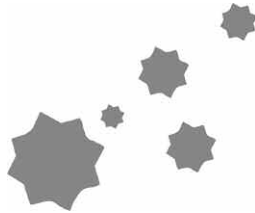


Extended abstract

*Impact of rural tourism on income
and the decision to emigrate
in the Llachón Community (Puno, Peru)*



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Highlights:

1. Rural tourism positively impacts improved family income
2. Heads of household working with rural tourism are less likely to emigrate
3. Rural tourism helps to retain emigration and depopulation
4. Rural tourism represents an option to promote local development.

Abstract: Rural tourism represents an option to promote local development, as well as an alternative to reduce the depopulation of rural areas. The objective was to estimate the impact of rural tourism on economic income and determine the effect of rural tourism on the decision to emigrate. The methodology for estimating the impact is a quasi-experimental design and the decision to migrate is estimated with the probit econometric model, the source of information is the primary data collected through a semi-structured questionnaire, with a sample size of 178 observations by simple random sampling. The results report that 21,80 % of households with rural tourism perceived to have improved their economic income than if they had not started in tourism. Furthermore, we find that 34,42 % and 73,50 % of the heads of households with and without rural tourism would be willing to emigrate, respectively; heads of households who have ventured into rural tourism have a lower probability of emigrating by 28 %; It is demonstrated that rural tourism contributes to the retention of emigration and depopulation.

Keywords: Rural environment, entrepreneurs, income perception, emigration retention, depopulation.

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Extended abstract

1. Introduction

According to the last seven national population censuses, internal migration is intense in Peru, and 50 % of Departments a negative migratory balance, while those migrating come mostly from rural areas. From the economic point of view, the causes of internal migration are: agricultural sector stagnation, large estates expanding and owners of smallholdings being unable to increase agriculture/livestock production.

Promoting rural tourism is one of the strategies to lower migration from rural areas to cities so that families can remain and earn their own income. In the Puno Department, rural tourism has been favoured by higher demand in the last 30 years. Specifically in the Llachón community, small rural tourism enterprises have been developed to improve families' income from halfway through the 1990s to the present-day.

Only a few studies have been conducted into the impact that rural tourism has on families' income and its effect on deciding to emigrate, and very little attention has been paid to them. This study provides evidence that links rural tourism with internal migration, and it poses the following questions: What impact does rural tourism have on families' income? How does rural tourism influence heads of household's decisions to emigrate? It also puts forward this hypothesis: rural tourism positively impacts families' income and, in turn, helps to slow down emigration and depopulation.

2. Objectives, methodology and sources

The objectives are to: a) estimate the impact of rural tourism on income; b) determine the effect of rural tourism on heads of household's decisions to emigrate. Data were obtained by conducting surveys and semi-structured interviews. Surveys aimed to know if families had managed to improve their income compared to the previous year regardless of them performing tourism activities or not. Heads of

household with or without tourism were also asked if they were willing to definitively emigrate.

In order to estimate the impact of rural tourism, a quasi-experimental design with two groups was applied, treatment (with tourism) and control (without tourism), to estimate the probability of participating in tourism by means of the probit model. With the obtained values, matching was performed by the propensity score matching method between the "with" and "without" tourism groups, based on the Kernel density estimation. The average impact of rural tourism was the difference between the average income values of the two "with" and "without" tourism groups.

The probit model was applied to evaluate families' decisions to emigrate. Decision to emigrate depended on the difference in income that could be earned by emigrating and that earned if families decided not to emigrate. If the income of those families remaining was higher, the decision would be to not emigrate. Then the model of the probability of willing to emigrate was estimated according to the head of the household's age, years of education, family responsibility and tangible assets like number of houses and the area covered by the family's farmland.

3. Results

The results evidenced that rural tourism positively impacted families' income. Indeed 21.8 % of families "with tourism" managed to improve their income. This result was statistically significant ($p > 0.00$).

As for the relation to decide to emigrate, the probability of deciding to emigrate lowered by 1.2 % ($p > 0.001$) when heads of household were 1 year older. Moreover, the probability of emigrating rose by 3.8 % ($p > 0.062$) for those heads of household who completed one more year of education. The probability of being willing to emigrate lowered by 6.4 % ($p > 0.026$) when families were formed by more members, which could incur more family expense if they emigrated.

Those families whose farmland covered larger areas could use it for agricultural and tourism purposes, which are activities that can help them to earn more income. Consequently, the probability of heads of household emigrating lowered by 7.5 % ($p > 0.056$). Finally, those families who engaged in rural tourism were 28 % ($p > 0.00$) less likely to emigrate than those families who did not.

4. Discussion

Our results confirmed that rural tourism positively impacted families' income and it is one of the strategies that families adopt to stay in their communities because this activity offers job opportunities and slows down depopulation from advancing.

Although this case study indicates a high tourism potential, tourism resources and the accommodation services in bedrooms do not provide suitable heating for the low temperatures in the air. These problems must be solved by means of sustainable proposals.

5. Conclusions

Rural tourism positively impacted families' income. The probability of heads of household emigrating inversely depends on their age, family size and farmland size, and is directly related to their years of education.

Consequently, those families who engage in rural tourism are less likely to emigrate than those families who do not. These results are valid for this case study, which demonstrates that rural tourism contributes to retain depopulation. It will be necessary to extend and corroborate these results in other communities with similar characteristics.

6. Future research lines

The methodology can be replicated by respecting the peculiarities of each case in other places that face similar problems. Future studies into the social impact that rural tourism has are suggested, which could employ families with and without tourism as the analysis unit using the network methodology. It would also be useful to study the environmental impact with the life cycle methodology to identify which tourism service production stages pose potential environmental pollution risks.