PREDICTORS FOR YOUTH NEET IN MONGOLIA: EVIDENCE FROM THE LABOR FORCE SURVEY – 2016

Erdenechimeg Ulziisuren, *Master of Science, London School of Economics*

Хураангуй

Монгол улс дахь залуучуудын 24% нь ажил ‘Ажил Хийгээгүй болон Суралцаагүй Залуучууд’ (АХСЗ) байгаа нь хүн амзүйн эхний болон хоёр дахь урамшууллууд бий болох боломжийг хаахад хүргэж, манай орны нийгэм, эдийн засгийн хувьд том гарз хохирол учруулж болохуйц байна. Тиймээс энэхүү судалгааны ажлаар АХСЗ болоход ямар хүчин зүйлс нөлөөлж байгааг судалж, тэдний ялгаатай байдлыг гаргаж ирэхийг зорьлоо. Судалгааны хүрээнд АХСЗ-ыг дотор нь 3 ангилав: i) ажилгүй АХСЗ, ii) гэрийн ажил үүргээс болсон АХСЗ, мөн iii) идэвхигүй, залхуу АХСЗ. Үүн дотроо цаашлаад, ажилгүй АХСЗ-ыг 7 төрөлд хуваан судалсан: богино хугацаанд ажилгүй байгаа, урт хугацаанд ажилгүй байгаа, ажилдаа эргэн орж байгаа, хөгжлийн бэрхшээлтэйгээсээ болоод ажил хийх боломжгүй байгаа, урам нь хугарснаас болж ажил хийх хүсэлгүй байгаа, мэдлэг мэргэжил нь тохирохгүй байгаа, болон бусад гэж судаллаа.

Энэхүү судалгаанд Үндэсний статистикийн хорооны Ажиллах хүчний судалгааны (АХС) датабаазыг ашиглан, статистикийн шинжилгээний хи-квадрат болон мултиномиал логистик регрессийн аргачлалыг ашиглан олон хүчин зүйлсийн шинжилгээг тооцсон. Судалгааны нэгжийн хувьд 15-34 насны 12,697 залуучууд болон 3,050 АХСЗ-ыг ялган авч судалсан. Түүврийн жинг тархаан тооцвол, 2016 оны байдлаар МУ-д байгаа 15-34 насны 910,603 залуусын 228,555 нь АХСЗ байна. МУ-ын 4 залуу тутмын 1 нь АХСЗ байна. Хүйс, гэрлэлтийн байдал, байршил, өрхийн гишүүдийн тоо, боловсролын түвшин зэрэг нь залуусыг ажилгүй АХСЗ, гэрийн ажил үүргээс болсон АХСЗ, мөн идэвхигүй, залхуу АХСЗ болоход статистикийн хувьд ач холбогдолтойгоор нөлөөлж байна. Идэвхигүй, залхуу АХСЗ-ын 40% гаруй нь хөдөө сумд байхад, ажилгүй АХСЗ-ын 42.2% нь аймгийн төвд байна. Хөгжлийн бэрхшээлтэй болох нь идэвхигүй, залхуу АХСЗ болох магадлалыг өсгөдөг. Дээд боловсролтой, ажилгүй АХСЗ нь бага болон түүнээс доош боловсролтойгоо бодвол АХСЗ болох магадлал 2.05 дахин их байна. Ажилгүй АХСЗ-ын бараг 50% нь урт хугацаанд ажилгүй байгаа гэсэн байхад 15% нь урам нь хугарснаас болж ажил хийх хүсэлгүй байгаа гэсэн дүн гарсан.

Түлхүүр үгс: АХСЗ, залуучуудын ажилгүйдэл, ажиллах хүчний судалгаа, мултиномиал логистик регресс

Abstract

In Mongolia, NEET youth constitutes over 24% of all youth which is a big loss for the country as it threatens the potential of reaping the first and second demographic dividends. Therefore, this study examines the risk factors that lead youth to become NEET in Mongolia, and explores their heterogeneity. The study proposes that there are three kinds of NEET youth: i) unemployed, ii) due-to-family-duty, and iii) idle. To further, the unemployed NEET youth is disaggregated into seven categories: short-term unemployed, long-term unemployed, re-entrant, unavailable due to disability or illness, discouraged, mismatch and others.

This study carries out chi-square and multinomial logistic regressions to provide prevalence and predictors for youth NEET based on the Labor Force Survey of Mongolia. The survey comprises nationally representative sample of 43,680 individuals, but the unit of 12,697 youth aged 15-34, and 3,050 youth NEET aged 15-34. When sample weight is applied, this indicates that there were 228,555 youth who were NEET in 2016 out of 910,603 youth aged 15-34 years old in Mongolia. It was found that about one in 4 youth in Mongolia is NEET. Sex, marriage, location, household size and education are all statistically significant predictors for youth to become either ‘unemployed,’ or, ‘due-to-family-duty,’ or, ‘idle’ NEET. More than 40% of ‘idle’ NEET are in rural areas whereas 42.2% of ‘unemployed NEET’ are in aimag centre. Probability of becoming ‘idle NEET’ is increased with having disability. The odds for the unemployed NEET with tertiary education of being NEET are 2.05 times the odds for youth with primary or less education. Beneath the unemployed NEET, about 50% of those are long-term unemployed, and about 15% are discouraged workers.

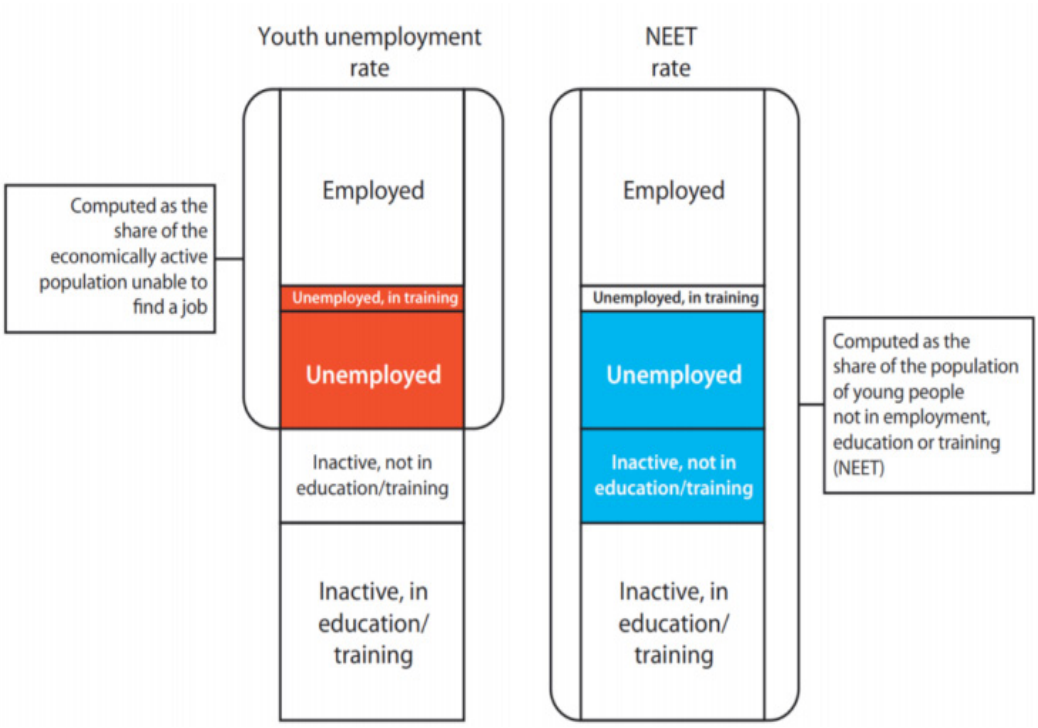
Key words: NEET, youth unemployment, Mongolia, labour force survey, multinomial regression

1. INTRODUCTION

Background

Youth unemployment rate is only of limited information value for the labour market situation of young people (Lassnigg, 2010), i.e. serious as these statistics are, they do neither exhibit hidden problem young people face nor inform policy makers to make tailor-made interventions to solve problems. Hence, those youths, who do not or no longer seek any employment due to poor chances labour market opportunities or those who are not immediately available due to care responsibilities, are not perceived as being unemployed. The international definition, which interprets unemployment very narrowly and gainful employment very broadly, can underestimate the extent of the problem—in particular in respect of young people (Eurofound 2011). Therefore, "NEET," an acronym for 'Not in education, employment or training' indicator became an attention to labour market researchers and political decision-makers as a supplement to the youth unemployment rate (Eurofound 2011). The climax of addressing this problem at global level was realized by making it a part of the Sustainable Development Goals 2030 Agenda as "Reducing the proportion of the NEET by half" (SDG Agenda, 8.6.1).

Figure 1: Conceptual difference between youth unemployment rate and NEET rate (Eurofound 2012)



The problem of NEET youth in Mongolia is significant. More than a third of the total population of Mongolia is between 15-34 years old, and this means that Mongolia is going through demographic window of opportunity at the moment. However, the latest official statistics of Mongolia shows that the country is not doing well in terms of utilizing this massive share of the population despite of the fact that the country has favorable demographic structure: one in five young people (15-34 years old) in Mongolia is NEET youth which is twice higher than that is in most of the OECD countries (RAND, 2014). The NEET youth constitutes 24 percent (2016) of total youth which is a big loss for Mongolia because it means that the country is in danger of losing the potential of reaping demographic dividend unless appropriate interventions are undertaken.

The latest statistics reveals that NEET rate increased substantially in 2016 by about 4% compared to previous stagnant rates of around 20%. For this paper, the ILO's definition will be based on further analysis of the Labour force survey of Mongolia. The ILO defined youth NEET as "those who are outside the educational system, not in training and not in employment." This paper explores three categories of youth NEET, i.e. unemployed, due-to-family-duty

and idle, and even further decomposes the unemployed NEET into seven categories using the Labour Force Survey.

1.2. Heterogeneity of youth NEET

Disentangling the heterogeneity of NEETs is essential for a better understanding of the characteristics and needs of the various subgroups and in tailoring effective policy measures and initiatives to re-integrate young people into the labour market or education. Williamson (2010) suggests disaggregation of NEETs into three groups: 'essentially confused'; 'temporarily sidetracked'; and 'deeply alienated'. According to Williamson, while the first group is willing and ready to re-engage as long as the right support and encouragement is provided, the second group needs some understanding and patience while they deal with what they consider to be more important matters in their lives right now. The third group is at high risk of disengagement and disaffection. This group may include those who have discovered 'alternative ways of living' within the informal and illegal economies, and those whose lives revolve around the consumption of alcohol and illegal drugs. Given the heterogeneity of NEETs, Elder (2015) argues that equating NEET only with joblessness overlooks the fact that many may have family responsibilities or 8 disabilities that make them unable or unwilling to work. Furthermore, Eurofound (2012) identified five categories within the NEET population, some vulnerable and some not, with very different characteristics and needs: conventionally unemployed; unavailable; disengaged; opportunity seekers; and voluntary NEETs. For this paper, author proposes three categories of youth NEET, i.e. unemployed, family-duty and idle, and even further decomposes the unemployed NEET into seven categories using the Labour Force Survey.

1.3. Predictors for youth NEET

The literature on youth NEET informs that the following are most common predictors for youth NEET:

Education attainment:

Education level of a young person has negative relationship with one's becoming a NEET youth. Low educational attainment not only increases the likelihood of disengaging from education but also constitutes a barrier to enter the labour market (Bell and Blanchflower, 2010) whereas educational qualifications more than double the chance that inactive young people will return to education even if after a short inactivity period (Quintini, 2009).

Sex:

Studies show that NEET rate is consistently higher among young women than men. Evidences indicate that girls are more likely to be NEET than their male counterparts mainly due to women's child-rearing and other household chores, and young women's trajectories are more likely to be interrupted after compulsory education as there is a chance that they become mothers (OECD, 2009; Coles, 2010).

Location:

Residence in remote areas is another most recurring explanatory factor for the NEET (Mascherini et al, 2015). The NEET rate is highest in the province centres, followed by Ulaanbaatar (RAND 2014). According to the neighbourhood effect theory, there is a direct association between living in deprived area and a risk of becoming a NEET due to poor quality of education provided (Midouhas, 2012).

Age:

The risk of becoming a NEET increases significantly with age. Compared to the age range 15–19, a substantial increase is observed in those aged 20–24, which is when young people have completed upper secondary and/or tertiary education. NEETs become even more numerous between the ages of 25 and 29 (ETF, 2015). More than half of all NEETs are younger than 25 years and teenagers account for about 16% of all NEETs (Carcillo, 2015). Interestingly though, the NEET rates are highest among the older age groups, i.e, 25-29 with 32.5% in Mongolia (RAND 2014).

Household size

Studies show that youth living in larger households are less likely to be in employment only and in education only, and more likely to be in NEET status (Ranzani, 2013). The presence of young children (aged between 0 and 4) increases the likelihood of being in NEET status (and it decreases the probability of being in employment only or in education only).

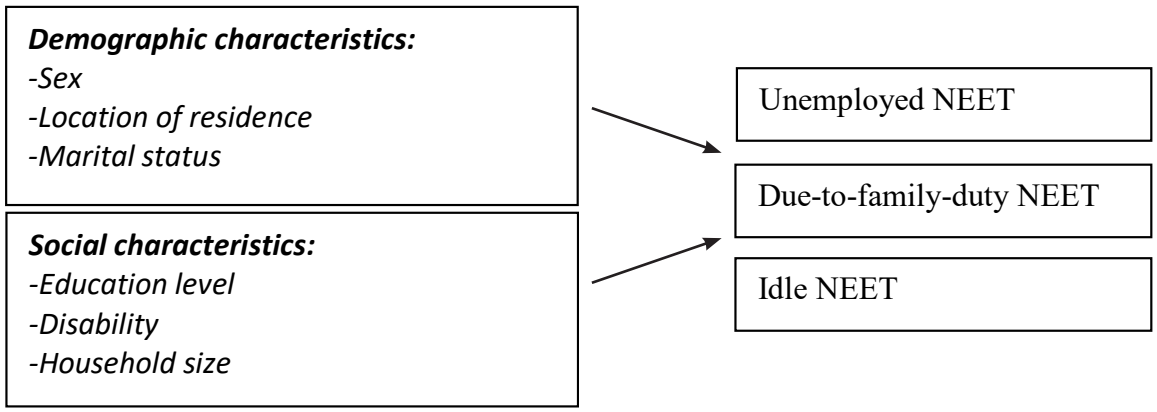
Health

Poor health and disabilities are referred in the literature as potential factors that increase the likelihood of young people being NEET (Rennison et al, 2006; Coles, 2010). Young people with disability are twice as highly represented amongst young people who have experienced 6 months or more NEET (Macmillan et al, 2012). Also, they may not find school programs that are adapted to potential special needs, and face barriers to employment that the general population does not face (Eurofound, 2016).

1.4. Conceptual Framework

Based on the reviewed concepts and studies in the past, the following conceptual framework has been developed for further analysis.

Figure 2: Predictors for 'unemployed NEET,' 'due-to-family-duty NEET' and 'idle NEET'



2. RESEARCH OBJECTIVE AND QUESTION

2.1. Purpose

Overall aim of this study is to examine predictors for youth aged 15-34 to become NEET in Mongolia.

Specific objectives

The specific objectives are to provide general picture of youth aged 15-34 NEET in the labour market by their socio-demographic characteristics, youth NEET trend in the past six years, and to examine risk factors for youth become NEET, and to contribute in filling the gap in the study of youth NEET in Mongolia.

Research question

Main question: What are the predictors that affect youth aged 15-34 to become a NEET?

Sub-question 1: To what extent does NEET prevalence differentiate by socio-demographic characteristics between 2011 and 2016 in Mongolia?

Sub-question 2: Which specific risk factors are associated with youth to become NEET?

Sub-question 3: What are the heterogeneity of youth NEET?

2.2. Significance of the study

This study becomes the first attempt to analyze predictors for youth to become NEET in Mongolia in three categories: unemployed, due-to-family-duty and idle. Moreover, this study is the first kind of its own to further decompose the unemployed NEET to address reasons for youth being unemployed. This study brings a value-added feature in its work by analyzing differentials of youth NEET by socio-economic characteristics for years between 2011 and 2016. In addition, it will contribute to methodological development, discussion, reporting and monitoring of the indicator in country context in due course in the near future with regards to Sustainable Development Goals 2030 Agenda: "Reducing the proportion of the NEET by half" (SDG Agenda, 8.6.1). Last but not least, findings of this study will inform and sensitize policy makers to understand bottlenecks and challenges youth NEET face in labour market, so that they may implement tailor-made and targeted intervention to tackle the issues.

3. RESEARCH DESIGN

3.1. Description of data set

The study used the secondary database of the Labour force survey (LFS) conducted by the National Statistical Office (NSO) of Mongolia on a quarterly basis using the same concepts and definitions, following the ILO. Total sample size for LFS 2016 was 12,816 households and 43,680 individuals, aged 15 and above, nested in the households. Out of them, youth aged 15-34 years old were 12,697 (910,603 when weighting is applied), and those youth NEET were 3,050 (228,555 when weight is applied).

3.2. Data analysis method

Several stages are involved in data analysis. Initially, descriptive statistics are conducted to explore the relationships between the socio-demographic characteristics and young people in NEET status in ages 15-34. In order to examine what are the predictors for youth to be in one of the NEET categories, the multinomial logistic regression was used, i.e. 'unemployed NEET' and 'idle NEET' were outcome variables with 'due-to-family-duty' as a reference category given location holding all other variables constant. For multinomial logistic regression, model building was constructed by using forward model selection technique whereby the control variables were added one at a time. Wald test for single regression coefficients and likelihood ratio test (LR) measure how well a model fits the data of two nested models by comparing the values of the likelihoods of the models.

Multinomial logistic regression:

Model diagnosis:

- $z = \frac{\beta_k^{(j)}}{\text{se}\,(\beta_k^{(j)})}$ (H_0: $\beta_k^{(1)} = \beta_k^{(2)} \ldots = \beta_k^{(c-1)} = 0$ $against\ H_0$: $\beta_k^{(1)} = \beta_k^{(2)} \ldots = \beta_k^{(c-1)} \neq 0$)
- $L^2 = -2\log L_1 - (-2\log L_2)$
- $\beta_k^{(j)} \pm 1.96\text{se}(\beta_k^{(j)})$, or, $(\exp\left[\beta_k^{(j)} - 1.96\text{se}\left(\beta_k^{(j)}\right)\right];\ \exp\left[\beta_k^{(j)} + 1.96\text{se}\left(\beta_k^{(j)}\right)\right]$

Model equation:

Model 1 :

$\log\left(\frac{\pi^j}{\pi^0}\right) = L^{(j)}$, where $L^j = \alpha^j + \beta_1^j X_{loc} + \beta_2^j X_{sex} + \beta_3^j X_{married} + \beta_4^j X_{sex*married}$

$$\pi^{family} = P(Y = 1\ (ref.)) = \frac{1}{1 + \exp(L^{(unemp)}) + \exp(L^{(idle)})}$$

$$\pi^{unemp} = (Y = 0) = \frac{\exp(L^{(unemp)})}{1 + \exp(L^{(unemp)}) + \exp(L^{(idle)})}$$

$$\pi^{idle} = P(Y = 2) = \frac{\exp(L^{(idle)})}{1 + \exp(L^{(unemp)}) + \exp(L^{(idle)})}$$

Model 2

$\log\left(\frac{\pi^j}{\pi^0}\right) = L^{(j)}$, where

$L^j = \alpha^j + \beta_1^j X_{loc} + \beta_2^j X_{sex} + \beta_3^j X_{married} + \beta_4^j X_{sex*married} + \beta_5^j X_{edu} + \beta_6^j X_{disab} + \beta_7^j X_{hhsize}$

$$\pi^{family} = P(Y = 1\ (ref.)) = \frac{1}{1 + \exp(L^{(unemp)}) + \exp(L^{(idle)})}$$

$$\pi^{unemp} = P(Y = 0) = \frac{\exp(L^{(unemp)})}{1 + \exp(L^{(unemp)}) + \exp(L^{(idle)})}$$

$$\pi^{idle} = P(Y = 2) = \frac{\exp(L^{(idle)})}{1 + \exp(L^{(unemp)}) + \exp(L^{(idle)})}$$

When: Y – probability of being in one of the NEET categories

j – 'due-to-family-duty NEET,' 'unemployed NEET,' or 'idle NEET' when Y – probability of being in one of the NEET categories

α_j – constants, β_1, β_2, β_3, β_4, β_5, β_6, β_7, β_8 – regression coefficients

loc – respondent's place of residence

sex – respondent's sex

age – respondent's age-group

married – respondent's marital status

sex*married – interaction between sex and marital status

edu – respondent's education level

disab – respondent's disability status

hhsize – respondent's household size

STATA 14 statistical software package was used to analyze the data.

4. RESULT

Findings

Share of youth NEET increased in 2016 reaching 24.02% at national level (Table 4), and proportion of female NEET is 9.15 percentage points higher than male NEET. More than a third of total youth NEET is in aimag centres followed by Ulaanbaatar (27.24%).

Table 4: Activities of youth aged 15-34, 2016

Region	Sex	NEET (%)				In school or employment			
		unemployed	due-to-family-duty	idle	Total	employed, in school	employed, not in school	OLF, in school	unemployed, in school
National	All	8.74	9.24	6.04	24.02	0.54	48.68	26.74	0.02
	Female	7.37	16.67	4.60	28.63	0.68	43.41	27.25	0.02
	Male	10.10	1.92	7.46	19.48	0.39	53.87	26.23	0.03
Ulaanbaatar	All	5.91	13.83	7.50	27.24	0.47	40.93	31.32	0.02
	Female	3.80	24.50	5.37	33.67	0.65	34.41	31.22	0.05
	Male	8.13	2.63	9.73	20.49	0.29	47.79	31.44	0.00
Aimag centre	All	14.50	9.67	6.97	31.13	0.09	39.81	28.97	0.00
	Female	13.33	16.43	5.65	35.42	0.18	36.01	28.39	0.00
	Male	15.76	2.33	8.40	26.49	0.00	43.93	29.59	0.00
Rural	All	7.48	5.29	4.30	17.07	0.86	60.34	21.69	0.04
	Female	6.42	9.96	3.21	19.59	1.06	56.36	23.00	0.00
	Male	8.41	1.18	5.26	14.85	0.68	63.85	20.54	0.07

Note: OLF = out-of-labour-force

(i) Trend and differential of NEET youth

Differential by location

There is not much of change occurred in terms of location in which NEET reside over the past six years. The share of idle NEET is dominant in Ulaanbaatar and unemployed NEET youth are often concentrated in aimag centre and rural areas, whereas due-to-family-duty and idle youth are mostly in Ulaanbaatar. In 2016, 42.6% of unemployed NEET youth were in aimag centre whereas 41.2% of idle and about half of all due-to-family-duty youth were in Ulaanbaatar (χ^2 = 188.6, p<0.001).

Differential by sex

Similar to location, there is no substantial shift of NEET groups by sex in the past six years. Dynamic of NEET youth by gender differential shows that male youth often dominate bigger share of the unemployed NEET than female youth, and it was 16.4 percentage points higher for male in 2016. Conversely, proportion of female due-to-family-duty youth always multiplied several folds that of men which are mostly due to taking care of children and tending home, and this was 8.5 times the men last year. For the idle NEET, women are usually less than male by more than ten percent, but it was striking high in 2016 by 24.4 percentage points for male than female in 2016 (χ^2 = 730.3, p<0.001).

Differential by age

There is a substantial difference among three NEETs by age groups, i.e, youth aged 20-24 tend to become unemployed NEET followed by youth aged 20-24; for due-to-family-duty NEET, majority of them are between 20-24 at most

followed by aged 25-29 (χ^2 = 173.1, p<0.001). Except for the age group 15-19, idle NEET have similar proportion across other three age groups. NEET groups by age differential in 2016 do not have major change compared to previous years.

Differential by education

Data revealed that among the unemployed NEET, biggest proportion of them have tertiary education, and similar trend is observed for the due-to-family-duty youth. However, for the idle youth, it is reverse, i.e. majority has primary or less education. Before 2013, share of youth who have TVET education and being NEET was substantially low, but onwards since then, the share increased dramatically across all three groups of NEET (χ^2 = 250.7, p<0.001)

Differential by marital status

There was a slight decline in the share of unmarried due-to-family-duty NEET, and increase in married due-to-family-duty youth NEET between 2011-2016. Among all other characteristics, three NEET groups vary significantly by marital status. For unemployed NEET, about 40% of them are married whereas 75.5% of the due-to-family-duty NEET are married; and more than a quarter of idle NEET are married (χ^2 = 525.5, p<0.001)

Differential by disability

Unemployed NEET who have disability decreased since 2013 whereas it remained constant for due-to-family-duty NEET. However, among idle NEET, the percentage of having disability increase until 2015 and declined in 2016. There is a substantial difference in being disabled by three NEET categories, i.e. about one in every three idle NEET has disability, but only one percent of unemployed NEET has disability and this even a half percent for due-to-family-duty NEETs (χ^2 = 671.1, p<0.001)

(ii) Multinomial logistic regression:

Since youth NEET are divided into three distinct groups, i.e. 'unemployed,' 'due-to-family-duty' and 'idle,' the outcome variable is no longer dichotomous, but in three categories. Therefore, multinomial logistic regression was used to examine the predictors for the outcome. Here, the unit of analysis is 3,050 youth aged 15-34 who are NEETs show in below Table.

Results for the unemployed NEET:

Figure 3: Multinomial logistic regression, result for unemployed NEET

Unemployed NEET	*Model 1*			*Model 2*		
Demographic variables	Coeff (β)	Odds ratio	P-value	Coeff (β)	Odds ratio	P-value
Sex						
(Female. ref)						
Male	1.83	6.26	0.001	1.88	6.56	0.001
Location						
(Ulaanbaatar. ref)						
Aimag centre	1.44	4.22	0.001	1.51	4.52	0.001
Rural	1.09	2.99	0.001	1.23	3.41	0.001
Married						
(No. ref)						
Yes	-1.71	0.18	0.001	-1.77	0.17	0.001
Interaction						
(sex##married)						
male#Yes	1.01	2.75	0.001	1.01	2.76	0.001
Social variables						
Education						
(Primary or less. Ref)						
Complete secondary				-0.39	0.67	0.027
TVET				0.36	1.44	0.071
Tertiary				0.51	1.65	0.014
Disability						
(Yes. Ref)						
No				-0.73	0.48	0.165
Household size						
(1-4. ref)						
5+				-0.09	0.91	0.010
_cons	-0.64	0.52	0.000	0.210	1.24	0.721
Log likelihood			-2613.05			-2303.65

Location:

Controlling for all other variables, the odds for youth in aimag centre of being 'unemployed NEET' rather than 'due-to-family-duty NEET' are exp(1.51)=4.51 times the odds for youth in Ulaanbaatar. That is, there is a strong evidence that youth in aimag centre are more likely to become the 'unemployed NEET' rather than 'due-to-family-duty NEET' compared to youth in the capital city Ulaanbaatar, statistically significant at z=11.72, p<0.001, and the 95% CI=[3.511; 5.812]. Similarly, holding all other variables constant, the odds for rural youth of being 'unemployed NEET' rather than 'due-to-family-duty NEET' are exp(1.22)=3.41 times the odds for youth in Ulaanbaatar. In other words, rural youth are more likely to become 'unemployed NEET' rather than 'due-to-family-duty NEET' compared to youth in Ulaanbaatar, statistically significant at p<0.001.

Sex and married interaction:

The interaction between sex and marital status shows that how the effect of marital status depends on sex (i.e. that the odds ratios being in one of the NEET categories between different marital status are different for men and women), or, put in a reverse way, that the effect of sex on being in one of the NEET categories depends on marital status (i.e. differences in chances of being in one of the NEET categories between men and women vary by marital status). Being unmarried male multiplies the odds of being 'unemployed NEET rather than 'due-to-family-duty NEET' by exp(1.88)=6.5 compared to unmarried female. That is, there is a strong evidence that unmarried male youth are more likely to become 'unemployed NEET' rather than 'due-to-family-duty NEET' compared to unmarried female, statistically significant at p<0.001, and the 95% CI=[1.539; 2.223]. The result is even more striking for married male youth, i.e. the odds of being 'unemployed NEET rather than 'due-to-family-duty NEET' are exp(2.89)=17.9 times the odds of female married youth. That is, there is a strong evidence that married male youth are much more likely to become 'unemployed NEET' rather than 'due-to-family-duty NEET' compared to female married youth, statistically significant at p<0.001. Conversely, being married female multiplies the odds of being unmarried female by exp(-1.77)=0.17 (83% lower) to be in the status of 'unemployed NEET' rather than 'due-to-family-duty NEET,' controlling for other variables. This indicates that there is a strong evidence that married female youth are much less likely to become 'unemployed NEET' rather than 'due-to-family-duty NEET' versus unmarried female statistically significant at p<0.001. When it comes to married male versus unmarried male, the odds of being 'unemployed NEET' rather than 'due-to-family-duty NEET' are multiplied by exp(-0.76)=0.46, i.e. decreases them by 54% versus unmarried male. That is to say that there is a strong evidence that married male youth are less likely to become 'unemployed NEET' rather than 'due-to-family-duty NEET' compared to unmarried male, statistically significant at p<0.001.

Interaction	Versus.	coefficient	Odds ratio	Sig.
Male ## unmarried	Female unmarried	1.88	6.5	p<0.001
Male ## married	Female married	2.89	17.9	p<0.001
Married ## female	Unmarried female	-1.77	0.17	p<0.001
Married ## male	Unmarried male	-0.76	0.46	P<0.001

Education:

Holding all other variables constant, the odds for youth who have complete secondary education of being 'unemployed NEET' rather than 'due-to-family-duty' are exp=(-0.39)=0.67 times (33% lower than) the youth with primary or less education. This indicates that youth who have complete secondary education are less likely to become 'unemployed NEET' rather than 'due-to-family-duty NEET' compared to youth who have primary or less education, statistically significant at p< 0.05, and the 95% CI=[-0.769; -0.017]. For the subsequent category of education, controlling for all other variables, the odds for youth with TVET education of being 'unemployed NEET' rather than 'due-to-family-duty NEET' are exp=(0.36)=1.44 times (44% higher than) the odds for youth with primary or less education. This means that youth with TVET education are more likely to become 'unemployed NEET' rather than 'due-to-family-duty NEET' compared to youth with primary or less education, statistically significant at p< 0.05. For the last category of education, holding all other variables constant,

the odds for youth with tertiary education of being 'unemployed NEET' rather than 'due-to-family-duty NEET' are exp(0.51)=1.65 times (65% higher than) the odds for youth with primary or less education. That is to say that youth with tertiary education are more likely to become 'unemployed NEET' rather than 'due-to-family-duty NEET' compared to youth with primary or less education, statistically significant at p< 0.05.

Disability:

Looking at the estimated coefficient only, youth without disability are more likely to become 'unemployed NEET' rather than 'due-to-family-duty NEET' compared to youth with disability. However, P-value is 0.174, thus, null hypothesis, that disability status has no effect for youth being in one of the NEET category, i.e.

is not rejected at all conventional levels of statistical significance.

Household size:

Having one additional member in a household multiplies the odds for youth of being 'unemployed NEET' rather than 'due-to-family-duty NEET' by exp(-0.08)=0.91, i.e. decreases them by 9%. In other words, youth become less likely to be in 'unemployed NEET' rather than 'due-to-family-duty NEET' when household size is increased by one member, statistically significant at p<0.05, and 95% CI=[-0.146; -0.029).

Result for the 'idle' NEET:

Figure 4: Multinomial logistic regression, result for idle NEET

Idle NEET	*Model 1*			*Model 2*		
Demographic variables	Coeff (β)	Odds ratio	P-value	Coeff (β)	Odds ratio	P-value
Sex						
(Female. ref)						
Male	1.97	7.17	0.001	2.09	8.12	0.001
Location						
(Ulaanbaatar. ref)						
Aimag centre	0.51	1.66	0.001	0.29	1.34	0.046
Rural	0.27	1.31	0.043	0.05	1.05	0.738
Married						
(No. ref)						
Yes	-2.21	0.11	0.001	-2.09	0.12	0.001
Interaction						
(sex##married)						
male#Yes	0.96	2.63	0.001	0.96	2.61	0.001
Social variables						
Education						
(Primary or less. Ref)						
Complete secondary				-0.46	0.63	0.023
TVET				-0.44	0.64	0.031
Tertiary				-0.47	0.62	0.019
Disability						
(Yes. Ref)						
No				-4.41	0.01	0.001
Household size						
(1-4. ref)						
5+				-0.07	0.93	0.037
_cons	-0.32	0.72	0.083	4.45	86.12	0.001
Log likelihood			-2613.05			-2303.65

Location:

The odds for youth in aimag centre of being 'idle' rather than 'due-to-family-duty NEET' are exp(0.29)=1.34 times (34% higher than) the odds for youth in Ulaanbaatar, holding other all other variables constant. This indicates that there is an evidence that youth in aimag centres are more likely to become 'idle' rather than 'due-to-family-duty NEET' versus youth in Ulaanbaatar, statistically significant at p<0.05, and the 95% CI=[0.005; 0.587]. As per the rural

youth, they are more likely being 'idle' rather than 'due-to-family-duty NEET' compared to youth in Ulaanbaatar, controlling for all other variables. However, P-value for the estimated coefficient is 0.738, thus, null hypothesis, that location has no effect for youth being in one of the NEET category, i.e.

$$H_0\colon \beta_{aimag}^{(unemp)} = \beta_{aimag}^{(famduty)} = H_0\colon \beta_{rural}^{(unemp)} = \beta_{rural}^{(famduty)} = 0,$$

is not rejected at all conventional levels of statistical significance.

Sex and married interaction:

Being unmarried male multiplies the odds of being 'idle' rather than 'due-to-family-duty NEET' by exp(2.09)=8.12 compared to unmarried female, controlling for other variables. That is, there is a strong evidence that unmarried male youth are more likely to become 'idle' rather than 'due-to-family-duty NEET' compared to unmarried female, statistically significant at p<0.001, and the 95% CI=[1.731; 2.457]. The result is even more striking for married male youth, i.e. the odds of being 'idle NEET' rather than 'due-to-family-duty NEET' are exp(3.04)=20.9 times the odds of female married youth. That is, there is a strong evidence that married male youth are much more likely to become 'idle' rather than 'due-to-family-duty NEET' compared to female married youth, statistically significant at p<0.001. Conversely, being married female multiplies the odds of being unmarried female by exp(-2.09)=0.12 (88% lower) to be in the status of 'idle' rather than 'due-to-family-duty NEET,' controlling for other variables. This indicates that there is a strong evidence that married female youth are much less likely to become 'idle' rather than 'due-to-family-duty NEET' versus unmarried female statistically significant at p<0.001. When it comes to married male versus unmarried male, the odds of being 'idle' rather than 'due-to-family-duty NEET' are multiplied by exp(-1.14)=0.31, i.e. decreases them by 69% versus unmarried male. That is to say that there is a strong evidence that married male youth are less likely to become 'idle' rather than 'due-to-family-duty NEET' compared to unmarried male, statistically significant at p<0.001.

Interaction	Versus.	Coefficient	Odds ratio	Sig.
Male ## unmarried	Female unmarried	2.09	8.12	p<0.001
Male ## married	Female married	3.04	20.9	p<0.001
Married ## female	Unmarried female	-2.09	0.12	p<0.001
Married ## male	Unmarried male	-1.14	0.31	P<0.001

Education:

Holding all other variables constant, the odds for youth who have complete secondary education of being 'idle' rather than 'due-to-family-duty NEET' are exp(-0.46)=0.63 times (37% lower than) the youth with primary or less education. That implies that youth who have complete secondary education are less likely to become the 'idle' rather than 'due-to-family-duty NEET' compared to youth who have primary or less education, statistically significant at p< 0.05, and the 95% CI =[-0.865; -0.064]. For the subsequent category of education, controlling for all other variables, the odds for youth with TVET education of being 'idle' rather than 'due-to-family-duty NEET' are exp(-0.44)=0.64 times (36% lower than) the odds for youth with primary or less education. That is to say that youth with TVET education are less likely to become 'idle' rather than 'due-to-family-duty NEET' compared to youth with primary or less education, statistically significant at p< 0.05. For the last category of education, holding all other variables constant, the odds for youth with tertiary education of being 'idle' rather than 'due-to-family-duty NEET' are exp(-0.47)=0.62 times (38% lower than) the odds for youth with primary or less education. In other words that youth with tertiary education are less likely to become 'idle' rather than 'due-to-family-duty NEET' compared to youth with primary or less education, statistically significant at p< 0.05.

Disability:

For youth without disability compared to youth with disability, the odds of being 'idle' rather than 'due-to-family-duty NEET' are multiplied by exp(-4.41)=0.01, statistically significant at p< 0.001, and the 95% CI=[-5.271; -3.528]. Therefore,

null hypothesis that disability status does not affect the population odds of being 'idle' rather than 'due-to-family-duty NEET,' is rejected at all conventional levels of statistical significance.

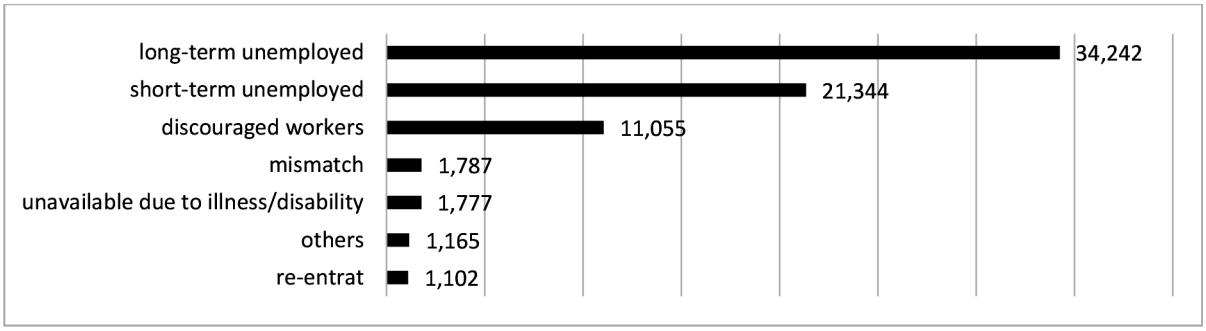
Household size:

A similar finding is observed for youth 'idle' rather than youth ''due-to-family-duty NEET' in terms of household size, i.e. with one additional member in a household, the odds for youth in the former status rather than the latter are multiplied by exp(-0.07)=0.93 (7% lower). That shows youth become less likely to be in 'idle'' rather than ''due-to-family-duty NEET'' when household size is increased by one member, statistically significant at $p<0.05$, and the 95% CI=[-0.137; -0.004].

Decomposition of the unemployed NEET

In 2016, there were total of 72,471 unemployed NEET, i.e, 32% of total NEET aged 15-34 in Mongolia The largest proportion of the unemployed NEETs were the long-term unemployed (47.9%), followed by the short-term unemployed (25.7%) (Figure 6). Discouraged workers accounted for 18.5%; those NEET who claimed that there was a mismatch between their qualification and employers' criteria were 2.7%; those unavailable due illness or disability, 2.2%. About 1.3% of the unemployed NEETs are re-entrans while the remaining 1.8% are 'others.' Considering the figures for discouraged workers, the short- and long-term unemployed and re-entrants, the data suggest that on average in Mongolia, 93.3% of the unemployed NEETs (67,743 young people aged 15–34) belong to the unemployed NEET group because of labour market-driven factors. The remaining 6.7% are the unemployed NEET for more social-policy related reasons, such as family their low or mismatch skills and knowledge as well as illness or disability.

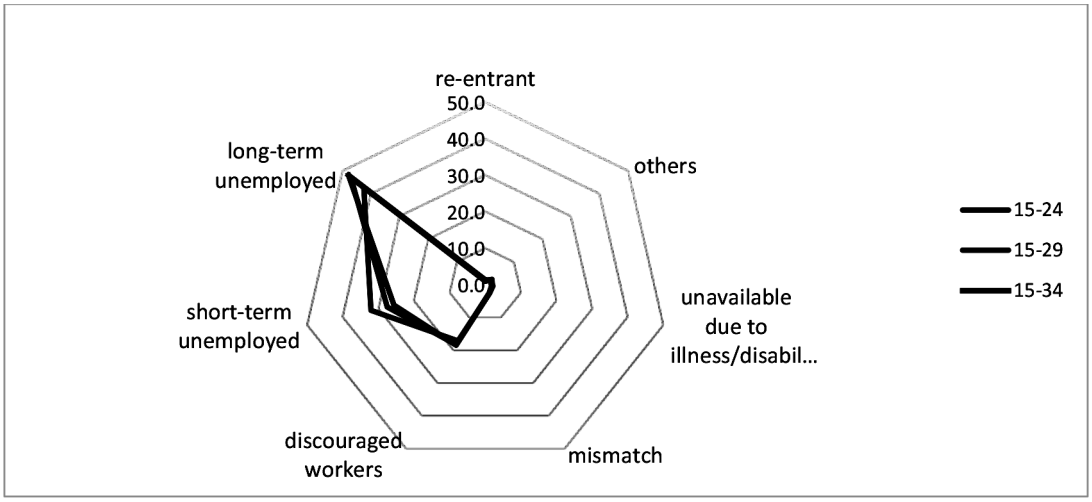
Figure 5: Unemployed NEET decomposition for youth aged 15-34, by numbers, 2016



Unemployed NEET decomposition has been calculated separately for three age ranges to show Mongolia specific case (15-34) as well as to display for international comparison. i.e. 15-24 and 15-29. Across all three age ranges, similar proportion by each category was observed. Among the unemployed NEETs, the largest share was for those who had long-term unemployment, 42.6%-47.9%, and this was highest among the age range 15–34. Next biggest share was for those who had short-term unemployed, 25.7%-32.1%, but the highest was among 15-24 and the lowest was among 15-34. Discouraged workers accounted for 17.2%-18.5% with highest for 15-34. Interestingly, those who are unemployed NEET due to knowledge and skills match against employers are accounted for only 2.6%-2.7%. Those who are unavailable to work and become unemployed NEET are between 1.8%-2.2%, and re-entrants constituted only 0.8%-1.3%. So, the figures for discouraged workers, the short- and long-term unemployed, mismatch and re-entrants, the data suggest that on average in Mongolia, around 96% of the unemployed NEETs (approximately 4.7 million young people aged 15–24) belong to the unemployed NEET group because of labour market-driven factors despite which age range they are in. The only remaining 6% are for more personal level related reasons, such as illness or disability or others (Figure 8)

At least six of 10 unemployed NEETs are long-term unemployed or discouraged workers. This indicates that a considerable share of the youth population is at risk of long-term disengagement.

Figure 6: Decomposition of the unemployed NEETs aged 15–24, 15–29 and 15-34 (%)



5. DISCUSSION AND CONCLUSION

Most of the findings of this study confirmed what previous researches and studies have found, especially in terms of probability of becoming NEET is higher among women (Duckworth 2012); youth in remote areas are more likely to become NEET (Mascherini et al, 2015); illness and disability increases the odds of becoming NEET (Rennison et al, 2006; Coles 2010); the larger the household size the higher the risk of becoming NEET (Ranzani, 2013). One interesting controversial finding against most of literature (Bell and Blanchflower, 2010) on the association of education attainment and the odds of being NEET was observed: the higher the education (tertiary) the higher the probability of becoming unemployed NEET. Furthermore, the study recognized heterogeneity of the unemployed NEET and attempted to differentiate them into several groups, and the findings were surprising in a way that more than 90% of the unemployed NEET either short-term or long-term unemployed and discouraged mostly due to labour market availability and accessibility.

Conclusion

In the past year 2016, youth NEET rate increased dramatically compared to previous years reaching 24.02% which implies every one in 4 youth are NEET in Mongolia. This is a big loss for the country both for human capital and economic growth as it threatens the potential of reaping the first and second demographic dividends and enhancing human development. Therefore, this study was timely and valuable by examining the risk factors that lead youth to become NEET in Mongolia, and exploring their heterogeneity, so that policy makers are better informed how and where to intervene. The study explored three kinds of NEET youth: i) unemployed, ii) due-to-family-duty, and iii) idle. To further, the unemployed NEET youth was disaggregated into seven categories: short-term unemployed, long-term unemployed, re-entrant, unavailable due to disability or illness, discouraged, mismatch and others.

And the result disclosed that there were 12,697 youth aged 15-34, and 3,050 out of them were NEET. Binary logistic regression result showed that all the explanatory variables were statistically significant predictors for youth become NEET or not except for the ‘complete secondary education’ and ‘household size.’ For the multinomial logistic regression, all the explanatory variables were statistically significant predictors for you to become ‘unemployed NEET’ rather than ‘due-to-family-duty NEET’ except for the variable ‘disability.’ For the ‘idle NEET,’ all the explanatory variables, but disability, were statistically significant predictors.

If the Government provides jobs that absorb youth bulge, Mongolia has potential to reap demographic dividend and boost its economy. However, prerequisite to that is to understand root causes of youth unemployment, more specifically, challenges and bottlenecks of youth NEET, so that they can make evidence based policy making, intervention and investment. For that purpose, this study was undertaken.

Limitations and further research

This study used cross-sectional database which is the main limitation of the study because the findings are able to show only a snapshot of the NEET youth at one specific point in time, and are not able show a change over time. Therefore, initiating the longitudinal study of the NEET youth or Labor force survey is much needed, so that outcomes of NEET youth will be better understood and prevented.

Another limitation could be the age definition of youth in Mongolia is 15-34 which is not comparable with international standards in most cases.

It is a current practice that the number of young people with disability is included in the NEET. However, it is not good practice as it does not create meaningful picture of the true NEET (Furlong, 2007), thus, revisiting the calculation of the NEET by subtracting the disabled youth is necessary in the future.

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