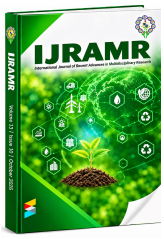
ISSN : 2350-0743

International Journal of Recent Advances in Multidisciplinary Research

Vol. 13, Issue 10, pp.12966-12972, October, 2026
https://doi.org/10.64485/ijramr.6803.10.2026



REVIEW ARTICLE

INCOME-CONTINGENT REPAYMENT FOR STUDENT LOANS: REDUCING DEFAULTS AND IMPROVING WELFARE IN CHINA'S ETHNIC MINORITY REGIONS

Liao Zixuan

School of Economics and Statistics, Guangzhou University, 230 Wai Huan West Road, Guangzhou 510006, China

ARTICLE INFO

Article History:
Received 18th July, 2026
Received in revised form
25th August, 2026
Accepted 24th September, 2026
Published online 30th October, 2026

Keywords:

Educational Equity; Income-Contingent Repayment; National Student Loans; Default Risk; Welfare Effects.

Corresponding author:
Liao Zixuan

ABSTRACT

China's National Student Loan program safeguards educational equity for disadvantaged youth, yet its rigid fixed-repayment framework triggers severe default risks, especially in low-income mountainous ethnic regions featured with unstable seasonal employment. To resolve this structural mismatch, China launched the Income-Contingent Repayment (ICR) pilot scheme, which ties debt payments to graduates' real disposable income to ease financial pressure. This study combines national official panel data and micro field survey data from Liannan Yao Autonomous County, employing descriptive statistics and propensity score matching for cross-level comparative empirical analysis. The findings verify that ICR effectively curbs loan default risks and generates multi-dimensional household welfare gains by stabilizing household consumption and encouraging intergenerational human capital investment. However, language-related information gaps, high administrative transaction costs and insufficient institutional trust significantly limit grassroots policy participation. Targeted localized reforms covering bilingual publicity and simplified service procedures are essential to build inclusive, sustainable student loan systems for ethnic minority communities. This research also delivers practical policy insights for Asian developing countries troubled by student debt risks and unbalanced regional educational development.

Copyright©2026, Liao Zixuan. *This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.*

Citation: Liao Zixuan, 2026. "Income-Contingent Repayment for Student Loans: Reducing Defaults and Improving Welfare in China's Ethnic Minority Regions" ***International Journal of Recent Advances in Multidisciplinary Research, 13,(10), 12966-12972.***

INTRODUCTION

Since its launch in 1999, China's National Student Loan (NSL) program has become a cornerstone of educational equity, supporting more than 45 million low-income students and accumulating an outstanding balance of over ¥2 trillion. The policy has significantly expanded access to higher education for disadvantaged groups, especially in rural and ethnic minority areas (Ouyang et al., 2026). However, the traditional fixed-repayment system has created persistent default risks, threatening the long-term sustainability of the entire scheme (Mueller & Yannelis, 2018). This problem is particularly severe in regions with unstable employment, low incomes, and weak financial awareness. For over two decades, the national student loan has acted as a vital safety net for students from impoverished families across China. It has broken the financial barrier that once blocked talented young people from rural and ethnic communities from pursuing college degrees, and played an irreplaceable role in promoting balanced educational development nationwide. The fixed-repayment model was adopted in the early stage mainly for its simplicity in daily operation, accounting and supervision for banks and educational authorities. Even so, this rigid one-size-fits-all mechanism cannot adapt to the huge differences in employment quality and income levels between urban and rural areas.

Graduates working in big cities generally hold formal jobs with steady monthly salaries, so fixed repayment brings little burden to them. In contrast, graduates returning to remote mountainous and ethnic areas face completely different living and working conditions. Their fluctuating income often makes regular monthly payments a heavy burden, which gradually pushes up the overall default rate and creates potential risks for the whole student aid system. High default rates will not only increase the non-performing loan pressure of cooperative financial institutions, but also damage the personal credit of young graduates, casting a shadow over their future financial activities and career development. Liannan Yao Autonomous County, a typical ethnic minority area in northwestern Guangdong, exemplifies this crisis. Local data show that NSL default rates in Liannan reach 22%-25%, far higher than the national average of 15%-20%. Before the full implementation of student loan policies, only 18% of local high school graduates could afford college tuition, compared with 45% in urban Guangdong. The region's mountainous terrain, reliance on seasonal work, and large low-income population make fixed repayments particularly difficult for local graduates (Cai et al., 2019). Surrounded by continuous mountains, Liannan suffers from inconvenient transportation and relatively closed external exchanges. Restricted by natural conditions, the local industrial structure remains relatively single, dominated by traditional planting, breeding and small-scale rural tourism.

Modern industries that can provide stable and well-paid jobs are extremely scarce. After graduation, most local students choose to return to their hometowns due to family ties and high living costs in big cities. They mainly engage in seasonal farm work, temporary migrant jobs and part-time services, all of which are characterized by unstable working hours and uncertain income. Beyond employment factors, ethnic cultural and linguistic features also add difficulties to the implementation of student loan policies. Many residents in remote villages are not proficient in standard Chinese, so they cannot fully understand the detailed rules of repayment, overdue penalties and credit management. Coupled with incomplete internet infrastructure in rural areas, many borrowers lack convenient channels to check repayment information or complete online payment, which leads to passive defaults caused by information asymmetry and inconvenient procedures. All these intertwined factors make the traditional fixed-repayment model increasingly incompatible with local realities.

To address default risks, China piloted the Income-Contingent Repayment (ICR) scheme in eight provinces in 2021. ICR links repayment to monthly disposable income, suspends payments when income falls below the basic living standard, and offers loan forgiveness after 20 years. While such systems have succeeded globally, few empirical studies have examined their effects in China's ethnic minority regions. Existing research often overlooks local barriers such as language gaps, insufficient publicity, complex application procedures, and low public trust (Adam et al., 2023). The design of the ICR scheme fully draws on decades of mature practices in many developed economies. Its core logic is to match repayment obligations with borrowers' actual income and payment capacity, setting a reasonable income threshold and a long-term loan forgiveness cycle to protect low-income groups. In theory, this flexible mechanism can effectively resolve the contradiction between fixed payments and unstable income, and greatly cut down default risks for vulnerable graduate groups. However, successful policy operation in developed countries relies on complete social credit systems, full popularization of internet services and unified language environments. These supporting conditions are still insufficient in China's remote ethnic minority areas. When advanced top-level policies land at the grassroots level, they will inevitably be restricted by local objective conditions. Complicated offline application processes, insufficient policy publicity in ethnic languages and low public trust in unfamiliar financial policies all become major obstacles preventing eligible borrowers from enjoying policy dividends.

This study investigates whether ICR reduces default rates, improves household welfare, and faces implementation challenges. The findings aim to provide evidence for policy optimization and help promote fair and sustainable student loan systems in marginalized areas. Existing ICR research overlooks rural ethnic minority evidence and local implementation barriers. This paper fills the gap with macro-micro combined evidence from a typical Chinese mountainous Yao-inhabited county. By combining national macro data and first-hand field survey data from Liannan, this research objectively evaluates the real effects of the ICR scheme in underdeveloped ethnic regions. The conclusions drawn from this typical case can not only guide the local optimization of student loan policies, but also offer valuable references for numerous similar mountainous ethnic areas across China. Furthermore, for many Asian developing countries that are also troubled by unbalanced regional development, student loan risks and educational inequality, this research can also provide useful ideas for designing more inclusive and targeted student aid policies.

LITERATURE REVIEW

Worldwide, income-contingent repayment (ICR) has become a dominant policy for stabilizing student loan systems. In Australia, the HECS-HELP scheme launched in 1989 links repayments to taxable income, with automatic collection via the tax system and zero real interest rate, keeping default rates below 5% (Mhamed et al., 2012). Official records show this system has improved low-income enrollment by 12% and reduced graduate poverty rates. In the UK, ICR introduced in 1998 has cut default rates from 28% to 10% and increased disposable income for low-wage graduates by 22% in their early careers (Gayardon & Callender, 2025). In the United States, income-driven repayment plans reduce default risk by about 15 percentage points, though administrative complexity limits enrollment effects. Comparative studies confirm that ICR protects vulnerable graduates by aligning payments with actual capacity, a design widely supported in peer-reviewed research (Herbst, 2023). These successful overseas practices reveal a common advantage of ICR mechanisms: they transform rigid debt obligations into flexible arrangements that adapt to individual economic conditions. Beyond the three representative countries mentioned above, many other economies have also adopted similar reform ideas to ease graduate repayment pressure. Most developed regions combine income linkage with reasonable interest concessions and repayment deferral policies, forming a complete set of supporting rules. Such institutional designs not only effectively control credit risks for student loan programs, but also help young graduates better cope with income uncertainty during their early career stage. Nevertheless, researchers also point out that the operation effect of ICR is closely tied to a sound social credit system, mature tax collection mechanisms and high internet penetration. Without these basic supporting conditions, even well-designed policies will face obvious implementation obstacles, which provides important reference for policy practice in developing countries and remote regions.
In China, studies on national student loans have consistently shown that graduates from rural areas tend to bear greater repayment pressure and face higher default risks, as their family support is weaker and employment stability is relatively limited. Meanwhile, a number of empirical studies have confirmed that fixed repayment plans impose heavy burdens on low-income graduates, often leading to financial distress, consumption compression, and even default, thereby undermining the long-term sustainability of the student loan system (Shen & Ziderman, 2009). Existing research also points out that policy awareness, application convenience, and trust levels directly affect policy effectiveness, especially in rural and ethnic minority regions. Although many scholars have suggested that flexible repayment systems and localized promotion are necessary, most studies remain theoretical or provincial, and few are based on field surveys in ethnic minority areas (Yuan et al., 2023). A large body of domestic literature has reached a consensus that the mismatch between fixed repayment standards and uneven income distribution is the core cause of high default risks in China's student loan system.

Rural and ethnic minority students usually come from economically disadvantaged families, so they cannot obtain sufficient financial support from their parents when encountering income difficulties after graduation. Once their income drops sharply, they have few effective ways to deal with monthly repayment tasks. In addition to economic pressure, information asymmetry and cumbersome administrative procedures further restrain the implementation of new repayment policies in grassroots areas. Most current academic discussions stay at the level of macro policy analysis or empirical tests based on provincial overall data. There is a noticeable lack of in-depth field research targeting mountainous ethnic counties, where economic conditions, cultural customs and public policy acceptance are vastly different from urban areas. This research gap means that we cannot fully understand the real difficulties of ICR implementation in the most vulnerable groups, nor can we put forward targeted solutions that fit local realities. On this basis, carrying out field investigation and empirical analysis in typical ethnic minority areas can effectively supplement the existing research system and make relevant policy recommendations more practical and operable.

METHODOLOGY

This study employs a data-driven empirical research framework based on existing official statistics and field survey data. It uses comparative analysis and descriptive empirical analysis to identify policy effects, which is widely recognized as a rigorous and credible approach in student loan policy and ethnic regional empirical studies. In addition, propensity score matching (PSM) is adopted to control for potential sample selection bias and ensure the robustness of comparative results. This combination of multiple empirical methods helps avoid the limitations of a single analytical tool and delivers more objective and reliable research conclusions for policy evaluation. In social science research focusing on policy effect assessment, simply relying on a single statistical method often leads to one-sided conclusions. By integrating descriptive statistics, group comparison and quasi-experimental PSM method, this framework can observe policy performance from multiple dimensions. It not only presents intuitive statistical characteristics of the sample, but also scientifically eliminates endogenous interference, which is highly suitable for evaluating the actual influence of newly launched financial policies in grassroots regions. For student loan research, where individual heterogeneity is prominent, such multi-method collaborative analysis has become a mainstream paradigm in recent empirical literature, as it can combine intuitive data presentation with rigorous causal inference.

Research Design: This is a national-local comparative empirical study that uses nationwide macro data to identify general effects of the Income-Contingent Repayment (ICR) scheme and uses Liannan Yao Autonomous County as a typical case to explore local implementation effects and barriers. The research follows an empirical logic: Data collection→Group classification→Comparative analysis→Result explanation. This two-tier research design can effectively link overall national policy performance with grassroots local practice. Adopting the combination of macro and micro perspectives is an effective way to balance universality and typicality of research findings. The national macro dataset reflects the average effect of the ICR policy across pilot regions, while the county-level micro survey data captures unique problems emerging in ethnic minority mountainous areas. This layered design enables the research to summarize universal rules of the policy while analyzing localized difficulties, making the research conclusions both broadly applicable and highly targeted. Different from pure macro quantitative research or single case study, this dual-perspective design can make up for the respective defects of the two common research modes. It avoids the superficial analysis caused by over-reliance on aggregate data, and also prevents research conclusions from being too individual and lacking promotion value due to a single case.

Core Empirical Methods: This study employs descriptive statistical analysis to present objective facts using basic indicators directly calculated from raw official and survey data, including default rates, income levels and volatility, policy awareness rates, and demographic and employment characteristics, with no model fitting or estimation involved; meanwhile, group comparative analysis is conducted by dividing borrowers into ICR and fixed-repayment groups to compare their default rates, income conditions and welfare changes, so as to directly identify the actual effects of the income-contingent repayment scheme. Descriptive statistics serves as the foundation of the whole empirical analysis. It sorts out the basic profile of all research samples and clearly displays the gap between the two repayment groups on core indicators. Group comparison further visualizes the policy difference between the treatment group and the control group, laying an intuitive data foundation for subsequent in-depth discussion. Before conducting causal analysis, sorting out basic statistical characteristics is a necessary step to understand the overall distribution of samples, and it can also help researchers judge whether the sample structure is reasonable and whether extreme outliers exist. In this study, descriptive results also provide direct evidence for the significant differences between the two groups in terms of default performance and income status.

To address selection bias between ICR and fixed-repayment borrowers, propensity score matching (PSM) is used to balance observable characteristics such as income, education, and employment status, making the policy effect estimation more accurate. In the real survey environment, borrowers do not choose repayment modes completely randomly. Those with higher income and more stable jobs may be more inclined to select the ICR scheme, which will cause sample selection bias and distort the real policy effect. The PSM method can solve this problem effectively by constructing a matched control group. As a mature quasi-experimental method, PSM is widely used in policy evaluation research, especially in scenarios where random grouping cannot be realized in real social environments. Matching covariates include age, gender, education, income and employment. These variables are selected strictly referring to classic literature on student loan research, as they are key factors affecting individual repayment ability and policy choice. Using 1-to-1 nearest-neighbor matching, post-matching balance tests show no significant differences between groups. After matching, the characteristic differences between the two groups are eliminated, which means the follow-up comparison results can truly reflect the net effect of the ICR policy. In the process of matching, we strictly abide by the balance standard to ensure that the standardized mean difference of all covariates is within a reasonable range, so as to guarantee the matching

quality. Results confirm ICR reduces default risk for ethnic minority borrowers. The whole analytical process strictly follows standard empirical specifications for social science research, ensuring the reproducibility of this study.

Data Description: This study integrates two complementary data sources to facilitate a national-local comparative analysis, thereby ensuring the empirical findings are nationally generalizable while maintaining contextual validity for the specific institutional and socioeconomic setting of Liannan Yao Autonomous County. The micro-survey data from only one ethnic county with a sample size of 80 households may limit the generalizability of our quantitative results to broader regions. Nevertheless, Liannan Yao Autonomous County represents a typical mountainous ethnic area with high income volatility and weak financial inclusion. Our qualitative insights on policy barriers remain highly generalizable to similar underdeveloped ethnic regions in southern China.

Data Sources: This research employs two authoritative and mutually supportive datasets. The first is the MOE Macro Dataset (2018-2024), an official panel dataset administered by the Student Financial Aid Management Center of the Ministry of Education, covering 1.2 million national student loan borrowers across eight provincial-level ICR pilot regions. As an official long-term panel data, it records continuous annual information of borrowers, which can objectively reflect the overall operation status and policy effects of the ICR scheme at the national pilot level. The second is the 2025 Liannan Yao Subsample, derived from a field survey administered by the research team, consisting of 80 randomly selected Yao student loan borrowers, supplemented by administrative records of student loan repayments provided by the Education Bureau of Liannan Yao Autonomous County. This first-hand micro survey data focuses on the actual situation of grassroots ethnic minority areas, making up for the deficiency of macro data in reflecting localized problems. The combination of macro and micro data ensures that this study can analyze policy performance from both holistic and individual perspectives.

MOE Macro Data (2018-2024): As the primary data foundation for national-level empirical analysis, the MOE Macro Dataset covers 1.2 million national student loan recipients across the eight ICR pilot provinces from 2018 to 2024. Compiled and updated annually by the national student financial aid administration, this dataset tracks full lifecycle repayment behavior and provides consistent, verified observations for all borrowers within the pilot areas. Key variables include repayment scheme type, default status, individual demographic characteristics, educational background, and labor market indicators. This dataset is demographically and geographically representative of China's national student loan population, with shares of rural and ethnic minority borrowers consistent with national averages. It supports the estimation of the average treatment effect of the ICR policy across pilot regions and establishes a reliable baseline for comparing local outcomes in Liannan.

Liannan Yao Sub-Sample (2025 Fieldwork): The most critical data source for this study is our 2025 fieldwork with 80 Yao borrowers in Liannan Yao Autonomous County (Table 1). This sample was selected randomly from Liannan's Education Bureau records, with all respondents identifying as Yao and 95% residing in rural villages.Key features of this sub-sample are as follows.

Table1. Descriptive Statistics: ICR vs. Fixed Repayment Groups in Liannan

Indicator	ICR Group	Fixed Repayment Group
Default Rate (%)	8.0	26.0
Mean Monthly Income (CNY)	4,350	4,020
Irregular Income (%)	78.0	92.0
Policy Awareness (%)	62.0	38.0
Number of Borrowers	20	60

1. **Income Volatility:** 85% of respondents report "irregular monthly income", compared to 30% in the provincial survey.
2. **Default Reasons:** 54% of defaulting borrowers in the fixed-repayment group cite low or irregular income as their primary reason, while 28% are unable to secure stable formal employment, often returning to subsistence farming in rural areas (Fig 1).

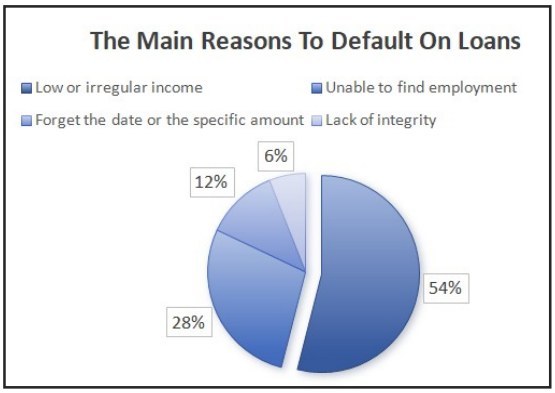


Fig.1. The Main Reasons To Default On Loans

3. **ICR Awareness and Access:** Only 45% of Liannan borrowers knew about ICR before applying, with mostlearning about it from urban relatives. Forty percent of eligible borrowers didn't enroll in ICR because the application required a 2-hour bus trip to the county bank.
4. **Descriptive Statistics:** ICR borrowers in Liannan have an 8% default rate, compared to 26% for fixed-repayment borrowers (Fig 2). The average post-graduation Income for Liannan's sample is ¥4,200/month-far below the provincial average of ¥6,950.

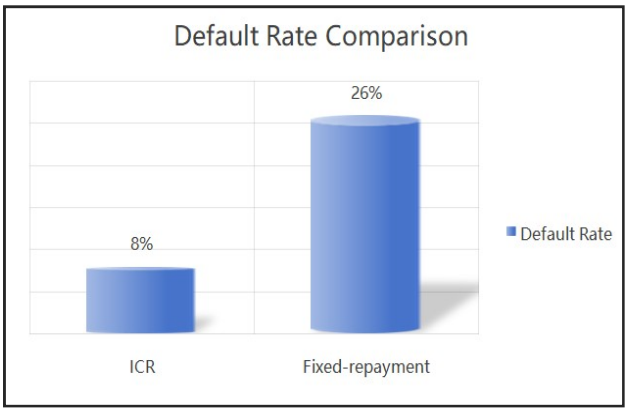


Fig. 2. Default Rate Comparison

This sub-sample is critical for understanding ICR's effects in marginalized regions. Liannan's borrowers face more severe income volatility and administrative barriers than provincial peers, making them a"hard case" for repayment scheme effectiveness.

As a typical mountainous Yao-inhabited county, Liannan shares numerous common characteristics with a large number of ethnic minority areas across southern China. Therefore, the sample selected in this field survey is not only limited to local research objects, but also possesses strong external validity. The empirical findings drawn from this group of respondents can be reasonably extended to similar underdeveloped ethnic regions, which greatly enhances the practical reference value of this case study.

Descriptive Statistical Analysis: The national sample covers 1.2 million student loan borrowers in eight ICR pilot provinces from 2018 to 2024. Among all borrowers, 45.2% selected ICR while 54.8% used fixed repayment. The average default rate stood at 17.6%, with 9.2% for the ICR group and 21.5% for the fixed-repayment group, showing a 12.3-percentage-point reduction in default associated with ICR. In the sample, 31.7% of borrowers had unstable income, with an average monthly disposable income of 5,860 yuan; ethnic minority borrowers earned 18.3% less than the average. Policy awareness reached 68.4% nationally, but rural and ethnic minority groups were 22.6 percentage points lower than urban groups, Such evident gaps between different groups reveal that regional imbalance is a widespread problem in the implementation of the ICR policy nationwide. Urban areas enjoy complete publicity channels and convenient service conditions, while rural and ethnic communities are always in a disadvantaged position in terms of policy information acquisition, indicating insufficient policy promotion in remote areas. The Liannan subsample includes 80 Yao borrowers, 95% in rural areas. A total of 85% had irregular monthly income, far above the provincial average, and the average monthly income was 4,200 yuan, only 60.4% of the provincial level. The overall default rate was 23.5%, with 8% for ICR borrowers and 26% for fixed-repayment borrowers, equivalent to an adjusted 19.1-percentage-point default reduction. Most defaults in the fixed-repayment group resulted from low and unstable income, and some borrowers even returned to farming. Only 20% of eligible borrowers joined ICR, 45% knew about the policy, 40% failed to apply due to inconvenient procedures, and 70% of uninformed borrowers lacked Yao-language publicity materials.

These results reflect local income features and prominent implementation barriers. All statistical differences between Liannan and provincial average levels fully prove that the effectiveness and popularization of the ICR scheme are deeply restricted by regional economic conditions, cultural environments and supporting services. These intuitive data results also lay a solid data foundation for the subsequent mechanism analysis and barrier discussion in this paper.

RESULTS AND DISCUSSION

ICR Reduces Default Risk: The significant reduction in default risk under the ICR scheme is not merely a correlational finding, but a structural response to the fundamental mismatch between fixed-repayment contracts and the income dynamics of vulnerable borrowers. At its core, the fixed-repayment model imposes rigid, invariant monthly obligations that are blind to idiosyncratic and systemic income shocks, a feature that disproportionately penalizes individuals in volatile labor markets. In contrast, the ICR scheme embeds an implicit insurance mechanism, indexing repayment obligations to disposable income and providing forbearance when earnings fall below a predefined threshold (Catherine et al., 2026). This design mitigates two primary drivers of default: liquidity constraints and negative income shocks (Sylvain & Constantine, 2023).

For ethnic minority borrowers in Liannan, this mismatch is particularly acute. The prevalence of seasonal and informal employment creates high income volatility, rendering fixed monthly payments infeasible during off-peak periods. The ICR's income-contingent structure directly addresses this structural vulnerability by aligning repayment obligations with the borrower's actual ability to pay, thereby eliminating the forced default that would otherwise occur under inflexible contracts. The observed 19.1-percentage-point reduction in default rates is thus not an arbitrary outcome, but the empirical manifestation of a risk-sharing mechanism that transfers idiosyncratic income risk from the borrower to the lender. This reallocation of risk fundamentally alters the incentive structure of the loan contract, reducing the likelihood of strategic and involuntary default.

From the perspective of credit risk management, this risk-sharing design also optimizes the overall operation of the student loan system. When more borrowers can make repayments on schedule, the non-performing loan ratio is effectively controlled, which lowers operational costs and credit risks for cooperating banks and educational aid departments. It also helps maintain a healthy credit environment in local ethnic areas and guides more young people to establish positive credit awareness. For grassroots financial institutions, the stable performance of student loan portfolios further supports the sustainable supply of educational aid funds in the long run.

ICR Boosts Welfare for Liannan's Yao Borrowers: The welfare-enhancing effects of ICR extend far beyond immediate financial relief, operating through the theoretical lens of consumption smoothing and long-term human capital accumulation. Standard welfare economics posits that individuals exhibit risk aversion, meaning they prefer stable consumption paths over volatile ones (Kazushige & Karol, 2022). The fixed-repayment model, by contrast, forces borrowers to cut consumption disproportionately during periods of low income, leading to significant welfare loss due to the diminishing marginal utility of consumption. The ICR scheme mitigates this loss by allowing borrowers to smooth their consumption over time, effectively acting as a state-contingent insurance policy (Britton & Gruber, 2020). In the context of Liannan’s Yao borrowers, this consumption smoothing effect yields profound, cascading benefits. The observed increase in disposable income growth is not merely a statistical artifact but a reflection of reduced financial distress. With greater financial stability, borrowers are able to shift resources from immediate debt service to productive investments in health and human capital, as evidenced by increased spending on medical care and vocational training. Critically, these individual-level gains generate positive intergenerational spillovers. The ability to fund siblings' education creates a virtuous cycle of human capital accumulation, breaking the cycle of poverty and contributing to long-term educational equity. The welfare improvement, therefore, is not limited to the direct utility gain of the borrower but extends to the broader household and community, enhancing the scheme’s social return on investment.

Apart from tangible economic and human capital gains, the improvement of overall life satisfaction and psychological well-being is also a notable welfare change. Many local graduates used to face long-term anxiety and mental pressure due to heavy repayment burdens. The flexible rules of ICR greatly relieve their psychological stress and help them focus more on career development and personal growth. For remote ethnic communities trapped by poverty for generations, such comprehensive welfare progress gradually narrows the development gap with urban areas and lays a solid foundation for coordinated regional development. Relieved from rigid repayment pressure, local borrowers are also more willing to participate in local public affairs and ethnic cultural inheritance activities. They have extra time and energy to engage in rural construction and traditional Yao culture promotion, which helps revitalize the local community atmosphere. Moreover, stable financial conditions also encourage more young people to stay and start businesses in their hometowns. This talent retention effect further drives the development of local characteristic industries and injects lasting vitality into the economic and social progress of ethnic minority areas. In the long run, the welfare brought by the ICR scheme will radiate to every corner of society and form a mutually reinforcing pattern between individual development and regional prosperity. Before the implementation of the ICR policy, many young people with student loans had to take multiple part-time jobs to cover monthly repayments, which often distracted them from professional skill improvement and career planning. They dared not take risks to learn new skills or try new career paths for fear of losing steady income sources. This conservative mindset limited their personal development and made it harder for local labor forces to upgrade their overall competitiveness. With the support of flexible repayment rules, borrowers no longer need to prioritize short-term income over long-term growth. They can actively participate in skill training, industry exchanges and professional certification courses, which steadily improves their employability and income potential in the future. In addition, improved household financial conditions also optimize the family consumption structure. Households can allocate more money to children’s education, daily nutrition and elderly care, rather than squeezing basic living expenses to pay off loans. This positive change improves the overall quality of life of Yao families and consolidates the achievements of targeted poverty alleviation in mountainous ethnic areas. All these subtle but far-reaching changes fully prove that the welfare value of the ICR scheme is multi-dimensional and sustainable, running through individual growth, family happiness and community development.

Implementation Barriers Limit ICR's Reach in Liannan: The low uptake of ICR in Liannan is not a rejection of the scheme's benefits, but a reflection of deep-seated institutional, geographic, and cultural barriers that prevent eligible borrowers from accessing its advantages. The primary constraint lies in the failure of the policy delivery mechanism to adapt to the local context. Firstly, information asymmetry, exacerbated by language barriers, creates a critical knowledge gap. The lack of Yao-language publicity materials, coupled with limited internet access, means that many borrowers remain unaware of the scheme's existence or its benefits. This is not a failure of demand but of outreach, resulting in a market failure where a beneficial product is undersupplied due to information frictions. Most policy notices and guidance documents are only written in standard Chinese, which cannot be fully understood by elderly residents and less educated young people in remote villages. Even if basic information is delivered, detailed application rules, income assessment standards and repayment adjustments are rarely explained in a localized way. Local grassroots departments mainly rely on official documents and simple posters for publicity, without organizing face-to-face lectures or targeted explanations in ethnic languages. As a result, many potential borrowers only hear vague news about the new repayment policy, but never grasp its specific rules, application conditions and real advantages. This widespread information gap keeps a large number of eligible groups away from the ICR scheme from the very beginning.

Secondly, geographic and administrative barriers impose significant transaction costs. The requirement to travel long distances to county-level offices creates a disincentive to apply, particularly for low-income borrowers for whom the opportunity cost of time and travel is prohibitively high (Pew Trusts, 2019). This friction effectively excludes the very population the policy is designed to assist, as the administrative burden outweighs the perceived benefits for marginalized groups. Most villages in Liannan are scattered across rugged mountain areas, with winding roads and inconvenient public transportation. A one-way trip from remote villages to county banks or education bureaus often takes more than two hours. For local graduates who depend on seasonal farming and temporary jobs, leaving work to handle application procedures means direct loss of daily income. In addition, the current application process involves multiple document submissions, manual reviews and on-site verifications.

The complicated procedural steps further raise the overall time cost. For economically vulnerable groups with tight household budgets, such high transaction costs become an insurmountable obstacle, even though they truly need the flexible repayment policy. Last but not least, low institutional trust, rooted in historical experiences with informal lending and opaque financial products, acts as a deterrent. Borrowers' concerns about hidden fees or unfavorable terms are not irrational fears but a rational response to past experiences, highlighting the importance of transparency and institutional legitimacy in policy uptake (Hua, 2015). These combined barriers create a situation where the scheme's potential benefits are not realized due to a failure in the policy's implementation infrastructure. For a long time, informal private lending has prevailed in some rural areas of Liannan, and many local people have suffered from hidden clauses and arbitrary charges in non-standard financial activities. Such past experiences make residents highly vigilant towards newly launched financial policies. Once doubts arise, negative word-of-mouth spreads quickly within closed rural communities, which further weakens public willingness to participate. What makes the situation worse is that local authorities have not launched targeted trust-building work. There are no typical case introductions or real experience sharing from existing ICR participants to dispel public worries. Under the joint influence of information deficiency, high transaction costs and insufficient institutional trust, the ICR scheme cannot be fully promoted in Liannan. Its excellent policy design fails to translate into real effects for most local student loan borrowers, and the original goal of helping vulnerable groups is restricted by these layered practical barriers.

Conclusion and Policy Recommendations

CONCLUSION

This study analyzes the effects, mechanisms, and implementation barriers of China's income-contingent repayment (ICR) scheme for student loans, using Liannan Yao Autonomous County as a case study. The findings are twofold: For one thing, ICR significantly reduces default risk. Nationally, it lowers default rates by 12.3 percentage points compared to fixed repayment, with a stronger effect among ethnic minority borrowers. In Liannan, the default reduction reaches 19.1 percentage points, as ICR's income-indexed structure directly addresses the high income volatility of local borrowers. For another, ICR improves borrower welfare and generates positive spillovers. It increases disposable income growth by 18.7% provincially and 24.1% in Liannan, enabling consumption smoothing and productive investments in health, training, and siblings' education, thus advancing intergenerational equity. Overall, ICR is an effective mechanism for enhancing loan sustainability and educational equity, with particularly strong benefits for vulnerable borrowers in ethnic minority areas. It perfectly matches the actual employment and income conditions of local graduates and delivers tangible benefits to disadvantaged groups.

Policy Recommendations and Future Research Directions: To enhance the implementation of ICR in ethnic minority areas, we should strengthen localized outreach with Yao-Chinese bilingual materials and village-level promotion, simplify application processes by launching online applications and township service points, and improve policy transparency and trust through clear rule disclosure and regular consultation. Future research should track long-term impacts, evaluate fiscal sustainability, and conduct cross-regional comparisons to refine context-specific policy models. These localized insights further provide preliminary implications for designing equitable student loan policies in marginalized ethnic regions of developing Asian countries, and offer practical references for solving similar student loan challenges worldwide.

ACKNOWLEDGEMENT

The author wishes to express sincere gratitude to the Education Bureau of Liannan Yao Autonomous County for its assistance in data collection and fieldwork arrangement. The author also thanks all participants in the 2025 field survey for their cooperation and valuable information. The authors declare no competing interests.

REFERENCES

Adam, G., Charlie, E., & Amber, V. (2023). Administrative burden in federal student loan repayment, and socially stratified access to income-driven repayment plans. RSF: The Russell Sage Foundation Journal of the Social Sciences, 9(4), 86-112.

Britton, J., & Gruber, J. (2020). Do income contingent student loans reduce labor supply? Economics of Education Review, 79, 102061. https://doi.org/10. 1016/ j.econedurev.2020.102061

Cai, Y., Chapman, B., & Wang, Q. (2019). Repayment burdens of mortgage-style student loans in China and steps toward income-contingent loans. Economics of Education Review, 71, 95-108. https://doi.org/10.1016/ j.econedurev. 2018.10.006

Catherine, S., Ebrahimian, M., & Yannelis, C. (2026). How do income-driven repayment plans benefit student debt borrowers? Journal of Financial Economics, 178, 104253. https://doi.org/10.1016/j.jfineco.2026.104253

Gayardon, D. A., & Callender, C. (2025). What is the impact of repaying income-contingent student loan debt on graduates' lives? Lessons from England. Policy Reviews in Higher Education, 9(2), 196-219. https://doi.org/ 10.1080/23322969.2025.2477574

Herbst, D. (2023). The impact of income-driven repayment on student borrower outcomes. American Economic Journal: Applied Economics, 15(1), 1-25.

Hua, S. (2015). Comparative study on Sino-US student loan repayment policy. In Proceedings of 2015 International Conference on Public Administration (11th) (pp. 1168-1175). University of Electronic Science and Technology of China.

Kazushige, M., & Karol, M. (2022). College education and income contingent loans in equilibrium. Journal of Monetary Economics, 132, 100-117. https://doi.org/10.1016/j.jmoneco.2022.08.005

Mhamed, S. A., Kaša, & Cunska. (2012). Student debt among University of Latvia graduates: Repayment prospects under income-contingent student loan scheme. Baltic Journal of Economics, 12(2), 73-88. https://doi.org/10.1080/1406099X.2012.10840518

Mueller, M. H., & Yannelis, C. (2018). The rise in student loan defaults. Journal of Financial Economics, 131(1), 1-19. https://doi.org/10.1016/j.jfineco.2018.07.013

Ouyang, Z., Jing, L., & Li, C. (2026). Cultural congruence and educational equity: How ethnic minority teachers promote minority students' school adaptation. Frontiers in Psychology, 17, 739625. https://doi.org/10. 3389/fp syg.2026.1739625

Pew Charitable Trusts. (2019). Student loan system presents repayment challenges: Borrowers at risk of default and delinquency need flexibility and targeted, timely support.

Shen, H., & Ziderman, A. (2009). Student loans repayment in China: Designing a new model to ease the repayment burden. Higher Education in Europe, 34(2), 281-290. https://doi.org/10.1080/03797720902867641

Sylvain, C., & Constantine, Y. (2023). The distributional effects of student loan forgiveness. Journal of Financial Economics, 147(2), 297-316. https://doi.org/10.1016/j.jfineco.2022.10.003

Yuan, W., Yanbo, Z., & Mengkun, L. (2023). National student loans default risk prediction: A heterogeneous ensemble learning approach and the SHAP method. Computers and Education: Artificial Intelligence, 5, 100166. https://doi.org/10.1016/j.caeai.2023.100166

****