consistent with that of previous studies on the impact of parental incarceration on adulthood outcomes, particularly on educational achievement, job opportunities, and income levels in adulthood. For example, some scholars found that parental incarceration had deleterious effects on many life domains of adulthood, including education and income (Mears & Siennick, 2016; Siennick, 2016). This suggests that the effects of parental incarceration extend beyond childhood and persist into late young adulthood. In addition, previous studies found that parental incarceration comprised a turning point in the offspring's transition to adulthood (Mears & Siennick, 2016; Sampson & Laub, 2005). Our study also supports the important effect of parental incarceration on School-to-Work transition trajectories; that is, experiencing parental incarceration during childhood affected not only the individuals' income and employment opportunities in adulthood (Mears & Siennick, 2016; Prakash & Kumar, 2021), but also their entire trajectory of successful transition from School-to-Work, leading to the accumulation of disadvantages over an extended period. This finding may constitute as one of the contributions of this study.

Our findings also suggest that early family support suppresses the cross-generational effects of parental incarceration on the children's transition trajectories from School-to-Work. Young adults whose parents were incarcerated had less family support; their families could not provide substantial financial and emotional support needed for them to transition from School-to-Work, thereby increasing their likelihood of experiencing disadvantages in the School-to-Work transition and facing multiple risks, including low education and performing agricultural work. The above finding may imply an intergenerational cumulative effect whereby those who have experienced parental incarceration without substantial family support are more likely to be disadvantaged in this transition. Specifically, the occurrence of parental incarceration may increase the children's chances of growing up in an unfriendly family environment and bring about a disadvantaged family socioeconomic status, rendering them vulnerable to negative outcomes in education and labor market competition, and unsuccessful School-to-Work transitions. Meanwhile, children who grew up in dysfunctional family households, such as having a parent incarcerated for criminal involvement, may receive less support in transitioning from School-to-Work (Siennick, 2016), or the family may not be sufficiently equipped to provide them with the resources required for a successful transition. In other words, without adequate help from outside the family, it may be difficult for adolescents affected by parental incarceration to escape from their disadvantaged situation, resulting in long-term problems in the transition from School-to-Work.

To date, many School-to-Work transition policies and action plans have been developed globally (van der Horst et al., 2021). Some examples include the United States' School-to-Work Opportunities Act, the CareerSKILLS intervention in the Netherlands, and Active Labour Market Policies advocated by the World Bank

(Nilsson, 2019). These policies aim to help young adults identify pathways to work and associate schools to employment, thereby reducing social problems such as dropping out, troubled teenage parenthood, and juvenile delinquency (Rogers and Creed, 2000). The findings of this study have important implications for intervention programs designed to facilitate successful School-to-Work transitions for children with one or more incarcerated parents. For example, this study revealed that parental incarceration has long-term effects on adolescents' School-to-Work transition trajectories, suggesting that these intervention programs should be prolonged and developmental, and should provide affected adolescents with ongoing care during their transition from School-to-Work. In addition, this study found that social support, especially emotional support, plays an important compensatory role in the School-to-Work transitions of adolescents whose parents are incarcerated. Considering this finding, the intervention programs for School-to-Work transitions should focus more on providing emotional support for adolescents whose parents are incarcerated, rather than just material support and skills training. Especially in China, the traditional cultural values remain relatively stable and uniform (Pan et al., 1994) and have persisted for thousands of years. Although China has experienced rapid social changes since the reform and opening up, it is still deeply influenced by traditional Confucian social norms and ideas in terms of ancestral ideas and family ties (Chen, 2013). In other words, the family based traditional concept still exists and has a strong influence. In this context, adolescents with incarcerated parents may be less well supported from their family in their transition from education to work than adolescents with non-incarcerated parents. Therefore, we should foster partnerships among parents, schools, employers, and labor organizations that can provide comprehensive support in the School-to-Work transitions of adolescents impacted by parental incarceration.

This study has several limitations. First, the data used in this study are retrospective survey data, which may be subject to a higher degree of measurement errors than prospective data, as responses based on participants' recall of events that had occurred several years or even decades ago might be affected by memory bias or loss. Although we have carefully sorted the data by deleting apparent errors and contradictory observations, subtle memory bias and loss caused by inaccurate recalls may still affect the validity of the conclusions to some extent. Second, the data period used in this study is a limitation because it may be somewhat outdated, and may differ from the transition trajectory of the more modern cohorts. Future studies must investigate modern cohorts from School-to-Work. Third, the mediation variable of early financial support and parental incarceration and School-to-Work transition may not be in chronological order, causing some interference in explaining the causal mechanism between parental incarceration and School-to-Work transition. In addition, in the process of model construction, this study controlled demographic characteristic variables and examined mediating variables of social support based on previous literature. However, we may have omitted some other variables associated with parental incarceration and School-to-Work transition, such as socioeconomic status, and this endogenous issue may also affect the consistency of the conclusion. Subsequent studies could further incorporate other variables to examine the effects of parental incarceration.

Conclusions

Building on the existing literature of School-to-Work transition, this study examined the roles of parental incarceration and early family support in the School-to-Work trajectories of Chinese young adults. We found that adolescents who had experienced parental incarceration transitioned from School-to-Work earlier, had more vulnerable and complex School-to-Work trajectories, and often faced agricultural labor, frequent job transitions, and even unemployment after leaving school. These findings underscore the long-term effect of negative parental behavior on their children's School-to-Work trajectories.

The adverse consequences of parental incarceration on young people who need support during life transitions deserve attention and have policy implications. First, the government and society must pay attention to the adverse effects of parental incarceration on young adults' transition from School-to-Work and adopt social work interventions and family assistance programs to strengthen support for these families to provide a family environment conducive to their growth. Second, the government and schools should strengthen their care for affected adolescents to prevent them from dropping out of school and entering the labor market prematurely, thereby reducing labor market inequalities caused by the effect of parental incarceration. Third, the government should also enhance employment support for the affected young adults, especially when they face unemployment or precarious work, and provide the necessary employment assistance. For young adults with incarcerated parents, equal access to jobs and employability skills training may be an easier and more realistic goal than a long-term plan.

Appendix

See Fig. 4.

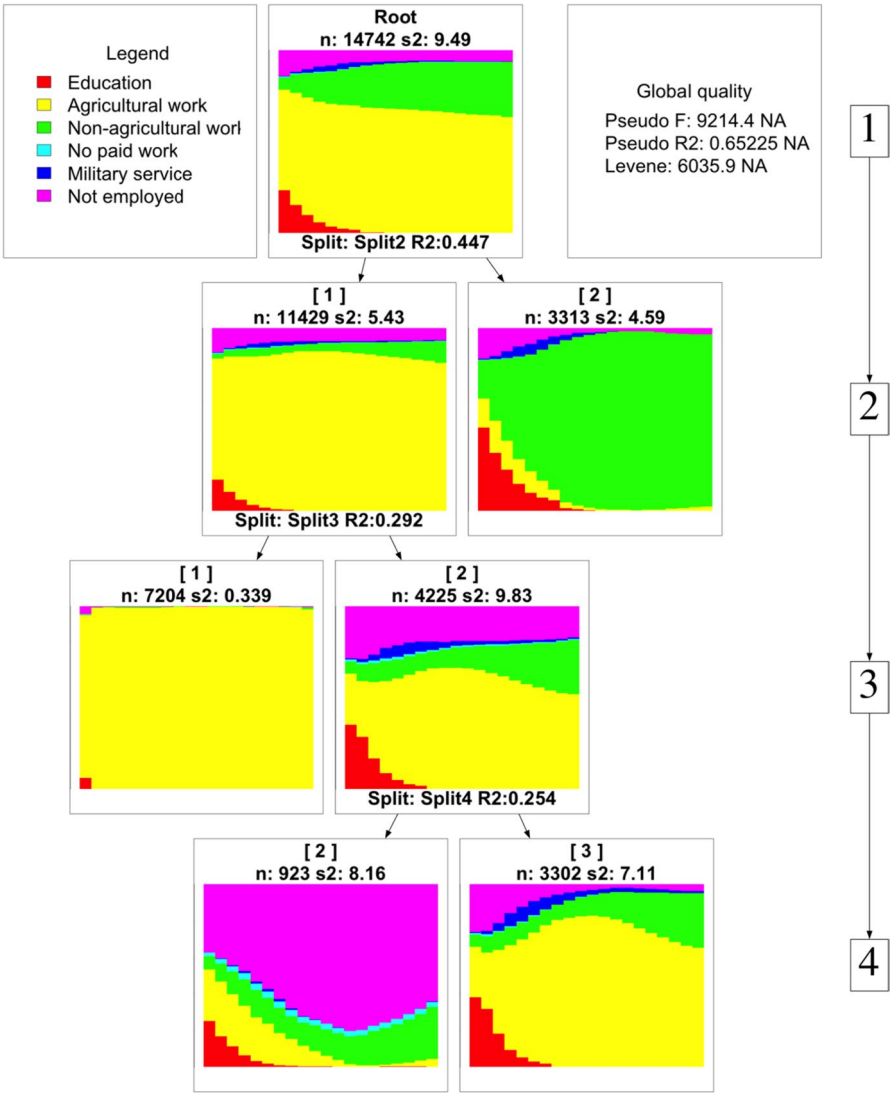

Fig. 4 The visualization of grouping logic for School-to-Work trajectories

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Data Availability The datasets used and/or analysed during the current study are available from the project of "China Health and Retirement Longitudinal Study (CHARLS)", https://charls.charlsdata.com/pages/Data/2014-charls-wave3/zh-cn.html.

Declarations

Conflict of interest The views expressed in the submitted article are the authors' own and not an official position of the institution or the funders.

Ethical Approval This study was approved by the Institutional Review Board of Peking University.

Consent for Publication This manuscript does not contain any individual person's data in any form.

References

Abbott, A. (1995). Sequence analysis: New methods for old ideas. *Annual Review of Sociology, 21*(1), 93–113. https://doi.org/10.1146/annurev.so.21.080195.000521

Absor, M. U., & Utomo, I. D. (2017). School-to-work transition of young people in Greater Jakarta: The determinants of success. *Asian Population Studies, 13*(3), 306–326. https://doi.org/10.1080/17441730.2017.1351686

Aisenbrey, S., & Fasang, A. E. (2010). New life for old ideas: The "second wave" of sequence analysis bringing the "course" back into the life course. *Sociological Methods & Research, 38*, 420–462. https://doi.org/10.1177/0049124109357532

Arditti, J. A. (2012). *Parental incarceration and the family: Psychological and social effects of imprisonment on children, parents, and caregivers*. New York University Press.

Besemer, S., Van der Geest, V., Murray, J., Bijleveld, C. C., & Farrington, D. P. (2011). The relationship between parental imprisonment and offspring offending in England and the Netherlands. *The British Journal of Criminology, 51*(2), 413–437. https://doi.org/10.1093/bjc/azq072

Billari, F. C. (2001). The analysis of early life courses: Complex descriptions of the transition to adulthood. *Journal of Population Research, 18*(2), 119–142. https://doi.org/10.1007/BF03031885

Billari, F. C. (2005). Life course analysis: Two (complementary) cultures? Some reflections with examples from the analysis of the transition to adulthood. Towards an interdisciplinary perspective on the life course. *Advances in Life Course Research, 10*, 261–281. https://doi.org/10.1016/S1040-2608(05)10010-0

Brzinsky-Fay, C. (2014). The measurement of school-to-work transitions as processes: About events and sequences. *European Societies, 16*(2), 213–232. https://doi.org/10.1080/14616696.2013.821620

Carr, D. (2018). The linked lives principle in life course studies: Classic approaches and contemporary advances. In D. Alwin, D. Felmlee, & D. Kreager (Eds.), *Social Networks and the Life Course. Frontiers in Sociology and Social Research.* Springer. https://doi.org/10.1007/978-3-319-71544-5_3

Cheetham, A., Allen, N. B., Schwartz, O., Simmons, J. G., Whittle, S., Byrne, M. L., Sheeber, L., & Lubman, D. I. (2015). Affective behavior and temperament predict the onset of smoking in adolescence. *Psychology of Addictive Behaviors, 29*(2), 347–354. https://doi.org/10.1037/adb0000048

Chen, G. (2016). Labor migration, parent-child separation and juvenile delinquency. *Youth Studies, 2*, 1–10.

Chen, M. (2013). On Confucianism as a civil religion and its significance for contemporary China. *Contemporary Chinese Thought, 44*(2), 76–83. https://doi.org/10.2753/CSP1097-1467440204

Chung, Y. (2012). The effects of paternal imprisonment on children's economic wellbeing. *Social Service Review, 86*, 455–486. https://doi.org/10.1086/667779

Dickson, B. J., & Rublee, M. R. (2000). Membership has its privileges: The socioeconomic characteristics of communist party members in urban China. *Comparative Political Studies, 33*(1), 87–112. https://doi.org/10.1177/0010414000033001004

Elder, G. H., Johnson, M. K., & Crosnoe, R. (2003). The emergence and development of life course theory. In J. T. Mortimer & M. J. Shanahan (Eds.), *Handbook of the life course. Handbooks of sociology and social research.* Springer. https://doi.org/10.1007/978-0-306-48247-2_1

Fingerman, K. L., Cheng, Y. P., Tighe, L., Birditt, K. S., & Zarit, S. (2012). Relationships between young adults and their parents. In A. Booth, S. Brown, N. Landale, W. Manning, & S. McHale (Eds.), *Early adulthood in a family context National symposium on family issues.* Springer. https://doi.org/10.1007/978-1-4614-1436-0_5

Foster, H., & Hagan, J. (2007). Incarceration and intergenerational social exclusion. *Social Problems, 54*(4), 399–433. https://doi.org/10.1525/sp.2007.54.4.399

Gaston, S. (2016). The long-term effects of parental incarceration: Does parental incarceration in childhood or adolescence predict depressive symptoms in adulthood? *Criminal Justice and Behavior, 43*(8), 1056–1075. https://doi.org/10.1177/0093854816628905

Gauthier, J. A., Widmer, E. D., Bucher, P., & Notredame, C. (2010). 1. Multichannel sequence analysis applied to social science data. *Sociological Methodology, 40*(1), 1–38. https://doi.org/10.1111/j.1467-9531.2010.01227.x

Geller, A., Garfinkel, I., & Western, B. (2011). Paternal incarceration and support for children in fragile families. *Demography, 48*, 25–47. https://doi.org/10.1007/s13524-010-0009-9

Giordano, P. C. (2010). *Legacies of Crime: A Follow-up of the Children of Highly Delinquent Girls and Boys*. Cambridge University Press.

Guo, J., Chen, S. L., & Zhou, Q. Y. (2021). Impact of family predicament on children's mental health: The case of parental imprisonment. *Population Research, 45*(1), 114–128.

Jin, C. C., & Ji, A. T. (2015). The effect of parents' incarceration on their minor children and its intervention. *Chinese Journal of Special Education, 8*, 64–69.

Johnson, E. I., & Easterling, B. (2012). Understanding unique effects of parental incarceration on children: Challenges, progress, and recommendations. *Journal of Marriage and Family, 74*(2), 342–356. https://doi.org/10.1111/j.1741-3737.2012.00957.x

Johnson, M. K., & Benson, J. (2012). The implications of family context for the transition to adulthood. In A. Booth, S. L. Brown, N. Landale, W. Manning, & S. McHale (Eds.), *Early adulthood in a Family Context.* Springer. https://doi.org/10.1007/978-1-4614-1436-0_6

Kohler, U., Karlson, K. B., & Holm, A. (2011). Comparing coefficients of nested nonlinear probability models. *The Stata Journal, 11*(3), 420–438. https://doi.org/10.1177/1536867X1101100306

Lee, R. D., Fang, X., & Luo, F. (2013). The impact of parental incarceration on the physical and mental health of young adults. *Pediatrics, 131*(4), e1188–e1195. https://doi.org/10.1542/peds.2012-0627

Li, M. L. (2018). A study on the early adulthood of Chinese youth. *China Youth Study, 11*, 5–14.

Lu, Z. C. (2018). An empirical analysis of the impact of urban and rural income gap on social crime. *Journal of Tongling University, 17*(2), 86–90.

McGinnity, F., Mertens, A., & Gundert, S. (2005). A bad start? Fixed-term contracts and the transition from education to work in West Germany. *European Sociological Review, 21*(4), 359–374. https://doi.org/10.1093/esr/jci025

Mears, D. P., & Siennick, S. E. (2016). Young adult outcomes and the life-course penalties of parental incarceration. *Journal of Research in Crime and Delinquency, 53*(1), 3–35. https://doi.org/10.1177/0022427815592452

Miller, H. V., & Barnes, J. C. (2015). The association between parental incarceration and health, education, and economic outcomes in young adulthood. *American Journal of Criminal Justice, 40*(4), 765–784. https://doi.org/10.1007/s12103-015-9288-4

Mortimer, J. T., & Shanahan, M. J. (2007). *Handbook of the life course*. Springer.

Murray, J., Janson, C. G., & Farrington, D. P. (2007). Crime in adult offspring of prisoners: A cross-national comparison of two longitudinal samples. *Criminal Justice and Behavior, 34*(1), 133–149. https://doi.org/10.1177/0093854806289549

Ng, T. W., & Feldman, D. C. (2007). The school-to-work transition: A role identity perspective. *Journal of Vocational Behavior, 71*(1), 114–134. https://doi.org/10.1016/j.jvb.2007.04.004

Nilsson, B. (2019). The school-to-work transition in developing countries. *The Journal of Development Studies, 55*(5), 745–764. https://doi.org/10.1080/00220388.2018.1475649

Osgood, D. W., Foster, E. M., Flanagan, C., & Ruth, G. R. (2005). Introduction: Why focus on the transition to adulthood for vulnerable populations? In D. W. Osgood, E. M. Foster, C. Flanagan, & G. R. Ruth (Eds.), *On your own without a net: The transition to adulthood for vulnerable populations* (pp. 1–26). The University of Chicago Press.

Pallas, A. M. (1993). Schooling in the course of human lives: The social context of education and the transition to adulthood in industrial society. *Review of Educational Research, 63*(4), 409–447. https://doi.org/10.3102/00346543063004409

Pan, Z., Chaffee, S. H., Chu, G. C., & Ju, Y. (1994). *To see ourselves: Comparing traditional Chinese and American values*. Westview Press.

Prakash, K., & Kumar, S. (2021). "Smoking your child's job away": Parental smoking during one's childhood and the probability of being employed in adulthood. *Journal of Business Research, 136*, 86–98. https://doi.org/10.1016/j.jbusres.2021.07.022

Rakt, M. V. D., Murray, J., & Nieuwbeerta, P. (2012). The long-term effects of paternal imprisonment on criminal trajectories of children. *Journal of Research in Crime and Delinquency, 49*(1), 81–108. https://doi.org/10.1177/0022427810393018

Raphael, S., & Stoll, M. A. (2009). *Do prisons make us safer?: The benefits and costs of the prison boom*. Russell Sage Foundation.

Research Group of the Institute for Crime Prevention of Ministry of Justice. (2006). A survey report on the basic situation of children of prisoners. *Research on Crime and Reform, 8*, 40–46.

Roettger, M. E., & Swisher, R. R. (2011). Associations of fathers' history of incarceration with sons' delinquency and arrest among black, white, and hispanic males in the United States. *Criminology, 49*(4), 1109–1147. https://doi.org/10.1111/j.1745-9125.2011.00253.x

Rogers, M., & Creed, P. (2000). School-to-work transition. *Australian Journal of Career Development, 9*(3), 20–25.

Roksa, J., & Kinsley, P. (2019). The role of family support in facilitating academic success of low-income students. *Research in Higher Education, 60*(4), 415–436. https://doi.org/10.1007/s11162-018-9517-z

Ryan, P. (2001). The school-to-work transition: A cross-national perspective. *Journal of Economic Literature, 39*(1), 34–92. https://doi.org/10.1257/jel.39.1.34

Sampson, R. J., & Laub, J. H. (1997). A life-course theory of cumulative disadvantage and the stability of delinquency. *Developmental Theories of Crime and Delinquency, 7*, 133–161. https://doi.org/10.2307/3340743

Sampson, R. J., & Laub, J. H. (2005). A life-course view of the development of crime. *The Annals of the American Academy of Political and Social Science, 602*(1), 12–45. https://doi.org/10.1177/0002716205280075

Schwartz-Soicher, O., Geller, A., & Garfinkel, I. (2011). The effect of paternal incarceration on material hardship. *Social Service Review, 85*(3), 447–473. https://doi.org/10.1086/661925

Shi, W. X., Zeng, F. J., Wu, Y. Y., & Zhu, X. L. (2011). Characteristics analysis for "after 90's" inmates' families. *Chinese Criminology Review, 1*, 81–90.

Siennick, S. E. (2016). Parental incarceration and intergenerational transfers to young adults. *Journal of Family Issues, 37*(10), 1433–1457. https://doi.org/10.1177/0192513X14550366

Stone III, J. R. (1992). School-to-work transition: Definitions and directions. In *annual meeting of the American Education Research Association, San Francisco*.

Swartz, T. T. (2009). Intergenerational family relations in adulthood: Patterns, variations, and implications in the contemporary United States. *Annual Review of Sociology, 35*, 191–212. https://doi.org/10.1146/annurev.soc.34.040507.134615

Swartz, T. T., Kim, M., Uno, M., Mortimer, J., & O'Brien, K. B. (2011). Safety nets and scaffolds: Parental support in the transition to adulthood. *Journal of Marriage and Family, 73*(2), 414–429. https://doi.org/10.1111/j.1741-3737.2010.00815.x

Tan, M. Y. (2021). Empirical investigation and improvement path of the assistance norms for minor children of prisoners. *Research on Crime and Reform, 11*, 21–27.

Taylor, A. (2005). 'Re-culturing' students and selling futures: School-to-work policy in Ontario. *Journal of Education and Work, 18*(3), 321–340. https://doi.org/10.1080/13639080500200567

Turney, K. (2014). Stress proliferation across generations? Examining the relationship between parental incarceration and childhood health. *Journal of Health and Social Behavior, 55*(3), 302–319. https://doi.org/10.1177/0022146514544173

Turney, K., & Goodsell, R. (2018). Parental incarceration and children's wellbeing. *The Future of Children, 28*(1), 147–164. https://doi.org/10.1353/foc.2018.0007

Uggen, C., & McElrath, S. (2014). Parental incarceration: What we know and where we need to go. *The Journal of Criminal Law and Criminology, 104*(3), 597–604.

van der Horst, A. C., Klehe, U. C., Brenninkmeijer, V., & Coolen, A. C. (2021). Facilitating a successful school-to-work transition: Comparing compact career-adaptation interventions. *Journal of Vocational Behavior, 128*, 103581. https://doi.org/10.1016/j.jvb.2021.103581

Wakefield, S., & Wildeman, C. (2011). Mass imprisonment and racial disparities in childhood behavioral problems. *Criminology & Public Policy, 10*(3), 793–817. https://doi.org/10.1111/j.1745-9133.2011.00740.x

Western, B., & Muller, C. (2013). Mass incarceration, macrosociology, and the poor. *The Annals of the American Academy of Political and Social Science, 647*(1), 166–189. https://doi.org/10.1177/0002716213475421

Wethington, E. (2005). An overview of the life course perspective: Implications for health and nutrition. *Journal of Nutrition Education and Behavior, 37*(3), 115–120. https://doi.org/10.1016/S1499-4046(06)60265-0

Wolbers, M. H. (2007). Patterns of labour market entry: A comparative perspective on school-to-work transitions in 11 European countries. *Acta Sociologica, 50*(3), 189–210. https://doi.org/10.1177/0001699307080924

Wu, B. B., Zhang, L., & Meng, F. Q. (2020). The effect of employment discrimination on the urban-rural income gap. *Chinese Journal of Population Science, 6*, 110–111.

Wu, W. (2019). The latest evolution of urban-rural inequality in higher education in China. *Journal of China Agricultural University (social Sciences), 36*(5), 129–136.

Wu, X. G., & Treiman, D. J. (2004). The household registration system and social stratification in China: 1955–1996. *Demography, 41*(2), 363–384. https://doi.org/10.1353/dem.2004.0010

Xie, Q. W. (2012). The living conditions and social assistance of the termers' minor children. *Youth and Adolescent Studies, 1*, 44–46. [in Chinese].

Xu, Z. N., & Feng, P. (2005). A survey on the living conditions and development needs of children from families serving prison sentences. *Youth Studies, 6*, 41–49.

Yan, H. R., Chen, P. Z., & Yin, D. Z. (2009). Research on the living conditions and social assistance to the termers' minor children. *Research on Rule of Law, 3*, 67–72.

Yan, S. P. (2017). The roles and trends of the Chinese communist party membership in China's urban and rural labor market: An empirical research based on the Chinese Household Income Project. *Studies in Labor Economics, 5*(1), 105–128.

Young, B., Collier, N. L., Siennick, S. E., & Mears, D. P. (2020). Incarceration and the life course: Age-graded effects of the first parental incarceration experience. *Journal of Developmental and Life-Course Criminology, 6*(3), 256–279. https://doi.org/10.1007/s40865-020-00143-7

Zhao, Y., Strauss, J., Yang, G., Giles, J., Hu, P., Hu, Y., & Wang, Y. (2013). *China health and retirement longitudinal study: 2011–2012 national baseline users' guide*. National School of Development, Peking University, Beijing