



## The Link Between Disability Adaptation and Subjective Well-Being (Empirical Evidence from Indonesia)

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### Abstract

Persons with disabilities will experience life in ways that are not typical because they perceive the detrimental effects of declining or nonexistent material well-being as they become older. As there is not much socioeconomic literature on the subject, this study looks at the different types of disabilities and how they affect people's subjective well-being in a certain period of time. This study accommodates disabilities such as hearing loss, impaired hand and foot movement, difficulty communicating, and incapacity to care for oneself. We use household and individual data to collect disability and subjective well-being information, apply an adaptation model, and empirically examine the link between the two. Our findings show that the well-being of households with disabled members is lower, although they can adapt over time to the negative effects of disability on well-being. With the exception of people who suffer from vision and hearing impairments, material well-being is not usually positively correlated with disability. As a result, stronger adaptation may help the household welfare level to recover prior to disability (pre-disability). This indicates that if adaptation exists, the negative impacts of disability will tend to decrease with time. We suggest that the government needs to give their daily activities more consideration.

**Keywords** *Adaptation, Disability, Subjective Well-Being, Indonesia*

### INTRODUCTION

A substantial risk of disability is posed by inadequate infrastructure in many developing countries, particularly sanitary conditions and healthcare facilities. Physical disability risk is further exacerbated by political, ethnic, and interpersonal violence, as well as low health and safety regulations at work and home ([Knowledge Sector Initiative, 2022](#)). Because physical labour is still a major source of income, such as in agriculture, the effects of physical handicaps on people's lives are probably worse than in developed countries. Increases in national revenue and technological capacity also allow society to allocate the resources required to permit people with impairments to work effectively ([Groce et al., 2011](#)). Persons with disabilities must rely on social networks that have limited capacity to pool risk, which means that the effect of disability on well-being is likely to be stronger because formal social insurance is typically nonexistent in developing countries ([Fafchamps & Lund, 2003](#)).

However, several types of variables tend to lower the percentage of disabled individuals in poorer regions. A shorter life expectancy is the first. The prevalence of disabilities—such as sight and hearing loss and stroke paralysis—usually rises with age in developed countries. It implies that populations with higher proportions of elderly individuals also have higher proportions of individuals with disabilities, all other factors being equal. Put differently, many persons in underdeveloped rural economies die before they have the opportunity to develop disabilities ([Miguel, 2005](#); [Lucas, 2007a](#)). The second reason is that people with disabilities typically have

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substantially shorter life expectancies than people in developed countries because disabilities can have serious repercussions, such as loss of support and income. In this scenario, the population's percentage of disabled people might be low even when the risk of disability is significant (Blanchflower & Oswald, 2004).

Literature informs that there was not much socioeconomic research on how disability affects developing countries, even though disability is a significant welfare concern. Studies on the adaptation of individuals with disabilities have predominantly used large-scale and national-scale data. The findings of these studies suggest a decline in subjective well-being for people with disabilities. However, some studies do not support a decline in subjective well-being for people with disabilities, although this is partial or has little impact (Lucas, 2007b; Anusic et al., 2014; Infurna & Wiest, 2016). These studies used large-scale data, and there is potential for similar findings, although there are differences in methodology and analysis techniques. In Indonesia, this study has not received attention, although there is research on adaptation for those in poverty (Subanti et al., 2022), and students' adaptation to welfare conditions plays a role in their achievement (Prasetyawati et al., 2021).

This study aims to close this gap by recording the prevalence of different types of impairment in Indonesia. We investigate the connection between disability and well-being as measured by self-reported wealth rankings and questions regarding subjective well-being. In particular, we investigate whether the detrimental impact of impairment on well-being lessens with time. If correct, it would suggest that people adjust to their limitations over time. We also look into whether declines in material well-being are the primary mechanism via which a handicap negatively affects subjective well-being.

## LITERATURE REVIEW

Although we typically anticipate a positive correlation between material well-being and subjective well-being, this does not mean that the two are mapped precisely. According to Olson and Schober (1993), some people with favourable material circumstances may have bad subjective well-being (dissonance or dissatisfaction problem), while people with unfavourable financial conditions may have positive subjective well-being (satisfaction paradox or adaptation). Due to the prevalent paradigm of subjective well-being, individuals may adjust to nearly any occurrence in life, including handicap; this phenomenon is known as hedonic adaptation in academic literature (Lucas, 2007b; Diener et al., 2006). After a period of adjustment and complete adaption, the person will regain their level of well-being prior to their disabilities. Since levels of subjective well-being, or happiness, effectively oscillate about a position that is biologically less likely to alter much, many support this adaptation concept (Oswald & Powdthavee, 2006; Lucas, 2007b).

Numerous studies demonstrating how individual personality qualities contribute significantly to the diversity in happiness measures support this research paper (Diener et al., 1999). If other social interactions compensate for their material deprivation, people with poor living conditions might not experience a decrease in their subjective well-being (Biswas-Diener & Diener, 2006). Nevertheless, the adaptation concept is refuted by another research. For instance, Easterlin (2006) provides evidence against the adaptation hypothesis and the dominant economic theory that happiness is dependent on objective conditions using lifetime data from the United States.

Large-scale panel data studies on the link between disability and well-being have produced some findings that partly defy the hedonic adaptation theory. For instance, studies indicate that adaptation is unavoidable and that long-term levels of subjective well-being fluctuate. People adjust to different kinds of situations differently, both in terms of whether they do so and how quickly they do so. Furthermore, there is much variation in how people adapt; some people adapt rapidly, while

others adapt more slowly (Lucas, 2007a).

In accordance with Oswald and Powdthavee (2006), the concept of adaptability can be explained as follows. Let us say the following utility function represents,

$$V = v(y) + h \quad (1)$$

Where  $v(\cdot)$  increases and concave in household income,  $y$ , and  $h$  are health measures. After disability at time  $T$ , well-being decreases to

$$V = v(z) + h - D \quad (2)$$

Where  $z$  is post-disability income (which may include transfers), and  $D$  is the disability's disutility. Define the habituation function in order to convey the concept of adaptability.

$$D = D(t - T) \quad (3)$$

with  $t$  representing the current period. If there is an adaptation, the first derivative of the function  $D(\cdot)$  becomes negative. This implies that with a longer duration of disability, the effect on well-being decreases. This idea is the basis for empirical tests carried out through econometric testing.

## RESEARCH METHOD

This study uses individual and household National Socioeconomic Survey (Susenas) data, with 2018 Susenas data as the database. Susenas data is a source of information on individual characteristics and household characteristics. This data is a collection of individual and household data that provides information on education, health, employment, housing, and household consumption/expenditure. This data is collected every year by BPS (Central Bureau of Statistics) and has been used by the government in planning sectoral and cross-sectoral development as well as formulating policies.

We want to see the influence between disability and subjective well-being and show evidence of whether there is adaptation. We began by running regressions, including measures of subjective well-being regarding the incidence of disability in each household and individual characteristics. We do this for each form of disability separately, consisting of visual impairment, hearing disability, disability in speaking and/or understanding/communicating with other people, disability in moving hands and feet, and disability in taking care of oneself. Here, we do not include all forms of disability in the same regression because it potentially creates multicollinearity problems with some forms of disability being correlated with each other. The empirical model of this research is as follows.

$$y_i = \alpha_i + \gamma_i + \delta \text{DisabledHH}_i + \emptyset \text{DDisability}_i + \beta P_i + \theta W_i + \varepsilon_i \quad (4)$$

Where  $y_{it}$  represents the level of subjective well-being and the level of material well-being of individual  $i$  in year  $t$ .  $D$  is a demographic measure at the individual level. It consists of man (1=male, 0=female); age (individual's age in year  $t$ ); village-city (1=individual lives in a city, 0=other). In addition, we also tested both adaptation hypotheses, the coefficients  $\beta$ , and  $\emptyset$  concerns. On variables  $DHH$  that want to see the impact of individuals living in households with at least one disability (such as hearing, vision, communication/speech disabilities, self-care disabilities, and hand and leg movements); they tend to have a level of prosperity. The *DisabledHH* variable is the

disability experienced by an individual, the *W* variable is the control variable, namely gender and age, while the *P* variable is the period of disability experienced by the individual. This paper estimates the model using the OLS technique via multiple regression (Wooldridge, 2013).

## FINDINGS AND DISCUSSION

This section wants to look at the influence of disability on subjective well-being and show evidence of whether adaptation exists. We began by running regressions, including measures of subjective well-being regarding the incidence of disability in each household and individual characteristics. We do this for each form of disability separately, consisting of visual impairment, hearing disability, disability in speaking and/or understanding/communicating with other people, disability in moving hands and feet, and disability/impairment in taking care of oneself. Here, we do not include all forms of disability in the same regression because it potentially creates multicollinearity problems with some forms of disability being correlated with each other.

**Table 1.** Regression Results for Welfare and Disability Levels

Variable	Hearing	Communication	Vision	Hand and Foot Movement	Taking Care of Yourself
<b>Man</b>	-0.054 ***	-0.017 ***	-0.029 ***	-0.020 ***	- 0.018 ***
<b>Age</b>	0.724 ***	0.322 ***	0.928 ***	0.283 ***	0.381 ***
<b>Village-City</b>	-0.479 **	-0.488 **	-0.466 **	-0.460 *	- 0.462 **
<b>Disabled HH</b>	-0.964 ***	-0.359 **	-0.749 ***	-0.618 ***	- 0.978 ***
<b>DDisability</b>	0.227	-0.755	0.174	1.371	0.033
<b>Period of Disability</b>	0.429 ***	-0.010	0.671 ***	0.268	0.241
<b>constant</b>	3.078 ***	4.433 ***	2.276 **	5.542 ***	5.148 ***
<b>No. of Obs</b>	3653	3653	3653	3653	3653
<b>LR chi2</b>	85.08	94.70	75.47	68.13	67.81
<b>Prob</b>	0.00	0.00	0.00	0.00	0.00
<b>Pseudo R2</b>	0.33	0.46	0.42	0.45	0.44

Table 1 shows that men who live in villages have a lower level of subjective well-being compared to women who live in cities. Those who are getting older tend to report higher levels of subjective well-being than those who are younger. These three findings show significant signs in all regression models. The regression estimation results inform that individuals who live in households with at least one person with a disability (all types of disabilities such as hearing, vision, communication/speech disabilities, self-care disabilities, and disabilities/impairments in moving hands and feet); tend to have lower levels of subjective well-being compared to households without

people with disabilities in them.

If a disability is experienced by oneself or another household member, it does not affect subjective well-being, which is four of the five categories of disability (i.e. visual disability, hearing disability, speech/communication disability, and self-care disability). This type of disability/impairment of moving hands and feet has a higher level of subjective well-being than others. These findings suggest that subjective well-being captures not only life satisfaction but also the daily strains that may be experienced in households with a member with a disability. They need to make the transition and learn to live with the presence of a family member with a disability (Seeman et al., 1999; Luhmann et al., 2012).

Our findings also inform us that households who have experienced disability for a long time tend to have a higher level of subjective well-being than those who have recently experienced disability. Our findings support this as represented by the coefficients of years of disability in hearing and vision. However, three other types of disabilities have insignificant regression coefficients. Our regression estimation results do not consider the severity of disability, whether mild or severe, because this information is not available. Of course, this can be considered in further research; if an individual's disability is severe, it is possible to produce different findings. Overall, our findings provide little evidence of adaptation to disability among Indonesian households. The results of our study can support previous studies regarding certain forms of disability from empirical model specifications by the predictions of the adaptation hypothesis, although some did not produce strong enough findings, and there is an impression that not all types of disability support adaptation.

### Disability and Material Well-being

This section will discuss the results of the analysis of disability and the level of material well-being because disability has the potential to reduce a household's effective workforce and thus impact their income and wealth. The study results show that disability has a lower association with wealth both in absolute and relative terms. Table 2, regression results show that the effect on wealth is not always linked to the respondent's disability, which is indicated by significant empirical findings. However, the estimation results also find some evidence of adaptation to disabilities in hearing and vision: in both cases, the negative relationship between disability and material well-being diminishes over time. These findings are also similar for those who experience disabilities/impaired movement of their arms and legs.

**Table 2.** Regression Results for Disability and Material Welfare

Variable	Hearing	Communication	Vision	Hand and Foot Movement	Taking Care of Yourself
<b>Man</b>	-1.401 ***	-1.423 ***	-1.639 ***	-1.243 ***	-1.334 ***
<b>Age</b>	0.517 ***	0.608 ***	0.853 ***	0.607 ***	0.649 ***
<b>Village-City</b>	-0.262 **	-0.226 **	-0.273 **	-0.221 *	0.262 **
<b>Disabled HH</b>	-0.884 ***	-0.597 **	-1.881 ***	-0.769 ***	0.621 ***
<b>DDisability</b>	0.194	-0.166	0.180	0.158	0.198
<b>Period of Disability</b>	0.130	-0.001	0.176	0.150	0.041

Variable	Hearing	Communication	Vision	Hand and Foot Movement	Taking Care of Yourself
<b>constant</b>	3.078 ***	4.433 ***	2.276 **	5.542 ***	5.148 ***
<b>No. of Obs</b>	1835	1835	1835	1835	1835
<b>LR chi2</b>	49.5	43.33	42.01	45.56	41.54
<b>Prob</b>	0.00	0.00	0.00	0.00	0.00
<b>Pseudo R2</b>	0.49	0.42	0.46	0.44	0.53

We also investigated whether there was a negative relationship between disability and subjective well-being caused by lower material well-being, which is based on the literature showing that subjective well-being depends on absolute and relative consumption (Blanchflower & Oswald, 2004; Fafchamps & Shilpi, 2008). Our findings support the existence of a negative effect of disability on the level of welfare, which may be caused by consumption, which tends to be lower; as a result, the presence of a wealth variable can produce an insignificant coefficient. The estimation results presented in the table also show that the disability variable is no longer significant in any of the five regression models. In contrast to previous results, the variable 'years of disability' was not significant for those with hearing and vision impairments. In other words, the adaptation effects we found for hearing and vision impairment/disability were driven by adaptations to material well-being. We also suggest that people with disabilities require special attention from the government, which must provide facilities for everyday living as well as other supports.

Both tables show a positive effect of age; this finding indicates that older individuals tend to be able to adapt to disabilities so that they do not have a negative impact on subjective well-being (Lucas, 2007a). People with disabilities before old age, with limitations in activity and mobility, will provide an earlier burden that they should not experience (Bierman & Statland, 2010). The early influence of disability on subjective well-being arises because of social comparisons with peers that usually tend to be stronger, look more striking than others, and conditions that are not commonly experienced by peers of the same age (Van Solinge & Henkens, 2007; Rozario & Derienzis, 2009). In addition, older people with disabilities have more social support than those who are adults or middle-aged (Calsyn & Winter, 2001).

## CONCLUSIONS

Our study uses cross-sectional data from the National Socioeconomic Survey (Susenas) 2018. This section wants to know the relationship between individual well-being and disability in Indonesia. We found evidence that households with members with disabilities have lower levels of well-being than those whose households do not have people with disabilities. Our findings also suggest that, over time, households with disabilities can adapt to their circumstances. This proves that if adaptation occurs, the negative effects of disability will tend to decrease over time, as a result, stronger adaptation can potentially restore the level of household welfare before disability (pre-disability).

The results of our investigation showed a relationship between disabilities and lower levels of material well-being. A person's ability to adapt is primarily determined by their absolute and relative wealth, with the exception of individuals who have visual or hearing problems. The impact of handicaps on well-being tends to vanish when affluence is taken into account. This demonstrates that impairment impacts material well-being, which is the cause of the link between these two variables. Since we cannot control for unobserved heterogeneity because we only have cross-

sectional data, the study's conclusions should be regarded as preliminary, which will be our study limitation. In order to strengthen the evidence, we propose that future research can make use of longitudinal data on subjective well-being and disability. We also recommend that the government provide the infrastructure and facilities required to enable people with disabilities to engage in their daily activities.

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