An Economic Analysis of Employment and Earnings Profile of People with Functional Difficulties in Sri Lanka

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Abstract

People with Functional Difficulties (FD) are one of the disadvantageous groups in the world. They have to face barriers when engaging in education, transport, communication, work force and getting higher earnings. This paper aims to identify the nature of occupations and earning determinants of people with FD in Sri Lanka. Sample was selected from the Sri Lanka Labour Force Survey (LFS) in 2018 as 3,277 of employed people with FD and 2,781 of employed people with FD who are earning wages. This study has identified the highest representations of people with FD by industries and employment status under the different disability groups. According to this study being male, being married, having only one difficulty, living in urban sector, years of education, being in non-agricultural industry, engaging in professional jobs are positively affected with hourly earnings of people with FD, while age, age square, having dual difficulties, being non-Sinhala are statistically insignificant with hourly earnings of a person with FD. Further, policies are proposed for increasing the high representative employment opportunities such as agricultural and own account workers, and increasing income levels of people with FD for reducing earning disparities with related to sectors and gender wise.

Keywords: *Difficulty, Disability, Earning, Employment, People with Functional Difficulties*

1. Introduction

1.1. Background of the study

The Department of Census and Statistics [DCS] (2012) defines disability as Functional Difficulties (FD) of people. It includes people with mental and physical difficulties. More than one billion persons in the world suffer some condition of disability. Disability can be identified as a negative aspect of interlinkage among persons with personal and environmental factors and their health conditions. They have low levels of education, low economic participation, poverty and social exclusions. (World Report on Disability, 2011).

Further, Yelln & Trupin (2003) stated that disabled persons can be identified by knowing whether they limit their works due to permanent mental and physical conditions or not. Protection of the Rights of Persons with Disabilities Act (1996) defines the Person with disability as a person who is unable to ensure their own life necessities by himself partly or wholly, due to mental and physical deficiencies, whether inborn or not.

According to the Bureau of Labour Statistics (2019), more of the disabled persons are 65 years and over, the ratio of employment-population is lower than that of non-disabled people,

and most of the employed disabled people tend to be self-employed than non-disabled employed people. Among them, 19.3% of the people with disabilities were employed. Also, in 2019, more disabled workers were likely to be in service occupations (20.7%) and they were less likely to engage in professional and managerial occupations.

According to Houtenville & Boege (2020), median annual earnings of full time (full year) disabled people recorded as $40,454 while non-disabled people's recorded $46,250 in United States. Also, the poverty rate (26.9%) for disabled people are higher than that of the non-disabled people (12.2%).

In the United States, the median earnings of persons aged 16 years and over with disabilities was recorded as $22,047 while $32,479 was recorded for persons without disabilities (Disability Statistics Annual Report, 2017). It is showed that persons with disabilities have lower earnings. According to the Disability and Development Report (2018), persons with disabilities are highly engaged in vulnerable employments and they earn lower wages than the persons without disabilities.

When considering the economically active and inactive status of the population, 28.7% represents the economically active while 71.3% represent economically inactive population. (Census of Population and Housing Sri Lanka [CPH], 2012). Further, it explains more people with difficulties remain out of the labour force. Therefore, they have no chances to earn money like the people without difficulties. They provide the population proportion of disability-by-disability types. They consider people with difficulties of 5 years and over as the total population. Also, they stated that 5.3 proportion represent the people with seeing difficulty, 2.1 represent people with hearing difficulty, 3.9 represent people with walking difficulty,1.0 represent people with communication difficulty, a proportion of 1.1 represent self-care difficulty and people with cognition difficulty are represented by 1.9 proportion (CPH, 2012).

Therefore, increasing the ability of their lives and increasing their earning profile are important aspects of this study. Hence, the main objective of this study is to identify the nature of occupations and earning determinants of people with FD in Sri Lankan context.

1.2. Research problem

Disability is a challenging issue in people's lives. It restricts the day-to-day work roles, participation in the workforce and getting higher earnings. Employment and earnings are highly affected by the type of disabilities. Furthermore, Myers & Sai (2014) have emphasized that disability creates negative impacts on earnings. Further, they do not receive sufficient and equal earnings as persons without disabilities. Although people with FD engage in some form of employment, they have more chances of being engaged in vulnerable employment due to their disability types. They have to face financial vulnerability (Batavia & Beaulaurier,2001). As well as, when comparing non-disabled people, depending on impairment severity, disabled men have to face earnings reduction about a quarter. (Berthoud et al., 1993 cited in Thornton & Lunt, 1995, p.2). They generally face some types of barriers. They are attitudinal, policy, physical and empowerment (Unit, 2005). They enjoy low wages and less working hours.

Because of these reasons, increasing their livelihoods and earning capacity is important. Therefore, this study aims to identify the employment nature of people with FD and their earning determinants. Therefore, this study evaluates what is the nature of occupations and earning determinants of people with FD in Sri Lanka?

2. Literature review

2.1. Theoretical literature

Regarding the earnings, Jacob Mincer (1958) introduced the aspect to identify earning distribution among the population and extended the model of human capital (Polacheck, 2008). Here, he explained the reasons for the increase in earnings due to education, reduction of people's earnings according to their lifecycle, enjoying different earnings according to the gender and differences of earning according to the geographic and occupational differences. Further, he stated that earning differentials generate due to the different demographic groups. According to that, men earn higher than women, whites earn higher than blacks, earning increment for men is related with age but in a declining rate, earnings for women are low with age, increasing earnings with education level and are different across jobs and higher earnings are experienced in urban areas etc. By evaluating all these, he stated that earnings are not equal across the population and that it varies with demographic and socio-economic characteristics.

Further, he explained some theories which evaluate the earnings. They are the screening model, which explain the reason for increasing earnings with education. Another one is the model of segregation. Here he explained the reasons for women being employed in various jobs than men, and the crowding model where he discussed the reasons for lower earnings for women than men. According to the theory of human capital, Baldrige et al (2019) stated that disabled people gained more benefits from higher educational levels, yet depending on theories of disability discrimination. Also, they found that disabled people showed a lower trend in turning their gains of education into higher education such as higher degrees and masters. Further, according to the multiple source of discrimination theory, they revealed that women with disabilities face double the disadvantages in gaining earnings than men with disabilities.

Maroto & Pettinicchio (2014) explained that earnings and employment gaps should be interrelated with individual characteristics. They are, preferences of jobs, human capital, disabilities whose work are limited and structural factors such as attitudes of employers and occupational requirements. Further, they mentioned that occupational segregation highly affects in generating labour market structural inequality. Disabled people face occupational segregation and it causes to limit their earning abilities. Further, disabled people mostly engage in less skilled employment opportunities with their limited experience and educational levels. This may vary with their disability types. When determining the earnings of a disabled person, human capital variables and supply side variables play a great role. However, they found that disabled persons' economic well-being strongly depends on the occupational characteristics and structural factors. Also, Myers & Sai (2014) emphasized that labour market discrimination reduces the income level of disabled people.

Further, according to the theory of labour market, when there is lower market wage and highest reservation wage, it causes person with disabilities to be less employed than persons without disabilities (Mitra & Sambamoorthi, 2008).

Jones et al. (2006) followed the traditional model of labour force participation. Here they revealed that the comparison between an individual's reservation wage and a firm's wage offer as the basic factor for knowing whether a person enters the labour market or not.

2.2. Empirical literature

The empirical literature will be examined under the demographic and health, sociological and locational, and economic factors related to determining the earnings of persons with FD.

Under the demographic and health factors, age, gender, marital status and disability are identified as the determinants of earnings for people with FD.

According to the age, Myers & Sai (2014) revealed that age positively affected the earnings. Further, age has been taken as a determinant of the earnings for disabled people (Marato & Pettinichchio, 2014; Brown & Emercy, 2009; Myers & Sai, 2014). Further, age represent the nonlinear and positive impact on earnings. (Mitra & Sambamoorthi, 2008). When determining earnings, age square is an important factor. Myers & Sai (2014); Maroto & Pettinichchio (2014); Jones et al. (2006); Mitra & Sambamoorthi (2008) have taken age square as a determinant of earning function for disabled people.

Gender is the other key determinant that affect the earnings of people with FD. According to Naami (2015); Baldrige et al. (2019), more income was earned by men with disabilities than women with disabilities. Madaus (2006) also explained that men with learning disabilities earn higher incomes (in excess of $60000) than the females. Furthermore, females earn less (less than $30000) than the men with learning disabilities. He also found that there are no significant differences between men and women with learning disabilities in the $30000 - $60000 earning range.

Another important factor is the disability characteristics. Myers & Sai (2014) stated that persons with disabilities receive lower earnings than persons without disabilities across for both genders, all groups of ages and people who are in bad or good health conditions. Further, disability negatively affected the salary earnings and wages. This is statistically significant. Deliere (2000) revealed that non-disabled men earn higher wages and higher income than the disabled men.

Earnings and mental disorders have negative relationships (Jones, 2011). Further, Naami (2015) stated that differences are statistically insignificant when comparing the income with disability types. According to Brown & Emercy (2009), disability creates a huge negative impact on earnings.

Jones et al. (2006) stated that if a man suffers from all disability types, he can earn a higher income than the persons with mental illnesses. Marato & Pettinichchio (2014) found that people with multiple disabilities and cognitive disabilities have a huge earning gap. Sensory disabled adults represented the small earning gaps. Further, multiple disabled peoples' earning was reduced by 37 percent when compared with non-disabled persons. Similarly, people with cognitive, ambulatory and self-care disabilities, reduced their earnings by 36%, 20% and 11% respectively.

Marital status is also identified as an important demographic factor. If disabled men are married, they earn higher wages than the single men. Further, marital status is insignificant for men whose work is limited, and women. (Blackaby et al.1998 cited in Jones 2011. P.21).

Further, Jones (2011); Brown & Emercy (2009) considered marital status as a determinant of earnings.

The following hypothesis was developed based on the above literature.

H1: There is a relationship between earnings of people with FD and demographic and health factors.

Among the sociological and locational factors that affect the earnings of disabled people, years of education plays an important role. Myers & Sai (2014) examined that employment completion leads the employment rates of persons with disabilities. Jones et al. (2006) explained that higher educational qualifications leads to earn higher wages in both disabled and non-disabled groups.

According to sociological factors, ethnicity is important. Past researches have taken ethnicity as a determinant of earnings. (Myers & Sai, 2014; Jones & Lattrielle, 2010; Jones, 2011). Further, ethnic and racial minorities obtain less earnings than those in non-minorities (Myers & Sai, 2014). Baldrige et al. (2019) also revealed that disabled non-minorities earn higher earnings than the disabled minorities.

The residential sector can be identified under the locational factor. There are no significant differences between urban majority earnings and urban minority groups' earnings (Myers & Sai, 2014). Himaz and Aturupane (2012) have found that the residence in estate sector has significant negative relationship with earning in comparison to rural sector in Sri Lanka. Based on these findings, hypothesis 2 was developed as follows.

H2: There is a relationship between earnings of people with FD and sociological and locational factors.

Under the economic factors, industry and occupation play a predominant role in determining the earnings of people with FDs. According to the occupation, Maroto & Pettinicchio (2014) stated that occupation plays a significant role in determining disabled people's earnings. Further, he stated that persons with disabilities have low probability of being employed in higher paying occupations. Further, he stated that disabled people have low representation in business, arts occupations, science and management. According to Jones et al. (2006), among non-disabled group, females with professional occupation have higher chances of earning better wages than the disabled group.

According to Maroto & Pettinicchio (2014), industry plays a significant role in determining disabled people's earnings. People with cognitive disabilities have high representation in the food service, entertainment and accommodation industries. People in these industries earn low mean annual wages than the population's mean annual wages.

H3: There is a relationship between earnings of people with FD and economic factors.

According to the earnings of people with FD, researchers do not sufficiently check the relationships of relevant variables. They are, disability characteristics, residence and ethnicity. Furthermore, less researches were available on the population of FD for this area, in the world context. Further, there are less researches to evaluate how disability impacts on earnings by taking these variables directly. Further, disability characteristics have been defined in different ways and not sufficiently checked in previous researches. So, this

research is done for filling the gap of lacking researches on this area in the world and Sri Lankan contexts.

2.3. Methodological literature

Table 1 represents the analysis models used by the previous researchers to analyse the determinants of earnings for people with FD in different countries. The Ordinary Least Square regression model and Semi log regression model were mostly used for the analysis.

Table 1: Analysis models employed in the previous studies

Analysis model	**Researchers**
Semi log regression model	Myers & Sai (2014)
Logit regression model	Marato & Pettinichchio (2014)
Ordinary Least Square regression model	Marato & Pettinichchio (2014) Brown & Emercy (2009) Deleire (2000)
Random effect model	Marato & Pettinichchio (2014)
Bivariate probit model	Jones (2011)

Source: Researcher developed

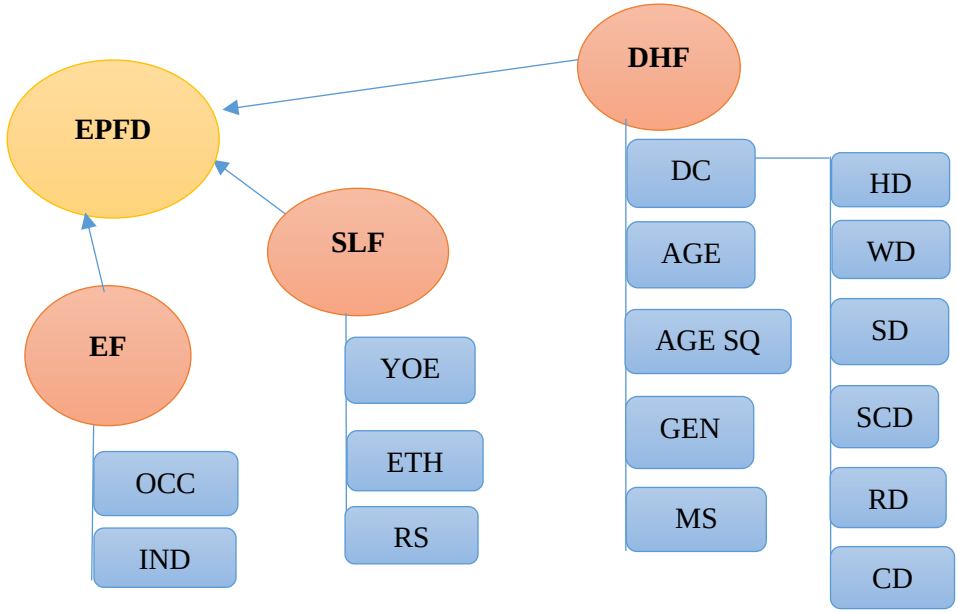
This research uses the Semi Log Multiple Regression Model for interpreting and checking the impact. So, this study planned to fill the research gap by using secondary data from LFS, 2018 in different aspects in the Sri Lankan and world context.

This study has also done the descriptive analysis for identifying the employment nature of people with FD by various ways and has done the inferential analysis for identifying the determinants of earnings of people with FD in Sri Lanka.

3. Conceptual framework

Conceptual framework and respective abbreviations are presented in Figure 1 and Table 2 respectively.

Figure 1: Conceptual Framework for determinants of persons with FDs earnings



Source: Researcher developed

Table: 2 Abbreviation of variables

Abbreviation	Variable Name	Abbreviation	Variable Name
EPFD	Earnings of People with Functional Difficulty	CD	Communication Difficulty
DHF	Demographic& Health Factors	RD	Remembering Difficulty
SLF	Sociological & Locational Factors	RS	Residential sector
		AGE	Age
EF	Economic Factors	AGE SQ	Age Square
DC	Disability Characteristics	GEN	Gender
HD	Hearing Difficulty	MS	Marital Status
WD	Walking Difficulty	YOE	Years of Education
SD	Seeing Difficulty	ETH	Ethnicity
SCD	Self-Care Difficulty	IND	Industry
		OCC	Occupation

Source: Researcher developed

4. Methodology

The data and sample, variable description and econometric model were discussed under this section.

4.1. Data and the sample

According to CPH (2012) total population with FD (5 years and over) are 18,527,683. Data of LFS, 2018 was used for the analysis of this study. According to the LFS, total respondents are 80577. Here, 3,277 of employed people with FD were used as a sample for analysing employment nature. When preparing this sample, the study removed 18,917 respondents who are aged below 15 years from the total respondents. Further, 70 respondents who had obtained special education from special educational institutions were removed due to their actual educational years not being known properly. Further, the observations of 51,120 people without FD were removed from the total population of with and without difficulties. Finally, the 44 unemployed and 7,149 inactive people with FD were also removed. The final sample was thus created as 3,277. It is used for analysing the employment nature of the people with FD. A further, 2,781 employed people with FD were used as a sample of people with FD earnings. Therefore, 388 observations related to people without earnings were removed. A further 108 observations were removed as extreme values in earnings. Finally, the sample consists of 2,781 employed people with FD with any kind of earnings.

4.2. Econometric Model

The Semi-Log Multiple Regression model is used for the analysis.

$$\ln(Y) = \alpha + \beta_i D_i + \gamma_i X_i + u_i$$

ln(Y) = Log hourly earnings, α =Constant, β_i = Coefficient of dummy variables,

γ_i =Coefficient of continuous variables, u_i = Error term

4.3. Variable Description

This study used 15-20 questions of the LFS which related to the disability. Here they considered the disability under six categories. They are: hearing, seeing, walking, remembering, self-care, communication difficulty. This study has also taken difficulty and disability as the same concept. This study considered all the persons who suffer from even a minor disability as disability. Also, major, cannot do anything, minor difficulty are also considered as disability.

According to this objective, the dependent variable is log hourly earnings. When preparing hourly earnings, this study used question number 45(a), (b) and (c) from the LFS, 2018. Question number 45(a) represents the monthly salary earnings as gross salary, additional earnings and other income types. Here, 45(b) represents the daily wage earners and the monthly income is calculated by multiplying the daily wage by the monthly working days and adding another income. Further, 45(c) represents the wages related to employers and own account workers. Finally, the monthly income was created by adding all these wages. Further, it is divided by using the monthly working hours for generating the earning per hour. This study only used primary job work hours. Finally, hourly earnings were converted into the log form for generating log hourly earnings.

When preparing variables according to this objective they are categorized into three types as demographic and health factors, sociological and locational factors and economic factors.

Here, all variables are categorized into less categories for convenience of modelling. Further, disability characteristics, gender, age, age square and marital status are identified as demographic and health factors. All the FD respondents who are having only one difficulty are categorized into one category as having only one difficulty. If people with FD have any of two difficulties, they were identified as dual difficulties. Further, if people have three to six difficulties, they are identified as multiple difficulties. Marital status and gender are identified as dummy variables. Marital status is identified as married and unmarried and gender identified as male and female. Further, the age variable is identified as a continuous variable in the model. Further, an age square variable was created by using age variable for earning function.

Years of education, ethnicity and residential sector are identified as sociological and locational factors. Here, years of education is used as a continuous variable for the model. According to ethnicity, this study used only two categories of ethnicity. They are, being Sinhalese and not being Sinhalese. Sri Lankan Tamil, Moor and other, Indian Tamil ethnic categories is identified as non-Sinhala group. The residential sector is categorized into two groups. They are urban and non-urban areas. Rural and estate sector have been identified under the non-urban category.

Further, occupation and industry are identified under economic factors. Occupation is divided into nine standards of occupational categories in Sri Lanka and it identified under professional workers, skilled workers and elementary workers. When creating professional workers, managerial, professional, technicians and associate professionals are identified under professional jobs. Further, clerical support workers, service and sales workers, agriculture, forestry and fishery workers, production workers are identified as skilled workers. Further, elementary workers and unidentified occupations were classified under elementary workers. In the earnings function, these occupation categories were further divided into two categories as professional job and non-professional job. Here, professional jobs are identified as professional workers and skilled workers and elementary workers identified as non-professional job. Industry is divided into agriculture, industrial and services. It is also divided into two categories as agricultural industry and non-agricultural sector. Non-agricultural sector includes the manufacturing sector and service sector.

5. Results and discussion

5.1. Identifying the nature of occupation among people with FD in Sri Lanka

Descriptive analysis of the nature of occupations among people with FD by industry and job status are represented in Table 3.

Table 3: Analysis of the employment for people with FD by nature of industry and employment status

Disability Types	**Industry**						**Employment status**							
	Agriculture		Manufacture		Service		Employee		Employer		Own account worker		Unpaid family worker	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Only hearing diff (143)	74	51.75	34	23.78	35	24.48	61	42.66	5	3.50	66	46.15	11	7.69
Only walking diff (507)	207	40.83	117	23.08	183	36.09	202	39.84	10	1.97	245	48.32	50	9.86
Only seeing diff (1087)	443	40.75	239	21.99	405	37.26	498	45.81	28	2.58	485	44.62	76	6.99
Only remember diff (94)	37	39.36	16	17.02	41	43.62	42	44.68	3	3.19	44	46.81	5	5.32
Only self-care diff (109)	37	33.94	33	30.28	39	35.78	52	47.71	2	1.83	46	42.20	9	8.26
Only communication diff (32)	8	25	5	15.63	19	59.38	18	56.25	-	-	11	34.38	3	9.38
Dual diff (729)	325	44.58	169	23.18	235	32.24	261	35.80	13	1.78	385	52.81	70	9.60
Multiple diff (576)	287	49.83	114	19.79	175	30.38	202	35.07	13	2.26	306	53.13	55	9.55

Source: Researcher developed

Note: All the persons with FD (cannot do anything, difficulty of major and minor) who were occupied in every category are represented by disability types.

According to Table 3, the industry categories are prepared based on the fourth revision of the International Standard Industrial Classification (ISIC). Here, all categories of disabilities, instead of people who are having only remembering difficulty, having only self-care difficulty and having only communication difficulty, are highly employed in the agricultural industry. Others have high representation in the service industry.

People with FD are physically vulnerable. Therefore, they engage highly in small workload and easy occupations. Hence, most of them are employed in the agricultural industry. Also, people with dual difficulties engage highly in the agriculture industry. Among the people with multiple difficulties, the highest number of people were recorded in the agricultural sector and the lowest in the manufacturing sector.

When considering the employment status, there are lower representations among all the disability type for being employers. Therefore, people having only hearing difficulty, having only walking difficulty, remembering difficulty, dual and multiple difficulties represent high probability of engaging in employment as own account workers. As employees, high representation was recorded among the people with only seeing difficulty and self-care difficulty. There is also a considerable representation among the unpaid family workers in every disability category than the category of being an employer.

Table 4: Hourly earnings by disability categories.

Disability type	**Wages (Rs.)**				
	0 – 100	100 - 200	200 – 300	300 - 400	400 plus
Only Hearing difficulty	68	40	8	2	0
Only Walking difficulty	245	120	39	16	6
Only Seeing difficulty	504	312	81	29	17
Only Remembering difficulty	44	28	7	3	1
Only Self-care difficulty	43	36	6	5	4
Only Communication difficulty	10	12	4	0	1
Dual difficulty	360	177	44	21	7
Multiple difficulty	323	112	36	5	5

Source: Researcher developed

Note: All the persons with FD (cannot do anything, difficulty of major and minor) who were occupied in every category are represented by disability types.

According to Table 4, the highest number of persons with FD in each disability category earns Rs. 0-100 wages per hour. They have less chances of obtaining Rs. 400 plus earnings per hour due to their disability type and low efficiency. According to the above Table, people with FD generally earn low hourly earnings. It can be shown by their mean hourly earnings as well (Table 5).

Table 5: Mean hourly earnings by disability categories

Disability type	**Mean hourly earning (Rs.)**
Only Hearing difficulty	99.82
Only Walking difficulty	114.18
Only Seeing difficulty	116.95
Only Remembering difficulty	114.59
Only Self-care difficulty	134.19
Only Communication difficulty	142.61
Dual difficulty	108.75
Multiple difficulty	95.51

Source: Researcher developed

Note: All the persons with FD (cannot do anything, difficulty of major and minor) who were occupied in every category are represented by disability types.

According to Table 5, the highest mean earnings was recorded among the people with communication difficulties, while the lowest earnings was recorded among the people with multiple difficulties. Generally, multiple difficulty people have less ability to work. So, they cannot engage in high earning employment opportunities and gain higher earnings. However, people with Communication difficulty have only difficulty in communicating. So, they have more chances of engaging in higher earning employment opportunities.

Table 6: Descriptive Statistics of Dependent and Independent variables in the model

Variable	***Mean / Proportion***	***Standard deviation***
Dependent variable		
Log hourly earnings	4.4403	0.7527
Independent variables		
Age (X_1)	55.1499	11.8692
Age square (X_2)	3182.344	1270.858
Gender		
Male(D_1)	0.6972	0.4595
Female (Ref)	0.3028	0.4595
Marital Status		
Married (D_2)	0.9324	0.2511
Unmarried (Ref)	0.0676	0.2511
Disability		
Only one difficulty (D_3)	0.6081	0.4883
Dual difficulty (D_4)	0.2189	0.4136
Multiple difficulty (Ref)	0.1729	0.3783
Ethnicity		
Non – Sinhala (D_5)	0.2913	0.4544
Sinhala (Ref)	0.7087	0.4544
Years of education (X_3)	7.3700	3.7623
Residential Sector		
Urban (D_6)	0.1154	0.3196
Non-urban (Ref)	0.8846	0.3196
Occupation		
Professional job (D_7)	0.1352	0.3420
Non-professional job (Ref)	0.8648	0.3420
Industry		
Non-agricultural industry (D_8)	0.5958	0.4908
Agricultural industry (Ref)	0.4042	0.4908

Source: Researcher developed

Number of observations (N) – 2781

(D) – Dummy variables

People with FD (Cannot do anything, major and minor difficulty) earn log hourly earnings of about 4.44 and their mean age is 55 years. It represents higher male

proportion, and the majority are married. People with one disability has high representation than the people with dual difficulties, while 71 percent are Sinhalese and 29 percent are non-Sinhalese. Also, the highest proportion was recorded in the non-urban sector. The majority work in the non-agricultural sector and are engaged in non-professional jobs. The majority of the sample have engaged in education up to grade 7. Table below shows the Semi Log Multiple Regression model.

Table 7: Semi Log Multiple Regression Model

Variable	***Coefficient***	***Standard error***	***P value***
Age (X_1)	-0.0037	0.0081	0.651
Age squared (X_2)	-0.00003	0.00008	0.724
Gender			
Male (D_1)	0.3065	0.0306	0.000
Marital Status			
Married (D_2)	0.2463	0.0555	0.000
Disability			
Having only one diff (D_3)	0.0681	0.0381	0.074
Dual difficulty (D_4)	0.0461	0.0449	0.304
Ethnicity			
Non - Sinhala (D_5)	-0.0054	0.0293	0.853
Years of education (X_3)	0.0241	0.0041	0.000
Residential Sector			
Urban (D_6)	0.1353	0.0389	0.001
Occupation			
Professional job (D_7)	0.2807	0.0425	0.000
Industry			
Non-Agricultural sector (D_8)	0.1492	0.0302	0.000
Constant	3.9151	0.2015	0.000

Source: Researcher developed

Significant level -10%

Base category: A person who is female, unmarried, having multiple difficulties, live in non-urban area, being Sinhalese, doing a non-professional job and working in agricultural sector.

Under the demographic and health factors, gender is an important factor and being male positively affects the hourly earnings of persons with FD. Generally, males enjoy higher earnings than the females. Females with FD do not like to work overtime hours due to cultural problems, security level and their disability conditions. However, males with FD like to work more hours than the female. Males have high bearing capacity than the females. Further, males can control their disability

conditions with the work schedule. They find high income jobs from any side to earn higher incomes. Because of this reason, the hourly earnings of persons with FD are higher than the female's hourly earnings. Therefore, if a person with FD is a male, it will increase the hourly earnings at the rate of 0.3065 percent. According to Naami (2015); Baldrige et al. (2019), more income was earned by men with disabilities than the women with disabilities.

The other important demographic factor is the marital status. Generally, married persons with FD earn higher wages than the unmarried people. Unmarried people have less responsibilities in their life. They can depend on their family members. However, married persons have to maintain a family. They have more responsibilities. Therefore, they engage in jobs which offer higher earnings. If the job has complex work schedules, unmarried persons with FD do not prefer to engage in them even though it offers higher earnings. The reason for that is they highly expect freedom of their lifetime and they do not highly plan their future due to less responsibilities and their disability conditions. However, married persons with FD engage in any high-income jobs suitable with their disability type to earn better wages. Therefore, hourly earnings of people with FD will increase at the rate of 0.2463 percent due to that person with FD being married.

Further, the researcher found that disability characteristics are the important factor for determining hourly earnings of persons with FD. Also, having only one disability is significant with earnings of people with FD. If a person has only one difficulty, he has the ability to earn a higher income than a person with multiple difficulties. If they have only one difficulty, they can engage in any higher paying jobs. They have lesser disability conditions than the multiple disabled people. Business firms also like to recruit people with FD who are having only one difficulty and order the relevant work schedule. If people have only walking difficulty, they can do any job by being sedentary. Also, if a person has only seeing difficulty, then he can carry out a job by using the Braille system and thus get higher earnings. Therefore, they can earn higher earnings by working for longer time periods. However, multiple difficulty people can engage in lesser work schedules and they enjoy less chances of earning higher incomes. People with only one difficulty can engage in any self-employment as well. Therefore, hourly earnings of people with FD will increase at the rate of 0.0681 percent due to having only one difficulty.

Past researchers have revealed the impact of disability on earnings. Accordingly, Myers & Sai (2014) stated that persons with disabilities receive lower earnings than persons without disabilities across for both genders, for all group of ages and for those who are in bad or good health conditions. Further, disability negatively affects the salary earnings and wages.

When considering sociological and locational factors, years of education is the important factor affecting the earnings of people with FDs. Years of education and earnings has a positive relationship. People gain education while expecting higher paying jobs in the future. If a person with FD has more years of education, that person has more chances of engaging in higher paying occupations and earning higher

wages. Most of the organizations decide the wage level according to the person's years of education. Due to their disability condition, most of them cannot earn better wages without education. So, if they have more education years, they have chances to earn more wages. Also, if they are knowledgeable, they can start their own businesses and earn better earnings. Therefore, when years of education increases by one year, the hourly earnings of people with FD will increase at the rate of 0.0241 percent.

As well as, residential sector is also an important factor for determining the earnings of people with FD. If people with FD live in non-urban areas, they have more job opportunities, but higher paying jobs are not available to them. However, in urban areas they can find some higher paying jobs. They can engage in some self-employment or earn some additional earnings by living in the urban area. Thus, although a person is disabled, he/she can find any occupation where he/she can receive better earnings amidst the vast job market. People with FD can engage in any employment in urban areas to earn higher incomes than in the non-urban areas. Therefore, the hourly earnings of people with FD will increase at the rate of 0.1353 percent due to people with FD living in urban areas.

Under the economic factors, occupation and industry are the important factor for determining earnings of a person with FD. According to the occupation, if a person is engaged in a professional job, he can earn more wages than the person who engages in a non-professional job. Professional workers are highly qualified workers. They are specified for some specific area. However, professional workers are not freely available in the job market like non-professional workers. If a person with FD is a non-professional worker, he can engage in some jobs but which are not higher paying jobs. They mostly engage in temporary work schedules. Although the person is disabled and he is a professional worker, he can get higher earnings because of the limited availability of professional workers. Therefore, hourly earnings of people with FD will increase at the rate of 0.2807 percent due to being professional workers. According to Jones et al. (2006), females with professional occupations enjoy higher chances of earning better wages in both non-disabled and disabled groups.

According to the industry, if a person with FD works in the agricultural sector, he can engage in any agricultural activities related to his disability condition. However, they cannot earn higher earnings from that. If a person with FD works in the non-agricultural sector, such as the manufacturing and services sector, he/she can choose higher paying job opportunities according to his/her disability type. They have more job opportunities in those sectors. Generally, people in non-agricultural sector earn higher wages than people in the agricultural sector. So, if a person is disabled and works in the non-agricultural sector, he/she can work more overtime hours than a person with FD in the agricultural sector. Therefore, their earning increases. According to that, hourly earnings of people with FD will increase at the rate of 0.1492 percent due to a person with FD working in the non-agricultural sector. According to Maroto & Pettinicchio (2014), occupation and industry play a significant role in determining disabled people's earnings.

The adjusted R^2 of this model is 0.1294. Accordingly, the hourly earnings of persons with FD are described by 12.94% of the variation of log of hourly earnings of persons with FD.

According to the Likelihood ratio test, *P* value of this model represents a level of less than 5%. It means, a significant effect is created on the earnings for persons with FD by all the independent variables in this model. Therefore, the overall model is significant.

6. Conclusion and recommendations

This study seeks the nature of employment among people with FD and the key determinants of their employment using the secondary data of Sri Lanka Labour force Survey, 2018, conducted by the Department of census and Statistics. The sample was 3,277 of employed people with FD and 2,781 out of them have earnings.

The majority of employed with FD are occupied in Agricultural sector according to industrial classification of employment while the majority of them are own account workers by employment status. Employees are the second highest category among other employment status showing their economic vulnerability with informal insecure employments.

This study has identified that being male, being married, disability (only one difficulty), residential sector (urban sector), years of education, industry (Non-agricultural sector), occupation (professional job) positively affected the hourly earnings of people with FD with reference to the base category and also the age, age square, dual difficulty, non-sinhala are statistically insignificant with the hourly earnings of a person with FD. Important policy recommendations are proposed as follows as the final contribution of the study.

- Production based occupations should be improved with easy work schedules among the people with FD through the Ministry of Labour.

- The Ministry of Agriculture should facilitate farming during both the *Yala* and *Maha* seasons by providing the essential financial assistance for local authorities to enhance the participation of persons with FD as paddy growers.

- Vocational Training and the Ministry of Skills Development and the Ministry of Labour together with government banks should conduct the programmes to provide technological and financial literacy to increase the income levels of people with FDs who are live in the non-urban sector.

- The Ministry of Labour should highly consider employing people with FDs in the services sector to increase employment opportunities.

- The Ministry of Labour and Commerce should reduce the earning disparities for people with FD who live in urban and non-urban sectors by implementing more high earning employment opportunities in the non-urban sector.

- Legal frameworks should be created and enacted through parliament to register and formally conduct businesses for own account workers with FDs. Also, disabled employers should be encouraged by conducting workshops on starting new businesses.
- Proper legal frameworks for reducing the persons with FD earning disparities by gender should be implemented by the Ministry of Labour.
- The Ministry of Labour should implement higher earning employment opportunities for people with FDs who work in agricultural and fishery activities to encourage them.

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