Disability and the Labor Market: Data Gaps and Needs in Latin America and the Caribbean

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The author would like to thank Javier Torres for his computational work and Manual Molano for his helpful comments.

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Summary

Across Latin America and the Caribbean (LAC), data on the relationship between disability and economics—particularly links to the labor market—is scarce. Gaining a better understanding of these links begins with collecting better data. Key to improved data collection are standard definitions and classifications. To date, however, no global definition of the term *disability* has been incorporated into laws or survey designs. In LAC, lack of common definition has often led to confusing cross-country comparisons. Moreover, LAC has no regionwide method for classifying disabilities. The universe of persons with disabilities for which data can be analyzed is restricted to those employed in the formal sector of the economy.

Given these gaps, this study sought to underscore the need for increased resources to obtain better household surveys and to help define the concept of disability to promote a better understanding of the population with disabilities. To this end, the study analyzed the relationship between disabilities and the LAC labor market, using the scant data that had been generated by national household surveys. This data was used to estimate incidence of disability for the total population and labor participation rates for populations with and without disabilities and families with and without members with disabilities. Other economic costs to labor were also analyzed, including changes in labor-force participation of families with members with disabilities and losses caused by their difficulty in entering the labor force.

The study showed that estimating the prevalence of disability in LAC countries is extremely difficult, given that most national household surveys do not identify a person as having a disability unless s/he is non-employed. Nonetheless, the study analyzed the incidence of disability in such countries to highlight the need for common definitions and questionnaires that could better capture the disability-prevalence variable. Data from only three countries—Brazil, Costa Rica, and Nicaragua—could be used to compare incidence of disability among total populations. Moreover, the Nicaragua survey was the only one that requested data on specific types of physical disabilities.

Comparison of household surveys among these three countries revealed differences in questionnaire structure and definitions, which accounted for wide variations in responses among the countries. Such differences clearly demonstrated how the relationship between disability and other variables changes as definitions shift from narrow to broad.

Making policy changes to combat labor-market discrimination against those with disabilities requires access to better data, the analysis of which can lead to more informed decision-making. The most urgent research needs identified by this study are to 1) **reach a common definition of the term *disability* for the LAC region** and 2) **develop disability modules within surveys**, beginning with countries that already have well-structured, frequently conducted, household surveys. Allocating more resources to these activities will lead to a better understanding of the problems that people with disabilities face, which, in turn, can result in sound policies that support them, both economically and socially.

Introduction

Although the United Nations Development Programme (UNDP) estimates that about 10% of the global population has a disability (UNDP 1997), information on this topic is negligible. In Latin America and the Caribbean (LAC), data is even scarcer. Early findings from this study revealed a dearth of information on the relationship between disabilities and economics, particularly links to the labor market. Gaining a better understanding of these connections, with which to formulate more appropriate policies, begins with obtaining better data.

Toward a Standard Classification

To date, the term *disability* has been variously defined. Several common definitions are as follows:

- Inability to engage in substantial, gainful activity because of physical or mental impairment—purely occupational definition provided by the U.S. Social Security Administration, Disability Insurance Program.
- People with challenges that can be met if appropriate policies and supports are available to address them—broader definition of Livermore et al. (2000).
- Condition with three components: presence of a pathology (physical or mental disorder), impairment (mental loss or abnormality that limits a person's capacity and level of functioning), and limited or no ability to perform socially-expected tasks—classification of Nagi (1991).

Nagi's definition is closer to the parameters set forth by the World Health Organization (WHO), through its International Classification of Impairments, Activities, and Participation (ICIDH-2) (WHO 2000). A refinement of the original International Classification of Impairments, Disabilities, and Handicaps (ICIDH), ICIDH-2 offers a standard language and framework with which to describe health-related conditions, providing qualifiers for three dimensions of human-health: body structures and functions, personal activities, and participation in society. Nonetheless, ICIDH-2 criteria have not yet been incorporated into laws or survey designs.

English, Spanish, and Portuguese definitions of the term *disability* do not always refer to the same problems. Differences in meaning significantly affect the ability to measure incidence of disability and, in turn, to analyze its links to the labor market. As yet, few official definitions exist in the disability literature, legislation, or country regulations. Further complicating the issue are the many Spanish terms used (Box 1).

Box 1. *Disability* Defined: Common Spanish Terms

Across LAC, a variety of Spanish words are used to describe disabilities. In Mexico and Costa Rica, for example, the terms *invalidez* and *discapacidad* refer to "disability" (the latter term is more politically correct), while *incapacidad* refers to a "temporary illness or injury." In other LAC countries, however, the term *incapacidad* may refer to a "permanent disability." Other commonly used words—*lisiado*, *impedido*, *paralítico*, *minusválido*, and *parapléjico*—only multiply the confusion.

The LAC region has no standard way to classify disabilities. Instead, it must rely on data generated from national social security systems across the region. Because there is no regionwide classification method for social-security systems, information is scant on the total number of individuals with disabilities across LAC. In addition, since many individuals are ineligible for social security, the universe of persons with disabilities that can be analyzed from social-security data is restricted to those employed in the formal sector of the economy (Elwan 1999).

Difficulties in Estimating Prevalence and Economic Costs

Most estimates of the overall prevalence of disability in LAC are derived from population censuses and household surveys. According to Mexico's 2000 population and housing census (INEGI 2001), that country's total number of individuals with disabilities exceeds 2.24 million (2.3% of the total population). Of this proportion, 31.6% and 22.7%, respectively, acquired their disabilities as a result of illness or aging; another 19.4% were born with a disability, and 1.9% became disabled for other reasons.

Montes and Massiah (2002) estimate that the respective percentages of men and women with disabilities are 2.4% and 1.5% in Brazil, 17.1% and 20.3% in Nicaragua,[1] and 6.1% and 5.8% in Costa Rica. These percentages contrast with information provided by the UNDP, which estimates that there are 8.87 million people with disabilities in Mexico, more than 15.53 million in Brazil, 396,000 in Nicaragua, and 326,700 in Costa Rica (UNDP 1997). These numbers represent about 10% of the total population in each country.[2] Using UNDP data, Metts (2000) concludes that, in countries with a high level of human development, 10.1% of people have disabilities, compared to 10% and 3.7%, respectively, of populations in countries with low and medium levels of human development.[3]

Houtenville (2000a) provides similar data for the United States, using alternative definitions of disability that are based on recent population surveys (1981–1999). For 1999, Houtenville estimates that the percentage of non-institutionalized civilians with disabilities (ages 25-61) was 7.9% for those with a *work limitation* (reported at the time of the survey) and 10.8% for those with a *work disability* (reported for the previous year).[4]

The 7-10% estimate is commonplace in the disability literature. Elwan (1999) even cites a 1995 study of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) that determines a disability prevalence of not more than 5% for the global population, owing to differing definitions and survey methods. It should be noted that such estimates are derived from a wide variety of surveys using diverse methods, underscoring the need to generate better data on disabilities in the future.

Data on the economic consequences of disabilities is even scarcer. According to Giuffrida, Iunes, and Savedoff (2001), one study showed that the economic costs of occupational injuries and illnesses represent approximately 3% of gross domestic product (GDP) in the United States, contrasted with as much as 10% in developing countries. In LAC, these authors note that the burden is heaviest for those who can least afford it, such as those employed in low-wage, informal activities, where opportunities for advancement are

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[1] According to Montes and Massiah (2002), the Nicaragua survey's high estimates can be explained by the fact that 63.1% of those who reported having a disability had a sight problem, whose degree of seriousness was undetermined. After subtracting this group, the remaining population with disabilities in Nicaragua is about 6.3% of men and 7.5% of women.

[2] The UNDP's total population estimates for these countries were 89.6 million for Mexico, 156.9 million for Brazil, 4 million for Nicaragua, and 3.3 million for Costa Rica.

[3] For countries with a high level of human development, the UNDP tables provide a single estimate for the population with disabilities. For countries with low or medium levels of human development, the tables provide both low and high estimates. The estimates of 10% and 3.7% presented here are low; high estimates would be 9.9% for both country types (see Metts, 2000).

[4] Following the census questionnaire, Houtenville defines *work limitation* as a health problem or disability that prevents one from working or that limits the type or amount of work s/he can perform. An individual with a *work disability* falls into one of the following categories: 1) has a work limitation; 2) did not work the previous year because of illness or disability; 3) retired from or left a job for health reasons; 4) received veterans' benefits due to a service-contracted disability the previous year; 5) received workers' compensation or other benefits the previous year, resulting from a job-related injury or illness; 6) received supplemental, security-income benefits and was less than 65 years old the previous year; or 7) received Medicare and was less than 65 years old the previous year.

few and compensation for on-the-job accidents or illness is rare.

Because of the extent of informal labor markets across the LAC region, one can conclude that the economic consequences of disabilities—not only those caused by occupational hazards—are high and largely underestimated. This matter should equally concern developing and developed countries since there is an apparent link between disability and poverty. According to Elwan (1999), disability increases the risk of poverty, while the converse is also true.

Study Goals and Objectives

Taking into account LAC's paucity of data and lack of an appropriate definition of disability, this study sought to:

- Analyze the relationship between disabilities and the LAC labor market, using the scarce data generated by national household surveys.[5] Specific objectives of the analysis were to estimate:
  1) *Prevalence of disability for the total population*. This component tested the hypothesis that prevalence of disabilities increases with age, decreases with schooling, and may be higher for non-heads of households, single people, and poor families.
  2) *Labor participation of populations with and without disabilities*. It was expected that the rate would be higher for people without disabilities.
  3) *Labor-participation rates for families with and without members with disabilities*. The study expected rates to differ by family type, although it was unclear, a priori, which type would have the higher rate.
  4) *Economic costs to labor generated by disabilities*. This component focused on: a) change in families' participation in the labor force caused a member's disability and b) economic loss caused by the resultant difficulty in entering the labor force.
- Emphasize the need to increase resources—mainly for obtaining better household surveys and helping to define a global concept of disability—in order to promote a better understanding of the global population with disabilities and that of the LAC region in particular.

[5] Despite the IDB's access to many household surveys from various countries over many years, only three were used (Brazil, 1981; Costa Rica, 1998; and Nicaragua, 1993) since these were the only ones from which the incidence of disability for the *total* population could be estimated. The household surveys of other countries could be used only to determine whether *non-working* persons had disabilities, rendering such data useless for the purposes of this research.

Theoretical Framework

When the disability variable is included in conventional labor-market models, both labor supply and demand change, reflecting the reduced participation rate of individuals with disabilities (Livermore et al. 2000).[6]

Disability and Labor Supply

- Because disabilities reduce life expectancy, persons with disabilities will work fewer years.
- In order to participate in the labor market, an individual with a disability incurs added costs for rehabilitation, special transportation and equipment, and personal-assistance services, which can reduce his or her labor output.
- Because their job-search costs are generally higher, people with disabilities often devote less time looking for a job, resulting in having to accept lower-level positions. Moreover, if the parties helping such individuals absorb all search costs, the persons with disabilities may not accept any job offers.
- The individual with a disability will consume and save less; however, the disability's effect on his or her labor participation will depend on how much time the condition requires and how much labor productivity is lost as a result.
- Allocation of time for leisure and work may be distorted by the existence of other income sources, such as insurance payments, earnings from other household members, public programs and subsidies, and the wage rate.

The approach of developed countries is to provide the person with a disability a supplemental or non-labor income. While this increases the individual's income, s/he will participate less in the labor market. Livermore et al. (2000) has widely explored this phenomenon, including U.S. policies that focus on providing permanent, supplemental income to persons with disabilities and their families, inevitably resulting in decreased labor participation. The outcome would be different if the individual with a disability received this income only once or if it were given in the form of a loan for a productive project that s/he could pursue, regardless of the disability.

If the market provided the person with a disability a higher wage, that individual would be better off financially and would participate more in the labor force; however, providing persons with disabilities higher wages cannot be achieved artificially. Opportunities must be created through promoting a culture of labor demand, which includes using job-placement databases and marketing of individuals' skills. Such an approach requires that policymakers have access to statistical data on disability types in order to better understand the needs of their target populations.

Disability and Labor Demand

- The employer may view a disability as a sign of lower productivity, which can generate workplace discrimination.[7]
- Lower productivity results in lower wages.[8]
- If a firm believes it will incur added costs by accommodating an individual with a disability, it may view the labor-demand adjustment cost as higher for a worker with a disability than for one without a

[6] See Oi, 1991.

[7] This is less likely to occur in the case of a worker with a physical disability in otherwise sound health whose disability does not interfere with job performance (e.g., clerical work).

[8] This is especially true for poorer individuals, whose physical or mental disability affects their job performance (e.g., non-clerical jobs).

disability.[9]

- A disability modifies not only the labor decisions of the individual with a disability; it affects his or her entire household dynamics. This is especially true in LAC countries, where the family, often more so than the government, plays the safety-net role (Hernández-Licona 2000).

  A person with a physical disability poses two major challenges for his or her family. First, depending on the nature of the disability, physical care of this individual can consume much of the caregiver's time, lowering his or her probability of participating in the labor market. Second, the family's potential income may be reduced because the member with the disability may not be able to work and because s/he may consume more than other family members; in this case, the labor-participation rate of other members may rise.[10]

Disability and Poverty

Disability and poverty are inextricably linked. Poorer people tend to work in riskier environments and are more often exposed to environmental hazards, particularly in countries with poorly-enforced environmental standards. In addition, poorer households often lack adequate food, basic sanitation, and access to preventive healthcare, all of which contribute to the risk of disability. Elwan (1999) summarizes these as follows:

- Disability increases the risk of poverty, while conditions of poverty increase the risk of disability.
- Exclusion and segregation decrease the chances that a person with a disability will contribute productively to his or her household and community, thereby increasing the risk of sinking into poverty.
- People with disabilities have lower levels of education, income, savings, and other assets, compared to the general population.[11]
- The mentally handicapped, women, and the elderly are more vulnerable to poverty when challenged by a disability.
- Costs stemming from disabilities can impoverish persons with disabilities and their families.
- Breakdown of health institutions during times of social conflict can turn otherwise treatable conditions into disabling ones.

Comparing developed and developing countries, Elwan (1999) further observes:

- Rural disability rates are higher than urban rates in both developed and developing countries.
- Disability rates are higher for women in developed countries and for men in developing countries.
- Although developing countries lack data on disability prevalence, the proportion of disabilities caused by communicable, maternal, and perinatal diseases, as well as child disability, is higher in developing countries, compared to the developed world.
- In developing countries, which often lack state-sponsored programs, people with disabilities tend to rely on family and other

[9] Livermore et al., 2000, describes U.S. tax policy, which reflects public recognition of the labor-demand problem. The authors highlight Tax Deduction (Sections 44 and 190), which allows businesses to deduct expenses related to removing impediments to persons with disabilities from their place of business; and the Work Opportunity Tax Credit, which allows a credit equal to 35% of the wages of certain groups, including those with disabilities.

[10] The net effect on household dynamics cannot be determined a priori as it depends on the individual's position in the household and the severity of his or her disability.

[11] According to Elwan (1999), the unemployment rate of persons with disabilities is twice, or even three times, that of persons without disabilities in developed countries. Although data is scarce for the developing world, people with disabilities are much less likely to be engaged economically than the population overall.

informal support networks. This is particularly true in the LAC region, where relatives often feel obligated to care for family members with disabilities.

- In countries that lack state-sponsored programs, family members without disabilities are likely to work harder to compensate for the lost household income of the member with a disability and to cover the costs of caring for him or her. Depending on the type of disability suffered, the family member with the disability might work at a non-market activity within the household, such as babysitting, or a market activity in the informal sector (such as begging, trading, or street commerce).

Estimates of Disability Prevalence

Estimating the prevalence of disability in LAC countries is extremely difficult, given that the national household surveys of most countries do not identify a person as having a disability unless s/he is unemployed. Nonetheless, it is useful to analyze the incidence of disability in such countries in order to highlight the need for common definitions and questionnaires that could better capture the disability-prevalence variable. To this end, this study analyzed the non-employed populations of eight countries: Argentina, Bolivia, Chile, Honduras, Mexico, Panama, Peru, and Uruguay.

Montes and Massiah (2002) found that the percentage of non-employed people with disabilities varies significantly among the eight countries studied (Tables 1 and 2). The primary reasons are as follows:

- Differences in meaning between the Spanish words *incapacitado* and *discapacitado* make cross-country, survey comparisons difficult.
- Sentence constructions of survey questions differ across surveys.
- Choices of survey responses differ by country, which violate the independence of irrelevant alternatives. Labor modules consider only the subset of individuals who were participating in the labor force at the time of the survey. Because women generally participated less, the labor module automatically inferred that disability incidence was lower for women than for men (Table 2).

Table 1. Respondents' Reasons for Not Working in Four Selected Countries

Country	Survey Year	Population with Disabilities (25-55 Years of Age)	
		Men (%)	Women (%)
Chile	1998	14.61	3.52
Mexico	1996	15.06	1.06
Panama	1999	12.17	1.22
Peru	1997	3.54	1.46

Source: Montes and Massiah, 2002.

Table 2. Respondents Who Reported Having a Disability in Four Selected Countries

Country	Survey Year	Population with Disabilities (25-55 Years of Age)	
		Men (%)	Women (%)
Argentina	1996	4.59	0.94
Bolivia	1999	7.54	1.64
Honduras	1999	16.83	1.38
Uruguay	1998	17.27	3.17

Source: Montes and Massiah, 2002.

Brazil (1981), Costa Rica (1998), and Nicaragua (1993) are the only three LAC countries whose household surveys have been designed to estimate the prevalence of disability for the total population; furthermore, the Nicaragua survey is the only one that has requested data on specific types of physical disabilities. As Table 3 shows, the percentage of people with disabilities appears to vary dramatically across these three countries.

Table 3. Population with Disabilities in Three Selected Countries

Country	Survey Year	Population with Disabilities (% Total Population)		
		Men	Women	Total
Brazil	1981	2.08	1.48	1.78
Costa Rica	1998	5.70	5.48	5.59
Nicaragua	1993	11.86	12.97	12.42

Source: Montes and Massiah, 2002.

These large variations in incidence of disability can best be explained by comparing the countries' design of survey questions. As Table 4a shows, the disability definition is broader for Costa Rica than for Brazil. The definition is even broader for Nicaragua (Table 4b), thereby accounting for that country's significantly larger percentage of persons with disabilities (Table 3).

Table 4a. Comparison of Survey Questions in Brazil and Costa Rica

Brazil	
Portuguese Question	***English Translation***
Qual a deficiência ou incapacidade que vôce tem?	*What type of deficiency or incapacity do you have?*
1. Cegueira	1. Blindness
2. Surdez	2. Deafness
3. Surdo-mudez	3. Deaf-muteness
4, Retardamento ou doença mental	4. Retardation or insanity
5. Falta de algum membro ou parte dele	5. Partial or total mutilation/amputation of any part of the body
6. Paralisia total ou das duas pernas	6. Total paralysis or paralysis of both legs
7. Paralisia de um lado (1 braço e/ou perna)	7. Paralysis in one side of the body (1 arm and/or leg)
8. Outro tipo de incapacidade ou paralisia	8. Other type of incapacity or paralysis
Costa Rica	
Spanish Question	***English Translation***
¿Alguna persona de este hogar presenta una o varias deficiencias que le impidan o dificulten, permanentemente, realizar sus actividades cotidianas?	*Does anyone in this household have one or several deficiencies that permanently prevent or make it difficult for him or her to perform daily activities?*
1. Ceguera parcial o total	1. Total or partial blindness
2. Sordera parcial o total	2. Total or partial deafness
3. Parálisis cerebral o de extremidades	3. Paralysis of brain, arms, or legs
4. Amputación	4. Amputation
5. Retardo mental	5. Mental retardation
6. Trastorno mental	6. Mental imbalance
7. Otro	7. Other

Moreover, the Nicaragua survey question is richer and more flexible than those of Brazil and Costa Rica. It first asks whether the respondent has a disability; if the answer is "yes," the second question asks, "*What type of disability do you have?*" Potential answers include a broad range of disability types, as well specific problems, which allow researchers to refine their focus, if desired (Table 4b).

Table 4b. Response Choices to Nicaragua Survey Question

Question: What type of disability do you have?	
Disability Type	*Specific Problem*
Hearing	Deafness Serious hearing problem Mild hearing loss
Speech	Muteness Speech difficulty
Sight	Blindness Blindness in one eye Difficulty without glasses Difficulty with glasses
Movement	Unable to walk or move alone Limited or no use of arm(s) Limited or no use of leg(s) Unable to move one side of body Involuntary movements
Deformity	Loss of both arms and legs Loss of both or one arm Loss of both or one leg Loss of one arm and one leg Deformed head/face Deformed arms Deformed legs Deformed torso
Mental	Retardation Psychological trauma Insanity
Attack or convulsions	
Hearing and speech	Deafness-muteness Mild hearing/speech loss
Various	

The most striking example of how differences in survey-question design can explain differences in incidence of disability is classification of sight problems. The Brazil survey, for example, considers a person as having a disability *only* if s/he is totally blind, while, in the Costa Rica survey, a person with a disability can be totally or partially blind. The Nicaragua survey, on the other hand, considers even someone with myopia as a person with a disability. It is not surprising then, that the incidence of disability appears surprisingly low in Brazil and relatively high in Nicaragua. Such differences clearly demonstrate how the relationship between disability and other variables changes as definitions move from restricted to broad.

Comparison of Personal Characteristics

Tables 5-8, respectively, estimate the incidence of disability by age group, gender, level of educational attainment, and household position; while Table 9 considers the relationship between education and position in the household. These estimates are limited to the 15-55-year-old age group in order to better target the working population.

As Table 5 shows, the probability of disability increases with age. The older a person is, the greater his or her physical diminishment and chances of having an accident. This phenomenon is evidenced in all three countries, although it appears most dramatic in Nicaragua since, as mentioned above, the definition of disability in that country is broader than in Brazil or Costa Rica.

Table 5. Percentage of Population with Disabilities, by Age Group

	Survey	*Age Group (years)*				
Country	*Year*	*15-24*	*25-34*	*35-44*	*45-55*	*Total*
Brazil	1981	1.48	1.53	1.82	2.63	1.74
Costa Rica	1998	2.82	4.04	5.32	9.83	4.90
Nicaragua	1993	6.90	9.46	19.22	39.11	13.99

Source: Montes and Massiah, 2002

As Table 6 shows, disability affected men more than women in Brazil and Costa Rica, while the reverse was true for Nicaragua.

Table 6. Percentage of Population with Disabilities, by Gender

	Survey	*Population (15-55 years of age)*		
Country	*Year*	*Men*	*Women*	*Total*
Brazil	1981	2.10	1.34	1.71
Costa Rica	1998	5.01	4.80	4.90
Nicaragua	1993	13.45	14.50	13.99

Source: Montes and Massiah, 2002

As Elwan (1999) points out and Table 7 generally confirms, the higher the educational level one attains, the less chance s/he has of taking jobs that could result in disability. While data from Costa Rica and Nicaragua show increased incidence with attainment of some college, these increases stem from these countries' respective definitions of disability. In Brazil, where the negative relationship between disability and schooling holds true at all levels of education, disability is narrowly defined. In Nicaragua, however, where the definition of disability includes an individual who simply wears eyeglasses to correct myopia, incidence of disability increases for those who complete secondary school and attend college. The reasons are twofold: 1) an individual who attends school has greater opportunity to detect his or her need for glasses and 2) more time spent reading may affect an individual's eyesight, thereby creating the need for glasses.

Table 7. Percentage of Population with Disabilities (15-55 Years of Age), by Educational Level

Schooling Level Attained	*Country*		
	Brazil (1981)	*Costa Rica (1998)*	*Nicaragua (1993)*
None	4.43	24.71	19.30
Some elementary	1.61	8.34	14.53
Completed elementary	1.22	4.24	12.86
Some secondary	0.79	3.05	9.13
Completed secondary	0.49	2.97	10.10
Some college	0.46	3.38	16.45
Missing data	0.47	3.85	--
Total	1.74	4.90	13.99

Source: Montes and Massiah, 2002

Differences in definitions can also explain why, in Brazil, household heads have the lowest probability among all household members of becoming disabled, while the opposite is true in Nicaragua (Table 8). According to Brazil's strict definition of disability, a person with a disability must have serious physical or mental constraints; therefore, it is less likely that this person can assume the responsibilities of a household head. In Nicaragua, the converse is true, owing to that country's broader definition of the term.

Table 8. Percentage of Population with Disabilities (15-55 Years of Age), by Household Position

Household Position	*Country*		
	Brazil (1981)	*Costa Rica (1998)*	*Nicaragua (1993)*
Household head	1.48	5.71	20.41
Spouse, son, daughter	1.72	4.53	12.16
Other member	2.86	5.28	7.84
Total	1.74	4.90	13.99

Source: Montes and Massiah, 2002

Finally, by disaggregating households by the household head's level of schooling, this study found that, when s/he attains a college degree or higher, the likelihood of having a family member with a disability is lower (Table 9). This result is consistent with Elwan (1999), who indicates that jobs for more highly educated people are less risky.

Table 9. Percentage of Families Having Members with Disabilities, by Educational Level of Household Head

Educational Level of Household Head	*Country*		
	Brazil	*Costa Rica*	*Nicaragua*
College degree or higher	3.00	9.43	34.24
Less than a college degree	7.83	18.98	44.65

Source: Montes and Massiah, 2002

Disability and Labor-market Participation

Obviously, a major cost of disability is being less able to participate in the labor market. For the three countries analyzed, this study compared working-age populations with and without disabilities in terms of labor-market participation rates, wages, industry type, and occupation.

As Table 10 shows, in Brazil, 25-55-year-old men with disabilities have dramatically lower employment levels than do their counterparts without disabilities. This differential is not as pronounced in Costa Rica, and, in Nicaragua, there is almost no difference in employment level by disability status (73.7% with versus 78.5% without).

For women, the pattern varies more, with Brazil having the largest differential in employment rates between those with and without disabilities. In Nicaragua, the percentage of employed women with disabilities is slightly higher than the percentage of employed women without disabilities (46.9% versus 42.6%). In Costa Rica, 37% of women with disabilities reported that they work, compared to 45% of their counterparts without disabilities. However, one should note the enormous differences between samples.

Table 10. Employment Comparisons of Men and Women (Ages 25-55) with and without Disabilities, in Three Countries

Men			*Women*		
% Employed	*No. Employed*	*Total Sample Population*	*% Employed*	*No. Employed*	*Total Sample Population*
Brazil, 1981					
With Disabilities					
42.68	728	1,757	15.60	186	1,189
Without Disabilities					
93.33	69,471	74,826	39.00	33,032	81,652
Costa Rica, 1998					
With Disabilities					
70.54	368	517	36.81	168	484
Without Disabilities					
94.42	7,118	7,532	44.90	3,328	7,830
Nicaragua, 1993					
With Disabilities					
73.67	451	592	46.91	319	727
Without Disabilities					
78.53	2,190	2,720	42.65	1,219	2,930

Source: Montes and Massiah, 2002

Similar results were obtained when the average wages of populations with and without disabilities were compared across the three countries. In Brazil, people without disabilities earn 45.8% more than those with disabilities. In Costa Rica, the difference is 15%. However, in Nicaragua, individuals with disabilities earn 11.3% more than those without disabilities (Table 11).

Table 11. Comparison of Average Wage for Employed Individuals (15-55 Years of Age)

			Population Group	
Country	*Survey Year*	*Currency (for survey year)*	*Without Disabilities*	*With Disabilities*
Brazil	1981	Cruzeiros	24,223.80	16,613.79
Costa Rica	1998	Colones	90,454.80	78,415.39
Nicaragua	1993	Córdobas	992.25	1,104.24

Source: Montes and Massiah, 2002

Tables 12 and 13 show the percentages of labor participation of persons with disabilities by industry and occupation, respectively. In Brazil and Costa Rica, many people with disabilities work in agriculture- and services-related industries, while relatively few work in the formal sector, primarily because private firms lack incentives to invest in special facilities for those with disabilities (Table 12). It is likely that many such individuals work in small family enterprises; however, data is insufficient to confirm this hypothesis (Hernández-Licona 2000).

Table 12. Comparison of Employed Populations (15-55 Years of Age), by Industry (%)

	Country			
	Brazil (1981)		*Costa Rica (1998)*	
Industry	*Without Disability*	*With Disability*	*Without Disability*	*With Disability*
Agriculture, hunting, forestry, and fishing	25.75	36.04	18.67	19.19
Mining	0.67	0.48	0.14	14.20
Manufacturing	16.12	15.91	16.30	--
Electricity, gas, and water services	0.80	0.54	1.04	1.05
Construction	8.58	9.91	6.31	6.42
Wholesale, retail; restaurants, hotels	12.91	11.41	19.53	16.54
Transportation, storage, and communications	4.61	2.42	5.60	6.71
Financial, insurance, real-estate, and consulting companies	2.69	1.26	5.66	4.62
Community, social, and personal services	27.88	22.02	26.02	30.30
Missing data	--	--	0.74	0.97

Note: The Nicaragua survey does not provide an aggregation by industry or branch of economic activity.
Source: Montes and Massiah, 2002

Table 13. Comparison of Employed Populations (15-55 Years of Age), by Occupation (%)

	Country					
	Brazil (1981)		*Costa Rica (1998)*		*Nicagarua (1993)*	
Occupation	*Without Disability*	*With Disability*	*Without Disability*	*With Disability*	*Without Disability*	*With Disability*
Professional, technician	7.70	3.80	12.52	9.57	16.85	20.76
Managerial	0.50	0.72	3.76	2.23	2.40	1.62
Clerical and administrative support	10.59	5.47	9.02	8.53	3.19	2.71
Merchant or sales	9.63	9.04	12.36	11.20	10.53	15.73
Services	26.99	28.78	15.10	18.79	13.03	12.90
Agriculture-related	25.60	35.80	17.09	18.91	31.89	22.66
Non-agriculture; machine, vehicle operator	15.80	13.80	29.35	29.97	21.72	23.34
Armed forces	1.12	0.32	--	0.78	--	--
Other occupations	2.06	2.27	0.66	0.00	--	--
Missing data	0.01	--	0.13		0.38	0.28

Source: Montes and Massiah, 2002

As might be expected, in Brazil and Costa Rica, relatively larger percentages of individuals without disabilities work as professionals, technicians, clerical workers, and even non-agricultural workers (Table 13). It is not surprising, however, that this trend does not hold true for Nicaragua, where the percentages of professionals/technicians and non-agricultural workers are higher for individuals with disabilities than for those without disabilities.

Other Economic Costs to Labor

In addition to its effect on an individual's labor-participation rate, wage potential, and type of job s/he can obtain, disability changes other aspects of the labor market as well, including entire family dynamics. According to the Brazil and Costa Rica surveys, a family member with a physical disability has less opportunity to participate in the labor force and may require that other family members spend time taking care of him or her, which can reduce the caregivers' participation in the labor market. Moreover, the family suffers loss of the potential income of the member with the disability, forcing other members to work more; therefore, certain members' labor-participation rates may increase. The net effect depends on a person's working potential.

This study also estimated that families that do not have members with disabilities participate more in the labor force than those with at least one member who has a disability (except in the case of Nicaragua, where the survey had no age limit on participation). For families with at least one member with a disability, the study showed that a household's labor dynamics change according to which household member has a physical disability. If the household head becomes disabled, his or her occupational status strongly affects the labor-participation rates of other household members.

In Brazil, for example, if the household head with a disability participates in the labor force, 32.4% of other members also participate. However, if the household head with a disability does not work, other members' participation rate increases to 38.2%. If the member with a disability is not the household head and has a lower income potential,

the effect on other household members differs. If the member with the disability works, other members' participation rate is 46.9%; if not, their rate drops to 40.9%, probably in order to take care of the member with the disability.

In Costa Rica, if the household head with a disability participates in the labor force, 31.8% of other members participate. If s/he does not work, other members' participation rises to 38.3%. However, if the member with the disability is not the household head, the participation rate of other family members varies only slightly—41.2% if the member with the disability participates in the labor force, increasing to only 41.6% if s/he does not. It is unclear whether other members stay at home to care for the member with the disability.

Given the data currently available, it is not possible to estimate accurately the wages that non-employed people with disabilities would earn if they worked.[12] However, a rough estimate using current data shows that, if one forces the participation rate of the population with disabilities to equal that of the population without disabilities, lost earnings would equal about 0.6% of total labor income for Brazil in 1981 (the survey year). (If forgone earnings from members who left the labor market in order to care for the member with a disability were included, another 0.8% would need to be added to total income.)[13] In Costa Rica, lost earnings would equal 0.9% for 1998 (the survey year).

Strictly speaking, the labor costs for families having members with disabilities and for the economy overall are not limited to forgone earnings of the member with the disability and his or her caregivers. They also include family members' reduced time spent in non-market activities (such as education, child-care, and recreation), particularly when the member with the disability is the household head. Although it is extremely important to take these costs into account, it is difficult to assign them a monetary value, given the data currently available.

[12] With aggregate data, one cannot use the Heckman procedure to estimate the wages of the non-employed population with disabilities.

[13] These estimations have an upward bias because of the inability to properly estimate the wages of the non-employed population; therefore, the selectivity bias is included here.

Conclusions and Recommendations

Despite its discouraging start in terms of poor-quality or unavailable data and inconsistent definitions of disability across the LAC region, this study has enabled a better understanding of how populations with disabilities behave in the labor market. Given the region's lack of a common or official definition of disability, the results of cross-country comparisons can be rather confusing, which, in turn, impede the development of sound regional policies.

Major Findings

- The study revealed that few countries have dealt with collecting sufficient data on populations with disabilities that can be linked to other socioeconomic variables.
- Surveys that have analyzed the disability issue have been hampered by lack of a common definition. In many surveys, independence of irrelevant alternatives is violated; as a result, the estimated population with disabilities changes from country to country. Even in countries like Nicaragua, where the disability module is comprehensive, certain data categories fall far short of what should be considered disabled.
- Disability prevalence changes according to age, education, and household position. As expected, the study showed that disability increases with age and decreases with schooling. In terms of household position, incidence varies. (For example, the percentage of household heads with disabilities is small in Brazil, while the opposite is true in Nicaragua.)
- As expected, physically disabled persons participate less in the labor market than the rest of the population (with the exception of Nicaragua).
- Agriculture- and services-related industries tend to favor workers with disabilities. The reason may be that the percentage of informal vacancies is relatively high in these industries, which can reduce hiring barriers.
- At least three types of labor-market costs are related to disability: 1) reduced participation rate of the person with a disability; 2) household caregivers' reduced participation rate; and 3) family members' increased participation rate (when household heads with disabilities cannot work) and related opportunity costs.
- Estimating the lost earnings of the population with disabilities without controlling for a possible sample selection bias, the study determined that Brazil and Costa Rica would have 0.6% and 0.9% more earnings, respectively, if the labor-participation rates of populations with disabilities were similar to those of populations without disabilities.
- Nicaragua's extremely broad definition of disability often leads to survey results that contradict what would be expected. (For example, the labor-market participation rate for persons with disabilities is greater than for persons without disabilities.)

Research Data Needs

Obviously, strong policies are needed to combat discrimination against persons with disabilities having access to well-paying jobs. Economic support should be used to obtain aid, not only income transfers, for individuals with disabilities. Moreover, entry should be eased to formal markets, which are usually linked to pensions. Making such policy changes, however, depends on having access to better data, the analysis of which can lead to better decision-making.

Despite the scant data available, the Inter-American Development Bank (IDB) has done a commendable job over the past year in attempting to analyze

disability's links to the labor market. The imperative now is to direct more resources toward understanding and measuring LAC's population with disabilities. The most urgent needs are to:

1. Reach a common definition of the term *disability* for the LAC region. While complicated initially, given the concept's flexible boundaries, this is an achievable goal for which precedents exist (e.g., the region reached a common definition of the term *unemployment*, using parameters established by the International Labor Organization).

2. Develop disability modules for surveys, beginning with countries that already have well-structured, frequently conducted, household surveys. As experiences from Brazil, Costa Rica, and Nicaragua show, the disability module, along with the labor module, can be inserted into the survey. Once a common definition is agreed upon, disabilities and their links to other labor variables can be analyzed.

It would then be possible to ask: "What is the origin or nature of the disability?," "Who takes care of the person with a disability and how?," "What activities can the person with a disability engage in?," "What types of support (special aids and/or training) does the person with a disability require in order to enter the labor market?," and "Has s/he ever been rejected from the workplace?"

Allocating additional resources to the above research activities will lead to a better understanding of the problems people with disabilities face, which, in turn, can result in formulating better policies to support them, both economically and socially.

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