Breaking Down the Barriers to Disability Benefits. Experimental Evidence from Vietnam
DRAFT - NOT FOR CIRCULATION

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Abstract

To investigate the barriers to expanding the coverage of disability benefit programs in less developed settings, disability program information was randomised via a commune loudspeaker system in 70 rural communes in northeast Vietnam. The broadcasts led to an 11 percent increase in the number of applications and an 8 percent increase in the number of persons certified as disabled by the commune disability determination committee. The effects were substantially higher among persons certified to have a severe disability who are entitled to a monthly disability pension, and among men and persons of working age. The results suggest that increasing the awareness of disability benefit programs through information campaigns at the local level can be a cost effective way of increasing program coverage in low- and middle-income countries.

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1 Introduction

Countless numbers of people around the world live with some form of disability among whom the vast majority live in low- and middle-income countries (Organization et al., 2022; World Health Organization and others, 2011).[1] Persons with disabilities in these settings experience high levels of poverty and disadvantage (Mitra and Palmer, 2023; Mitra et al., 2013). One key contributing factor is the underdevelopment of disability inclusive social protection systems (Devandas Aguilar, 2017). In recent years, in accordance with obligations under international, regional and national human rights instruments, many governments have developed or modified disability pension and other social protection programs for persons with disabilities.[2] Coverage of these programs is low. According to data from nine low- and middle-income countries, eight in ten persons with disabilities who needed welfare services reported that they were not able to receive them (United Nations, 2018). In Vietnam, a lower middle income country and the focus of this study, just one percent of the adult population reported to be receiving the disability pension.[3] This compares with coverage rates of five percent and higher in high income countries including the United States, United Kingdom, Australia and the Netherlands (Burkhauser et al., 2013; Maestas et al., 2021, 2015).

There are several reasons for the low coverage of social protection programs for persons with disabilities in low- and middle-income countries. Disability pension programs have long been in place in many now rich countries (Ravallion, 2015). Given the relative newness of these programs, governments in poorer countries have much less experience in administering the programs. Unlike an age pension or maternal health program, determining eligibility to a disability benefit program is not straight forward. Persons with disabilities form a heterogeneous group and some health conditions or impairments are invisible (such as lower back pain) or episodic (such as mental illness). Determining how health conditions or impairments restrict one's ability to work or participate more broadly is also subjective. In rich countries, such as the United States, disability determination is lengthy and complex (involving multiple medical and income screens) and is prone to classification error.[4] Many governments generally do not possess the resources and capacities to administer such complex disability determination processes. Alternate approaches, including community based

[1] According to one estimate, 16% of the world's population or 1.3 billion people live with some form of disability Organization et al. (2022). It is estimated that 80% of the world's disabled population live in low- and middle-income countries (World Health Organization and others, 2011).

[2] Specifically, Article 28 of the CRPD which came into effect in 2006 and is ratified by 185 countries mandates state parties to safeguard the right to an adequate standard of living and social protection for persons with disabilities. While many countries had some form of laws protecting the rights of the disabled in place prior to ratifying the convention, ratification requires signatory states to review existing laws and policy frameworks, modify or abolish discriminatory laws, and adopt new legislative measures to ensure future implementation of obligations under the CRPD.

[3] Own calculations from the Vietnam Disability Survey 2016.

[4] Large numbers of U.S. disability pension beneficiaries are granted benefits upon appeal of the initial denial decision (Maestas et al., 2021, 2015).

targeting models, have consequently been developed (University College of London and Ministry of Labour, Invalids & Social Affairs, 2017).

Aside from the administrative challenges, whether an eligible person with disability receives benefits will depend upon their level of awareness and knowledge of the program. Barriers to information may be particularly important to consider for low- and middle-income settings. For one, education attainments are very low for persons with disabilities (Mitra et al., 2013; United Nations, 2018; World Health Organization and others, 2011). Typically, they will have received no formal schooling or have not completed primary school. They reside disproportionately in rural areas where road infrastructure may be poor and public transportation inaccessible or simply not available, making it difficult or costly to reach public grant offices in urban areas. Opportunities for informal information sharing within the community may be also limited due to deeply entrenched discriminatory attitudes. Disability is often associated with incapacity and in some cultures is seen as a form of divine punishment. Accessing information online is particularly suitable for people with disabilities who face a range of barriers to accessing information. However, information and communication technology usage is very low due to poverty and other factors. In our study context, just 5 percent of the eligible disabled population used the internet in the past month and one-third owned a mobile phone (Table 2).

Indeed, recent reviews of the literature reveal that people with disabilities in low- and middle-income countries, including in Asia, are not always informed of social protection programs in their area (Banks et al., 2017; Walsham et al., 2019). For those aware of such programs, they were unsure of whether they meet the eligibility requirements or about the application requirements (e.g. requried documents). Other reported barriers included difficulties and costs associated with accessing public grant offices, and lack of respect for applicants during the application process. If a lack of information on social protection programs for persons with disabilities exists, then providing information may be a cost-effective strategy for increasing the uptake level of benefits in less developed settings. To examine this question, this paper presents a randomised field experiment on providing disability benefit information among rural communes in Vietnam.

In late 2020, in cooperation with the Vietnamese government, disability benefit information was randomised among 70 communes in Bac Giang province, northeast Vietnam. The information was delivered through an extensive commune loudspeaker system. First established during the war time in the 1960's to warn villagers of bombing raids, utility poles all over the country are attached with a loudspeaker which delivers public broadcasts twice daily to the masses. The system operates as one of the main communication channels of the government, along with new channels such as social media and popular messaging apps (Nguyen-Thu, 2020). The loudspeakers represent a unique and advantageous channel for an information intervention involving persons with disabilities given their low use of information and communication technology. Running over a period of 5 weeks (twice a day for two days each week totalling 20 broadcasts), the announcements included detailed program

information on eligibility, benefits, and application procedures. Beginning from the commencement of the announcements, information was collected on the number of lodged applications and certified beneficiaries for a period of three and a half months so as to allow sufficient time for the applicants to gather the necessary medical documents and for the application to be assessed by the commune disability determination committee.[5]

The announcements led on average to an 11% increase in the number of disability benefit applications and an 8% increase in the number of certified people with disabilities over the data collection period. The magnitudes were similar since the vast majority of people who applied for benefits were certified by the commune disability determination committee as disabled. The overall effects of the information experiment mask substantial differences across the disabled population. The broadcasts substantially increased program participation among persons certified with severe disabilities, males and persons of official working age (below sixty years). Specifically, the announcements led to a 35% increase in the number of persons certified with severe disability and no effect on persons certified with either mild or profound disabilities; a 33% increase in the number of male applicants and no effect on female applicants; a 21% increase in the number of working age applicants (<60 years of age) and no effect on elderly applicants. No clear effects are found according to the type of certified disability which likely relates to the many disability type categories and relatively small number of applications lodged over the collection period.

Overall, the result suggests that lack of information is a barrier and that given their low cost information and nudge campaigns are an attractive policy option to raise participation of persons with disabilities in social protection programs (Thaler and Sunstein, 2009). This is particularly the case among persons whose potential benefits exceed the costs associated with applying. In Vietnam, persons with severe disabilities are entitled to a wide array of benefits including a monthly disability pension, non-contributory health insurance and discounts on public transport and other state services. In contrast, entitlements for persons with non-severe disabilities are negligible (outside of exercising their rights under the disability law) whereas there are monetary and non-monetary costs involved in applying which likely explains the unresponsiveness of this group to the announcements. Although the benefit levels are greater for persons certified with profound disabilities it is possible that this group was already well targeted. Social protection systems in low- and middle-income countries tend to pick up the most severe and visible forms of disability (Banks et al., 2017). In support of this, I show using data from the Vietnam Disability Survey, the first nationally representative survey dedicated to disability, that persons reporting a profound disability are approximately twice as likely to be receiving the disability pension compared with persons reporting a severe disability.

Unlike in high-income countries, there exists no age limit on the eligibility to disability benefits in Vietnam. In fact, the disability pension amounts are higher for elderly persons (and children) with

[5]Under law, the commune disability assessment committee must undertake the assessment within twenty working days of receiving the application.

disabilities. However, persons cannot receive multiple forms of public income support. For example, a person receiving the old age pension cannot simultaneously receive the disability pension. Again drawing upon the Vietnam Disability Survey, I show that persons with severe disability above the age of 60 are significantly more likely to be receiving other forms of public transfers (43% versus less than 5% for equivalent persons aged 16-59).[6] This rate is around twenty percent higher for females whose official retirement age is 55 years of age compared to 60 years for men. Together these findings provide suggestive evidence of a possible explanation for the non-effect of the intervention for elderly persons and females with disabilities. Although disability is highly age related, elderly persons and in particular females at the margin were more likely to be receiving other benefits and thus ineligible for disability benefits. Further to this, I show that the treatment effect is contained to mature age men whom presumably were not yet eligible for other forms of public income support.[7]

This study builds on the large literature on participation in social programs. Households who are eligible for a government benefit program often do not enroll in the program (Currie, 2006). Existing evidence across a range of country contexts points to increased participation in social programs, from monetary subsidies (e.g. Banerjee et al., 2021; Finkelstein et al., 2019), reductions in transaction costs (e.g. Alatas et al., 2016; Banerjee et al., 2021; Dupas et al., 2016), and information (e.g. Banerjee et al., 2021; Bhargava and Manoli, 2015; Gupta, 2017). I provide the first experimental evidence on the role of information in improving access to benefits for people with disabilities, a particularly economically and socially disadvantaged group. I do so in a low- and middle-income country setting where the benefit coverage rates are low and the barriers to information are high.[8] The simple five-week information intervention led to a large effect among the eligible disabled population in the short-run. This suggests that increasing the awareness of the right to social protection among persons with disabilities and their families through information campaigns at the local level may be a relatively cost effective way of increasing the coverage of social protection programs for people with disabilities. The finding is timely as many governments have introduced or modified disability benefit programs in recent years.

The remainder of the paper is organized as follows. Section I describes the Vietnam context

[6]Specifically, the survey question asks whether in the last 12 months respondents had received any monthly subsidies, and whether it was reserved for persons with disabilities or 'other' category. The other categories were not listed but there exists multiple income support programs for elderly persons in Vietnam. This includes, for instance, persons of age pension eligibility age who worked in the formal sector and contributed to social insurance; persons aged 60-80 years who do not have someone to support them and live in conditions of poverty; persons 80 years of age and above who do not receive an age pension or any other social beneficiary transfer.

[7]Note the prevalence of disability among children (< 15 years of age) is very low and they were more likely to already be certified with a disability. Moreover, the treatment effect is negative and insignificant.

[8]More broadly, this study also builds on the literature on the role of information on the behaviour of vulnerable subpopulations in low- and middle-income country contexts (Dupas, 2011; Jalan and Somanathan, 2008; Jensen, 2010). For instance, Dupas (2011) finds that providing information on HIV prevalence rates affects the incidence of risky sexual behavior among teenage girls in Kenya. Jensen (2010) finds that providing information on higher measured returns to schooling increased years of schooling among youths in the Dominican Republic. Jalan and Somanathan (2008) show that informing households that their drinking water is contaminated increases the probability that they start purifying their water.

and presents novel information on disability prevalence and receipt of social protection obtained from the first large scale household survey devoted to disability in Vietnam. Section II outlines a simple conceptual framework to hypothesise how, and for whom, our intervention of community broadcasts will influence the uptake of disability benefits. Section III describes the experimental design. Section IV presents the results, and Section V concludes.

2 Background

2.1 Disability in Vietnam

Vietnam has high numbers of people with disability, in part, due to its history of warfare. The Second Indochina War (1965-1975) resulted in the colossal loss of Vietnamese lives, with estimates ranging from one million to three million deaths, and millions more were thought to be injured through direct exposure to more than a decade of violence.[9] However, the indirect or 'hidden' effects of war on disability may also be substantial and not surface until generations later (Ghobarah et al., 2003; Hunt, 1999). Studies have established long-lasting impacts of exposure to war-time bombing and the spraying of toxic military herbicides in Vietnam on a range of disability and mental health measures with the highest impacts among cohorts who were in utero or early childhood during the war period (Le et al., 2022; Palmer et al., 2019; Singhal, 2019).

Several large scale data collection efforts have attempted to document the extent of disability in the Vietnamese population. Most recently, the Vietnam Disability Survey (hereafter VDS) was fielded in 2016 by the General Statistics Office with technical assistance from UNICEF and the Washington Group on Disability Statistics (WG). The VDS marked the first large-scale nationally representative survey (N=35,400 households) dedicated to disability with measuring tool sets based on contemporary international standards in the measurement of disability. Specifically, the survey adopted the WG Short-Set (WG SS) questionnaire which focuses on measuring functional difficulty in basic actions including seeing, hearing, mobility, cognition, communication and self-care.[10] Based upon the WG recommendation to count as disabled people with a lot of difficulty or who are unable to do (at least) one of six core activities, approximately five percent of the population aged 15 years and above in Vietnam report living with a disability (Table 1).[11] The prevalence rate is similar to that of those recorded from household survey data in other low- and middle-income countries which adopt the same WG-SS measure and cut-off (Mitra et al., 2022).[12]

The characteristics of the disabled population in Vietnam are similar to what we observe in other developing country settings. Table 2 presents summary statistics on the disabled (column

[9] A data-driven estimate of Vietnamese war-related deaths from 1965 to 1975 is approximately one million (Hirschman et al., 1995).

[10] Refer https://www.washingtongroup-disability.com/question-sets/ for more information on the measure.

[11] Note the other difficulty scale categories include no difficulty or some difficulty.

[12] We note further that the rate is similar, albeit slightly lower, than the 2009 Vietnam Population and Housing Census which adopted an abridged version of the WG-SS.

2) and non-disabled (column 4) population generated from the VDS. Relative to the population without disability, people with disabilities on average are significantly older, much less educated and likely to be working, and more likely to be living in rural areas. Close to two-thirds of the disabled population are sixty years of age or above compared to 13% of the non-disabled population. Around 60% of the disabled population have not completed primary school education compared to 15% of the non-disabled population (one-half of this number have no formal schooling compared to just 6% of the non-disabled population). Only one-quarter of persons with disabilities report to be working compared to the vast majority of persons without disabilities. Reflecting the different age distributions and the fact that females tend to live longer than males, the disabled population has a higher proportion of females.

2.2 Social protection system and disability in Vietnam

The social protection system in Vietnam has long given priority to persons who acquired their injuries or impairments through contributions towards the reunification of Vietnam. Victims of dioxin containing U.S. military herbicides are also given special social beneficiary status. More broadly, state obligations for the social protection of persons with disabilities have been in place since 1998 which were strengthened in 2010 under the inaugural national disability law. The Law on Persons with Disabilities of Viet Nam set out a framework for the protection of the rights of persons with disabilities broadly in line with those outlined in the CRPD which the country signed in 2007 (and later ratified in 2014).

Eligibility for disability benefits in Vietnam includes any person with disability as defined under the national disability law: "Any person impaired in one or more body parts or suffer functional decline manifested in the form of disability which causes difficulties to his/her work, daily life and study." This definition is broadly in line with the definition of persons with disabilities contained in the CRPD as the intersection of a health condition or impairment with various barriers that hinder participation in society.[13] Inspired by a social model of disability, disability under the CRPD is viewed not merely in terms of the existence of a health condition but how that condition limits one's ability to function in society.

Persons with disabilities are entitled to a range of state supports which varies according to the degree of disability. There are three degrees of disability: persons with **profound** disabilities are those whose impairments prevent them from performing daily life activities; persons with **severe** disabilities are those whose impairments prevent them from performing some daily life activities; persons with **moderate** disabilities are all other disabled persons as defined under the law (i.e. persons with impairments that experience limitation in functioning). Persons with severe disabilities are entitled to a monthly disability pension with higher amounts awarded to persons with profound

[13] Specifically, under the CRPD persons with disabilities are defined as those "who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others."

or disabilities. Specifically, persons certified with severe disabilities are entitled to 450,000 VND ($\sim$ 19 USD) per month and persons certified with profound disabilities are entitled to 540,000 VND ($\sim$ 23 USD) per month. Higher amounts are awarded to children and the elderly [540,000 VND ($\sim$ 23 USD) for those with severe disabilities and 675,000 VND ($\sim$ 29 USD) for those with profound disabilities]. All certified persons with disabilities are entitled to free public health insurance and discounts on other state services such as public transport.

The assessment of disability is undertaken by a commune (village) committee comprising the president of the commune and local representatives of various organisations including the Ministry of Labour, Invalids and Social Affairs (MOLISA) which is the ministry responsible for the administration of social welfare.[14] The committee is tasked with determining disability status on the basis of a submitted application for disability benefits and accompanying medical information certifying a health condition or impairment. The determination itself is conducted using a disability assessment tool designed to assess the three degrees of disability severity and the types of disability specified under the national disability law. In cases where the medical information provided is not clear cut the commune committee will undertake an in-person interview with the applicant.

The VDS collected detailed information on the receipt of social protection supports as well as the certification of disability as adjudged by the commune committee. As shown in Table 1, 1.2% of the adult population (15 years of age and above) were certified by the government to have a disability.[15] The vast majority of these persons were certified with severe and profound disabilities (mostly severe) with a combined prevalence of 1% representing some eighty percent of the certified disabled population. Because only persons with severe disabilities are entitled to income support, the prevalence of the population in receipt of the disability pension is very similar to the prevalence of certified disability (1.09%).[16] The most commonly certified disability types are physical and mental disabilities with sensory, visual, intellectual and 'other' disability types significantly less represented among the certified disabled population.

The collection of information on an internationally standardised measure of disability as well as the official certification of disability by the government in the VDS is rare in a developing country context and enables one to compare the extent of targeting of disability for purposes of the provision of social protection. As shown in Table 2, 5.05% of the adult population in Vietnam report a disability based upon the recommended WG-SS measure. This compares to approximately

[14] According to the national disability law (article 16) the disability determination committee should include the following: president of the commune committee, head of the commune health station, local commune representatives from the Department of Labour, Invalids and Social Affairs, disabled people's organisation, and unions such as the Women's Union and Youth Union. However, in practise there exists variation in the composition of committee members across communes. For example, only a small select number of communes have a disabled people's organisation.

[15] Note that this number excludes persons with disabilities classified as meritorious persons or Agent Orange victims which receive a different class of benefits.

[16] However, we note that three quarters of respondents who report themselves to be certified as mildly/moderately disabled also report to be in receipt of the pension (column 3). It remains possible that these people inaccurately reported their disability status.

one percent of the population who report to have been certified as disabled by the government and in receipt of the disability pension. Therefore around one in five adult persons with disability in Vietnam are certified as disabled and receive the disability pension.

The WG-SS measure of functional difficulties is in line with the general definition of disability in the national law which entitles persons to protections under law. It is based upon a recommended cut-off of experiencing at least 'a lot of difficulty' in performing basic actions that may correspond to limitations in other life areas (work, daily activities, study). It is interesting to note that the returned prevalence rate of five percent is broadly in line with the the proportion of the population receiving disability benefits in industrialised countries and may be viewed as a measure of moderate to severe levels of disability in the population (Burkhauser et al., 2013; Maestas et al., 2021, 2015). Close to one-quarter of adult VDS respondents reported to experience at least 'some' degree of difficulty in any of the six WG-SS domains which captures persons with more mild forms of disabilities who may not classify as a person with disability under law.

It is possible to adopt an alternate threshold of disability as 'cannot do' in at least one functional domain which more closely aligns with the definition of severe disabilities in the disability law as persons who cannot perform some daily activities. As shown in Table 2, based upon this alternate threshold of disability, 1.5% of the adult population report a disability. Among this disabled population, the proportion in receipt of the disability pension is 37% or approximately two in five persons at double the rate of the population with a moderate level of functional difficulties. As anticipated this sub-population also has a lower level of educational attainment and work participation. As shown in Table 2 (column 3), only 12% reported to working in the past 7 days for example.

There also exists variation in the extent of pension coverage across different functional domains as recorded by the WG-SS. Coverage rates are highest for persons with communicating and self-care difficulties (44% and 31%), followed by cognitive difficulties (24%), mobility and hearing difficulties (17%), and seeing difficulties (14%). Relatively high levels of pension coverage among persons experiencing difficulty in performing self-care activities, such as washing and clothing oneself, makes since the self-care question was included in the WG set partly as a proxy for more severe disabilities and to document the population unable to work and in high need for social protection support.[17] We note that the absolute number of persons receiving the pension is similar for persons with mobility and cognitive difficulties compared to those reporting difficulties in self-care, as reflected by the similar pension prevalence rates, but the pension coverage rates are relatively low due to higher reported levels of these types of functional difficulties in the population.[18]

Finally, we draw attention to some key differences in the characteristics of the disabled popu-

[17]It is interesting to note that the prevalence of the population reporting a lot of difficulty in performing self-care (1.5%) is the same as the prevalence rate returned for the alternate disability measure with a higher threshold of functional difficulty.

[18]Walking difficulties represent the most common functional difficulty with a prevalence rate of 3% followed by difficulties in concentrating or remembering at around 2%.

lation as self-reported and certified by the government. As shown in Table 2, a higher fraction of persons above the age of 15 years reporting to have a disability are female compared to male (60% versus 40%) whereas males are more likely to be certified as disabled than females (54% versus 46%). Moreover, close to two-thirds of the self-reported population with disabilities are sixty years of age or above yet around the same fraction of people certified with disabilities are below the age of 60 years. Education levels, the fraction working and living in rural as distinct to urban areas are similar whether disability is self-reported or certified.

Overall, the rate of coverage of social protection benefits for persons with disabilities in Vietnam is low. We estimate that around 20% of the eligible population are certified as disabled by the government and receiving disability benefits. This corresponds to data from other developing countries where 80% of persons with disabilities who needed welfare services are reportedly unable to receive services (United Nations, 2018). Among the severely disabled population the rate of coverage is doubled which suggests some degree of targeting yet only four in ten persons are receiving the main form of social protection support in the disability pension. Coverage rates also vary according to the type of disability and demographic characteristics including gender and age. In the following section we discuss a range of possible explanations for the low take-up of disability benefits and how our information intervention may overcome some of them.

3 Conceptual Framework

Participation in social programs is a sequential process characterised by eligibility, awareness, application and ultimate enrolment (Coady et al., 2013; Currie, 2004; Heckman and Smith, 2004). We discuss each stage with respect to the features of the disability benefit program and what we know about the lives of persons with disabilities in Vietnam. We then apply this framework to hypothesise how, and for whom, our intervention of community broadcasts will influence the uptake of disability benefits.

As previously discussed, eligibility to disability benefits in Vietnam includes any person with disability as defined under the national disability law. Broadly, this includes persons who experience functional difficulties which causes activity limitations and participation restrictions. There are no age or wealth restrictions placed on eligibility to disability benefits which is distinct to many industrialised countries. However, it is stated under law (article 51) that persons with disabilities that are currently receiving other state benefits (such as an old age pension, social insurance, poor household transfer, war veteran and meritorious person benefits) are not eligible for disability benefits. One explanation for the relatively low coverage of disability benefits may thus be that a non-trivial number of persons with disabilities are already receiving other state benefits. Close to one-half (49%) of adult respondents with disability in the VDS reported to be receiving some form of monthly state subsidy among which 38% reported to receiving the disability pension with

the remainder receiving other state benefits consisting primarily of old age benefits.[19] Therefore, taking into account other state benefits, it is estimated that around one-half of the eligible disabled population remain uncertified. The fraction is lower among the severely disabled population yet around one in three persons with severe disabilities remain uncertified.[20]

Since participation in the disability benefit program in Vietnam is determined by self-selection, whether a person decides to lodge an application depends upon their level of awareness and knowledge of the program. Awareness of program eligibility has been found to be a major source of variation in social programs (Heckman and Smith, 2004). Knowledge about social programs can be obtained through friends and neighbours, television and radio campaigns and from social networks such as disabled people's organisations. Alternatively, the internet is increasingly a channel for conveying information about government services. Accessing information online is particularly suitable for people with disabilities who may face a range of physical, communication and transport barriers to accessing information.

The VDS collected information on several variables which can used to proxy for access to information. As shown in Table 1, only around five percent of the adult population with disabilities reported to have used the internet over the past month compared to almost one half of the non-disabled adult population. Further, just one-third of the disabled population owned a mobile phone compared to the vast majority (85%) of the non-disabled population. The rate of participation in any social organisation or professional union was also markedly lower among the disabled, particularly among those with severe disabilities (28% versus 45%). Taken together this implies that awareness of eligibility to social programs is likely to be lower among the disabled population. Furthermore, awareness of social programs has also been shown to be correlated with education levels which are substantially lower among the disabled population. It is conceivable that awareness levels will also vary according to dimensions of disability. Access to social organisations is lower for persons with severe disabilities, for example. People with learning and cognitive disabilities may have problems understanding and absorbing information whereas people with hearing or vision related disabilities will have difficulty accessing information through different mediums.

Even if people with disabilities are eligible and aware of the program, whether they decide to lodge an application will depend upon the expected benefits and costs of program participation (Currie, 2004; Moffitt, 1983). The level of benefits awarded is a function of the degree of the person's disability with severe and very severe disabilities awarded the highest level of benefits that includes a monthly disability pension. Presumably because of an inability to work, children and elderly persons are awarded higher pension amounts. Because anything that increases the size of the benefits will increase the likelihood of participation, this implies that the probability of

[19] Small numbers of persons reported to be receiving state benefits as a war veteran, victim of Agent Orange, and poor household.

[20] Seventy percent of persons with severe disabilities reported to be receiving a monthly cash transfer with around half (53%) of the beneficiaries receiving the disability pension.

participation will rise with the threshold of disability and age category.

Applying for disability benefits is not straightforward. Applicants must supply medical documentation certifying their impairment or health condition which necessitates visiting a doctor which may extend to specialist doctors and extensive medical testing. This may involve multiple doctor visits and substantial out-of-pocket costs not to mention indirect costs of time and money associated with travel to and from health facilities. It is also common for persons to make multiple trips to public offices. Qualitative interviews with persons with disabilities in Vietnam have described the paper work and administration involved with disability benefit application as 'excessive' and 'complicated' (Palmer et al., 2015). These hassle costs are a function of the geographic isolation of the individual, including how far they are located from public offices and health facilities and the cost and availability of public or private transportation. The latter is likely to vary across the disabled population (persons with significant mobility disabilities face obvious challenges). The direct costs may therefore be highest for precisely those individuals in greatest need. Further, some or all of the costs may be borne by other family members or an individual other than the beneficiary who may be less willing to bear the costs.

Another cost identified in the literature on participation in social programs relates to what has become known as stigma-related costs or personal distaste associated with welfare (Moffitt, 1983). Given the high level of social stigma associated with disability, it is possible that being certified as disabled may be associated with negative feelings, such as shame and lack of self-respect. This is perhaps more likely to be an issue for persons with less severe, visible or traditional forms of disability. Interviews with persons with significant disabilities in Vietnam did not reveal any negative self-characterisations associated with the receipt of disability benefits and emphasised instead that social protection supports fell short of current needs (Palmer et al., 2015). However, it remains possible that hassle costs and negative attitudes encountered at public facilities may increase the personal distaste for welfare.

The final stage in the participation process relates to the certification of disability and enrollment in the program. Assessment of disability is undertaken by a local disability determination committee with the use of a disability assessment tool. One of the advantages of the community targeting model is that community representatives have more intimate knowledge of the applicant and their circumstances. On the other hand, disability determination is complex and there are inherent difficulties in interpreting medical documents and health conditions as to whether they constitute limitations in daily functioning as per the definition of disability in the disability law. To complicate matters further, the committee is required to grade the degree of functional difficulty into three categories. A review of the disability determination process in Vietnam raised several challenges faced by commune committees in implementing the disability determination tool (University College of London and Ministry of Labour, Invalids & Social Affairs, 2017). Chief among these were that the tool was very medical in nature and there was inadequate training of local cadres. Commune

committees are therefore perhaps more equipped to assess severe or obvious functional limitations than mild functional difficulties or those less associated with traditional forms of disability such as back pain.

The above framework provides us with a number of predictions relating to our intervention. The community broadcasts will reduce information barriers and the searching costs of knowledge acquisition which, in turn, will increase the likelihood of program participation for the disabled population. It remains possible that persons with certain disabilities, such as hearing or cognitive disabilities, will be less influenced by the intervention. However, only a small fraction of the sample of persons with disabilities in the VDS live alone so information from the broadcasts may be transferred or acted upon by other members of the household yet there exists potential agency problems. It is also important to note that our intervention will reach only persons with disabilities living in the community and not those that are living in formal institutions who are small in number (less than one percent of the VDS disabled sample reside in institutions).[21] The broadcasts will furthermore be most efficacious among households that are located in near vicinity to the loudspeakers. However, we cluster the intervention at the level of the village to allow for information spillovers across households within the same village.

Because the size of the benefits increases with the degree of disability, the intervention should induce greater participation among persons with severe disabilities. Greater take-up is also predicted among children and elderly persons with disability who are entitled higher pension payments. However, as illustrated using survey data elderly persons may already be in receipt of other benefits (namely the old age pension) or be less able or willing to bear the hassle costs associated with applying for disability benefits. For persons with mild or moderate disabilities, the disutility of participation may outweigh the potential benefits. This is compounded by the uncertainty associated with the certification of disability by commune committees. Because a person's decision to apply will also be influenced by his or her expectations of being accepted (Coady et al., 2013), the intervention is predicted to have less impact on persons with mild or moderate level disabilities.

4 Experimental Design

4.1 Setting

The study took place in the northern province of Bac Giang. The study location was chosen because in ways Bac Giang represents the typical province in Vietnam and the local authorities were willing to collaborate with the study team. Located in the north east region of the country approximately 50 kilometres from the capital of Hanoi, Bac Giang province has an average monthly income of around 4 million VND ($\sim$ 170 USD) and a poverty rate of around 6 percent that is very close

[21] Author's own calculation using the Vietnam Disability Survey.

to the national average.[22] The province is sub-divided into 9 rural districts and 1 provincial city where some 15% of the province's two million inhabitants reside. Consistent with other provinces in Vietnam, the vast majority of the population live in rural areas many of whom make their living through farming activities such as rice, vegetable, and fruit crop cultivation. Notably, Bac Giang is the nation's largest producer of lychees. Due to its proximity to major trade routes, the province has experienced strong economic growth in recent years on the back of a growing industrial sector and foreign direct investment.

The experiment was contained to rural districts since people with disabilities in Vietnam live overwhelmingly in rural areas. Barriers to information and the costs of program participation for persons with disabilities are also likely to differ across urban and rural areas as may the administrative capacities of local disability determination councils. As a consequence, the effects of the intervention are likely to vary between rural and urban settings. Furthermore, the administrative structure of urban areas is different to that of rural areas in Vietnam. Urban areas are divided into wards which are substantially smaller in land area and higher in population density than communes which has implications for the randomisation of community broadcasts at ward level and the greater potential for spillovers of information across wards. Whilst we cannot rule this out, the potential spill over from one commune to another is significantly less.

Among the nine rural districts of Bac Giang, four were selected for the study. The districts of Viet Yen, Viet Dung, Yen The, and Lang Giang were chosen as those that were not too mountainous and remote with known well-functioning loudspeaker systems. If districts are too sparsely populated or the loudspeaker systems not functioning properly then our information broadcasts will be less effective. As illustrated in Figure 1, the four study districts flank the provincial city of Bac Giang (shaded area). It is shown further in Table 3 that the four districts are somewhat similar in baseline characteristics including the number of communes, number of households per commune and the poverty rate. Typically, there are around 20 communes in each district. Compared to the other five rural districts in Bac Giang province the study districts are more densely populated and less poor, reflecting their greater proximity to the provincial city.

4.2 Experiment

The experiment took place in four rural districts in northeastern Vietnam, and involved all of the 70 communes in the districts. The sample size was determined based upon information on the certification of disability contained in the VDS. Surprisingly, there is almost no variation in the certification rate across communes. In effect, individuals within communes are no more different to individuals across different communes which suggests some sort of program rationing across communes. Taking into account the low level of intra-cluster correlation and given a baseline

[22]Specifically, the average monthly income and income poverty rate in the province is 3.9 million VND ($\sim$ 166 USD) and 6.3% compared to 4.2 million VND ($\sim$ 179 USD) and 5.8% respectively for the whole country (REF).

enrolment rate of 1%, we determined that a sample size of 70 communes was sufficient to obtain 80% power for a 5% level test of a difference of at least ten percentage points in the probability of being enrolled in the disability program.[23] Given the low levels of enrolment, a reasonably large effect was deemed to be meaningful from a policy perspective.

After stratifying the communes by district location, one-half of the communes (35) was randomised to receive the community broadcasts of disability program information and the remaining half continued with the regular community broadcasts without the inclusion of the information on disability programs.[24] Stratification ensured that a similar number of communes within each district were and were not exposed to the broadcasts. Table 4 presents the means of baseline characteristics for the treatment and control communes using administrative data from MOLISA, the governing ministry of social protection programs in the country. As anticipated given the randomisation, there exist no statistically significant differences in the mean number of households and percentage of poor households between the two groups of communes.

Starting in late October 2020, each of the randomly selected subset of communes commenced broadcasts of disability benefit information via a community loudspeaker system. First used in the 1960's to deliver warnings of American bombings, utility poles in neighbourhoods all over the country attached with a loudspeaker continue to deliver public messaging every morning and afternoon (Nguyen-Thu, 2020). The loudspeaker system operates as one of the main communication channels of the government, along with new channels such as social media and popular messaging apps. It is credited as playing a role in the government's recent successful campaign in containing the community transmission of the novel coronavirus. Critics have viewed the system as an annoyance and symbol of ideological conservatism (Vo 2017).

The disability benefit broadcasts were included within the regular scheduled broadcasts at 6:30 in the morning and at 4:30 pm in the afternoon for two days a week over a period of five weeks. In total, 20 broadcasts were delivered for each treatment commune. Running for a period of 3-5 minutes, the broadcasts contained comprehensive information on the disability benefits program. The announcement started with the definition of a person with disability under the national disability law followed by information on benefit categories and levels (including cash transfer amounts for different severity levels and ages groups), the documents required to submit an application, and the process of disability determination including information on the the number of days from the time of submitting an application to the disability determination meeting and announcement of the council's decision. The broadcast concluded with the following statement (refer Appendix 1 for the full transcript):

People's Commune Committee announce and invite any person in the commune if they have any sign of defects in one or any part of the body or experience a reduction in functioning that causes difficulty in work, activities, study to make an application according to the directions above and

[23] Sample size calculations were undertaken using Optimal Design Software.

[24] Randomisation was accomplished using Stata's random number generator.

send to the People's Commune Committee to undertake an assessment of the degree of disability and receive benefits under current law. Respectful thanks!

Data was collected by commune authorities on the number of applications and certified beneficiaries over a period of three months beginning from the commencement of the broadcasts (close to two months after the broadcasts ceased) to allow sufficient time for applicants to gather the necessary information to prepare an application and for the disability determination council to meet to assess the application. Councils are required under law to undertake the determination within 20 working days of receiving the application to reduce the chance of long delays in processing.

5 Empirical Specification

To estimate the effect of the community announcements of disability benefit program information on individual's application decisions and disability determination council's enrolment decisions we estimate the following equation via ordinary least squares (OLS):

$$Y_{ij} = \alpha + \beta T_{ij} + X'_{ij}\gamma + \delta j + \varepsilon_{ij}, \tag{1}$$

where Y_{ij} represents the number of disability benefit applications submitted or the number of persons certified to have a disability by the commune disability determination council in commune i within district j; T is a dummy variable indicating whether the commune received the community broadcasts; X'_{ij} is a vector of baseline commune characteristics which include population size and poverty rate; δ_j are district (stratum) fixed effects; and ε_{ij} is an idiosyncratic error term. The standard errors are adjusted to take account the potential correlation of outcomes in communes within a district. Due to the small number of districts, we employ the wild cluster bootstrp percentile-t procedure to estimate appropriate p-values for the coefficient of interest (Cameron et al., 2008).

The coefficient of interest in Equation 1 is β, the average treatment effect of exposure to the information intervention. The randomisation was done in a way such that the probability that each commune received the broadcast was similar though not orthogonal to what district it was in. Because the total number of communes in some districts was not even, the ratio of treated to untreated communes (treatment probabilities) was not the same in each strata. Whilst reducing the standard errors, the inclusion of district fixed effects is thus also necessary for the analysis to be consistent. To further improve the precision of the estimator, we include in our specification baseline covariates at the commune level which by definition are not affected by the treatment. The inclusion of controls further takes account of any potential small baseline differences between the treatment and control communes resulting from imperfect randomisation.

Conditional on the district strata, the random assignment of communes to treatment and comparison groups ensures that, in expectation, the communes in either group are similar in all respects

except that the treatment communes were exposed to the community broadcasts. In other words, we should expect $E(\varepsilon_{ij}|\ T_{ij},\delta_j)=0$ so that the OLS estimator of β is unbiased. One issue in the interpretation of our effects as causal is the potential spillover of information across communes. On the assumption that information will increase the odds of lodging an application, such a spill over will bias us against finding an effect and bias the result towards zero. To test for the presence of spillovers across communes, for all communes not in the treatment group we calculate the distance to the nearest treatment commune and examine whether distance to the nearest treatment commune is correlated with the number of disability applications or certifications.

6 Results

6.1 Did the announcements increase participation?

Table 5 presents the main results from the information experiment on the number of disability benefit applications and enrollments collected over a three month period. Columns 1 and 4 show results for each of the two outcomes without controls; columns 2 and 5 add in fixed effects for the stratification district; and columns 3 and 6 control further for baseline commune characteristics including the natural log of the number of households and the poverty rate. All standard errors are corrected for clustering at the district level.

The simple difference in the mean number of applications between treatment and control communes is 0.4. However, the standard error is of a similar magnitude. The inclusion of district fixed effects increases the magnitude of the effect slightly to 0.47 yet remains statistically insignificant at conventional levels. Adding in the baseline controls increases the precision of the estimate substantially. Column 3 shows that the community broadcasts of disability benefit information increased the number of applications to close to one half (0.49), an effect which is now statistically significant at the five percent level ($p\text{-}value$=0.044). Compared with a mean number of applications collected in the control communes of 4.57, the treatment effect corresponds to a 10.6 percent increase in the number of applicants.

Given that the announcements and data collection occurred over a relatively short time window the 11 percent effect is quite large in magnitude. It is reassuring to observe that the direction of the coefficients on the pre-treatment commune controls is in line with expectations. More populated communes are more likely to apply for disability benefits whereas poorer communes are less likely. However, only the latter effect is significant. Communes with higher rates of poverty may receive lower numbers of disability applications because poverty and disability benefits are mutually exclusive. This hypothesis is strengthened by the fact that the poverty rate variable is not a constructed variable and is based upon actual rolls of certified poor households.

Since only a small number of applicants were unsuccessful and not certified to have a disability by the commune disability determination committee, the effect of the loudspeaker announcements on

the number of participants in the disability program is similar albeit slightly smaller in magnitude and level of significance. Based upon the preferred specification with stratum fixed effects and baseline controls as described in equation 1 and shown in column 6, being in a commune that broadcast disability program information led to an increase of 0.37 in the number of program enrolments over the data collection period. The mean number of enrolments in the control group is 4.54, and thus the treatment effect corresponds to a 8.2 percent increase. The effect is significant at the ten percent level (p-$value$=0.065).

Overall, the results show that the disability benefit announcements run over the course of five weeks had a non-trivial, statistically significant, impact on the number of applicants and ultimate participants in the program. We turn now to the question as to whether the information intervention had varied effects over the disabled population.

6.2 Did participation vary over the targeted population?

The framework discussed in Section 3 suggests that our simple information intervention may have differential impacts on the targeted population according to dimensions of disability and demographic characteristics. In Tables 6 & 7, we examine whether the impact of the announcements varied across the certified disability severity and type, gender and age category of applicants. All specifications include stratum fixed effects and baseline controls with robust standard errors clustered at the district level.

Columns 1-3 of Table 6 examine the impact of the announcements on the certification of disability severity as determined by the commune disability committees. Column 2 shows that the announcements on average led to a 0.44 increase in the number of persons certified with a severe disability. Compared with the mean number of certified persons with severe disabilities in the control communes, the effect is large at a magnitude of 18.3 percent but is imprecisely estimated and is not significant at conventional levels (P-$value$=0.29). Meanwhile the effects on other certified severity levels including moderate and profound disabilities are close to zero and far from conventional levels of significance. Column 4 presents results for the aggregated outcome of the number of persons certified with either a severe or a profound disability. It is shown that the announcements led to a increase of 0.42 persons certified with a severe or very severe disability and the effect is statistically significant at the 5 percent level (p-$value$=0.044). Compared with the control mean number of aggregated severe disabilities, the estimate corresponds to a 10.7 percent increase which exceeds the overall 8 percent effect on program enrolments and thus demonstrates that the broadcasts had a greater impact on persons with severe disabilities.

The remaining columns of Table 6 examine the impact of the community announcements on the number of certifications of different disability types as classified under the Vietnamese disability law.[25] As shown in columns 5-10, there is no clear evidence that the effects varied according

[25]Note persons could be certified with more than one disability type.

to certified disability type. The effects are small in magnitude with the exception of intellectual and hearing disabilities which are negative and imprecisely estimated. None of the estimates are statistically significant at conventional levels. However, the positive estimate on 'other' disability types shown in column 10 is marginally significant (*P-value*=0.10). Even though the effect size is modest there were no persons certified with other disabilities in the control communes and thus the 0.18 effect corresponds to an 18 percent increase. It is conceivable that through an improved understanding on the legal definition of a person with disability and eligibility to benefits the broadcasts led to an increase in the number of persons with non-conventional or obvious types of disability to apply.

Table 7 shows the estimate of the intervention on the number of disability benefit applications broken down by gender and age category.[26] Column 2 shows that the announcements had a substantial effect on the number of male applicants; the announcement increased the number of male applicants by 0.688, or approximately 33 percent. The effect is statistically significant at conventional levels with a *P-value* of 0.065. In contrast, the effect on the number of female applicants is negative and highly insignificant. With respect to age category, column 4 shows a relatively large positive effect on the number of working aged applicants (15-59 years) in the order of 0.569 applications or some 42 percent against the control mean. The effect is marginally significant (*P-value*=0.10). There are no substantial differences in the number of applications from younger and older applicants across treatment and control communes (columns 3 & 5).

As anticipated, the information intervention did have differential impacts on the disabled population. We find relatively larger impacts on persons certified with severe disabilities, those with disability types certified as 'other', males, and persons of working age. However, several of these results were imprecisely estimated and bordering on being marginally significant which likely reflects the small number of applications across the different categories. The findings should therefore be interpreted with a degree of caution.

7 Discussion and Conclusion

As countries enter into international and regional agreements to promote and protect the rights of person's with disabilities, of which the right to an adequate standard of living and social protection is equal among other rights, there has been a growing move to expand social protection coverage to persons with disabilities in recent times. However, many countries are running into challenges in extending coverage. One key challenge facing governments in developing countries in particular is that persons with disabilities are hard to reach. Typically, they live in rural and remote areas, have low levels of education and access to information through digital technology. Studies have shown that persons with disabilities in developing countries may not always be well informed of the social

[26]Note the results are slightly smaller yet remained qualitatively unchanged when we use the number of enrolments as distinct to applications as the outcome. These results are available upon request.

protection programs available to them (Banks et al., 2017).

This paper uses a randomized field experiment to study changes in the submission of applications and uptake of benefits in response to information on disability benefits in Vietnam. Vietnam represents a suitable setting because it has a relatively large disabled population and developed legal and administrative system of social protection. This is in part due to the country's history of war and long-standing support for classes of meritorious persons. Furthermore, in the experiment we take advantage of a national loudspeaker system that was established in villages and neighbourhoods during wartime and continues to this day as one of the main communication channels of the government (Nguyen-Thu, 2020). The loudspeaker system has the advantage that it can reach segments of the population (i.e. the disabled population) who have low use of digital technology including mobile phones and the internet.

We show that a simple 3-5 minute broadcast on disability benefit information via a community loudspeaker system in rural Vietnam can increase coverage of benefits by around 8 percent. The impact on the number of applications is slightly higher at 11 percent. These effects are not trivial especially in view of the short timeline of the intervention. The treatment effects are greater for persons certified with severe disabilities likely because monthly cash transfers are only available for persons with severe or very severe disabilities. The administrative burden of supplying medical information and uncertainty regarding certification may deter persons with less severe disabilities from applying for the lower tier of non-cash benefits that include discounts on state services. This lower class of benefits may be less appealing for persons with disabilities living in rural areas where state services such as public transportation are non-existent or limited.

We also find that the broadcasts led to higher coverage of persons certified with 'other' disability types. This may perhaps be explained by the fact that the broadcasts delivered a formal definition of a person with disability as defined under national law. Broadly, this includes any person with an impairment or functional difficulty that causes difficulties in performing daily life activities. In line with contemporary classifications of disability, such a definition departs from the traditional medical based view of disability with its focus on impairments, such as blindness and the loss of a limb. Under current Vietnamese law, a person living with chronic back pain that limits their ability to perform daily activities and participate in society may be certified as a person with disability and eligible for social protection for example. By improving understanding on what it means to be a person with disability it seems reasonable that the broadcasts may have induced applications from persons with less visible or traditional forms of disability.

The broadcasts also induced a higher number of applications from males and persons of working aged. Survey data reveals that men are more likely than women to be certified as disabled in Vietnam so our finding is in line with existing gender norms regarding access to social protection in the country. The result suggests that simply increasing awareness on the rights of persons with disabilities through an information campaign may not be enough to challenge existing norms

and that gender specific messaging may be necessary. Even though larger pension amounts for young and elderly persons with disabilities were outlined in the broadcasts which intuitively may incentivized more applications, survey data shows that the prevalence of severe levels of disability among children is low and disability pension coverage rates relatively high whereas a substantial fraction of elderly persons are receiving the old-age pension and ineligible for disability benefits. Taken together these facts may explain the observed effects of our intervention among persons of working age.

The effects we observe are likely lower bound for several reasons. First, under Vietnamese law people cannot receive disability benefits in conjunction with other state benefits (poor household, old age, or meritorious person transfer) which limits the number of eligible people on disability rolls. Second, the state definition of persons with severe disabilities under law as eligible for the disability pension is very restrictive. Based upon an international survey measure of disability which is broadly consistent with the legal definition of severe disability, we estimate that around 1.5 percent of the adult population are eligible for the pension. By comparison, 5 percent or more of the population receive a disability support pension in industrialised countries which coincidentally is also the prevalence rate of persons experiencing a lot of functional difficulty in Vietnam (what the government classes as non-severe disabilities). Because the level and range of benefits available to persons with non-severe disabilities is substantially less, increased program awareness may not equate to increased participation among persons with less severe disabilities. This is compounded by the fact that applying for disability benefits can be costly and that certification is uncertain given the inherent difficulties in determining disability status particularly for community level administrators. Third, though the loudspeaker system was well distributed in the selected study districts, it remains possible that some households in the treatment communes did not hear the announcements. This may be mitigated to some extent by the fact that the announcements were randomised at the commune level to allow for the spread of information across households within the same commune. Spillover across communes, though less likely, is also a possibility which would bias our estimates downwards.

For these reasons it therefore remains possible that a similar information intervention in a different setting may yield larger effects. This seems particularly likely given that persons with disabilities likely face similar information deficits across different settings. For example, consistently high disability gaps are found across countries in education, labour market, and urban residence outcomes (Mitra and Palmer, 2023; World Health Organization and others, 2011). Social stigma and negative attitudes towards persons with disabilities is also common. Future research would be better served with a design (e.g. a randomised clustered design whereby all communes in a district receive the same level of treatment) that takes into account complications with local interactions. Further, it is preferable to randomise different treatment arms and the level of information received. Our single treatment is unable to shed light on whether it is that people do not know about the

existence of the programs, what are the benefits, who is eligible, and what is the application process. Greater understanding on the information gaps can assist in the targeting of interventions.

Nevertheless, the findings of this paper suggest that the social protection seeking behaviour of persons with disabilities is responsive to program information. The findings relating to the different levels of responsiveness according to certified disability severity reveals something about the underlying decision making processes in applying for disability benefits and suggests some ways in which information campaigns can be more effective in improving coverage. Specifically, the results reveal that if persons believe that the benefits provide genuine opportunities for economic and social inclusion (and exceed the hassle costs associated with registration) then they will respond to such opportunities. Awareness raising and information and media strategies alone will not bring gains in coverage without adequate investment in benefits and in reducing hassle costs. In Vietnam's case, the benefits on offer to persons other than those with the most severe disabilities (or an estimated 1.5% of the population) seemingly do not sufficiently outweigh the costs associated with applying.

Our information experiment ran for a short period. It is entirely possible that an actual sustained information campaign may be more efficacious. We do not propose that information campaigns will solve the problem of low coverage of disability benefits in developing countries. However, the results are valuable as they show that persons with disabilities respond to economic opportunities. Aside from benefit levels and the administrative burden of applying for benefits as mentioned above, one significant challenge facing governments in developing countries is the disability determination process itself. There are many outstanding questions and promising areas for future research. It is unclear whether a community based model as currently operating in Vietnam is the way to go or whether an assessment by trained medical practitioners or some hybrid approach would yield better results. In the case of the community model, what sort of assessment tool would work best and what level of training of cadres is required? In addition to the use of the assessment tool, does it make a difference if local cadres are schooled on contemporary models of disability such as the social model and or the human-rights model?

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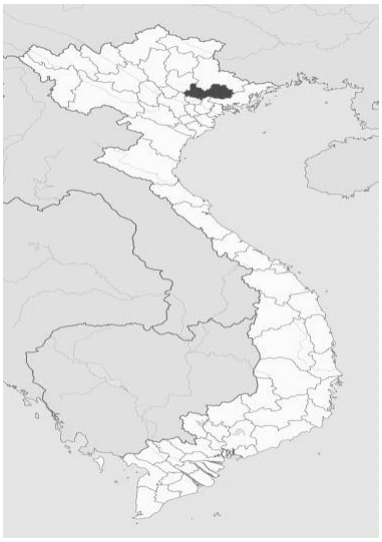
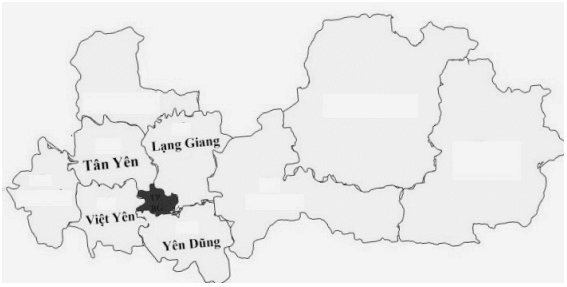


(a) Bac Giang province



(b) Study districts

Figure 1: Study setting

Table 1: Prevalence of Disability and Disability Pension

	Percentage	Percentage with disability pension	Proportion with disability pension
	(1)	(2)	(3)
Disability certificate	1.366	1.147	0.840
Certified disability severity			
Moderate	0.644	0.169	0.262
Severe	1.127	0.773	0.686
Profound	0.243	0.207	0.852
Don't know	0.100	0.043	0.430
Certified disability type			
Physical	0.794	0.508	0.640
Sensory	0.252	0.195	0.774
Visual	0.201	0.138	0.687
Mental	0.531	0.405	0.763
Intellectual	0.188	0.157	0.835
Other	0.259	0.065	0.251
Don't know	0.063	0.011	0.175
WG SS ('a lot of difficulty' cutoff)			
Any domain	5.263	0.993	0.189
Seeing	1.379	0.192	0.139
Hearing	1.163	0.206	0.177
Communicating	0.962	0.431	0.448
Walking	3.180	0.546	0.172
Concentrating/remembering	2.172	0.546	0.251
Self-care	1.602	0.506	0.316
WG SS ('cannot do' cutoff)			
Any domain	1.568	0.580	0.370
Seeing	0.157	0.073	0.465
Hearing	0.198	0.098	0.495
Communicating	0.297	0.174	0.586
Walking	0.933	0.280	0.300
Concentrating/remembering	0.461	0.215	0.466
Self-care	0.874	0.293	0.335
Observations	94,303	94,303	

Source: Vietnam Disability Survey, 2016.

Table 2: Demographic and Socio-economic Characteristics, by Disability Status

	Disability Certificate (1)	WG SS ('a lot of difficulty') (2)	WG SS ('Cannot do') (3)	No reported Disability (4)
Female	44.33	58.67	56.74	51.34
Male	55.67	41.33	43.27	48.66
Age Category				
16-29 years	16.77	5.92	9.46	27.49
30-44 years	23.53	9.65	11.64	31.75
45-59 years	25.47	19.17	16.41	27.21
60 years and above	34.24	65.27	62.49	13.54
Highest level of schooling				
None	36.15	29.80	38.59	5.97
Less than primary	19.41	28.08	25.70	10.37
Primary	19.56	22.48	18.57	23.93
Lower secondary	14.95	12.58	9.87	29.19
Upper secondary	9.94	7.05	7.27	30.54
Working in past 7 days	26.96	25.88	11.77	83.66
Poor household	26.23	20.02	20.00	9.08
Urban	32.63	33.41	37.48	40.97
Rural	67.37	66.59	62.52	59.03
Used internet in past 30 days	7.38	4.73	4.22	43.81
Owns mobile phone	36.24	33.24	18.43	85.03
Participates in any social organization	30.42	38.99	28.17	45.80
Observations	1,288	4,936	1,470	88,851

Source: Vietnam Disability Survey, 2016.

Table 3: Study districts compared with other regions in Bac Giang province

	No. communes/wards per district/city	No. households per commune/ward	Percentage of poor households
Study districts			
Tan Yen	24	2,071	6.45
Viet Yen	19	2,505	4.75
Yen Dung	21	1,867	3.32
Lang Giang	23	2,517	4.59
Total	22	2,240	4.78
Other rural districts	25	1,724	10.16
Provincial city	16	2,717	0.81
Total	23	2,007	6.11

Source: Ministry of Labour Invalids and Social Affairs Database, 2019.

Table 4: Baseline Characteristics of Treatment and Control Villages

	Treatment village (T) (1)	Control village (C) (3)	Difference (T-C) (3)	P-value (4)
Number of households	2395.243	2297.043	98.2	0.516
	(83.357)	(125.318)	(150.509)	
Percentage of poor households	5.142	4.886	0.256	0.652
	(0.401)	(0.398)	(0.565)	
Observations	35	35		

Notes: Standard errors in parenthesis.

Table 5: Effect of Community Announcements on the Number of Disability Pension Applications and Enrolments

	Applications			Enrollments		
	(1)	(2)	(3)	(4)	(5)	(6)
Community announcement	0.400	0.471	0.486**	0.286	0.361	0.373*
	(0.340)	(0.370)	(0.058)	(0.339)	(0.374)	(0.070)
	[0.274]	[0.236]	[0.035]	[0.393]	[0.313]	[0.062]
District (Ref: Lang Giang)						
Tan Yen district		-0.674***	1.259		-0.569***	1.342
		(0.010)	(0.669)		(0.010)	(0.677)
Viet Yen district		2.491***	2.664***		2.643***	2.809***
		(0.022)	(0.054)		(0.022)	(0.055)
Yen Dung district		-1.287***	-0.375		-1.257***	-0.330
		(0.010)	(0.939)		(0.010)	(0.939)
Log of population size			4.736			4.759
			(3.532)			(3.536)
Poverty rate			-0.464***			-0.453***
			(0.069)			(0.071)
Observations	70	70	70	70	70	70
Control commune mean	4.57	4.57	4.57	4.54	4.54	4.54
R-squared	0.001	0.066	0.150	0.001	0.069	0.153

Notes: Robust standard errors clustered at district level in parenthesis. *P*-values calculated using the wild cluster bootstrap percentile-*t* procedure in brackets. *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Effect of Community Announcements on Certification of Disability Severity and Type

	Certified Disability Severity				Certified Disability Type					
	Moderate	Severe	Profound	Severe/Profound	Mobility	Mental	Intellectual	Vision	Hearing	Other
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Community announcement	-0.051	0.444	-0.020	0.424**	0.064	-0.051	-0.321	0.027	-0.290	0.180
	(0.157)	(0.282)	(0.310)	(0.129)	(0.283)	(0.132)	(0.353)	(0.064)	(0.176)	(0.083)
	[0.633]	[0.291]	[0.920]	[0.044]	[0.810]	[0.634]	[0.405]	[0.616]	[0.279]	[0.104]
Observations	70	70	70	70	70	70	70	70	70	70
Control commune mean	0.571	2.429	1.543	3.971	3.114	0.571	0.971	0.429	0.514	0
R-squared	0.156	0.200	0.103	0.177	0.115	0.214	0.214	0.061	0.073	0.119

Notes: All regressions include district fixed effects and baseline commune controls. Robust standard errors clustered at district level in parenthesis. *P*-values calculated using the wild cluster bootstrap percentile-t procedure in brackets. *** p<0.01, ** p<0.05, * p<0.1.

Table 7: Effect of Community Announcements on Disability Pension Application, By Gender and Age Category

	Gender		Age group		
	Female	Male	< 15 years	15-59 years	60 + years
	(1)	(2)	(3)	(4)	(5)
Community announcement	-0.202	0.688*	0.075	0.569*	-0.158
	(0.298)	(0.330)	(0.075)	(0.232)	(0.162)
	[0.822]	[0.065]	[0.327]	[0.100]	[0.324]
Observations	70	70	70	70	70
Control commune mean	2.514	2.057	0.771	1.343	2.457
R-squared	0.096	0.180	0.264	0.133	0.085

Notes: All regressions include district fixed effects and baseline commune controls. Robust standard errors clustered at district level in parenthesis. *P*-values calculated using the wild cluster bootstrap percentile-t procedure in brackets. *** p<0.01, ** p<0.05, * p<0.1.