

# Exploring Research Directions on the Role of the Applied Self-Study Examination in Local Economic Growth in Sichuan

**Peizhou Huang**

*School of Economics and Management, Xiangnan University, Chenzhou, China*

**Abstract:** *This proposal explores the potential economic impact of the Applied Self-Study Examination in Sichuan Province, focusing on how it contributes to local economic growth through direct and indirect channels. The examination, which blends national standardized exams with institution-specific assessments, has become a prominent educational path for working professionals and non-traditional students. The influx of candidates, especially from other regions, generates significant spending on travel, accommodation, dining, and related services, positioning the examination as an economic catalyst. This proposal outlines a research framework for assessing these impacts, recommending a multi-step methodology that includes quantitative surveys of candidates' spending patterns and qualitative interviews with local business owners to capture a comprehensive economic picture. The integration of Keynesian economic theory and Growth Pole Theory offers a theoretical foundation for understanding the multiplier effect of candidate spending on the regional economy. By presenting a strategic approach for future large-scale research, this proposal aims to provide policymakers and academic researchers with a detailed roadmap for quantifying the examination's contributions and guiding policy decisions that enhance regional development. Additionally, this proposal underscores the practical applications of these findings for local businesses and government agencies to optimize services and infrastructure during exam periods to maximize economic benefits.*

**Keywords:** *Applied self-study examination; Economic impact; Regional development; Local economy; Educational Policy*

## 1. Introduction

The Applied Self-Study Examination is a unique form of higher education self-examination in China that blends national standardized exams with institution-administered assessments. Known for its flexibility, accessibility, and the combination of public and private educational resources, the applied self-study exam is designed to cater to individuals seeking to enhance their educational qualifications or professional skills without engaging in traditional full-time studies <sup>[1]</sup>. The program's dual structure, consisting of standardized national exams and tailored institution-specific assessments, provides practical learning experiences that appeal to non-traditional students. This flexibility, along with cost-effectiveness and scheduling adaptability, makes it particularly attractive to working professionals.

An attractive feature of the applied self-study examination is its inclusion of certificate programs focused on vocational training. These certificate programs can be applied toward reducing the number of required examination subjects, effectively accelerating the path to graduation. This allows candidates to complete their degrees faster while gaining practical, job-oriented skills that enhance employability.

The examination's prominence is particularly notable in Sichuan Province <sup>[2]</sup>, which is used as a case study in this proposal because of its pivotal role in the implementation of this educational model. In Sichuan Province, this examination program has been actively implemented, supported by local universities and government policies aimed at fostering lifelong learning and workforce development. The reputation of Sichuan's robust educational support and comprehensive exam infrastructure has attracted candidates not only locally but also from other provinces, who register and travel to Sichuan to take the exams. This inflow of out-of-province candidates contributes to the province's economy through their spending on travel, lodging, and other related expenses. Upon completion of all the required online courses and exams within a chosen field of study, candidates can obtain an associate degree or a bachelor's degree, thus achieving recognized higher education qualifications. This combination of educational opportunity and economic stimulation positions Sichuan Province as a key player in the

national applied self-study examination framework, benefiting both the educational landscape and local economy.

This paper proposes a research framework and strategic approach for future studies that aim to assess the economic implications of the applied self-study examination in Sichuan Province. Instead of presenting completed research results, this paper will outline the methodologies, data collection strategies, and economic models necessary to thoroughly investigate the examination's impact. By focusing on potential approaches, this work seeks to provide a roadmap for comprehensive studies that can accurately measure the direct and indirect economic contributions brought by local and out-of-province candidates participating in the program.

The significance of this proposal lies in offering policymakers and academic researchers a detailed blueprint for conducting in-depth research to better understand how the applied self-study examination contributes to regional economic growth. Recognizing the potential benefits tied to this educational model can lead to the development of more informed strategies that enhance the synergy between educational programs and economic development. Focusing on the case of Sichuan Province, this proposal can serve as a reference for other provinces seeking to implement or optimize their own applied self-study examination systems. Comprehensive government-led research incorporating large-scale datasets and advanced economic analyses is essential for validating findings and exploring long-term impacts on both regional and national levels. Such investigations would underscore the applied self-study examination's role in economic development and inform policy decisions that maximize its positive effects on local and regional economies.

## 2. Policy and Implementation

The applied self-study examination in Sichuan Province is a significant aspect of higher education self-examinations aimed at providing flexible learning and examination opportunities for a wide range of candidates, including working adults. Overseen by the Sichuan Education Examination Authority, this policy supports educational equity and promotes adult continuing education by offering various pathways for individuals to attain higher education credentials. The exam structure includes multiple yearly sessions, typically two national exams in April and October and two school-based exams in June and December, organized by participating universities. These institutions, such as Sichuan University and Southwestern University of Finance and Economics, coordinate the exams, set curricula, and issue diplomas, leveraging their academic strengths to facilitate the process [3]. Despite the benefits, implementation challenges persist, such as uneven resource distribution that affects learning quality, especially in less developed areas, and the administrative complexity of coordinating both national and institutional exams. Nonetheless, the policy has been instrumental in expanding access to higher education and enhancing educational fairness, supporting Sichuan's broader economic and social development goals.

The 1+X program is an innovative initiative aimed at enhancing the applied self-study examination framework and promoting the development of practical and job-oriented skills among candidates. This program aligns with the national educational strategy to integrate academic learning with vocational training, thus supporting workforce readiness and employability [2]. Under the 1+X program, candidates pursuing higher education through the applied self-study examination can simultaneously earn an academic degree (the "1") and additional professional certificates (the "X") in specialized skill areas. This dual-track approach allows students to gain comprehensive theoretical knowledge while also acquiring practical certifications that are highly valued in the job market, such as those in information technology, business management, and engineering.

In recent years, participation in the applied self-study examination has shown notable interest and engagement, reflecting the growing demand for flexible education options among working adults and other non-traditional students. While anecdotal evidence and reports from educational institutions suggest an upward trend in enrollment [4], detailed statistics on the number of participants and growth rates remain unavailable, as the Sichuan Education Examination Authority has not published comprehensive data on this aspect. This lack of transparent, publicly available data highlights the need for government involvement in conducting thorough research. By investing in systematic data collection and analysis, authorities could better understand participation patterns, regional disparities, and demographic trends, enabling more informed policy decisions to optimize the applied self-study examination framework and align it with local educational and economic goals.

### 3. Applied Self-Study Examination's Direct and Indirect Economic Contributions

The applied self-study examination in Sichuan has significant direct economic effects, particularly through the assistance fees that candidates pay for exam preparation. These costs, which include tuition for preparatory courses and related training programs, greatly impact the local education market. Universities and private training institutions benefit from the increased revenue, allowing them to expand their educational offerings, hire more teaching staff, and develop better resources. This growing demand for preparatory programs creates a competitive educational landscape, promoting the growth of the regional education sector and contributing to job creation, which supports a knowledge-based local economy. Additionally, candidates often pay for certificates and specialized training programs to gain exemptions for certain exam subjects. Programs such as the 1+X illustrate how these expenditures enrich educational institutions and foster the growth of specialized training sectors that align with local industry needs.

Indirect economic effects also arise from the influx of candidates traveling to Sichuan for examinations, providing a significant boost to the hospitality and transportation sectors. The repeated visits of thousands of candidates throughout the year lead to increased demand for accommodations, meals, and transit services, enhancing the income of local businesses, especially those located near examination centers and universities. This surge in activity benefits hotels, restaurants, and various transport providers, strengthening the local service economy during exam periods.

Moreover, interviews and surveys can provide insight into candidates' overall spending behavior during their exam visits, revealing their impact on the service sector. Beyond accommodation and meals, candidates often engage in shopping and leisure activities, contributing to the local retail and entertainment industries. The cumulative effect of these expenditures supports job creation and sustains a range of service providers, from small vendors to large retail businesses. This cyclical economic activity reinforces the importance of the applied self-study examination as not only an educational initiative but also an economic catalyst within the region.

These direct and indirect economic contributions illustrate that the applied self-study examination plays a crucial role beyond its educational value. While direct impacts can be easily quantified through tuition and program fees, indirect impacts manifest in the sustained economic activity within the service sector. To fully understand these contributions, comprehensive government-led research would be valuable, offering detailed insights that could guide policy-making to enhance the examination's economic and social benefits for regional development.

### 4. Theoretical background

The analysis of the economic impact of individual and group expenditures, such as those of candidates participating in applied self-study examinations, can be effectively contextualized using Keynesian Economic Theory. John Maynard Keynes' seminal work emphasized the significance of aggregate demand in driving economic growth and employment<sup>[5]</sup>. According to Keynesian economics, initial spending by individuals or groups acts as a catalyst for broader economic activity, triggering a series of expenditures that magnify the original investment through the multiplier effect. In this context, the spending by candidates participating in applied self-study examinations, including expenditures on accommodation, dining, and transport, serves as the initial economic injection that stimulates local economic growth.

Growth Pole Theory provides a relevant framework for analyzing how applied self-study examinations can serve as economic catalysts within a region. This theory suggests that economic development tends to concentrate around specific hubs or "growth poles," which stimulate growth in their surrounding areas<sup>[6]</sup>. These growth poles act as centers of economic activity that attract resources, investments, and human capital, subsequently generating economic benefits that extend beyond the immediate area<sup>[7]</sup>. In the context of applied self-study examinations, these events can be seen as growth poles that attract a significant number of participants to key urban centers or educational hubs. The influx of candidates brings increased demand for local services such as accommodation, food, transport, and retail, generating a ripple effect that stimulates related industries. The initial economic activity created by the spending of these examinees diffuses outward, benefiting local businesses and encouraging further economic interactions and investments. This cascading effect illustrates how applied self-study examinations not only directly impact the hosting area's economy but also contribute to sustained regional growth through the diffusion of resources and economic momentum.

## 5. Methodology

To conduct a comprehensive study on the multiplier effect of the applied self-study examination in Sichuan Province, a multi-step methodology would be employed to ensure the accuracy and reliability of the findings. The initial phase would involve data collection, focusing on gathering primary data through structured surveys distributed to a representative sample of exam participants. Given the estimated 330,000 annual candidates [4], a recommended sample size of approximately 400 participants, based on Slovin's formula [8], or 385 participants as determined by Cochran's method [9], would ensure statistical significance at a 95% confidence level with a  $\pm 5\%$  margin of error. For greater precision, especially if analyzing subgroups, a larger sample of 500-1,000 participants would be ideal. The sampling method would include stratified random sampling to ensure that the sample captures the diversity of candidates based on key demographics such as age, income, geographic location (urban vs. rural), and participation frequency.

These surveys would capture detailed information on candidates' spending patterns, including tuition, travel, accommodation, food, and other associated costs during exam periods. To complement the quantitative analysis, in-depth interviews and focus groups with local business owners (e.g., hotel managers, restaurant owners, and transportation providers) would be conducted to provide qualitative insights into the economic activity generated during exam periods. These qualitative methods would help to triangulate data, offering context and elaboration on the quantitative findings and highlighting indirect economic impacts that might not be evident from survey data alone.

The primary goal of the qualitative research is to validate and complement the quantitative findings by providing deeper insights into the broader economic impacts that may not be captured through surveys alone. Specifically, qualitative data would help to clarify indirect effects, such as how local businesses experience fluctuations in demand during exam periods and how exam candidates' spending habits differ across various sectors.

The qualitative phase of the research would involve gathering detailed perspectives from key local stakeholders—hotel managers, restaurant owners, transportation providers, and other small business owners who frequently interact with exam candidates. These interviews would aim to uncover patterns in candidate behavior, such as the frequency of repeat visits, variations in spending based on demographic factors (e.g., age, income, or origin), and the extent to which the applied self-study examination drives seasonal or temporary spikes in business activity.

To analyze the qualitative data, thematic analysis would be employed to identify, analyze, and report key themes emerging from the interviews and focus groups. This method would allow the researcher to capture recurring patterns related to candidates' consumption behaviors, the impact of geographic location on spending, and the shifts in demand within various local industries. Additionally, content analysis would be used to systematically analyze textual data from interviews, such as the frequency of specific words or phrases, to uncover underlying trends and sentiments about the economic impacts of the examination program.

By triangulating the qualitative findings with the quantitative data, future study could offer a more thorough understanding of how the applied self-study examination contributes to local economic activity. This approach would also help verify the accuracy of the estimated multiplier effect, ensuring that both direct and indirect spending are accounted for in the final analysis. Additionally, qualitative insights could provide a foundation for policy recommendations regarding how businesses and local governments can optimize their strategies to further benefit from the influx of exam participants, and highlight areas where additional support or infrastructure may be needed to maximize the economic potential of this educational model.

Given the absence of publicly available secondary data on this topic, it becomes essential to create a comprehensive primary dataset. This dataset would be used to calculate the initial direct spending by candidates, forming the basis for applying the multiplier effect. The Marginal Propensity to Consume (MPC) would be estimated from survey responses that indicate how much of candidates' additional income is typically spent versus saved. Using the MPC, the multiplier  $k$  can be calculated with the

formula:  $k = \frac{1}{1 - MPC}$ . This multiplier would then be applied to the total initial expenditure to estimate the broader economic impact on the local economy.

To ensure robustness, data analysis tools such as SPSS or R would be used to process the collected data, compute average expenditures, and verify the MPC estimates. The final analysis would highlight the economic contribution of the applied self-study examination to the region, providing critical insights

for policymakers and laying the groundwork for future large-scale studies.

## 6. Conclusion

This proposal has examined the role of the Applied Self-Study Examination in promoting local economic growth in Sichuan Province, with a focus on understanding the economic implications of this educational system. By combining an accessible educational model with the economic potential of increased consumer spending, the Applied Self-Study Examination has proven to be more than just a means of obtaining higher education credentials; it also serves as a powerful economic driver. Through a thorough analysis of both direct and indirect economic contributions, this paper highlights how the inflow of candidates, both local and from other provinces, stimulates demand across various service sectors, such as accommodation, transportation, retail, and dining. These activities lead to job creation, a boost in local business revenues, and, ultimately, the growth of the region's economy.

The integration of Keynesian economic theory and Growth Pole Theory within the framework of this research demonstrates how educational initiatives like the Applied Self-Study Examination can serve as focal points for regional development. By attracting individuals from diverse backgrounds, the examination generates a ripple effect that benefits not only educational institutions but also surrounding industries and service providers. The 1+X program further enhances the economic value of this initiative by equipping candidates with both academic degrees and professional certifications, thus aligning the examination with workforce demands and contributing to the employability of graduates.

To fully capture the extent of the economic impact, the paper stresses the need for comprehensive research and robust data collection. The proposed methodology, incorporating both quantitative surveys and qualitative interviews, will allow for a detailed understanding of candidate spending patterns and the broader economic effects on local industries. By triangulating these data sources, future research can validate the multiplier effect and offer valuable policy recommendations aimed at maximizing the economic potential of the Applied Self-Study Examination.

Furthermore, the potential findings from future study can provide valuable insights for both businesses and government agencies. For businesses, understanding candidate behavior and spending patterns can guide improvements in service offerings, helping local retailers, accommodation providers, and transportation services tailor their products to meet the specific needs of exam candidates. This could include adjusting pricing, enhancing customer service, and offering targeted promotions during peak exam periods. For government authorities, future research can inform policies that better integrate the Applied Self-Study Examination into broader regional development strategies. By providing support for businesses that are directly impacted by exam-related demand, as well as improving infrastructure and service delivery in key exam hubs, governments can optimize the economic benefits of this educational model and ensure that it continues to support both educational and economic growth in the region.

Overall, the Applied Self-Study Examination represents a significant intersection of education and economic growth. By recognizing and leveraging its economic benefits, policymakers can foster strategies that not only enhance educational access but also promote regional economic development. As Sichuan Province continues to lead the way in implementing this educational model, it serves as a valuable case study for other provinces seeking to capitalize on the economic opportunities associated with flexible education systems, and offers a roadmap for businesses and governments to enhance their services and better serve the needs of candidates.

## Acknowledgements

This article is supported by the following project: "Research on Continuing Education in General-Level Universities Serving the Local Economy," issued by Xiangnan University (Document No. 2023, 44).

## References

- [1] Wang, H. (2015). *Innovation in the talent cultivation model of the applied self-study examination. Education and Vocation, (02), 51-52.*
- [2] Sichuan Provincial People's Government. (2020, November 11). *Our province ranks first in the country for the scale of the 1+X certificate system pilot. Sichuan Provincial People's Government. <https://www.sc.gov.cn/10462/10464/10797/2020/11/11/fbbb6cf2651b42309578d47860ec6b4f.shtml>*

- [3] Sichuan Online. (2024, May 21). 49 institutions designated as the main examination schools for applied self-study programs in Sichuan for 2025. Sichuan Online. <https://sichuan.scol.com.cn/ggxw/202405/82531716.html>
- [4] Sichuan Online. (2024, April 14). The 2024 first-half self-study examination in Sichuan concluded, results expected by May 7. Sichuan Online. <https://sichuan.scol.com.cn/ggxw/202404/82508072.html>
- [5] Keynes, J. M. (1936). *The General Theory of Employment, Interest, and Money*. Macmillan.
- [6] Hansen, N. M. (1967). Development Pole Theory in a Regional Context. *Kyklos*, 20(4), 709–728.
- [7] Richardson, H. W. (1978). *Regional and Urban Economics*. Penguin Books.
- [8] Slovin, E. (1960). *Sampling Design for Survey Research*.
- [9] Cochran, W. G. (1977). *Sampling Techniques (3rd ed.)*. John Wiley & Sons.