Socio-economic status of youth non-participation in Yala province: Population-based study using Thailand 2000 census data

Sunaree Suwanro¹, Phattrawan Tongkumchum*, Chamnein Choonpradub, Arinda Ma-a-lee, Nurin Dureh

Department of Mathematics and Computer Science, Faculty of Science and Technology, Prince of Songkla University, Pattani 94000, Thailand

Article Info

Article history:
Received 20 July 2015
Received in revised form 7 February 2016
Accepted 8 February 2016
Available online 12 February 2018

Keywords:
logistic regression, non-participation, socioeconomic, Yala province

ABSTRACT

This study investigated the effects of demographic and socio-economic factors on youth non-participation in Yala province using data from the 2000 Population and Housing Census of Thailand. The study sample comprised 23,642 youths aged 15–17 years. The binary outcome was youth non-participation (yes/no). The determinants were demographic and socio-economic factors. The demographic factors included gender, religion (Muslim or non-Muslim), and region (subdistrict or aggregated subdistrict) of residence. The proportion of non-participation and determinants was modeled using logistic regression. Youths from families with 5–10 and 11–15 members were more likely to be non-participants. Higher levels of education for the head of household resulted in lower rates of non-participation. Having a family head who worked as a state enterprise employee had a lower rate of non-participation whereas having a family head who worked as a private sector employee had a higher rate than the reference. Muslim males had a high non-participation rate. There was a high non-participation rate in the subdistricts of ThaSap and NaTham (5), Betong (7), BannangSata and Bacho (10), TalingChan (12), KrongPinang and Purong (13), MaeWat (15), Yaha (16), and Kabang and Bala (19).

© 2018 Kasetsart University. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Introduction

Youth non-participation is a major social problem found in both developed and developing countries. Non-participation is defined as youths either at school or at work. This definition has been used in previous studies (Suwanro & Tongkumchum, 2010, 2011; Tongkumchum, Suwanro, & Tongrong, 2013).

The trend of student drop-out is decreasing in developed countries (Chapman, Laird, & KewalRamani, 2010) but is increasing in developing countries (Hug & Rahman, 2008; Integrated Regional Information Networks, 2007). The drop-out rates among government high schools in Thailand were reported as 2.1–2.3 percent for 2005–2008 (Office of the Basic Education Commission, 2009).

The situation of children being uneducated results in further associated social problems including crime, illicit drugs, and other social problems (Buonanno & Montolio, 2008; United Nations, 2000). Even though the youth unemployment rate in Thailand is less than the global average and is not as severe as in some other countries, the rate is far greater than that of adult unemployment.

* Corresponding author.
E-mail addresses: sunaree.s@psu.ac.th (S. Suwanro), phattrawan@gmail.com (P. Tongkumchum).
Peer review under responsibility of Kasetsart University.
¹ Co-first author.
Non-participation rates among 15–17-year olds in five southernmost provinces using 2000 Population and Housing Census data have been analyzed (Suwanro & Tongkumchum, 2010, 2011; Tongkumchum et al., 2013). The researchers used a statistical model of the non-participation rate for measuring social inequality and they reported that social inequality among demographic groups existed in some regions.

Since the start of the unrest in the three southernmost provinces comprising Pattani, Yala and Narathiwat, and some areas in Songkhla in 2004, it can be observed that terrorism incidence has varied with respect to place and time (Marohabout, Choonpradub, & Kuning, 2009). This suggests that studies on social indicators are needed.

Many children and teenagers have stopped attending school for a variety of reasons including psychosocial variables, school factors, demographic, and family factors (Clark, Borg, Calleja, Chircop, & Portelli, 2005). However, very few studies have focused on their socio-economic status because of different views of its meaning and the difficulties associated with measurement. Several studies, including Cowell (2008), have used incomes for measuring inequality within a society, usually justified by findings that dependent children share the socio-economic conditions and well-being of their parents (Avramov, 2002; Buonanno & Montolio, 2008; Figen, 2007). Disadvantage is often generational and Gesemann (2007) concluded that education is the key to integration. Phillimore and Goodson (2008) used education and employment as indicators of integration within a society. Recommendations suggested the collection of multiple indicators.

This study aimed to investigate the effects of demographic and socio-economic factors on youth non-participation in Yala province. The socio-economic situation of youth non-participation before the unrest may create a guideline for government authorities. A focus on participation by young people in education and employment can be used as a guideline for future levels of integration and also probable disparity and tensions in the community.

Materials and Methods

This paper presents an analysis of a population-based study using data from the 2000 Population and Housing Census of Thailand. Persons who did not state their age, and persons aged less than 15 years or greater than 17 years were omitted, giving a total study sample of 23,642.

The binary outcome was youth non-participation. The adverse outcome was defined as giving the answer “no” to both the questions of “attending school” and “employment status” on the form for the 2000 Population and Housing Census of Thailand as explained by Tongkumchum et al. (2013) and summarized in Table 1. The participants who were in groups E, F, H, and I were defined as non-participants.

The determinants were demographic and socio-economic factors. The demographic factors consisted of gender, religion (Muslim or non-Muslim), and region (subdistrict or aggregated subdistrict) of residence. Some subdistricts had low populations for either Muslim or non-Muslim residents. To ensure that the statistical analysis was not compromised by such small sample sizes, adjoining subdistricts were combined where necessary to form larger regions, each with a minimum total population of approximately 1,600 Muslim and non-Muslim residents. This reduced the number of residential locations from 58 subdistricts to 19 statistical regions. Table 2 shows the labels used for each statistical region.

The socio-economic factors comprised number of family members and information on the head of the family including literacy, education, and employment status.

In our preliminary data analysis, we compared the prevalence of non-participation within our 19 statistical regions of Yala province by plotting proportions separately for each combination of gender and religion using an area plot. A χ² test was used to investigate the association between outcome and each determinant.

The prevalence of an adverse outcome was modeled using logistic regression, which provides a method for modeling the association between a binary outcome and multiple determinants ( Hosmer & Lemeshow, 2000; Kleinbaum & Klein, 2002; Venables & Ripley, 2002). For categorical determinants, the model takes the form shown in Eq. (1):

\[
\ln \left( \frac{p_{ijklmn}}{1 - p_{ijklmn}} \right) = \mu + \alpha_i + \beta_j + \delta_k + \gamma_l + \nu_m + \zeta_n
\]

where \( p_{ijklmn} \) denotes the probability of an adverse outcome in a combination of determinant factor groups. The terms \( \alpha_i, \beta_j, \delta_k, \gamma_l, \nu_m, \) and \( \zeta_n \) thus represent effects of demographic and socio-economic factors.

Results

Overall the non-participation rate was 19.6 percent. Figure 1 shows an area plot of the non-participation rate in the 19 regions, ordered by the sum of the non-participation percentages for the four demographic groups. The area plot compares percentages by religion and indicates that both Muslim males and females had higher non-participation than non-Muslims. Only in KrongPinang+Purong+(13) did non-Muslims have a combined non-participation rate for males and females exceeding 20.0 percent, whereas there were 11 regions where the combined non-participation rate for Muslims exceeded 20.0 percent.
Table 3 shows non-participation classified by socio-economic factor. The p-value from the $\chi^2$ test was significant for each determinant. The percentages of non-participation rates were 28.7 percent for families with 11–15 members, 26.3 percent for families whose head could not read and write, 26.7 percent for families whose head was illiterate, and 24.0 percent for families whose head worked as a private sector employee.

The logistic regression was fitted to the data on non-participation using socio-economic and demographic factors as determinants. Out of the four, head of family literacy was not significantly associated with youth non-participation. Further, the reduced model without head of family literacy was fitted to the data. The adjusted odds ratio of each factor adjusted for other factors was estimated from the reduced model.

Figure 2 shows the adjusted odds ratio of non-participation rates by socio-economic factor with 95 percent confidence intervals. Youths from families with 5–10 and 11–15 members were more likely to be non-participants at work or at school. Higher levels of education for the head of household resulted in lower rates of non-participation. The effect of head of family occupation fluctuated. Having a family head who worked as a state enterprise employee lowered the rate of non-participation whereas having a family head who worked as a private sector employee increased the rate compared to the reference.

Figure 3 shows the adjusted odds ratio of non-participation rates by demographic factor. Muslim females, other males and other females had lower non-participation rates than Muslim males. A high non-participation rate occurred in the subdistricts of ThaSap and NaTham (5), Betong (7), BannangSata and Bacho (10), TalingChan (12), KrongPinang and Purong (13), MaeWat (15), Yaha (16), and Kabang and Bala (19).

Figure 4 shows the data for the subdistrict of Yala province based on the adjusted odds ratio. The darker color represents an adjusted odds ratio greater than 1.

---

Table 3

<table>
<thead>
<tr>
<th>Socio-economic factor</th>
<th>Youth non-participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of family members</td>
<td></td>
</tr>
<tr>
<td>&lt;5</td>
<td>5,505 (85.4), 944 (14.6)</td>
</tr>
<tr>
<td>5–10</td>
<td>12,658 (79.0), 3,372 (21.0)</td>
</tr>
<tr>
<td>11–15</td>
<td>683 (71.3), 275 (28.7)</td>
</tr>
<tr>
<td>16–20</td>
<td>94 (86.2), 15 (13.8)</td>
</tr>
<tr>
<td>&gt;20</td>
<td>79 (82.3), 17 (17.7)</td>
</tr>
<tr>
<td>Literacy of head of family</td>
<td></td>
</tr>
<tr>
<td>Can read and write</td>
<td>13,424 (83.6), 2,631 (16.4)</td>
</tr>
<tr>
<td>Cannot read and write</td>
<td>5,595 (73.7), 1,992 (26.3)</td>
</tr>
<tr>
<td>Education of head of family</td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>4,982 (73.3), 1,815 (26.7)</td>
</tr>
<tr>
<td>Primary school</td>
<td>9,917 (80.7), 2,369 (19.3)</td>
</tr>
<tr>
<td>Secondary school</td>
<td>2,807 (88.2), 348 (11.8)</td>
</tr>
<tr>
<td>Certificate</td>
<td>405 (92.9), 31 (7.1)</td>
</tr>
<tr>
<td>Bachelor degree or higher</td>
<td>1,108 (94.9), 60 (5.1)</td>
</tr>
<tr>
<td>Employment status of head of family</td>
<td></td>
</tr>
<tr>
<td>Owner of business</td>
<td>479 (83.3), 96 (16.7)</td>
</tr>
<tr>
<td>Owner of business with no employees</td>
<td>10,340 (79.6), 2,647 (20.4)</td>
</tr>
<tr>
<td>Government officer</td>
<td>2,100 (91.4), 198 (8.6)</td>
</tr>
<tr>
<td>State enterprise employee</td>
<td>265 (96.7), 9 (3.3)</td>
</tr>
<tr>
<td>Private sector employee</td>
<td>3,623 (76.0), 1,145 (24.0)</td>
</tr>
<tr>
<td>Family business</td>
<td>80 (81.6), 18 (18.4)</td>
</tr>
<tr>
<td>Unknown/not stated</td>
<td>2,132 (80.7), 510 (19.3)</td>
</tr>
</tbody>
</table>
Figure 2 Adjusted odds ratio for non-participation by socio-economic status

Figure 3 Adjusted odds ratio for non-participation by demographic factor
Discussion

This study used a statistical model to explain youth non-participation in Yala province, southern Thailand using the 2000 Population and Housing Census data. It was found that socio-economic status and demographic factors were related to youth non-participation either at school or at work.

Yala is a smaller province in population size and area compared to the other southern-most provinces (Pattani & Narathivat) where unrest has occurred. It would be useful to carry out an investigation in the small province and then expand to other provinces. Effective management can be targeted in a small area and it can be a role model for others.

The adjusted odds ratio and 95 percent confidence intervals provided information on the association between determinants and outcome. The odds ratio of 1 indicates that the determinant does not affect the outcome. The odds ratio is greater (less) than 1 indicates that the determinant is associated with higher (lower) odds of the outcome. The choice of referent category is arbitrary. The predictions from a model are not affected by the choice of reference category (Steyerberg, 2008). The best choice is first to think if there is one category to which we would like to compare all the other categories (such as an experimental condition). If not, then we might indeed choose a reference category at either end. In our case, we chose one at the lower end as the reference category. Wider confidence intervals will generally result if the reference group contains smaller numbers. On the other hand, it may be desirable to choose the lowest risk group as the reference category, so all the odds ratio are greater than 1 (McNeil, 1996).

Youths from families with 5–10 and 11–15 members were more likely to be non-participants. A higher level of education for the head of household resulted in lower rates of non-participation. Having a family head who worked as a state enterprise employee resulted in a lower rate of non-participation whereas having a family head who worked as a private sector employee resulted in a higher rate than the reference. Some studies also have suggested that household resources are key factors determining children’s educational investments (Behrman & Knowles, 1999; Glewwe & Jacoby, 2004). Behrman and Knowles (1999)

Figure 4 Adjusted odds ratio (OR) for non-participation by statistical region

used the 1996 Vietnam Social Sector Financing Survey to investigate the relationship between household income and child schooling in Vietnam. The Vietnamese data showed that high-income households paid higher school fees, presumably for better school quality. Only few studies have been conducted in Thailand. Na Ranong, Na Ranong, and Leckcivilize (2006) used data from the 1997 and 2002 Children and Youth Surveys in Thailand to investigate the determinants of educational attainment at lower and upper secondary levels of education. They found that several household characteristics, such as parental occupation, education expenditure, number of children, and parental education were the most important factors explaining secondary education attainment.

Regarding the demographic factors, Muslim males had a high non-participation rate. Various aspects of Muslim culture in Thailand deserve further attention. The high non-participation rate occurred in the subdistricts of ThaSap and NaTham (5), Betong (7), BannangSata and Bacho (10), TalingChan (12), KrongPinang and Purong (13), MaeWat (15), Yaha (16), and Kabang and Bala (19).

The place of residence in our study was the subdistrict, which provided more specific information than simply rural and urban as categories. Subdistrict and rural/urban are highly correlated and cannot both be used in one model.

Socio-economic status (such as parents’ level of education and occupation) has been regarded as predictors of children’s academic achievement (Kainuwa & Yusuf, 2013). Parents’ educational background also influences the academic achievement of their children because the parents would be in a good position to be second teachers to their children and to provide the necessary materials needed by the children (Memon, Joubish, & Khurram, 2010).

The number of family members was related to non-participation and may be partly explained by the income. Research has shown that low-income families are less involved in their children’s education, and because of this lack of participation, their children are less likely to be successful in school (Kainuwa & Yusuf, 2013).

It was difficult to explain relationships between non-participation, religion, and place of residence measured using subdistrict. Further investigation is needed.

**Conclusion**

This study raises questions for further investigation on cultural and geographical variation in youth education.

**Conflict of interest**

There is no conflict of interest.

**Acknowledgments**

We are grateful to Prof. Don McNeil for initiating the project. We would like to thank National Statistical Office of Thailand for providing us the data. We acknowledge Prince of Songkla University, Pattani Campus for supporting this project.

**References**


