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Factors Motivating Participation of Persons with Disability in the Philippines: The Discount Privilege in Goods and Services

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Philippine Institute for Development Studies
Surian sa mga Pag-aaral Pangkaunlaran ng Pilipinas

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**Factors motivating participation of persons with disability in the Philippines:
The discount privilege in goods and services¹**

Aubrey D. Tabuga

In urban Philippines, the percentage of persons with disability (PWD) participating in various government and non-government programs is low. In fact, the level of awareness among PWD on the policies that intend to uplift their well-being is also low. These were some of the findings of a 2008 survey on persons with disability in selected cities in Metro Manila. This paper therefore aims to examine this problem by looking at the various factors that influence the PWD's participation specifically in the government-mandated discount on fare on bus and other land transportation vehicles and medical services. Interestingly, it focuses on the role of social networks among PWD, environmental constraints, and the type of disability the person has. Interestingly, because participation is conditional on awareness and eligibility, this paper likewise looks into variables that are associated with awareness and eligibility. The goal is to identify areas of potential gaps in terms of information dissemination, implementation, and enforcement so that PWDs can fully benefit from the policies and programs intended for them. This paper uses the dataset of a pioneering survey on 400 PWD conducted in 2008 in Metro Manila.

Key words: disability, participation, Philippine survey on PWD

¹ Paper presented at the 12th International Convention of the East Asian Economic Association (EAEA), author is a Research Associate at the Philippine Institute for Development Studies. Usual disclaimer applies.

Introduction

Efforts aimed at improving the lives of persons with disability (PWD) in the Philippines have been recently renewed through the amendment in 2007 of the Magna Carta for PWD, passed originally into law in 1991. This law mandates the expansion of services that aims to benefit the differently-abled. It also stipulated certain additional privileges for PWD to expand their opportunities for them to have independent living and be able to participate more in the mainstream society. Among these are the discount privileges on bus fares, medical and dental services, and restaurants and hotels among others².

There is however low awareness among the PWDs on this renewed policy. This was found in a survey on PWD conducted in the urban areas in 2008. In this survey, only one of five respondents reported awareness on the amended law. This is quite understandable because the law is relatively new. Surprisingly, even the existence of the old law, passed in 1991, was unknown to most of the PWD. Only about 32 percent said that they knew or have heard anything about the old Magna Carta for Disabled People. Interestingly, awareness of the policies is low even among eligible PWD, those that hold the PWD ID card provided by the NCDA or the LGU Social Welfare Office which is necessary to avail of a wide range of programs and services. In fact, among those who are eligible, more than half were not aware of either the old or the amended versions of the law.

Consequently, there is a low participation rate in these discount privileges. In the discount on land transport fares for instance, only 59 percent of the PWDs have actually availed and benefited from this discount privilege. Meanwhile, only a third of the respondents have ever availed of the medical discounts. Also, even for PWDs who are eligible and aware, a considerable portion has never availed of the discounts. This goes to show that there are costs on the part of PWDs large enough for them not to opt to participate.

This paper examines the factors that affect awareness and motivation of PWD to avail of programs and privileges intended for them. The goal is to identify areas of potential gaps in

² See Appendix 1 for a description of the discount programs under the Amended Magna Carta for PWDs.

terms of information dissemination, implementation and enforcement so that PWDs can fully benefit from the policies and programs intended for them.

Literature review

The body of literature on the life of persons with disability in the Philippines is very limited. For one, the area of disability as a research subject suffers from huge data constraints. In fact, the most recent government estimate of PWD in the Philippines was that from the 2000 Census of Population and Housing conducted by the National Statistics Office putting the number of PWD at 1.2 percent of the total population (or 942,000). The key household surveys conducted by the NSO also do not include variables on disability. PWD organizations in fact face difficulty in their advocacy efforts and clamor for government assistance because of lack of concrete data on the situation of PWDs in the country.ⁱ

Some works have identified issues concerning the disabled within the context of poverty reduction.ⁱⁱ Using the same dataset as the one used in this paper, Mori, Reyes and Yamagata (2009) estimated the returns to schooling of persons with disability in urban Philippines. They found out that returns to education for women PWDs are significantly lower than those for the men.

Lamoureux, Hassell, and Keeffe (2004) meanwhile studied the determinants of participation in activities of daily living by people with impaired vision. The studies found out that both physical and mental health significantly explain variation in participation. Therefore, interventions aimed at improving the lives of the visually impaired may include approaches to improve not just in terms of vision-related rehabilitation but also mental and physical health. The study by Heckman and Smith (2003), although doesn't concern persons with disability, examined the determinants of participation in a social program by decomposing participation into eligibility, awareness, application, acceptance and enrolment. The results show that personal choices significantly influence participation while awareness of being eligible in the program is a major source of disparity in participation.

One key factor that influences participation and the general outlook of PWDs in general is societal attitude. Enns (n.d.) noted that societal attitudes reinforce passivity and dependence among disabled people. These attitudes are classified into medical and religious. The medical

model views that PWD are sick patients to need to spend the rest of their lives getting well. This attitude treats the PWD as a child relieving him/her of many adult responsibilities. Therefore full participation in many activities are either denied or discouraged on the so-called patients. The religious model meanwhile views PWD as people who committed some sin in the past. Sometimes, the disability is seen as caused by a sin committed by the family. Thus the PWD are expected to beg and helping the beggar is believed as an act to avoid punishment in the afterlife. These attitudes limit the PWD in participating fully in the mainstream society.

In many cases, because of the limiting societal attitudes and other environmental factors such as inadequate facilities and infrastructure to cater to the needs of PWD, a disabled person chooses to shut himself out from the mainstream society. This paper looks into these in more details with emphasis on the conditions of the urban PWD. The main objective is to examine factors that prevent the PWD from fully benefiting from the programs/privileges intended for them. The goal is to determine where the potential gaps are and to recommend possible courses of actions. In addition, because participation is conditional on awareness and eligibility, this paper also aims to examine various factors that are associated with these.

Scope and Limitation of the Data

This study used the cross-sectional data from the PWD survey conducted by PIDS and IDE in August, 2008. The cities covered in this pioneering survey were chosen to represent the heterogeneous population of Metro Manila. Makati City and Quezon City represented the relatively richer segments while Pasay and Valenzuela represented those at the lower classes.ⁱⁱⁱ The dataset is limited only to the types of impairment – visual, mobility, and hearing with several cases of multiple impairments. Because the focus was on independent living and livelihoods, other types such as mental and psychological disability were not included in the survey.

In the 2008 survey on PWDs in Metro Manila, 403 respondents aged 15 and above were interviewed.^{iv} Of this total, 249 were male while 154 were female. The three (3) types of impairment targeted by the survey were the mobility-impaired (30%), visually-impaired (35%), and hearing-impaired (26.3). There were also several cases (8.4%) where the

impairment was multiple in nature, meaning having two or more of the three types mentioned or having other additional impairments such as mental/cognitive and speech disability.

In the survey, the information used to denote availment/participation by respondents is by asking one whether he/she benefited from a certain discount privilege/program. This may be limited in the sense that it does not provide information on several important aspects. One, it does not provide detail as to who, between the PWD and the provider of the service (the bus driver/operator in case of discounts in bus fare), actually had the prior knowledge about the discount program. Because the interview did not ask for this information, one could not control for the fact that the provider/retailer may have significantly contributed to the participation of the PWD.

The study aims to determine the factors that contribute to or prevent participation of PWDs in a wide variety of programs intended for them. A great deal part of this is obtaining what costs and benefits do these programs/privileges entail. However, the survey, though included a comprehensive set of questions, was more focused on livelihood and independent living. It would have been more useful to have included in the survey instruments questions that directly inquire on PWD's perceived and actual costs and benefits in participating to each of the programs as well as the reasons for not availing of these despite awareness and eligibility. In this way, one can have a better understanding on what types of programs/interventions are more practical and sound in order to mainstream the PWD into the society and how these should be designed. Because of this limitation, this study only attempted to somewhat extract the costs and benefits by drawing some insights at the influence of certain characteristics to participation or non-participation.

Because the programs covered in this study are the discounts on goods and services mandated under the amended Magna Carta, the important information to look at is the attitude of the society in general. Is the public aware of such provisions if at all they knew anything about the law? More importantly, one needs to consider the awareness of the provider of discounted goods and services – these are the public utility vehicle operators and drivers, the restaurant owners, the management of hotels and theaters, the hospitals/medical facilities, among others. The awareness is also a function of various factors like the visibility of advocacy campaigns either by the government or PWD organizations. This however is another limitation of the data because the survey did not include items to explicitly describe this aspect.

Empirical Variables

The empirical analysis is quite straightforward and aims to draw intuitive understanding of what motivates, or conversely prevents, PWD to participate in the discount privileges intended for them. Table 1 provides the summary statistics of the dependent variables and explanatory variables.

The key dependent variable is whether the PWD have ever availed of the discount privilege or not. Because of a very small number of observations for the other services/discount categories, the ones included were the land transportation fare discounts and discount on medical services (hospitals and medical facilities). Among the 403 respondents in the survey, only 235 (59%) reported awareness in the fare discount, not necessarily the policies, while only 138 (34%) indicated awareness on medical services discount. Therefore the econometric estimation on participation utilized only 235 and 138 samples, respectively. The availment rate for land transportation discount was about 59% while only 34% for the medical discounts (see Table 2). Among those who have never availed of the transport fare discount, 59% (57 out of 97) in fact are eligible (that is, they have the PWD ID card) and are aware of the said privilege. Meanwhile, among those who have never availed of the medical discounts, 56% (43 out of 77) did have the necessary PWD ID card and are aware of the discount.

To assess the determinants of participation, general characteristics of the individual PWD, their household characteristics, and several location variables were examined. General characteristics like sex, age, and marital status of the PWD respondents are important factors that help explain preferences and situations. Women PWD are assumed to participate less because their situation is double jeopardy. They are both disabled and women (Enns, n.d.). Older people may tend to participate less, not only because of the physical constraints (older people may tend to be less mobile and hence not have the chance to avail of the discounts) but also for the fact that they may already be enjoying the discount privileges for the elderly and hence no longer qualified to avail of the PWD discounts.

Education may turn positive or negative. Educated people may be more aware of the policies and have higher bargaining power therefore are able to participate more. At the same time, more educated persons may no longer opt to avail of the discounts because they may have higher paying jobs/businesses and can very well afford to pay.

The type of mobility controls for the fact that the survey included varying types of impairment with varying levels of functioning and abilities. The base dummy is multiple impairment. The mobility impaired would be expected to participate less because of physical constraints of moving from one place to another. In addition, the discount on fares does not cover taxi cabs which are believed to be used more frequently by the mobility impaired because they, particularly those in wheelchair and crutches, could hardly get on a jeepney or a bus. However, they may be expected to be less constrained relative to the visually impaired and those with multiple impairments. The hearing impaired would normally participate more, especially in the transport fare discount, because of the fact that they can still see and walk and move around places.

As a proxy for mobility, having an income-generating job is also included in the model. This variable controls for the fact that employed people may use the public transport more frequently than the unemployed. In the medical discount estimation, the result may turn positive or negative depending on the overall health condition of the PWD.

In the empirical estimation, one explanatory variable is having the PWD ID card. This ID card proves that the PWD is indeed a differently-abled person as the policy indicates and therefore qualified to avail of various forms of government assistance. Among those that have the PWD ID card, there are PWDs who have never availed of the discounts (see Table 2). Also, some of those (18%) who have availed of the transport fare discount did not have the PWD identification cards. Therefore, although it is required by law that PWDs should present identification to avail of the discount, other establishments/transport facilities sometimes do provide the discounts even without the ID.

This paper also aims to examine the influence of being a member in an organization and having the PWD ID variables. Being a member of an organization, be it a disabled organization, a religious one, or in other types, is believed to positively influences participation because organizations provide avenues for skills development, mutual support, and information sharing, among others.

The location factors such as efficiency of the local government social welfare office on advocacy and information dissemination, manpower resources (e.g. number of social workers in the city, and the presence or number of barangay health workers (BHW) assigned in the villages), the private sector's level of awareness, and levels of enforcement have all been

lumped together and appear in the model as area dummies. The base dummy is Valenzuela city, a relatively poorer city. We would expect that being in Makati and Quezon City may positively motivate participation in the sense that these two are relatively more progressive cities which may have better awareness campaigns, information dissemination initiatives, among others. But then, those in poorer cities may avail more of the discounts because they are aiming to save some money.

For one to avail of discount privileges and other programs, one must first be aware of these. In some cases, the will to participate and benefit from the programs influence the level of awareness. Several factors were also examined in terms of their association with awareness of the major policies concerning PWDs. For instance, more educated persons may tend to be more aware. PWDs who have attended the SPED schools may normally be more knowledgeable of the policies. Also, PWDs who are members of organizations may tend to be more empowered and may tend to get more exposures on the issues facing PWDs and hence are more aware about the programs intended for them.

Conditional on awareness, a PWD must be eligible to gain access to the discounts, that is - one must have the PWD ID card issued by either the LGU or the NCDA. This attests that indeed the PWD is a differently-abled person who needs assistance and special treatment, as stipulated in the law. It is expected that a rich city like Makati has a more efficient system in providing ID cards to PWD. PWD who attended SPED schools may also have the edge as the schools are an effective venue for enrolling PWD in various programs.

Econometric Methodology

This study's notion of assessing participation follows that by Heckman and Smith (2003) which looked into the determinants of participation in a social program without the decomposition.^v Although this study looks into the specific case of the discounts on various goods and services, which have many different aspects as opposed to the social program, some of the insights are nonetheless relevant and applicable.

The structure of the equation is defined as follows:

$$\Pr(A = 1|X) = \alpha + \sum X\beta + \varepsilon$$

where the probability of availing, $\Pr (A=1|X)$, is conditional on a vector of individual, household, and community/location characteristics X . The equation is estimated using both Probit and Logit analyses to explore the robustness of the model using various assumptions of the error term, ε . We are interested on the parameters β . The same equation was also applied to being aware and having the PWD ID card. The procedure aims to examine how various factors affect the likelihood that the PWD is aware, eligible, and participates in/avails of the discount.

Empirical Results

The econometric estimations were done for both participation in land transport fare discount and medical services. The model for medical discount has been slightly modified to include only one dummy for the type of impairment, that is - mobility impaired, because their impairment is sometimes associated with other diseases like diabetes, stroke, and polio among others which may cause the PWD to visit the medical facility more often than the non-mobility impaired ones.

To check for robustness, this paper did both Probit and Logit analyses. Moreover, the usual routine of taking one variable out from the model at a time to examine the consistency in the coefficient estimates was employed.

The results of the estimations of availment or participation in the land transport fare including the marginal effects estimates are shown in Tables 3a and 3b. Surprisingly, only the variables eligibility and being employed turned out significant at 5%. Therefore, having the ID helps PWD a lot in gaining access to the discount. Also being employed is significantly associated with availing the transport fare discount. These are true for both Probit and Logit analyses. Even the dummies controlling for the types of impairment were insignificant. The dummies for the locality did not turn significant as well. Being in say, Makati does not affect participation, maybe because PWDs in Makati may be moving not only within Makati but also in other cities.

The result is understandable because factors other than personal preferences and characteristics may weigh more given the nature of the program. There are specific community and government factors that may help explain more the behaviour of the PWD such as the level of awareness of the general public, presence of information dissemination

initiatives at the community level, number of barangay health workers, among others. As earlier noted, these factors have not been specifically included in the analysis because of data limitations and were only included as area dummies. Future works therefore should focus on these factors.

In the estimation of participation in the medical discount, several factors turned out statistically significant (see Table 4a and 4b). These are eligibility (with ID dummy), household size, age, income, being in Makati and Pasay. Again having the ID is indeed very necessary; in fact it raises the probability of availing by around 33 percent. Household size tends to diminish the possibility of availing. It can be assumed that a bigger family surrounding the PWD is an advantage in terms of securing care and assistance for him/her and therefore may have better health condition. This is an interesting finding that needs to be further analyzed.

Meanwhile, age is significantly correlated to participation for obvious reasons. The coefficient of age is negative while that of age-squared is positive, both are significant. These results suggest that as people get older they participate less in the medical discounts but for those oldest, they tend to participate more. Also, richer PWDs tend to participate less either because they can very well afford the medical expenses and therefore do not avail the discount or that they tend to get sick less often.

The location dummies Makati and Pasay are both significant and positive. Makati is known for its “yellow card” which gives discount privileges to its residents regardless whether the person is disabled or not. Therefore, the general public is more receptive of such initiatives. The result for Pasay turning positive and significant, with a coefficient above that of Makati did not come out as a surprise. Pasay is considered a poorer city than Makati and even Quezon city. It is possible that the samples drawn from Pasay consist more of the poor households who tend to have a higher probability of availing the discounts.

In this case, the employed dummy no longer significantly determines participation simply because of several possible reasons. One, those employed may not be getting sick quite often and therefore do not get to visit the doctor, thus may not have the opportunity to avail of the discount. This is quite reasonable because a bulk of those employed who have never availed the medical discounts were visually impaired persons (who may relatively be less prone to health problems unlike the mobility-impaired).

In both estimations, the dummy for being a member of an organization did not turn out significant. It does not mean however that membership does not help PWD in accessing various discount programs. In the analyses on awareness and eligibility, we shall see that this factor strongly determines awareness and eligibility – the initial and critical steps into participation.

Table 5 provides results of these analyses. Because of the relatively small size of the final samples, only 370 out of the original 403, the explanatory variables were limited to basic characteristics of the PWD and their households and several location dummies controlling for community characteristics and governance among others.

In the model explaining awareness on either the policy (Magna Carta for PWD) or the discounts, both Probit and Logit analyses returned positive and significant estimates for the visually impaired. The omitted variable among the types of impairment is the multiple impaired. This paper's hypothesis that the visually impaired persons are less mobile and therefore less aware of the programs intended for PWD is not quite true, as shown in this paper. In fact, among all types of impairment, only the visual impairment variable is significantly different from the base dummy. This may be because the survey captured a large number of visually impaired who are masseurs. The visually impaired, the survey discovered, are known to move around together and have found a niche as masseurs. Therefore, there may be a lot of social interactions among them.

Meanwhile, as expected, years of schooling is positively related to awareness. It appears that the richer the PWD household is, the more that the PWD is aware of the policies/discount privilege. Pasay has negative and significant estimates which imply that PWD in Pasay tend to be less aware than those in Valenzuela (the base dummy). Meanwhile, estimates for Makati and Quezon City are both insignificant.

In the estimation for eligibility, the same set of variables was used. Education likewise plays a role in explaining the tendency to have the PWD ID card. Also the hearing impaired have relatively higher tendency to be eligible than those with multiple impairment. The other types have not been significantly associated with eligibility. Age also has significant relationship with eligibility as expected. The results confirmed that elderly PWD have lower likelihood to have the ID because they are already entitled to the 20 percent discount for elderly.

In this estimation, area dummies play significant roles. PWD in Makati tend to have higher possibility of getting the ID with other things being held equal. Those in Pasay and Quezon City however have lower tendencies than Valenzuela City. Again, being a member of any organization significantly increases the probability of obtaining the ID card *ceteris paribus*.

Concluding Remarks

Notwithstanding the data limitations, we can draw useful insights from this empirical exercise. First, there is low awareness among PWDs. Because this is a major hurdle in their participation, efforts must be intensified in disseminating information. The role of the local governments (city and municipality officials) and the village governments (barangay officials and barangay health workers) are very critical in educating not only the PWD but the public in general especially the transport groups, medical facilities, and other commercial establishments where the discounts are supposed to be imposed. Because awareness is very much associated with education, efforts should center on educating the PWD. Because of their situation, the government and NGOs alike must come up with creative ways to educate PWD with varying levels of ability.

Second, the distribution of ID cards for PWD must be fast-tracked. Even with awareness, the PWD still cannot avail of the discount without this requirement. Problems concerning ID issuance should be further scrutinized as this is another major problem that PWDs encounter³. If necessary, issues concerning budget or manpower in the local government should be examined as to whether these are causing the delay in the provision of ID to PWDs. The local government units' social welfare office is the one responsible for providing this necessary requirement. The role of the barangay health worker (BHW) is very critical as they are the ones working at the grass roots and therefore should be tapped. Efforts however should also be devoted in providing incentives and capacity building to BHWs to compensate for their hard work and enhance their skills.

³ The procedures on how to obtain the PWD ID card is shown in Appendix 2. The long procedure proves that there may be significant costs in obtaining the ID.

Moreover, organizations of PWD are a powerful avenue to disseminate information to the PWD. Therefore, using the organizations as way to reach out to persons with disability is highly recommended.

The Magna Carta for PWD is indeed a very important policy in improving the lives of PWD. However, as in the case of many other policies in the country, this law is very weakly, if at all, enforced. In a separate ongoing studies (i.e. August 2010) participated by the author, the awareness of hospitals on the discount for PWD is very low. What is more popular is the discount for elderly. Many primary private hospitals in particular are not aware of the discount on medical care for PWD⁴. Clearly, there is much to be done in terms of implementing the policies and programs/privileges of the government.

The goal to uplift the lives of the PWD does not end with giving discounts, cash subsidies, and even free assistive devices. The more important and urgent need of PWDs is for the government and the society to remove physical and social barriers for freer mobility and social inclusion of persons with disability. There appears to be a lot of costs that they incur before they can participate in the programs as evidenced by the presence of those aware and eligible but have never availed of the programs. Improving the physical environment entails building/improving schools for PWDs or those that accept PWDs, ensuring the continuity of space in the sidewalks and accessibility of buildings, and providing ramps in public places among others. Removing the social barriers is a far more difficult task as this includes educating the public in terms of its attitude towards PWDs. For the government, educating and building the capacity of its own social welfare manpower is highly recommended.

Lastly, further studies on matters concerning the PWDs are highly recommended. This area is so under-researched and clearly there is much left to be done in the effort to uplift the conditions of PWDs. For one, a deeper analysis on the actual costs that PWD incur prior to participation would be very helpful. This will greatly help policy-makers and stakeholders in formulating more effective strategies in program design and implementation. It would also be helpful to identify the impacts of various programs such as livelihood training, rehabilitation, and educational programs to the PWDs' well-being.

⁴ Lavado, Reyes, et al. Private Healthcare Market Study in the Philippines, 2010 (draft and unpublished)

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National Council on Disability Affairs

Table 1. Description and summary statistics of variables						
Variable	Description	Obs	Mean	Std. Dev.	Min	Max
Availment on discount in land transportation	Dummy variable for having availed of the land transportation discount	235	0.587234	0.493382	0	1
Individual characteristics						
With PWD ID dummy	Dummy variable for having the PWD ID card	401	0.478803	0.500175	0	1
Employed dummy	Dummy for having an income generating job	403	.5037221	.5006076	0	1
Female dummy	Dummy variable for being female	403	0.382134	0.486513	0	1
Married dummy	Dummy variable for married PWD	403	0.471464	0.499806	0	1
Household head dummy	Dummy variable for being the household head	403	0.33995	0.474281	0	1
Mobility impaired	Dummy variable for having mobility impairment	403	0.300248	0.458936	0	1
Hearing impaired	Dummy variable for having hearing impairment	403	0.263027	0.440824	0	1
Visually impaired	Dummy variable for having visual impairment	403	0.352357	0.478298	0	1
With multiple impairment	Dummy variable for having multiple impairment	403	0.084367	0.278283	0	1
Age	Age expressed in years	403	38.41687	12.62884	15	67
Years of schooling	Years of schooling	403	9.312655	4.461724	0	16
With special education dummy	Dummy for having received special education	403	0.322581	0.468045	0	1
Member of an organization dummy	Dummy for being a member in any organization (e.g. religious, PWD organization, self-help, etc).	403	0.478908	0.500176	0	1
Household characteristics						
Household size	No. of household members	403	5.861042	3.329432	1	22
Log of per capita income	Log of per capita income	370	9.860657	0.89279	6.645391	11.86076
Area/Location factors						
Makati area dummy	Dummy for being a resident in Makati City	403	0.310174	0.46314	0	1
Pasay area dummy	Dummy for being a resident in Pasay City	403	0.208437	0.406696	0	1
Quezon City area dummy	Dummy for being a resident in Quezon City	403	0.30273	0.46001	0	1
Valenzuela area dummy	Dummy for being a resident in Valenzuela City	403	0.17866	0.383544	0	1

Table 2. Awareness and availment rate among PWDs		
Variable	Number	%
Aware of		
Magna Carta for PWD	140	34.74
Transport fare discount	235	58.75
Medical discount	138	34.24
Availed of		
Transport discount	138	58.72
with ID	113	81.88
without ID	25	18.12
Medical discount	39	33.62
with ID	34	87.18
without ID	5	12.82
Eligible/With PWD ID	192	47.88
but have never availed transport discount	57	29.69
but have never availed medical discount	43	22.40
Total number of observations	403	100

Table 3a. Empirical results of availment/participation in land transportation discount analysis: Probit

Probit regression	Number of obs =	220
	Wald chi2(18) =	45.45
	Prob > chi2 =	0.0004
Log pseudolikelihood = -121.81932	Pseudo R2 =	0.1835

Availed land transportation fare discount	Coef.	Robust Std. Err.	z	P>z	[95% Conf. Interval]
Eligibility (Dummy for having the PWD ID card)	0.8648	0.2908	2.97	0.003	0.2949 1.4348
Employed dummy	0.5362	0.2328	2.3	0.021	0.0800 0.9925
Female dummy	0.2234	0.2171	1.03	0.304	-0.2021 0.6489
Married dummy	-0.0113	0.2199	-0.05	0.959	-0.4424 0.4197
Household size	-0.0369	0.0347	-1.06	0.287	-0.1049 0.0311
Head dummy	0.2620	0.2404	1.09	0.276	-0.2093 0.7332
Mobility impaired	-0.2912	0.5320	-0.55	0.584	-1.3340 0.7516
Hearing impaired	0.5654	0.5942	0.95	0.341	-0.5993 1.7301
Visually impaired	-0.3691	0.5206	-0.71	0.478	-1.3894 0.6511
Age	0.0477	0.0546	0.87	0.383	-0.0594 0.1548
Age-squared	-0.0007	0.0007	-1.05	0.295	-0.0021 0.0006
Years of schooling	0.0147	0.0238	0.62	0.536	-0.0320 0.0615
SPED dummy	0.4169	0.2791	1.49	0.135	-0.1302 0.9639
Log of per capita income	-0.1101	0.1328	-0.83	0.407	-0.3705 0.1503
Makati area dummy	0.5483	0.3115	1.76	0.078	-0.0623 1.1590
Pasay area dummy	0.7626	0.4546	1.68	0.093	-0.1285 1.6537
Quezon City area dummy	0.6048	0.3236	1.87	0.062	-0.0296 1.2391
Member of an organization dummy	-0.4123	0.2454	-1.68	0.093	-0.8932 0.0686
Constant	-0.6374	1.7694	-0.36	0.719	-4.1055 2.8306

Marginal effects after probit
 $y = \text{Pr}(\text{landtranspo_availed})$ (predict)
 $= 0.61856521$

Variable	dy/dx	Std. Err.	z	P>z	[95% C.I.]	X
Eligibility (Dummy for having the PWD ID card)*	0.3328	0.1072	3.11	0.002	0.1227 0.5429	0.7273
Employed dummy*	0.2045	0.0879	2.33	0.02	0.0322 0.3769	0.5773
Female dummy*	0.0845	0.0813	1.04	0.299	-0.0749 0.2439	0.4136
Married dummy*	-0.0043	0.0838	-0.05	0.959	-0.1686 0.1600	0.5000
Household size	-0.0141	0.0132	-1.07	0.287	-0.0400 0.0118	5.6591
Head dummy*	0.0986	0.0893	1.1	0.27	-0.0765 0.2737	0.3818
Mobility impaired*	-0.1127	0.2079	-0.54	0.588	-0.5200 0.2947	0.2682
Hearing impaired*	0.2032	0.1962	1.04	0.3	-0.1813 0.5877	0.2682
Visually impaired*	-0.1409	0.1982	-0.71	0.477	-0.5294 0.2475	0.4364
Age	0.0182	0.0208	0.87	0.383	-0.0226 0.0590	38.5318
Age-squared	-0.0003	0.0003	-1.05	0.295	-0.0008 0.0002	1624.9300
Years of schooling	0.0056	0.0091	0.62	0.536	-0.0122 0.0234	10.4182
SPED dummy*	0.1558	0.1024	1.52	0.128	-0.0449 0.3565	0.4000
Log of per capita income	-0.0420	0.0506	-0.83	0.407	-0.1411 0.0572	9.9814
Makati area dummy*	0.2044	0.1126	1.82	0.069	-0.0163 0.4251	0.4364
Pasay area dummy*	0.2502	0.1178	2.12	0.034	0.0194 0.4811	0.1091
Quezon City area dummy*	0.2177	0.1069	2.04	0.042	0.0082 0.4271	0.2955
Member of an organization dummy*	-0.1528	0.0875	-1.75	0.081	-0.3243 0.0187	0.6591

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Table 3b. Empirical results of availment/participation in land transportation discount analysis: Logit

Logistic regression		Number of obs	=	220		
		Wald chi2(18)	=	38.69		
		Prob > chi2	=	0.0031		
Log pseudolikelihood=-121.83227		Pseudo R2	=	0.1834		
Availed land transportation fare discount	Coef.	Robust Std. Err.	z	P>z	[95% Conf. Interval]	
Eligibility (Dummy for having the PWD ID card)	1.5219	0.5258	2.89	0.004	0.4913	2.5526
Employed dummy	0.9304	0.4072	2.28	0.022	0.1322	1.7285
Female dummy	0.4099	0.3759	1.09	0.276	-0.3269	1.1467
Married dummy	0.0183	0.3798	0.05	0.962	-0.7260	0.7626
Household size	-0.0604	0.0584	-1.03	0.301	-0.1748	0.0541
Head dummy	0.4336	0.4050	1.07	0.284	-0.3602	1.2274
Mobility impaired	-0.5066	0.8300	-0.61	0.542	-2.1334	1.1202
Hearing impaired	0.9805	0.9808	1	0.317	-0.9419	2.9029
Visually impaired	-0.6223	0.8103	-0.77	0.442	-2.2104	0.9658
Age	0.0779	0.0916	0.85	0.395	-0.1016	0.2574
Age-squared	-0.0012	0.0012	-1.04	0.299	-0.0035	0.0011
Years of schooling	0.0224	0.0404	0.55	0.58	-0.0569	0.1016
SPED dummy	0.6260	0.5047	1.24	0.215	-0.3632	1.6153
Log of per capita income	-0.1901	0.2309	-0.82	0.41	-0.6426	0.2624
Makati area dummy	0.9285	0.5241	1.77	0.076	-0.0987	1.9558
Pasay area dummy	1.3380	0.8522	1.57	0.116	-0.3323	3.0083
Quezon City area dummy	1.0662	0.5620	1.9	0.058	-0.0353	2.1676
Member of an organization dummy	-0.7355	0.4366	-1.68	0.092	-1.5912	0.1202
Constant	-1.0146	3.0209	-0.34	0.737	-6.9354	4.9061

Marginal effects after logit							
y = Pr(landtranspo_availed) (predict)							
= 0.62204006							
Variable	dy/dx	Std. Err.	z	P>z	[95% C.I.]	X	
Eligibility (Dummy for having the PWD ID card)*	0.3613	0.1162	3.11	0.002	0.1335	0.5891	0.7273
Employed dummy*	0.2189	0.0946	2.31	0.021	0.0335	0.4044	0.5773
Female dummy*	0.0953	0.0862	1.11	0.269	-0.0736	0.2641	0.4136
Married dummy*	0.0043	0.0893	0.05	0.962	-0.1707	0.1793	0.5000
Household size	-0.0142	0.0137	-1.04	0.299	-0.0410	0.0126	5.6591
Head dummy*	0.1003	0.0923	1.09	0.277	-0.0806	0.2812	0.3818
Mobility impaired*	-0.1216	0.2021	-0.6	0.547	-0.5176	0.2744	0.2682
Hearing impaired*	0.2128	0.1886	1.13	0.259	-0.1569	0.5824	0.2682
Visually impaired*	-0.1467	0.1907	-0.77	0.442	-0.5204	0.2271	0.4364
Age	0.0183	0.0215	0.85	0.395	-0.0239	0.0605	38.5318
Age-squared	-0.0003	0.0003	-1.04	0.299	-0.0008	0.0003	1624.9300
Years of schooling	0.0053	0.0095	0.55	0.58	-0.0134	0.0239	10.4182
SPED dummy*	0.1439	0.1145	1.26	0.209	-0.0806	0.3684	0.4000
Log of per capita income	-0.0447	0.0541	-0.83	0.409	-0.1507	0.0614	9.9814
Makati area dummy*	0.2120	0.1152	1.84	0.066	-0.0138	0.4378	0.4364
Pasay area dummy*	0.2571	0.1187	2.17	0.03	0.0245	0.4897	0.1091
Quezon City area dummy*	0.2315	0.1076	2.15	0.031	0.0206	0.4424	0.2955
Member of an organization dummy*	-0.1661	0.0932	-1.78	0.075	-0.3489	0.0166	0.6591

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Table 4a. Empirical results of availment/participation in medical services discount analysis: Probit						
Probit regression			Number of obs	=	110	
			Wald chi2(16)	=	48.59	
			Prob > chi2	=	0	
Log pseudolikelihood	=	41.664033	Pseudo R2	=	0.4069	
Availed of discount in medical services	Coef.	Robust Std. Err.	z	P>z	[95% Conf. Interval]	
Eligibility (Dummy for having the PWD ID card)	1.6407	0.5231	3.14	0.002	0.6155 2.6659	
Employed dummy	-0.0346	0.3683	-0.09	0.925	-0.7564 0.6873	
Female dummy	0.3168	0.3456	0.92	0.359	-0.3605 0.9941	
Married dummy	-0.6821	0.3610	-1.89	0.059	-1.3896 0.0253	
Household size	-0.1725	0.0725	-2.38	0.017	-0.3146 -0.0303	
Head dummy	0.2759	0.3948	0.7	0.485	-0.4978 1.0497	
Mobility impaired	0.3983	0.4448	0.9	0.371	-0.4736 1.2701	
Age	-0.3197	0.0915	-3.49	0	-0.4992 -0.1403	
Age-squared	0.0044	0.0012	3.82	0	0.0021 0.0067	
Years of schooling	0.0767	0.0437	1.75	0.08	-0.0091 0.1624	
SPED dummy	0.5730	0.3999	1.43	0.152	-0.2108 1.3568	
Log of per capita income	-0.4969	0.2144	-2.32	0.02	-0.9170 -0.0767	
Makati area dummy	1.3616	0.6494	2.1	0.036	0.0888 2.6344	
Pasay area dummy	2.5826	0.8034	3.21	0.001	1.0079 4.1573	
Quezon City area dummy	0.9920	0.6905	1.44	0.151	-0.3613 2.3453	
Member of an organization dummy	-0.7322	0.4311	-1.7	0.089	-1.5772 0.1128	
Constant	7.5421	2.7284	2.76	0.006	2.1945 12.8898	
Marginal effects after probit						
y= Pr(medical_availed) (predict)						
= 0.17590212						
variable	dy/dx	Std. Err.	z	P>z	[95% C.I.]	X
Eligibility (Dummy for having the PWD ID card)*	0.3306	0.0858	3.85	0	0.1624 0.4987	0.6636
Employed dummy*	-0.0090	0.0961	-0.09	0.925	-0.1973 0.1793	0.6455
Female dummy*	0.0847	0.0942	0.9	0.369	-0.0999 0.2694	0.3818
Married dummy*	-0.1798	0.0980	-1.84	0.066	-0.3718 0.0122	0.5364
Household size	-0.0446	0.0185	-2.41	0.016	-0.0809 -0.0083	5.4000
Head dummy*	0.0723	0.1052	0.69	0.492	-0.1339 0.2785	0.4455
Mobility impaired*	0.1150	0.1426	0.81	0.42	-0.1644 0.3944	0.1727
Age	-0.0827	0.0248	-3.33	0.001	-0.1314 -0.0340	40.3818
Age-squared	0.0011	0.0003	3.64	0	0.0005 0.0018	1769.8500
Years of schooling	0.0198	0.0111	1.78	0.075	-0.0020 0.0416	10.3636
SPED dummy*	0.1617	0.1202	1.34	0.179	-0.0739 0.3973	0.3182
Log of per capita income	-0.1285	0.0550	-2.34	0.019	-0.2363 -0.0207	10.1105
Makati area dummy*	0.3681	0.1768	2.08	0.037	0.0216 0.7145	0.4455
Pasay area dummy*	0.7968	0.1185	6.72	0	0.5646 1.0290	0.0727
Quezon City area dummy*	0.2932	0.2217	1.32	0.186	-0.1413 0.7277	0.3182
Member of an organization dummy*	-0.2118	0.1318	-1.61	0.108	-0.4701 0.0465	0.6909
(*) dy/dx is for discrete change of dummy variable from 0 to 1						

Table 4b. Empirical results of availment/participation in medical services discount analysis: Logit

Logistic regression		Number of obs =		110		
		Wald chi2(16) =		40.48		
		Prob > chi2 =		0.0007		
Log pseudolikelihood =		-41.907		Pseudo R2 = 0.4034		
Robust						
medical av~d	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Eligibility (Dummy for having the PWD ID card)	2.8682	1.0514	2.73	0.006	0.8074	4.9289
Employed dummy	-0.0789	0.6284	-0.13	0.9	-1.3104	1.1527
Female dummy	0.5351	0.5932	0.9	0.367	-0.6275	1.6978
Married dummy	-1.1642	0.6529	-1.78	0.075	-2.4437	0.1154
Household size	-0.2970	0.1327	-2.24	0.025	-0.5571	-0.0369
Head dummy	0.4955	0.6924	0.72	0.474	-0.8616	1.8526
Mobility impaired	0.6074	0.7712	0.79	0.431	-0.9041	2.1189
Age	-0.5282	0.1630	-3.24	0.001	-0.8476	-0.2087
Age-squared	0.0073	0.0020	3.56	0	0.0033	0.0113
Years of schooling	0.1350	0.0817	1.65	0.098	-0.0251	0.2950
SPED dummy	1.0300	0.7619	1.35	0.176	-0.4633	2.5232
Log of per capita income	-0.8236	0.3668	-2.25	0.025	-1.5424	-0.1048
Makati area dummy	2.2419	1.1802	1.9	0.057	-0.0713	4.5551
Pasay area dummy	4.5231	1.5555	2.91	0.004	1.4745	7.5718
Quezon City area dummy	1.5936	1.2806	1.24	0.213	-0.9164	4.1036
Member of an organization dummy	-1.2289	0.7845	-1.57	0.117	-2.7665	0.3088
Constant	12.3257	4.8098	2.56	0.01	2.8987	21.7528
Marginal effects after logit						
y= Pr(medical_availed) (predict)						
= 0.17140051						
Variable	dy/dx	Std. Err.	z	P>z	[95% C.I.]	X
Eligibility (Dummy for having the PWD ID card)*	0.3219227	0.0997	3.23	0.001	0.1264 0.5174	0.6636
Employed dummy*	0.0112853	0.0905	-0.12	0.901	-0.1886 0.1660	0.6455
Female dummy*	0.0792817	0.0901	0.88	0.379	-0.0972 0.2558	0.3818
Married dummy*	0.1710188	0.1025	-1.67	0.095	-0.3720 0.0299	0.5364
Household size	0.0421812	0.0186	-2.27	0.023	-0.0786 -0.0058	5.4000
Head dummy*	0.0717193	0.1026	0.7	0.484	-0.1293 0.2728	0.4455
Mobility impaired*	0.0977795	0.1413	0.69	0.489	-0.1791 0.3747	0.1727
Age	0.0750092	0.0252	-2.98	0.003	-0.1243 -0.0257	40.3818
Age-squared	0.0010341	0.0003	3.25	0.001	0.0004 0.0017	1769.8500
Years of schooling	0.0191662	0.0113	1.7	0.089	-0.0029 0.0413	10.3636
SPED dummy*	0.1648097	0.1329	1.24	0.215	-0.0957 0.4253	0.3182
Log of per capita income	0.1169704	0.0520	-2.25	0.024	-0.2189 -0.0151	10.1105
Makati area dummy*	0.3468321	0.1949	1.78	0.075	-0.0352 0.7288	0.4455
Pasay area dummy*	0.8024597	0.1100	7.29	0	0.5868 1.0181	0.0727
Quezon City area dummy*	0.2693045	0.2482	1.09	0.278	-0.2171 0.7557	0.3182
Member of an organization dummy*	0.2019731	0.1402	-1.44	0.15	-0.4768 0.0729	0.6909

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Table 5. Empirical results of awareness and eligibility analyses

Variable	Aware=1		Eligible (with PWD ID card=1)	
	Probit	Logit	Probit	Logit
Female dummy	0.28964123	0.61581613	0.02610472	0.0217166
Married dummy	-0.18732558	-0.26729866	-0.40496463	-0.74601093
Household size	-0.04521379	-0.08096751	-0.06160825	-.11708009*
Head dummy	0.39362433	.77073831*	-0.18549098	-0.37856766
Mobility impaired	0.39016829	0.69116083	0.48538128	0.86771016
Hearing impaired	0.62537835	1.0343501	1.4682201***	2.7092767**
Visually impaired	.9044705**	1.5830672**	0.72508133	1.3432175
Age	0.08107923	0.14963915	.18719882***	.32882747***
Age-squared	-0.0010217	-0.00193787	-.0023478***	-.00413657***
Years of schooling	.09893689***	.17678728***	.09250755***	.16567728***
SPED dummy	0.40918404	0.81543014	0.35076618	0.51586911
Log of per capita income	.22537058*	.38747899*	0.04540815	0.08920668
Makati area dummy	0.52431787	1.0244762	1.1947397***	2.1374608***
Pasay area dummy	-.70822158**	-1.1522533**	-.70762466**	-1.248791**
Quezon City area dummy	-0.21467025	-0.26730167	-.90599724***	-1.6315972***
Member of an organization dummy	.78627578***	1.3377903***	1.1964597***	2.0956751***
_cons	-4.8215251***	-8.598015***	-5.5044202***	-9.6931111**
N	370	370	369	369

ⁱ ADB, RETA 5956 p.20

ⁱⁱ ADB, RETA 5956; Mori and Yamagata (2009)

ⁱⁱⁱ At the household level, there were several occasions when the PWD household samples were drawn in a purposive manner because the sampling frames available at that time have not been updated and validated prior to the survey operation, see Yap, Albert, Reyes and Tabuga (2009).

^{iv} Refer to Yap, Reyes, Albert, and Tabuga (2008) for a full length report on the 2008 survey.

^v Heckman and Smith (2003) decomposed the impact of awareness and eligibility, among others, on the participation of persons in a social program.