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TEP Working Paper No. 0424

May 2024

Trinity Economics Papers
Department of Economics

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Abstract

We present experimental evidence on the impact of a role model intervention to encourage ethnic minorities in Vietnam to start businesses and diversify income sources. We distinguish between *relatable* ethnic minority role models and ethnic majority role models allowing us to investigate the effect of increasing the social distance of the role model from the target population while keeping the information content constant. We find that relatability is important for inspiring individuals and inducing behavioral change. Diversification into business activities, however, does not always lead to improved household outcomes, particularly for those exposed to natural shocks.

JEL Codes: D1, D3, I3, O12
Keywords: role models, RCT, ethnic minorities, Vietnam

*We wish to express our gratitude to the leadership and staff of the Institute of Labour Science and Social Affairs (ILSSA) in Vietnam for their collaboration and unfailing cooperation, without which this study would not have been possible. The authors wish to thank Catia Batista, Natalie Bau, Andrea Guariso, Dina Pomeranz, and Debraj Ray for their valuable suggestions and participants in seminars at Trinity College Dublin, Nova SBE, the School of Economics, Ho Chi Minh City University of Economics (UEH), College of Economics, Law and Government UEH (CELG). This study began within the UNU-WIDER project on 'Structural transformation and inclusive growth in Vietnam'. An earlier version of the paper was circulated under the title "Information, identification, or neither? Experimental evidence on role models in Vietnam". The RCT was registered on the AEA RCT Registry on 16 June 2017 (AEARCTR-0002274). IRB approval was granted through UNU-WIDER on May 17th, 2017.

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1 Introduction

How can development programs reach geographically, politically, culturally, and economically isolated communities? What interventions can stimulate social mobility in communities remote from knowledge exchange, new technological ideas, markets, and policy decision-making? Individuals in such communities may lack resources, but also the "capacity to aspire" (Appadurai (2004)), as they might not have positive examples of what is possible for them and their peers to achieve. Role models bridge this gap by showing how to achieve a goal, representing the possible, and inspiring individuals to try to achieve the same (Morgenroth et al. (2015); Serra (forthcoming)). From business endeavors to children's education, savings to sexual health, several studies in economics provide evidence that role models can raise aspirations and lead to behavioral change (Banerjee et al. (2019a); Beaman et al. (2012); Bernard et al. (2014); Cheung (2012); Lubega et al. (2021); Riley (2024); Serra (forthcoming); Batista and Seither (2019)). Whether role model interventions are effective in communities polarized along ethnic dimensions and vulnerable to shocks is an open question. Moreover, less is known about the extent to which the *relatability* of the role models is effective in inspiring their target population. What happens when their social distance increases? To this end, we designed a randomized controlled trial to evaluate the impact of role models in a marginalized, ethnically diverse community. We vary the degree of social connectedness to the role models to understand whether relatability matters.

The setting for our study is Northern Vietnam where ethnic minorities form a large proportion of the population. In this paper, we present experimental evidence on the effects of a role model intervention to encourage these groups to start businesses and diversify income sources, distinguishing between relatable ethnic minority role models and ethnic majority role models. This setting allows us to investigate the effect of increasing the social distance from role models while keeping the information content constant. Moreover, the study's design allows us to observe attendee *and* household behavior. This aspect is particularly relevant in a context in which production, consumption, and investment decisions are made at the household level. Indeed, this perspective provides one of the key takeaways of this study.

Over the course of a year, ethnic minority individuals in the treatment groups were invited to watch one of three sets of videos. The first set of videos features individual role models of ethnic minority background, who discuss their businesses, the challenges faced, the innovations adopted, and their achieve-

ments. This treatment arm is in line with similar video interventions in the role model literature, such as the work by Lubega et al. (2021) among HIV-positive women in Uganda and Bernard et al. (2014) and Bernard et al. (2019) among farmers in Ethiopia. The aim of the ethnic minority treatment arm is to test the effect of role models in the context of marginalized communities. The second treatment arm consists of a set of videos reproducing precisely the same information as the ethnic minority role model videos, but with actors of the ethnic *majority* telling the stories presented in the role model videos as if they were their own. The ethnic majority videos, therefore, replicate the content of the ethnic minority videos, both visually and in terms of the script. This type of treatment arm is novel in the literature, as its purpose is to test the effect of increasing the social distance and social connectedness between the role models and the target population. A third treatment arm is introduced as a placebo, following Card et al. (2012) and Bernard et al. (2015), whereby individuals are invited to watch an episode of a Vietnamese entertainment show, usually broadcast on Vietnamese television. The placebo treatment arm allows us to control for the possibility that bringing individuals together to watch a video is an additional mechanism through which the videos affect outcomes, thus allowing us to isolate the relatability and information channels. We also include a pure control group of individuals who did not participate in any screening but were interviewed at baseline and end-line.

Overall, we find a negative income effect for households exposed to ethnic minority role models and a very limited impact of the interventions on household activities at the endline, despite the fact that participants in the ethnic minority treatment appear to be more inspired following the first intervention round. Over the course of the intervention, participants switch out of agriculture into business activities and wage employment, in line with the video content. This transition to new activities is particularly stark, and happens sooner, for individuals exposed to the ethnic minority role models videos. Overall, both role model interventions seem effective in inducing behavioral change in the attendees, although the speed of adjustment varies depending on the social distance from the role model.

These findings pose a puzzle: if participants engage in new activities following exposure to the ethnic minority/majority role models videos, why do we observe a negative income effect at the *household* level? Ethnic minorities live and work in an environment prone to natural disasters. According to our baseline, one-third of the households in our sample had suffered from a natural shock (e.g., flood, landslide) in the previous 12 months. While participants are

following the advice of the role models, it appears that switching to other activities might have affected the overall resilience of the household to withstand natural disasters. In fact, we provide evidence that the negative income effects found for the ethnic minority role models intervention stem entirely from households that experienced natural shocks. In the presence of such shocks, households exposed to the ethnic minority role models videos move away from business activities and resort back to more subsistence activities, such as common property resource activities (e.g. foraging and fishing). No such effect is found for households exposed to the ethnic majority role models.

We conjecture that the ethnic minority role models videos might have inspired individuals who may not have been suited to starting a business. This may have been driven by the inspirational component of the intervention, although we cannot directly test for this mechanism. While the relatability component of the role models is important to induce behavioral change, the information itself, disjointed from the inspirational aspect associated with the role model, might be more relevant for individuals to make the right choices in relation to their business activities. Our findings, therefore, provide a cautionary tale: policy measures that encourage individuals to diversify income sources, in particular into business-related activities, need to be studied in the context of the household's ability to weather adverse natural shocks.

Vietnam represents a very motivating case for two main reasons. First, the country has witnessed staggering growth over the past two decades, but economic growth has not benefited the population equally. The gap between the ethnic majority group and the ethnic minorities persists (Tarp (2017); The Economist (2015); United Nations Population Fund (2011); World Bank (2009); World Bank (2019)). Second, ethnic minority groups are mainly confined to specific, often remote, areas. The remoteness of their location poses numerous challenges, such as poor road networks, limited access to markets, and a lack of education; challenges not dissimilar to those experienced by communities in regions of other developing countries, such as the Karamoja region in Uganda, or by ethnic minorities in China.

This paper contributes to the recent and growing literature in economics on the role of aspirations (Ray (2006); Genicot and Ray (2021); Genicot and Ray (2020)) and exposure to role models in affecting behavioral changes (Serra (forthcoming); La Ferrara (2019)). In particular, a number of studies have analyzed how light-touch interventions, based on role models videos, can have a large impact. Bernard et al. (2014), Bernard et al. (2019) and Bernard et al. (2023) provide evidence of increased aspirations among Ethiopian farmers

exposed to role models videos. They also find increased savings, credit and investment in children's schooling six months after the intervention. Lubega et al. (2021) document the positive effect of role models exposure for HIV-positive women in Uganda, while Banerjee et al. (2019b) show evidence of the positive impact of information provided by an MTV series on HIV attitudes and knowledge. Dalton et al. (2021) provide similar evidence based on an experiment among sellers in Indonesia: exposure to light-touch interventions based on "exemplary peers" leads to higher profits and sales. Similarly, Batista and Seither (2019) conduct a field experiment to test the impact of providing information to micro-entrepreneurs through role models in Mozambique and find a positive effect on aspirations, investment and sales one year after the intervention. A recent paper by Cecchi et al. (2022) explores the effect of a role model intervention on dairy farmers and finds mixed evidence: while aspirations are improved by exposure to role models, the increased aspirations do not translate into greater milk production. Rojas et al. (2021) couple a microfinance program with a role model intervention and find that, despite a modest effect on aspirational hope, the treatment led to higher employment and more ambitious hiring plans.

Our paper contributes to this literature in three ways. First, our study is the first to attempt to disentangle the effect of the relatability of the role models to the target population from the information that the role models convey.[1] This is relevant for understanding why role model interventions might effectively boost aspirations and lead to behavioral change. We find that the relatability of the role model matters for improving aspirations. In line with Genicot and Ray (2021)'s theory of group-based aspirations, we provide evidence that one's own ethnicity's outcomes enter the aspiration formation function of our participants. Second, no other study in the literature has focused on role model interventions that specifically target ethnic minorities. Identifying relevant policy interventions to address growing inequality along ethnic lines is a key policy priority for Vietnam and other countries, such as China and India, which have witnessed fast economic growth associated with rising inequality (World Bank, 2012). Third, this paper sheds light on an often overlooked aspect in determining the impact of role models by providing an analysis at the level of the participants as well as the household. We find that the aspirational component of role model interventions at the individual level can lead to behavioral changes that could have unintended (and even

[1] In a different setting, a recent paper by Armand et al. (2024) provides evidence of the effect of religious proximity on reducing misinformation in India during the Covid-19 crisis.

negative) consequences for the household unit as a whole. This is an important dimension that should be considered in the design of future programs targeting the behavior of individuals whose decisions impact on their whole household.

The rest of the paper is organized as follows. In Section 2 we provide the background and context for studying ethnic minorities in Vietnam. Section 3 describes the research design and implementation, while Section 4 presents the data and the empirical approach. The results and mechanism are presented in Section 5. Section 6 concludes.

2 Context

Vietnam is ethnically diverse, comprising 54 officially recognized ethnic groups. The Kinh group constitutes the majority, representing about 86 percent of the population according to the 2009 Census.[2] While the overall poverty rate in Vietnam fell from 58 percent in 1993 to 16 percent in 2006, ethnic minorities experienced a much slower decline in poverty, from 86 percent to 52 percent over the same period (Cuong et al. (2015); Nguyen et al. (2017); World Bank (2012)).

The disparity between the ethnic majority and the ethnic communities has been at the centre of the policy agenda of the Vietnamese government over the past decades: a series of programs have been put in place to support minority groups and to reduce the socio-economic disparities between the ethnic majority and the ethnic minorities.[3] Cuong et al. (2015) provide evidence of the positive effects of such programs on income and agricultural productivity, although large differences between the majority and the minority ethnic groups persist. On average, ethnic minority households face lower-quality agricultural land, less access to markets and financial services (Singhal and Beck, 2017).

Table 1 presents summary statistics of the demographic characteristics of the households interviewed in the 2016 Vietnam Access to Resources Household Survey (VARHS) in the three provinces where the randomized field experi-

[2]The largest ethnic groups (apart from the Kinh), with a population above 1 million, are the Tày, Thai, Muong, Khmer, H'Môngand Hoa (United Nations Population Fund, 2011). Minority communities are geographically concentrated: Tày, Thai, Muong, and H'Môngare mainly in the Northern Midlands and mountainous regions, while Khmer are primarily in the Mekong River Delta (United Nations Population Fund (2011)).

[3]In particular, an initiative known as Program 135 has financed infrastructure improvements, such as road construction, electricity, and clean water supplies (Nguyen et al. (2017)).

ment took place. While only the ethnic minority households from this sample are included in our study, we use the full VARHS 2016 sample to investigate the characteristics of ethnic majority versus ethnic minority households. On average, ethnic minority households have much lower incomes than ethnic majority households. They are more likely to have a male as head of household and their heads of household are more likely to be married, and are younger and less educated on average than household heads from the ethnic majority. Ethnic minority households tend to be larger and are significantly more likely to be engaged in agriculture and subsistence activities, such as the collection of common property resources (CPR). In line with the findings from the nationally representative Vietnam Household Living Standard Survey (VHLSS), ethnic minority households are poorer, in terms of income as well as food expenditure, and have lower levels of education (Nguyen et al. 2017). They are also more vulnerable to natural disasters: this particular aspect is very relevant for our analysis.

Table 1: Comparison of ethnic minority and ethnic majority households based on VARHS 2016

	(1) Ehtnic minority	(2) Ethnic majority	(3) Difference	(4) p-value
HH Income ('000 VND)	55,300	136,716	-81,416	0.00
HH member in business	0.29	0.33	-0.04	0.45
HH member in own agriculture	0.97	0.76	0.21	0.00
HH member works for a wage	0.72	0.64	0.08	0.14
HH member engages in CPR	0.95	0.42	0.53	0.00
Male HH head	0.90	0.73	0.17	0.00
Married HH head	0.89	0.75	0.15	0.00
Age of HH head	47.99	53.98	-5.99	0.00
Number of HH members	5.44	3.77	1.67	0.00
HH head has second level ed.	0.33	0.83	-0.5	0.00
Area of land used for farming (m2)	6,185	3,886	2,299	0.00
Food expenditure last 4 weeks ('000 VND)	921	1,826	-905	0.00
Stock of savings ('000 VND)	8.309	26,878	-18,568	0.00
HH experienced natural disaster	0.36	0.22	0.15	0.01

Source: Authors' calculations based on VARHS 2016.

These findings align with the country social analysis conducted by the World Bank (2009), which identifies six factors explaining the disadvantages that ethnic minorities face: low education, low out-migration, lack of access to financial services and markets, lower quality land, stereotyping, and other cultural obstacles. One of the recommendations stemming from the country's social analysis is the need to support ethnic voices by drafting policies shaped by ethnic minorities. The intervention presented in this study is in line with

this recommendation. By allowing ethnic minority role models to showcase their entrepreneurial activities, we offer a voice to ethnic minorities and a relatable example for them to follow.

3 Experimental design and implementation

As discussed in the introduction, this paper aims to determine whether role models can be effective among remote and marginalized ethnic minority communities and test the extent to which the target group's relatability or social connectedness to the role model matters. To this end, we designed and conducted a randomized controlled trial in three provinces in the North of Vietnam, namely Lao Cai, Lai Chau, and Dien Bien, where a large number of ethnic minority households are located.[4] The intervention consists of three treatment arms in the form of three different sets of documentary videos, as described below. The baseline survey took place between May 2016 and May 2017, and was followed by three intervention rounds: the first round took place in June–July 2017, the second round in September–October 2017, and the last round in January–February 2018. A new video, different for each treatment arm, was screened during each round of the intervention. The end-line evaluation was conducted between May and July 2018. The Online Appendix provides details on the implementation of the study while Figure A1 in the Online Appendix presents the timeline.

The sample was stratified by the three provinces to ensure the representation of the three treatment arms and the control group in each province. Randomization occurred at the commune level: 88 communes were randomly allocated to one of the four groups described below, with 22 communes in each group.

Treatment 1: Ethnic minority role model video

The first intervention takes the form of three documentary videos, each featuring the story of a successful ethnic minority entrepreneur who managed to lift their household out of poverty through enterprise activities. The scope of the Treatment 1 videos is to capture the extent to which relatability matters:

[4]The intervention implementation received support from a series of government departments, including the Institute of Labour Science and Social Affairs (ILSSA) and the Department of Labour, Invalids and Social Affairs (DOLISA) in each of the three provinces. See the Online Appendix for further information and an earlier version of this paper, Narciso et al. (2018).

what is the effect of exposure to a role model from an ethnic minority background? The videos present the real-life stories of people whom participants in our sample could relate to and be inspired by. In the videos, ethnic minority people narrate their own stories and the achievable entrepreneurial activities that they engage in. For example, one of the role models switched from selling pigs to selling pork meat from a specific type of swine breed and diversified into other types of economic activities such as renting out equipment for weddings. The individuals featured in the videos are of three different ethnic minorities (Tày, H'Mông, and Dao) and they speak their own language, often mixed with words in Vietnamese. Subtitles in Vietnamese were added to ensure that all participants understood the videos.[5] Interpreters were only needed and used in three out of the 88 communes in the sample. The three videos were screened across 22 treated communes, one video for each intervention round.

Treatment 2: Ethnic majority role model video

The second treatment arm consists of screening three documentaries in which *actors* of ethnic majority identity reproduce the same stories as those told by the ethnic minority role models in Treatment 1. The videos in Treatment 2 are almost exact reproductions of the videos in Treatment 1, apart from the ethnic identity of the protagonist, who is recognizable as belonging to the ethnic majority. This allows us to test the extent to which the social distance from the role model matters for their impact on aspirations and entrepreneurial outcomes. The ethnic majority role models videos were screened in 22 communes, over the three rounds of the intervention.

Treatment 3: Placebo video

The third treatment arm consists of three placebo videos shown under the same conditions as in the treated communes. The placebo videos are short television episodes (Nét Ẩm Thực Việt) of a Vietnamese entertainment program, usually broadcast on the Vietnamese television channel VTV3. Including the placebo treatment allows us to control for the possibility that the physical act of bringing people together may impact outcomes and disentangle this potential effect from the impact of the inspirational messages and information contained in the videos (Bernard et al. (2015); Bernard et al. (2014); Card et al. (2012)).

[5]About 93 percent of participants speak Vietnamese at baseline. Literacy rates across the three provinces are as follows: 77 percent in Lao Cai, 84 percent in Lai Chau, and 73 percent in Dien Bien.

The three placebo videos were screened in 22 communes, one video for each intervention round.

Control group

The control group consists of the remaining 22 communes in the sample, which are not exposed to any videos. These households were not contacted during the intervention rounds but were interviewed at baseline and end-line.

Screening of the Treatment 1, 2 and 3 videos

Ethnic minorities may vary significantly in terms of living arrangements. In most cases, the videos were shown in commune headquarters, but in the case of communities in close living arrangements, the videos were screened in one household in the village. Videos across the different treatments have about the same duration (12 minutes). Enumerators collected attendance and the extent to which viewers participated and were engaged in the video screenings.[6] A short questionnaire was administered to all participants at the end of each screening. The implementation protocols were carefully planned with a long-standing partner, the Institute of Labour Science and Social Affairs (ILSSA), which has implemented the VARHS project since its inception in 2006.

4 Data and Empirical Approach

4.1 Data

The baseline survey is part of the Vietnamese Access to Resources Household Survey (VARHS), a panel data survey conducted biennially in 12 provinces in Vietnam since 2006 (Brandt and Tarp (2017)). We use the sample of 494 ethnic minority households covered by the VARHS in 2016 from the three provinces. We supplement the sample with an additional 310 ethnic minority households randomly selected from the population of ethnic minority households in these communes to ensure that there are at least eight ethnic minority households in each commune in our study. The baseline survey for these additional households took place in April and May 2017, while the original 494

[6]Invitations to the screenings were sent out to the participating households and participants were permitted to bring guests. See the Online Appendix for further information on the implementation.

VARHS households were interviewed in April and May 2016.[7] The baseline provides comprehensive information on households' socio-demographic characteristics, including detailed information on agricultural productivity, land holdings, savings, and economic activities. The baseline sample consists of 803 households spread across 88 communes in the three provinces and includes 19 ethnic minority groups. The three largest ethnic groups in our sample are Thái, H'Mông and Tày, which account for 34 percent, 30 percent, and 10 percent of the sample, respectively. The distribution of different ethnic groups varies across the three provinces of this study, as shown in Table A1 in the Online Appendix. The choice of the three ethnic minorities presented in the videos takes into account the distribution of the ethnic groups across the provinces included in our sample. It is important to note that the ethnic distribution in the sample closely matches the ethnic distribution in the 2009 Census (United Nations Population Fund (2011)).

Power calculations

We use the baseline data to perform the power calculations focusing on the main outcomes of interest: household income, whether members of the household own a business, whether members of the household engage in (own) agriculture, whether members of the household work for a wage and whether members of the household engage in common property activities.[8] At baseline, the average yearly household income for the ethnic minority sample was around VND 60 million (approximately US$2,293) with a standard deviation of around VND 51 million. For the power calculations, we consider the standardized income variable. With 200 households and 22 clusters we are powered to detect increases of 0.10 standard deviations, which are small-sized effects. At baseline, 24.6 percent of households had a member that owned a business, 96.6 percent had a member that engaged in own agriculture; 72.8 percent had a member that worked for a wage and 84.1 percent had a member that engaged in common property resources activities. For these outcomes, we are powered to detect increases or decreases of 6, 1, 4, and 5 percentage points, respectively. It is worth noting that role models interventions of this kind have been found to have very large effects on income in other contexts. For example, Lubega

[7] All of our results are robust to the inclusion of an indicator variable for whether the household was surveyed in the second wave of the baseline and an interaction term between this indicator and the baseline value of the outcome variable.

[8] Table A2 in the Online Appendix presents the number of communes and households assigned to each group at baseline and the level of attrition at the end-line.

et al. (2021) find that showing inspirational videos of role models to women living with HIV almost doubled income from livestock and crop production.

Balancing tests

Table 2 presents a series of balancing tests comparing baseline characteristics of our treatment and control groups prior to the intervention. We achieve almost perfect balance in each of the control variables of interest and the outcome variables with some exceptions. We find that households in the ethnic minority treatment group are slightly more likely to engage in CPR activities than the control group. We also find a small difference in the income levels of households between the ethnic majority role model treatment group and the control group. Households in the placebo group are slightly more likely to speak Vietnamese and run a business than the control group at baseline. While overall we are satisfied with the balance between the treatment and control groups at baseline, we nonetheless include baseline values of the control and outcome variables in all specifications.

Table 2: Balance tests across treatment and control groups at baseline

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Mean C	Mean T1	Diff C-T1	p-value	Mean T2	Diff C-T2	p-value	Mean T3	Diff T3-C	p-value
Male HH head	0.92	0.93	-0.01	0.77	0.90	0.02	0.49	0.89	0.03	0.31
Married HH head	0.88	0.89	-0.01	0.66	0.90	-0.02	0.42	0.91	-0.03	0.25
Age of HH head	46.6	45.7	0.81	0.52	47.3	-0.72	0.60	46.8	-0.22	0.86
HH members	5.09	5.00	0.09	0.58	4.94	0.15	0.38	5.26	-0.17	0.33
Illiteracy	0.26	0.31	-0.05	0.23	0.24	0.01	0.73	0.23	0.03	0.48
Secondary education	0.38	0.38	-0.01	0.89	0.46	-0.08	0.10	0.37	0.01	0.84
Natural disaster	0.27	0.26	0.01	0.84	0.26	0.01	0.82	0.21	0.06	0.16
Speaks Vietnamese	0.91	0.90	0.01	0.68	0.95	-0.04	0.11	0.96	-0.04	0.06
Distance to PC office	2.85	2.90	-0.05	0.89	2.68	0.17	0.69	3.23	-0.38	0.33
Log Income	10.7	10.8	-0.02	0.71	10.9	-0.13	0.04	10.7	0.04	0.53
Business	0.21	0.26	-0.06	0.18	0.21	0.00	1.00	0.31	-0.10	0.02
Agriculture	0.97	0.94	0.03	0.17	0.97	0.00	1.00	0.98	-0.01	0.31
Wage	0.74	0.73	0.01	0.81	0.73	0.01	0.82	0.70	0.04	0.32
CPR	0.83	0.89	-0.06	0.06	0.82	0.01	0.79	0.82	0.01	0.89

Note: C refers to the control group, T1 to ethnic minority role model treatment, T2 to the ethnic majority role model treatment, and T3 to the placebo treatment.
Source: Authors' calculations using baseline data.

Compliance and attrition

The overall attrition rate at the end-line is low, at 5.1 percent (see Table A2 in the Online Appendix). All video screenings took place within the timeline of each intervention round. Table A3 in the Online Appendix reports the number of attendees present at each screening round. Compliance rates are high, with 95.7 percent of the treatment group attending at least one screening and 69.8 percent attending all screenings.

Enumerators also rated participants' engagement levels in each session. Overall, viewers were reported to be engaged with the video in 81 percent of the screenings, and all participants stayed for the entire screening duration in 95 percent of the video sessions.

4.2 Empirical approach

First, we test the impact of the three treatments on outcomes at the household level. The main econometric specification we use is as follows:

$$O_{h1} = \alpha + \beta_1 T1_h + \beta_2 T2_h + \beta_3 T3_h + \gamma O_{h0} + \delta X_{h0} + \theta District_h + \epsilon_{h1} \quad (1)$$

where O_{h1} is the particular outcome variable of interest for household h at end-line, i.e. a measure of household income, whether any household member has a business, engages in agriculture, works for a wage or works in common property resources;[9] $T1_h$ is a dummy indicator for whether the household is in the ethnic minority role model video treatment group; $T2_h$ is a dummy indicator for whether the household is in the ethnic majority video treatment group; and $T3_h$ is a dummy indicator for whether the household is in the placebo video treatment group. O_{h0} is the value of the outcome variable at baseline; X_{h0} is a vector of baseline characteristics (gender, age and marital status of the household head, whether the household head is illiterate or has secondary-level education, whether the household head speaks Vietnamese, household size, distance of the household from the People's commune headquarter, and whether the household has experienced a natural shock); and $District_h$ represents district of residence fixed effects. We stratify the sample by province to ensure a balanced representation of each treatment and control group within each province. Standard errors are clustered at the commune level, which is the unit of randomization.

We also provide estimation results at the attendee level, by treatment round to capture the effect of the intervention on participants, rather than households. Given that the control group was not visited during the treatment rounds (see Section 3), we examine the impact of the ethnic minority role models and ethnic majority role models videos (Treatment 1 and 2) relative to the Placebo group (Treatment 3) as follows:

[9] Examples of business activities are retail and food production.

$$O_{ihr} = \alpha + \beta_1 T1_h + \beta_2 T2_h + \gamma O_{ih0} + \delta X_{h0} + \theta District_h + \epsilon_{ihr} \quad (2)$$

where O_{ihr} is the outcome variable for individual i in household h in round r, O_{ih0} is the outcome variable at baseline for the attendees, and all other variables are as for equation (1). We present the estimation results at the individual level by intervention round.

5 Results and discussion

5.1 Household outcomes

The intervention aims to inspire ethnic minority households to engage in new enterprise activities and improve livelihoods. Our main outcomes of interest at the household level are household income, and whether any household member has a business, engages in agriculture, waged employment or is involved in common property resources activities.[10] Table 3 presents the results of the estimation for each of these outcomes. Contrary to our expectations and previous findings in the literature, the ethnic minority role model treatment has a negative and statistically significant impact on household income, while the ethnic majority role models and placebo arms have no effect on household income (column 1). This suggests that the income levels of the households that received the ethnic minority role models intervention is approximately 17.5 percent lower at end-line than the incomes of the control group. We find no statistically significant impact of any of the treatments (or the placebo) on business activity at the household level (column 2) or wage employment (column 4). Households exposed to the ethnic minority role models are more likely to be involved in agriculture (column 3), while households in the ethnic majority role models treatment are less likely to rely on common property resources (column 5). These results are in contrast to much of the recent literature, which has found large positive effects of role model interventions on similar sets of outcomes (see, for example, Lubega et al. (2021)).

The results indicate that the intervention did not have a transformational impact at the household level. In fact, it affected household income negatively.

[10]Income is deflated to 2016 values, is log transformed and outliers (5 observations) are dropped. The results are very similar when an inverse hyperbolic sine transformation is used.

Table 3: Activities at end-line – household level

	(1) Household income	(2) Business	(3) Agriculture	(4) Wage employment	(5) Common property resources
Ethnic Minority Role Models	-0.175**	-0.038	0.055**	0.049	-0.008
	(0.084)	(0.042)	(0.024)	(0.059)	(0.050)
Ethnic Majority Role Models	-0.046	-0.016	0.005	0.020	-0.119**
	(0.076)	(0.043)	(0.027)	(0.062)	(0.057)
Placebo	-0.036	-0.051	0.031	0.031	-0.019
	(0.085)	(0.037)	(0.024)	(0.059)	(0.050)
Observations	762	762	762	762	762
R-squared	0.307	0.121	0.110	0.210	0.310
Mean Control	10.833	0.108	0.912	0.732	0.830

Note: All specifications include baseline (Round 0) values of the outcome variable, district fixed effects and baseline (Round 0) controls (sex, marital status, age, and education level of the head of household, the size of the household, whether the household experienced a natural disaster, whether the head of household speaks Vietnamese, and the distance of the household to the nearest People's Committee Office). Robust standard errors (s.e.) clustered at the commune level are presented in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Source: Authors' calculations using baseline and end-line data.

Why does exposure to ethnic minority role models lead to a decrease in household income, contrary to the expectations and the findings in the literature? Moreover, why do we observe a null effect of the ethnic majority treatment? Our study design allows us to track both households *and* attendees. In the next subsection, we investigate the behavior of the attendees over the course of the study as the role models interventions took place.

5.2 Attendees' outcomes

The intervention aimed to inspire ethnic minority households to engage in new enterprise activities and improve livelihoods. As reported by the World Bank (2019), ethnic minorities appear to have internalized a sense of inferiority towards the ethnic majority. The scope of the intervention is to unlock the participants' potential by providing examples of what can be achieved, hence stimulating their ambitions. While the previous results relate to the activities of the entire household, here we explore how the intervention impacted the individual attendees.[11] To understand whether the intervention impacted aspirations and led to behavioral change it is necessary to examine how the individual participants responded.

[11]Invitations to the screenings were sent to the treated households in our samples. Each household could then choose which household member would attend the screening. The head of the household attended the screening in about 60% of cases.

In order to investigate the impact on aspirations, we explore the effect of the intervention on participants' internal locus of control, measured as the belief that outcomes are within one's control. The indicator takes a value of 1 if respondents strongly agree with the statement "*If I try hard, I can improve my situation in life*" and 0 otherwise. The results are presented in Table 4. To gauge the effect of the intervention over time, Columns 1 to 3 present the impact of the intervention on attendees across the three different rounds.[12]

Table 4: Internal locus of control - attendees

	(1) Round 1	(2) Round 2	(3) Round 3
Ethnic Minority Role Models	0.150**	0.062	-0.060
	(0.068)	(0.070)	(0.053)
Ethnic Majority Role Models	0.075	-0.003	0.016
	(0.069)	(0.056)	(0.052)
Observations	438	442	448
R-squared	0.146	0.203	0.194
Mean Placebo	0.561	0.525	0.660

Note: All specifications include district fixed effects and baseline (Round 0) controls (sex, marital status, age, and education level of the head of household, the size of the household, whether the household experienced a natural disaster, whether the head of household speaks Vietnamese, and the distance of the household to the nearest People's Committee Office). Robust standard errors (s.e.) clustered at the commune level are presented in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Source: Authors' calculations based baseline data and data gathered during each intervention round.

The estimation by round shows a very interesting pattern. Individuals exposed to the ethnic minority role models report a higher internal locus of control and increased agency immediately after the first viewing of the role models videos (Column 1). In interpreting this finding, it is important to consider the context for this study. In Vietnam, the ethnic majority usually

[12]Baseline information on attendees is obtained by matching the attendee characteristics to the individual level data gathered at baseline. The matching is straightforward for most attendees since in the majority of cases the household head or the spouse attends the screening. Where another household member attends we match based on relationship with household head and gender. Where this produces duplicate matches within the household we choose the characteristics of the oldest household member within that group. The results presented here are based on all observations that could be matched to the baseline.

provides information and local leadership. Therefore, presenting ethnic minority role models is likely to have been a novelty for our participants. Indeed, exposure to *relatable* ethnic minority individuals shapes their internal locus of control during the first round.

In contrast, the estimated coefficient on the ethnic majority videos (treatment 2) is lower in magnitude and is not statistically significant. The ethnic majority videos bring the same content and information as the ethnic minority role models. This treatment arm aims to capture the effect of increasing the social distance from the role model. These contrasting results can be explained with reference to the recent literature in economics on aspirations discussed in the introduction. Ethnic minority role models are part of the aspirations reference group of ethnic minorities, hence the positive impact of exposure to ethnic minority role models on their agency. On the other hand, no statistically significant effect is found for the ethnic majority role models. There are two possible explanations for this. First, the distribution of outcomes of the ethnic majority could enter the aspirations function of ethnic minority individuals, however, the information that they provide may not be perceived as relevant or new to them.[13] Second, and more in line with our prior expectations given the context of our study, it is likely that the distribution of outcomes of the majority group does not enter the aspirations window of the ethnic minority individuals (Genicot and Ray (2021)), hence the null effect of the ethnic majority role models intervention on the agency of the ethnic minority participants. Once we remove the relatability component of the role models, participants are less likely to be inspired by the motivational videos.

In the next part of the analysis, we investigate whether actual activities changed in line with the videos. The main message of the ethnic minority/majority role models videos is that starting a business, especially one different from the usual ethnic norms, can lead to prosperity. In the three videos, the role models/actors mention their initial experiences working for local companies to gain relevant business knowledge. Therefore, we test whether the treatments affect business entrepreneurship and working for waged labor. We expect to see movement towards these activities over time and away from others. Given that both the ethnic minority treatment and the ethnic majority treatment convey the same content, differences in the impact of these two

[13]It is also possible that the distribution of outcomes of the ethnic majority is already perceived by the ethnic minority group as being different from their own experience, so the new information that they receive from the ethnic majority does not lead to any updating of beliefs about the distribution.

treatments can be attributed to the *relatability* of the role models. The fact that in the ethnic minority treatment the role models are more relatable, are part of the aspirations set of the participants and positively affect the locus of control in round 1, we may expect to see bigger immediate impacts.

The results for the impact of the treatments on whether the attendee at the screening was engaged in business, wage employment, agriculture or gathering common property resources over the three intervention rounds are presented in Table 5. As for the locus of control, since there is no attendee in the pure control group, we compare the impact of the two role models treatments to the Placebo group.

The questionnaire was administered to participants immediately after the video screening, therefore we do not expect any effect of the treatments on activities in round 1. This is indeed the case across all activities presented in Table 5. Participants exposed to the ethnic minority role models respond to the intervention by switching into business activities (column 2) and wage employment (column 8) in round 2 and moving out of agriculture in rounds 2 and 3 (columns 5 and 6). Participants exposed to the ethnic majority role models treatment also move into business activities, but not until round 3 (column 3). They move out of agriculture in rounds 2 and 3 (columns 5 and 6). This suggests that even though the ethnic majority role models did not impact the agency of our participants, the information conveyed in the videos mattered and was taken on board by some respondents.

Table 5: Evolution of engagement of attendees in economic activities across rounds

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Has a business			Works in own agriculture			Works for a wage			Works in CPR		
	Round 1	Round 2	Round 3	Round 1	Round 2	Round 3	Round 1	Round 2	Round 3	Round 1	Round 2	Round 3
Ethnic Minority Role Models	0.017	0.072*	0.045	-0.011	-0.040**	-0.042**	0.079	0.149**	0.063	-0.018	-0.023	-0.060
	(0.041)	(0.041)	(0.047)	(0.020)	(0.019)	(0.017)	(0.048)	(0.061)	(0.063)	(0.029)	(0.035)	(0.040)
Ethnic Majority Role Models	0.011	0.038	0.084*	-0.025	-0.082***	-0.034*	-0.039	0.068	0.072	0.049	-0.052	-0.035
	(0.047)	(0.033)	(0.043)	(0.018)	(0.023)	(0.018)	(0.063)	(0.068)	(0.082)	(0.034)	(0.035)	(0.041)
Observations	438	442	448	438	442	448	438	442	448	438	442	448
R-squared	0.226	0.175	0.164	0.123	0.115	0.141	0.162	0.150	0.148	0.180	0.188	0.571
Mean Placebo	0.108	0.066	0.085	0.986	0.985	0.993	0.568	0.467	0.695	0.885	0.869	0.702

Note: All specifications include the baseline (Round 0) values of the outcome variable, district fixed effects and baseline (Round 0) controls (sex, marital status, age, and education level of the head of household, the size of the household, whether the household experienced a natural disaster, whether the head of household speaks Vietnamese, and the distance of the household to the nearest People's Committee Office). Robust standard errors (s.e.) clustered at the commune level are presented in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Source: Authors' calculations based on baseline data and data gathered during each intervention round.

Overall, Table 5 provides some evidence of uptake of the intervention in *both* treatment groups. The increased locus of control for participants in the ethnic minority intervention (Table 4) appears to lead individuals to a quicker move into business and wage activities. These results seem to depict a positive picture of the effect of role models: participants exposed to both types of role models act upon the information provided and switch in and out of activities in line with the information and example provided by the role models. Increasing the social distance between the role models and their target population (i.e., Treatment 1 vs. Treatment 2) affects the speed of such adjustments, with participants exposed to the ethnic minority role models acting quicker than the ones in the ethnic majority treatment arm. Key to such speed in uptake is the effect of the relatability of the role models on participants' aspirations, a result in line with Genicot and Ray (2021). These results at the individual level provide further support for previous findings in the literature: video role models, a very light-touch intervention, can have a positive impact on individuals' behavior even in remote and marginalized communities. But how do we reconcile the positive impact found at the individual level with the negative income effect at the *household* level? We explore this puzzle in the next section.

5.3 Mechanism

To understand this puzzle, we need to revert back to the context in which ethnic minorities live and work. The overall risk environment for these communities is extremely high, due to the frequency of large natural shocks. According to our baseline, about one-third of the households in our sample suffered from a natural disaster (e.g., flood, landslide) in the preceding 12 months. Although participants are following the advice of the role models, it is likely that switching to other, and potentially riskier, activities might have affected the overall resilience of the household to withstand natural shocks. In order to explore this mechanism, we reconsider the outcomes at the household level presented in Table 3, by assessing the impact of the role model interventions in the presence of natural shocks. We estimate equation (1) and include an interaction between each of the treatment indicators and a dummy variable capturing the household's experience of a natural shock in the previous 12 months.[14]

The estimation results of this heterogeneity analysis, presented in Table 6,

[14]The indicator *Shock* takes the value 1 if the household experienced a flood, drought, typhoon or other natural disaster in the previous 12 months.

Table 6: Activities of household at end-line: heterogeneity by shock

	(1) Household income	(2) Business	(3) Agriculture	(4) Wage employment	(5) CPR
Ethnic Minority Role Models	-0.091	-0.012	0.050*	0.064	-0.042
	(0.068)	(0.052)	(0.027)	(0.054)	(0.052)
Minority x Shock	-0.508**	-0.186**	0.010	-0.111	0.200*
	(0.255)	(0.080)	(0.046)	(0.150)	(0.105)
Ethnic Majority Role Models	-0.044	-0.008	0.014	0.019	-0.128**
	(0.074)	(0.046)	(0.029)	(0.063)	(0.058)
Majority x Shock	0.140	-0.052	-0.102	-0.006	-0.030
	(0.163)	(0.084)	(0.068)	(0.135)	(0.099)
Placebo	0.011	-0.030	0.030	0.057	-0.017
	(0.091)	(0.042)	(0.028)	(0.060)	(0.051)
Placebo x Shock	-0.210	-0.097	-0.021	-0.153	-0.059
	(0.177)	(0.082)	(0.052)	(0.137)	(0.095)
Natural Disaster	0.081	0.004	0.043	0.050	0.016
	(0.149)	(0.063)	(0.041)	(0.118)	(0.073)
Observations	762	762	762	762	762
R-squared	0.320	0.132	0.113	0.213	0.318
Mean Control (No shock)	10.833	0.106	0.905	0.729	0.829
Mean Control (Shock)	10.835	0.125	0.958	0.750	0.833

Note: All specifications include baseline (Round 0) values of the outcome variable, district fixed effects and baseline (Round 0) controls (sex, marital status, age, and education level of the head of household, the size of the household, whether the household experienced a natural disaster, whether the head of household speaks Vietnamese, and the distance of the household to the nearest People's Committee Office). Robust standard errors (s.e.) clustered at the commune level are presented in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Source: Authors' calculations based baseline and end-line data.

depict a stark picture: the negative income effects found for the ethnic minority role model intervention stem entirely from households that experienced natural shocks. Households in the ethnic minority role models treatment group that are exposed to a shock move out of business activities and engage significantly more in activities relating to common property resources (hunting, fishing, collecting firewood, etc.). We do not find any effect for households exposed to the ethnic majority role models, which, in fact, on average, move away from subsistence activities (column 5).

The results presented in Table 6 offer an essential insight, which has been unexplored in the literature so far. While the social connectedness of the ethnic minority role models is important to affect aspirations and the locus of control, the information itself, disjointed from the inspirational component as-

sociated with the role model, might be more relevant for individuals to make the *right* choices in relation to their income-generating activities. We interpret these results as suggestive evidence that the social connectedness of the ethnic minority role model videos might have inspired individuals to start a business who may not have been suited to doing so. This, ultimately, might have affected the household's ability to withstand negative natural shocks. Our findings suggest that caution should be exercised in designing policy measures that encourage individuals to diversify income sources in settings where climate and environmental-related risks are significant, vulnerability is high, and resilience is paramount.

These results highlight the complexities of providing role models in a society polarized along ethnic lines. Unequal development calls for more radical interventions than a light-touch one. More specifically for Vietnam, our findings are aligned with those of the World Bank (2009) in its country social analysis, which calls for a sea-change in the way in which marginalized ethnic minority communities are targeted and supported in Vietnam.

6 Conclusion

This study explores whether providing role models to ethnic minority groups is an effective tool for inspiring households to start businesses and increase incomes. Our research is motivated by the increased focus of development policies on reaching the most vulnerable and marginalized populations, an objective that lies at the heart of the SDG agenda. A recent literature has found promising evidence that providing role models through the medium of videos could be effective in inspiring vulnerable groups and improving welfare outcomes. Such interventions, if effective, could well be a straightforward way to reach marginalized groups and inspire behavioral change toward achieving attainable welfare-enhancing goals.

The setting for our study is rural Vietnam, where large income disparities persist between the ethnic majority and ethnic minority groups. We implement a three-arm randomized controlled trial in three rural provinces in Northern Vietnam where a large proportion of the ethnic minority population of Vietnam lives. Participants in our study are randomly assigned to one of three treatment groups and a control group. Each treatment arm involves the screening of three different videos over the course of a year. The first treatment group is exposed to videos featuring individual role models of ethnic minority backgrounds, who discuss their businesses, the challenges faced, the innovations

adopted, and their achievements. The second treatment group is exposed to videos of actors of the ethnic majority telling exactly the same story. The third treatment group is the placebo group. The control group of individuals does not participate in any screening and they are interviewed at baseline and end-line. Our focus is on disentangling the impact of the treatment in the first and second groups to isolate the relatability effect of the role model videos. Despite very careful design and effective implementation of the experiment, low levels of attrition and high levels of compliance, we find no evidence that the role models intervention improved outcomes at the household level. On the contrary, we find evidence that the ethnic minority treatment led households to suffer a fall in incomes.

At the core of our study design is the dual analysis at the household *and* participant level. Our results highlight the positive effect of the role model interventions at the *individual* level: in line with the literature, we find that participants were indeed moved by the role models videos, increasing their agency and engaging in new economic activities. The discordant results at the individual and household level need to be interpreted in the light of the natural risk environment in which these communities live and work. We provide evidence that the negative income effect at the household level is entirely driven by households hit by a negative natural shock. We conjecture that diversification into new activities might have affected the household's resilience to shocks.

Overall, our findings provide a cautionary tale: while role models might be effective in leading to behavioral change even in marginalized communities, policies need to take into account the household's ability to weather adverse natural shocks. This result is even more compelling in the light of the climate change crisis. Our findings suggest that remoteness and unequal development call for more sophisticated and possibly a more radical change than light-touch interventions such as the one considered in our study.

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Online Appendix

Implementation of the intervention

Implementation of the intervention involved a series of steps and the support of a series of government departments. At the start of the intervention implementation, an official letter from the Institute of Labour Science and Social Affairs (ILSSA) was submitted to the Department of Labour, Invalids and Social Affairs (DOLISA) in each of the three provinces, with an official request for support. Upon receiving a response, ILSSA assigned an enumerator team to each area. A schedule of the fieldwork was put together by ILSSA enumerators, in consultation with the local DOLISA contact person. Official letters were then sent to the communes in the study. The commune chair assigned a person responsible for the actual implementation. Village heads were then contacted by ILSSA and participant households were informed about the screening either by the village head or by staff at the local commune. Two or three days before screening, the enumerators contacted the households directly, to confirm the screening. In cases where three or fewer households attended the screening, the screening was rescheduled at another time or date.

Ethnic minorities may vary significantly in terms of living arrangements: some ethnicities, such as Tày, tend to live in close-knit communities, with houses built very close to each other. Other ethnicities, such as H'Mông, tend to live in houses scattered around the commune. In most cases, the videos were shown in commune headquarters, but in the case of communities in close living arrangements, the videos were screened in one household in the village. Due to treacherous road conditions and heavy rain, in some communes where households were widely spread, screening took place in two separate community halls.

After each video screening, ILSSA provided a full report of any implementation challenges encountered in the fieldwork. In particular, the second round coincided with the harvest season, hence screenings were rescheduled in the afternoon depending on participants' availability. The third round of the intervention was characterized by treacherous weather conditions, which led to the rescheduling of some video screenings.

Despite the remoteness of these communities and the weather conditions that made travelling to these communities impervious, all video screenings took place within the timeline of each intervention round.

Additional tables and figures

Table A1: Ethnicity of the household across provinces

Ethnicity	(1) Lao Cai %	(2) Lai Chau %	(3) Dien Bien %
Bố Y	0.42	0.00	0.00
Cống	0.00	3.93	0.00
Cơ Lao	0.00	0.36	0.00
Dao	15.55	6.79	1.40
Giáy	3.36	4.29	0.00
Hà Nhì	0.00	5.36	0.00
Hoa	0.00	0.00	0.35
H'Rê	0.00	0.36	0.00
H'Mông	28.99	30.36	29.47
Kháng	0.00	1.43	0.35
Khơ Mú	0.00	0.00	6.32
La Hủ	0.00	1.79	0.00
Lào	0.00	4.29	3.51
Lự	0.00	2.86	0.00
Mường	0.84	0.00	0.00
Nùng	17.23	0.00	0.00
Tày	33.61	0.36	0.35
Thai	0.00	37.50	57.89
X'Tiêng	0.00	0.36	0.00
Unknown/doesn't know	0.00	0.00	0.35

Source: Authors' calculations based on baseline data.

Table A2: Sample by province and treatment and control groups at baseline and end-line

	Control		Ethnic minority		Ethnic majority		Placebo	
	Base	End	Base	End	Base	End	Base	End
Lao Cai								
Communes	6	6	6	6	7	7	7	7
Households	64	63	64	62	55	55	55	54
Lai Chau								
Communes	8	8	8	8	8	8	7	7
Households	64	61	64	61	88	84	64	56
Dien Bien								
Communes	8	8	8	8	7	7	8	8
Households	71	70	78	70	56	54	80	72
Total								
Communes	22	22	22	22	22	22	22	22
Households	199	194	206	193	199	193	199	182

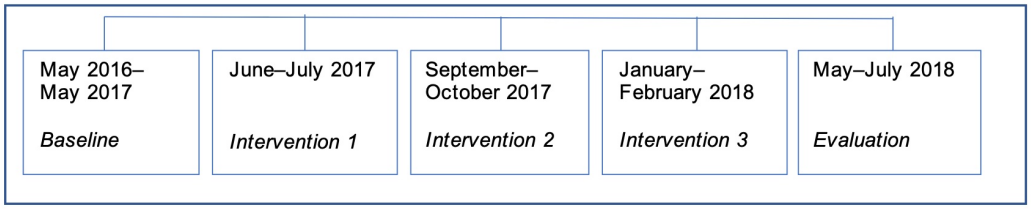
Source: Authors' records of intervention.

Table A3: Compliance and intensity of treatment

	(1)	(2)	(3)	(4)	(5)
Ethnic minority video	R1	R2	R3	% At least one	% All
Lao Cai	53	57	54	95.3	70.3
Lai Chau	53	55	56	93.8	71.9
Dien Bien	62	62	63	87.2	57.7
Total	168	174	173	91.7	66.0
Ethnic majority video	R1	R2	R3	% At least one	% All
Lao Cai	48	54	50	100.0	78.2
Lai Chau	74	73	76	95.5	68.2
Dien Bien	50	48	47	96.4	73.2
Total	172	175	173	97.0	72.4
Placebo	R1	R2	R3	% At least one	% All
Lao Cai	48	48	49	96.4	72.7
Lai Chau	54	61	58	87.5	67.2
Dien Bien	64	61	64	87.5	57.5
Total	166	170	171	98.4	70.9

Source: Authors' records of intervention.

Figure A1: Study timeline



Source: Authors' records of intervention.