

# System Dynamic Study of Nepalese Labors Migration Trend to Malaysia

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## **Submitted by**

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## Acronym

AD	Adult population
BY	Base year
DoFE	Department of Foreign Employment
EL	Eligible labors
EP	Elder Population
GoN	Government of Nepal
MoCPA	Ministry of Cooperatives and Poverty Alleviation
NPC	National Planning Commission
NPV	Net Present Value
PL	Potential Labors
SD	System Dynamic
SFD	Stock and Flow Diagram
UiB	University of Bergen
WB	World bank

## Acknowledgment

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## Abstract

This thesis deals about the dynamic of the migratory trend of Nepalese labors from Nepal to Malaysia. Though the remittances contribute significantly to Nepal's national domestic product (GDP), the higher rate of labor migration is problematic concern including labor shortage in Nepalese labor market.

The labor shortage mainly in agriculture and construction is high concern. On average more than 1500 Nepalese labors leave the country daily for employment. The recent official record shows that about 2.5 million Nepalese labors work abroad. Officially, the Malaysian labor market was open for Nepalese labors in 2001 however, now Malaysia constitutes about 40 percent of total international labor migration from Nepal.

The earning gap effect and effect of labor migration cost are accounted to drive the fractional migration rate and finally to the labor migration rate. The low earning rate and wage rate in Nepal than in Malaysia are push factors for Nepalese labors to migrate. On other hand, low job creation rate in Nepal is crucial factor of the labor emigration. Additionally, the social network effect on the labor migration cost also plays role to take the decision of the labor migration.

The labor migration increases if both effects are increased however, the increment in the potential Nepalese labors also changes the migration rate. Once the GDP in the country is increased the earning gap decreases that lowers the migration rate. The government policy initiative to increase the GDP through employment generation is proposed to avoid the higher rate of the migration. The policy implementation comprises particularly the training component relating to the entrepreneurship, improved cropping method to increase agricultural yields. The implementation challenges including borrowed money payback is the major concern of the policy though the model does not deal about it extensively.

This thesis is organized mainly in five sections with relevant sub heading. The introduction deals about the problematic nature of the labor migration from Nepal while the theoretical backing of the thesis and relevant studies relating to the migration is in the literature review section. The system dynamic method and research design is shortly introduced in the research design and methodology section. The result and analysis section deal the simulation results with causal explanation of variables. The policy proposed, a brief implementation outlines including challenges are shortly described in the policy design section. The concluding remark with a few points of recommendation is presented in the conclusion section.

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## Introduction

Nepal a small country with diverse socio-cultural settings and ethnic composition in South Asia is located between two giant countries- China in the North and India in the East, South and West has a long history of international labor migration. The migration was initially understood as the movement of working aged active population particularly in search of work. The limited employment options with the low wage rate and the earning drives Nepalese labors to migrate.

The historical patterns of the labor migration from Nepal shows the increasing trend. Please refer to figure 1 for the increasing trend. With the high rate of the labor migration, the local labor market has negative effect in terms of labor availability and the labor force participation. The availability of the local market especially the cropping season is a major concern in Nepal (Raju Tuladhar, 2014 ).

In the beginning of the 19 century Nepalese labors moved to India for employment (Seddon, 2005 ). Mainly, the labors migrate for two reasons- employment and to live abroad (Gurung, 2004 ). Traditionally, Nepal's economy was agriculture dominant however, with the increasing trend of the migrant labors the economy is heavily supported by the remittances contributed by the labors. The contribution of the remittances in the GDP is about 25 percent in Nepal's economy. The World Bank (WB) points that Nepal has ranked in the third position in the remittance monies receiving country and contributing to the national economy in the world (Xinhua, 2014 ). Furthermore, the agricultural sector in Nepal also contributes about 38 percent in the GDP however, the productivity in the agriculture sector is less than other sectors.

Most Nepalese people about 60 percent engage in agriculture sector particularly in cropping season. However, agriculture in Nepal is subsistence based with low productivity and the labors only busy in agricultural season. In general, the cropping method in Nepal is more labors consuming and less technically quipped. When labors migrate from a household, the labor sending household is supposed to hire labors from the local market. However, in case of Nepal the migration rate is very high about 1500 Nepalese labors migrate per day. In such case the availability of labors is a big concern in the market. The labor market becomes disturbed in many underdeveloped countries like Nepal due to the high rate of labor migration that causes labor shortage and finally brings negative consequences at the household production level (Lipton, 1980).

On other hand, Nepal's economy is heavily dominated by the remittances and in long run it may cause "Dutch Disease" effect creating poor domestic investment in Nepal (Raju Tuladhar, 2014 ). The sustainability of the remittance based economy is always matter of question in Nepal. For the reliable and strong domestic investment, the government policies have focused to generate employment options in Nepal rather than sending unskilled labors abroad. The considerable



number of the migrant labors are unskilled or semi-skilled as the result they perform do 3D (difficult, danger and dirty) nature of work in destination countries. This has created moral and social pressure to the government for controlling high flow of the labors and to send skilled labors that could ensure work securities and safety.

The system dynamic approach of the labor migration with causal explanation of the system variables is new study area. This thesis studies the migration trend of the labor migration that is problematic nature in Nepalese context. The international migration changes the labor supply in the origin country. If the labor migrants are substituted by the non-migrants labors in the origin country in such case the migration will decrease the labor supply in home country (Rodriguez & Tiongson, 2001). Furthermore, the participation of women labors in Nepalese labor market is negative by the remittances (Lokshin 2009). Moreover, the hours of work and the labor participation is decreased due to the migration. Those people who receive remittances the working hour is less to compare to those who do not receive remittances (Grigorian & Melkonyan, 2011). The recent study report of Overseas Development Institute notes that Nepal will face 3.6 Million of labor shortage severely by 2030 if the labor migration continues. That may create hurdles for Nepal's government vision to graduate into a middle income economy country by 2030(TKP, 2017).

Based on above context the high rate of the labor migration from Nepal is problematic in nature which the present study wants to reveal through the SD approach. The assumption of this study is that employment options expect migrating to abroad are limited in Nepal. The wage rate in the destination countries is higher than that in Nepal. The productivity from the agriculture Nepal is less than compare to other service sector including the benefits from the labor migration.

### Migration History from Nepal

The migration started from Nepal especially to India in early 19<sup>th</sup> century for the employment. Later, British's colonization in India has also provided migration opportunities for Nepalese labors in British's colonial states. During World War I and II significance numbers of Nepalese labors engaged in the wars in different parts of the World on behalf of the United Kingdom (Seddon, 2005 ). Nepalese youths recruited in the Indian and the British army to serves in military forces. Since then the labor migration trend has been continuously increasing.

In Nepal, the Foreign Employment Act (1985) was formulated to manage and regulate the labor migration. This acts also opened way for private sectors to engage in export of Nepalese labors with the legal foundation. The acts clearly defined roles of private sector on institution basis to send labors abroad. The civil war in Nepal (1996-2006) that has also surged the labor migration. During the war period, government concentrated to settle the war politically as the result employment generations are limited. Even after settlement of the war the employment

generations in Nepal are not diversified as the result the trend of migrating abroad for employment is increasing. It is estimated that about 3 million Nepalese labors work abroad. The recent trend in Nepal’s population shows increasing trend migratory trend of Nepalese emigrants. The Nepalese emigrants are denoted with the terminology of ‘absent population’ (refer to the figure 1). The latest population census report of 2011 shows that 7 percent of the total population is absent population. With the increasing trend of Nepalese migrant labors, labor availability and labor participation are major concern in Nepal (Lokshin 2009; Raju Tuladhar, 2014 ).

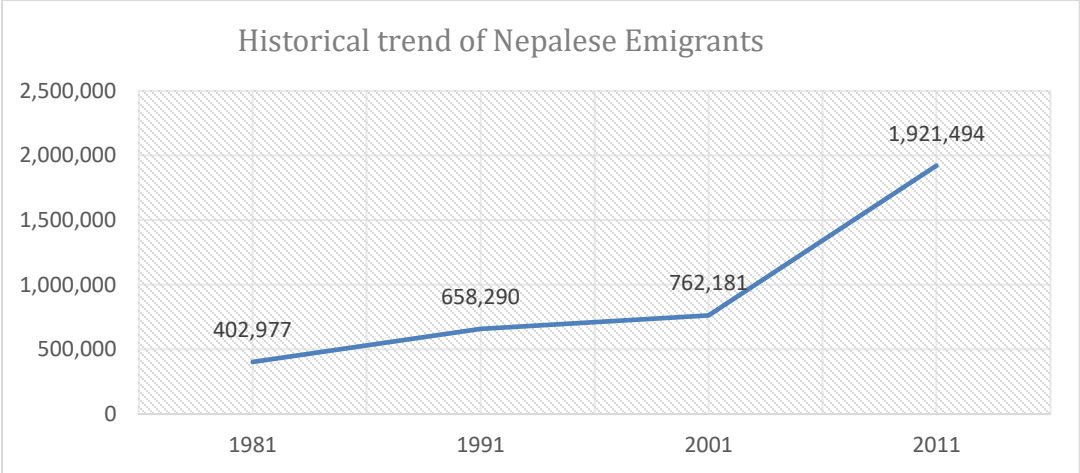


Figure 1: Nepalese Migrant Labors

India occupied high share of labor migration since long however the share of the migration decreased with the opening of new destinations. The census reports of 1981, 2001 and 2011 shows significant decreasing trend to India although the increasing trend shifted to other destination especially Gulf countries particularly Qatar, Oman, Bahrain, United Emirates (UAE), and Saudi Arab.

**Nepalese Migrants in Malaysia**

Malaysia’s economic market is mostly dominated by foreign workers. It is estimated that 2.1 Million migrant workers are registered and about 1 Million are illegal foreign workers that are not documented. The immigration act 1959 provided foreign migrant’s stay and work permit in Malaysia (Harkins, 2016). The migrant labors in Malaysia are mainly from Nepal, Bangladesh, Indonesia, Vietnam. The migrants from Indonesia has occupied high share of Malaysian labor market. Construction, industry, agriculture and service sectors in which foreign labors work (Network, 2016 ). However, it is expected that 3 to 4 Million migrant work currently in Malaysia.

The southeast Asian country Malaysia the major destination of Nepalese labors hosts about 500,000 Nepalese migrant labors (GoN, 2015). Nepalese labors work in different sectors that

requires low skills such as manufacturing, agriculture, and services. Malaysia is the first destination of Nepalese labors constituting about 40 percent of total international labor migration. The historical trend of the Nepalese labor migration to Malaysia is in increasing trend. Please refer to the Figure 2 as the reference mode which shows migratory trend.

For Nepalese labors the labor market in Malaysia was officially opened in 2001(Seddon, 2005 ). However, Nepalese labors already have worked before the official opening although the verified documentation is not available. It is estimated that 60,000 Nepali workers worked as security guards. Malaysian companies are supposed to hire security guards either locals or Nepalese people. There is high demand of Nepalese labors with the military background. Since 2000 the number of the labors was increased until 2006. The increasing trend becomes less from 2005 to 2009 that was followed by the sharply increment in the coming years.

Nepal has officially signed the bilateral labor agreement with other countries mainly Republic of Korea in 2007, the UAE in 2007, and Qatar in 2005, Bahrain in 2008 and Japan in 2009 that allows Nepalese labors to migrate new destinations. The opening of attractive destinations in terms of income and wage rate could be one reason for dropping of the migration rate to Malaysia. Japan and Korea are the most attractive destinations for Nepalese labors with the high wage rate. However, migrating to Japan and Korea is not easy as the labors should have the basic language text completion certificate and other requirements.

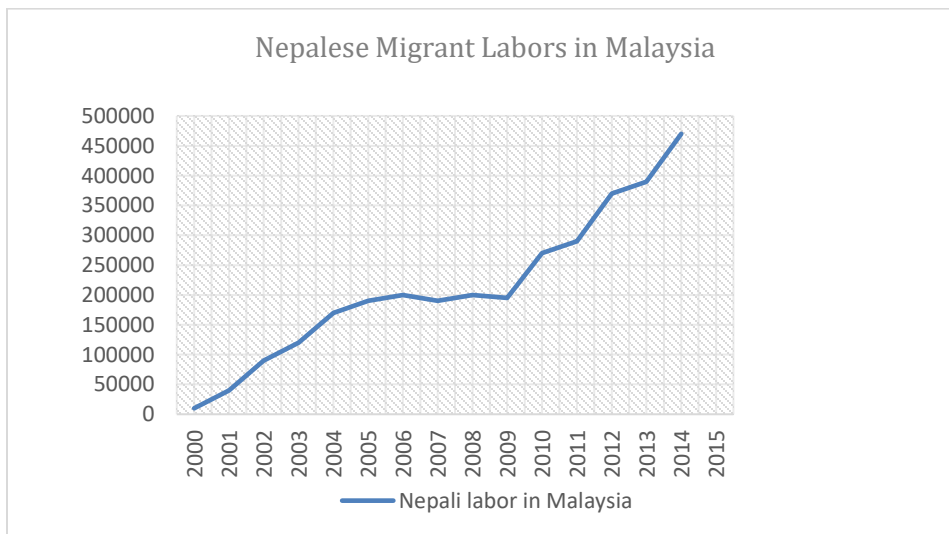
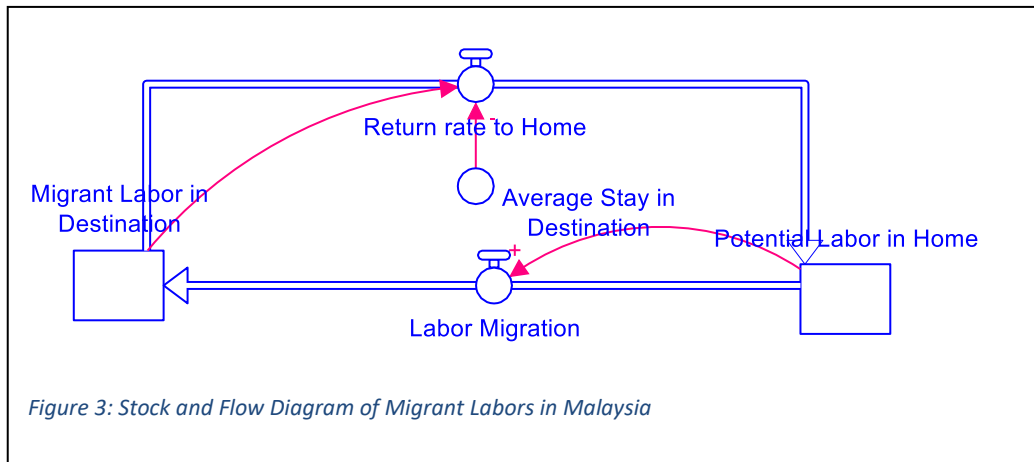


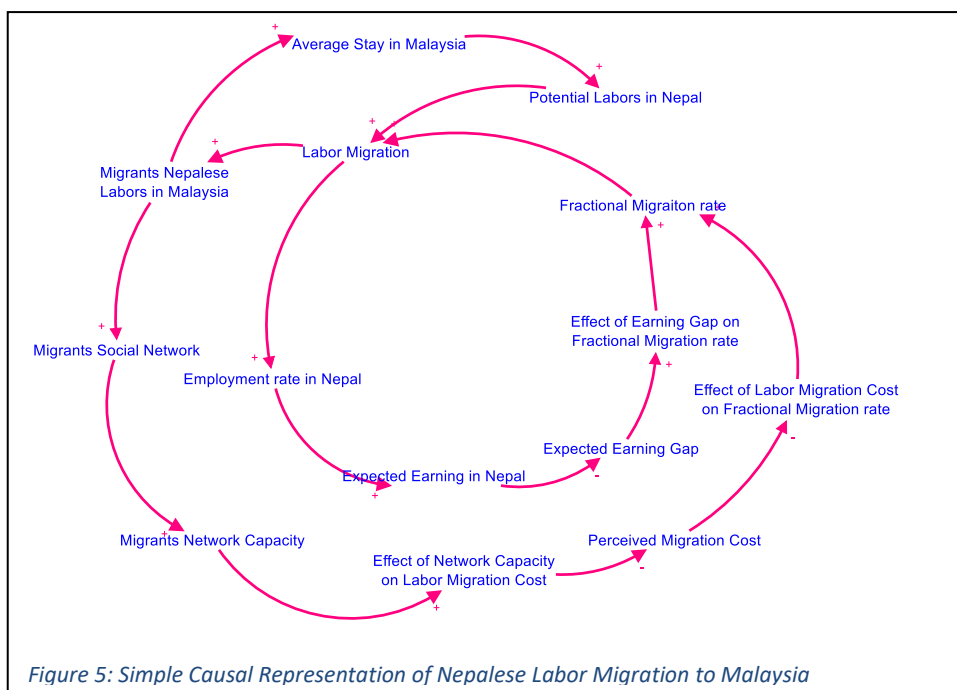
Figure 2: Reference Mode, Nepalese Migrant labors in Malaysia

The above reference mode in figure 2 can be presented in the stock and flow diagram as shown in figure 3. The stock- Migrant Labor in Destination-refers to Nepalese migrant labors in Malaysia. The stock changes with the flow that is the labor migration. The stock is outflowed by the average stay in the destination. The average stay in the destination is 17 years (DoFE, 2015) that includes all migration episodes of the migrant labors. The stay is an average abroad stay of

Nepalese labor during this life time although the labor may not stay in Malaysia for 17 years and might go to another destination.



However, the behavior (given in figure 2) of Nepalese migrant labors in Malaysia is because of many endogenous variables. The major variables to bring such behavior is simply presented in the figure 5 below. The labor migration increases Nepalese migrants labor in Malaysia which increases the migrants social network in Malaysia with increment on the social network capacity that decreases the perceived labor migration cost but finally increases the fractional migration rate together with the labor migration rate.



On other hand, the employment rate increases with the labor migration from Nepal is increased that also increases earning in Nepal however, that decreases the earning gap and finally increases the fractional migration rate and labor migration rate. The detail dynamic is dealt in the result and analysis section.

As shown in figure 6, the labor migration rate also changes with another stock-potential labor in home-that refers to the working age people in Nepal. The potential labor in home accumulates two flows-the average stay in destination and the young maturation rate. On the other hand, the labor migration rate, the adult population death rate and the adult maturation rate outflows the potential labor in Nepal.

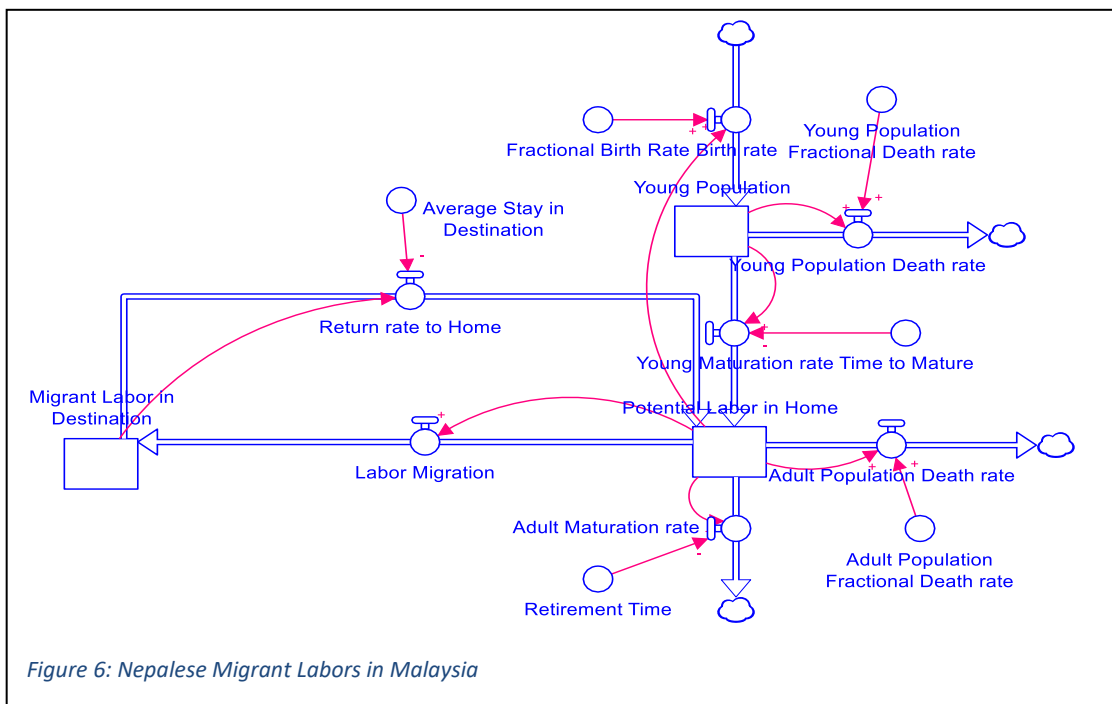
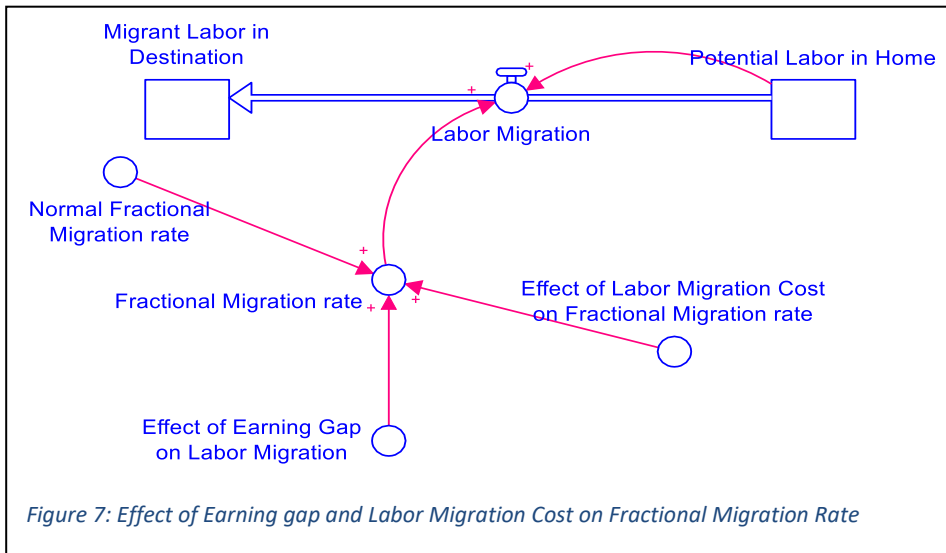


Figure 6: Nepalese Migrant Labors in Malaysia

Moreover, the labor migration is dynamic phenomena that changes with the fractional migration rate as the result of change in the effect of earning gap on the fractional migration rate and the effect of migration cost on the fractional migration rate. The fractional migration rate also changes with the normal fractional migration rate is treated as exogenous variable. Please refer to the figure 7 below.



## Objective

The general objective of the thesis is the system dynamic study of the labor migration from Nepal to Malaysia. The specific objective is stated below;

1. To explain the historical behavior of labor emigration pattern from Nepal to Malaysia.

## Literature Review

This section has two folds. The first section briefly highlights the migration theories in line to the SD approach. A brief review of previous research relating to the migration that are relevant to this study is presented in the second sub heading entitled ‘Review of Labor Migration Literatures’.

### Review of Migration Theories

There are different theories to deal with the migration process. The SD approach assumes that different migration theories have different underlying structures that are responsible for showing different behaviors. The SD approach is highly concentrated with the mathematical formulation of theories. Based on the formation, the logical reasoning is possible in the system dynamic approach. The Table 1 has briefly shows different existing theories of migration with their variables.

*Table 1: Summary of Migration Theories*

Theory	Subject of Analysis	Level of Analysis	Variables
Neo Classical Theory	Determinants of migration	Macro and micro	Wage and income differentials And probability of employment
Human Capital Theory of Migration		Micro	Wages, economic benefits affected by individual characteristics
New economics Theory of Migration		Micro and mezzo	Wages and income distribution Institutional failures-credit market, labor market deficiencies
World System Theory (Historical-Structural)		Macro	Structural changes and flow of capital
Dual Market Theory		Macro and Mezzo	Labor demand, immigration policies
Social Network Theory	Perpetuation of migration and/or directionality of flows	Mezzo	Networks, diaspora
Migration Systems Theory		Macro	Development space
Transnational Theory		Transnational level	Transnational social spaces

Source: Adopted from Kurekova, 2011 page 14

The neo classical theory of the migration considers wage and income differences as push factors of the labor migration from one country to another. The human capital theory of



migration argues that the individual characteristics with the economic benefits of migration play key role. Whereas, the world system theory focuses on structural changes and flow of capital. The transnational theory assumes international social networks and space as causing factor of the migration. However, this thesis considers the neo- classical and the social network theories as theoretical framework of the study.

### *Neoclassical Theory of Migration*

The most powerful theoretical explanation of migration is the neoclassical theory that assumes that economic disparity is major cause of the migration. The central argument of the theory is wage difference between the labor sending country and the destination country. Kurekova critically highlighted major considerations of the neo classical theory. The migration is a geographic difference between labor supply and demand that causes wage differences (Kurekova, 2011).

### *Causal Loop Explanation of Neo classical Theory*

As shown in the figure 8 below, with the increment in the labor migration, the labor supply in the country decreases however, it increases the wage rate in the home with the low availability of labors. The labor demand in the home country increases that also pushes the wage rate to go up in the home country. The wage difference is subtraction of the wage rate in home country from that in the destination country. When the wage rate is increasing in the home country that decreases the wage differences that also lowers migration from the home country to the destination country. The balancing loop is formed within this structure that we call the wage control loop C1 that ultimately controls the labor migration.

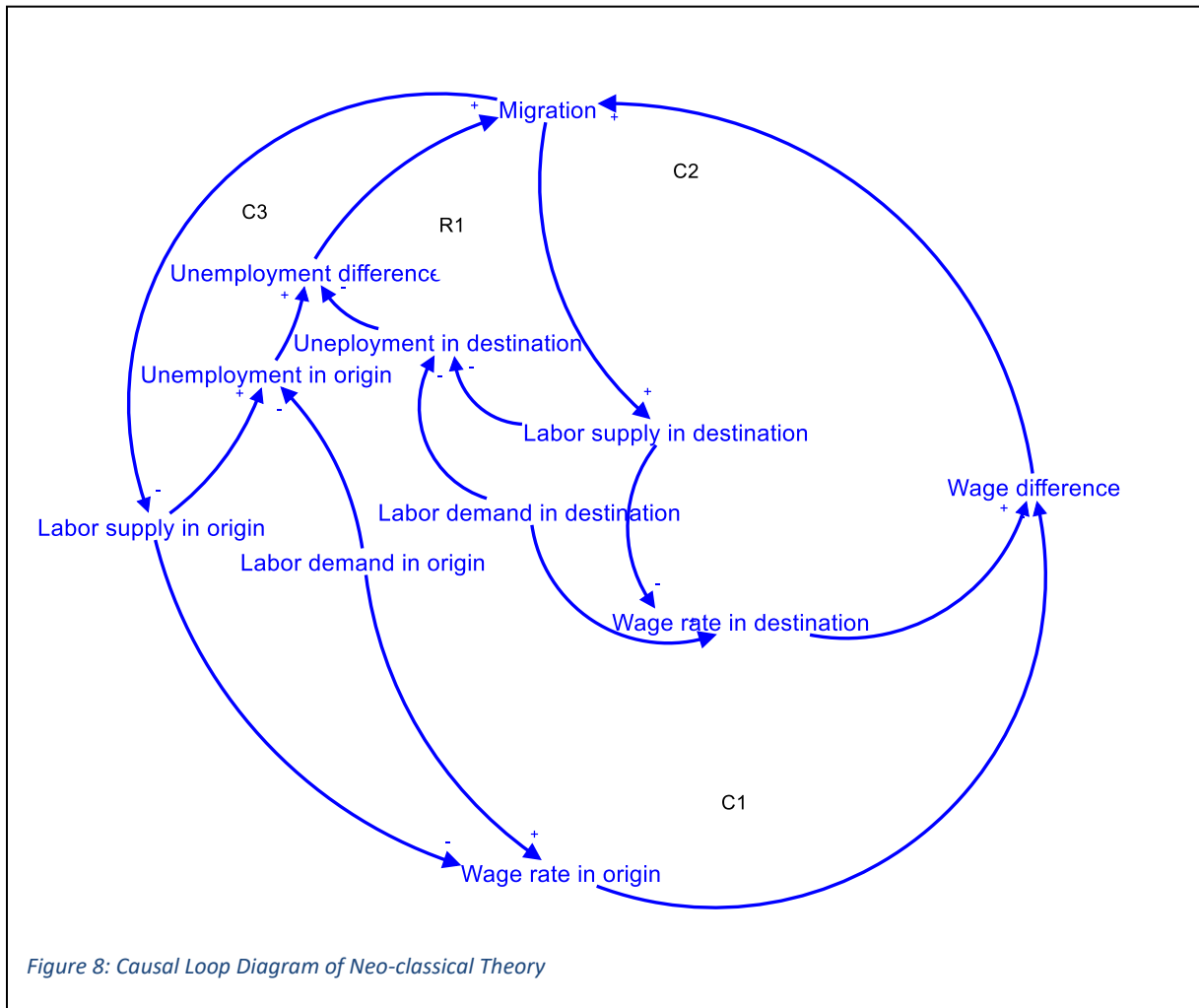
On the other hand, the labor supply in the destination country goes up with the high rate of the migration. However, the wage rate decreases due to more labor supply in the destination with decreasing value in the wage difference. Another balancing loop C2 controls the labor supply in the destination country.

In contrary, the high number of labors in the labor receiving country also increases unemployment in the destination with decreasing trend of the unemployment difference. The reinforcing loop R1 is created within this structure that paly role for the labor migration.

The labor supply in the home country decreases with the high rate of the labor migration but it also increases the employment in the home country for the remaining labors with decreased value of the unemployment difference. The effect of employment rate on expected wage rate is increased with the employment rate in Nepal and decreases with the normal employment rate. That will also increase that expected wage and expected earning of Nepalese labors if they are employed in their home country. On other hand, the earning gap decreases. The effect of the earning gap on fractional labor migration is positive which finally increases the fractional

migration rate and the labor migration rate. The balancing loop C3 also controls employment rate in Nepal. The loop will extensively deal in the result and analysis section.

The figure 8 is a causal loop diagram of the neo classical theory of the migration in which three balancing loops and one reinforcing loop play causal effect within the system of the labor migration. The diagram below clearly indicates the causal links with different variables with polarity. The wage rate is the central variable that plays key role for the labor migration.



## Social Network Theory

The prime argument of the social network theory is that migrant's network in destination has also effects on the migration rate because of social ties and we-feeling. Social and financial support offered by the migrants to new-comers lowers the migration risk and the migration cost.

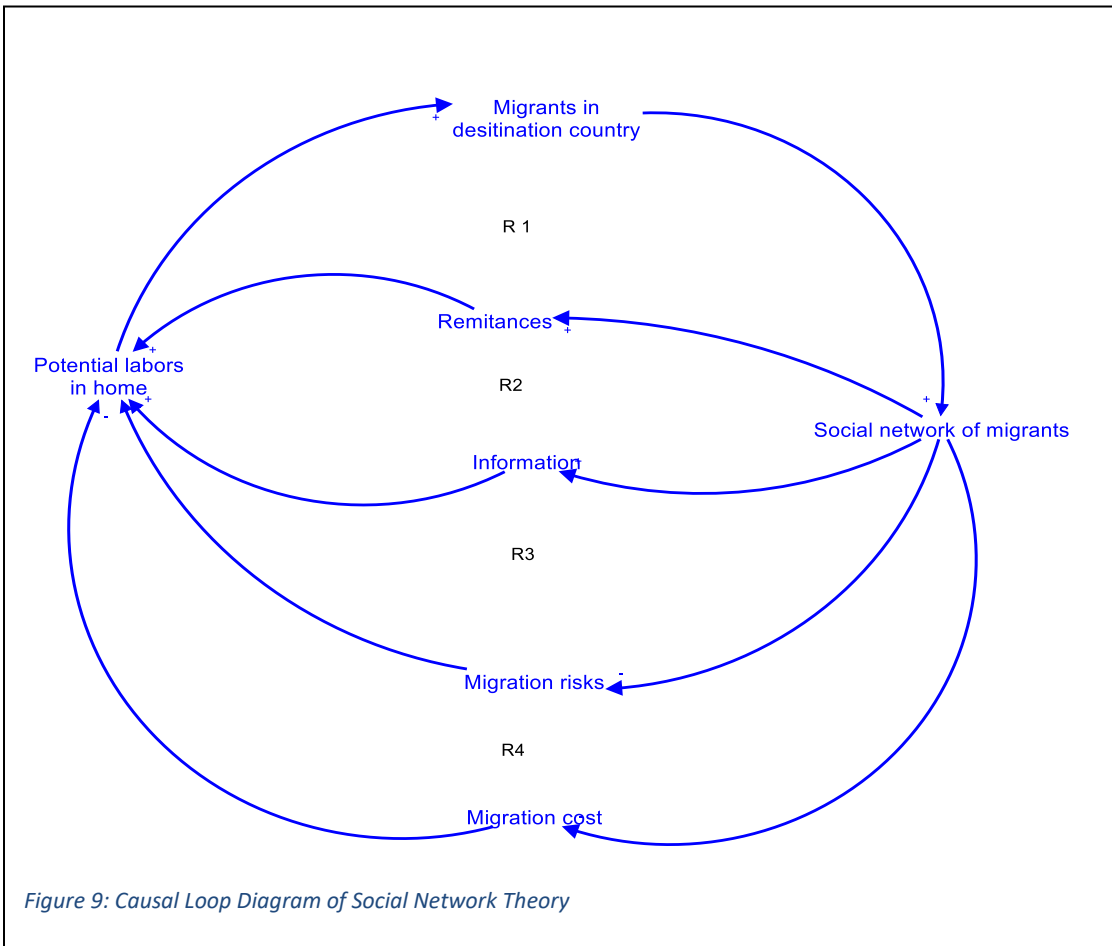
The social network in destination country is number of migrant labors. The remittances from the migrant labors also increases. The remittance increment reinforcing loop R1 increases number of labors in the destination country.

The migration is also associated with the risks in unfamiliar places, new cultures and completely new environments. The social networks reduce several types of risks associated with the pre- and post-migration process. The reinforcing loop R3 increases the social networks in the destination country while decreasing the migration risks.

The fellow labors in the home country get more information regarding cost, types of work, and other useful information that are relevant to them. Although it takes some time to get new update that we call the information delay in the SD language. The migration leads to the increased social network in the destination country. Furthermore, it also increases the labor migration rate from the home country with increased number of migrants in the destination.

The R4 is the labor network increasing reinforcing loop that increases the migration rate. The social network of Nepalese migrant labors is increased with the increasing number of the migrants that will lower the perceived migration cost. The delay function is used. Furthermore, the perceived migration cost is reciprocal to the effect of labor migration cost on the fractional migration rate. The section below entitled 'Result and Analysis' deals about the effect of the social network of Nepalese migrant labors in Malaysia on the migration cost and effect of labor migration cost on the fractional migration cost in detail with causal explanation.

The figure 9 below is a simple causal representation of the social network migration theory. The four reinforcing loops play role to increase the social network in the destination country. Those loops are also responsible to gear up the labor migration rate from the home country.



## Review of Labor Migration Literatures

Shrestha (2016) studies international migration from Nepal that highlighting push and pull factors however, the method of analysis is purely economic point. (Shrestha, 2016 ). He also briefly presents the history of the international migration from Nepal.

The Nepal government study report of 2015 thoroughly highlights the labor migration trends with labor migration status including its context. Furthermore, it also highlights policies with structural mechanism (DoFE, 2015). The constitution of Nepal has assured involvement of the private sector in the mechanism of the labor migration. In addition to the governmental bodies, private manpower agencies also engage to export the labors to abroad.

The system dynamic behavior of labor migration in Latica is studied in consideration with the hypothesis that labor migration is primarily determined by the payment level (Skribans, 2012). The study is about the labor migration and labor market in Latica. The higher wage rate in the destination country and high employment opportunities have role for labor migration.

The demographic study in consideration with health care, housing, and economy is also a novel research with the application of the system dynamic approach with explanatory and simulation model in Netherland (Gijsbers, 2011). The study applied the combine methodology of the system dynamic and the explanatory modeling and the analysis tool that is referred to the ESDMA. The ESDMA is useful tool to analyze uncertain complex dynamic system.

The dynamic of labor migration and migration policies with the SD approach is another study to observe historical pattern of Polish labors in Norway (Mohamed, 2015 ). The Polish migrants occupies the significant labor proportion in Norway.

The migration has serious impact on the labor availability in Nepal (Raju Tuladhar, 2014 ). The labor migration withdraws the labors availability in the home country and in return migrants send remittances. The agriculture sector in the country has faced serious labor shortage especially during the cropping season. Furthermore, some case studies such as in Armenia (Grigorian & Melkonyan, 2011), Jamaica (Kim, 2007), Philippines (Rodriguez & Tiongson, 2001) has pointed that the labor migration and remittances have negative effect on labor market and the labor participation in the sending country.

The migration phenomenon is the significant in terms of social and economic dimension in Nepal although studies are not enough to deal labor migration phenomena with the system dynamic approach. Furthermore, the problematic behavior of the labor migration with causal explanation is novel academic research in Nepalese context. Malaysia has high share of Nepalese migrant labors however, study from academia to deal with the historical migration trend is novel work.

## Research Design and Methodology

Like other academia, the SD approach is also rooted to the scientific research method. The SD follows PHAPI tool in which P stands for problem formulation that is problematic behavior, H stands for hypothesis testing based on the relevant problem, A stands for analysis of hypothesis. If the proposed hypothesis is tested, then policy is designed to deal with the problem to avoid unintended behavior and the policy is implemented in consideration with effectiveness and efficiency.

### Data Collection and Type

All data used in both endogenous and exogenous variables are collected from secondary sources. The sources include publications from both home and destination countries. Additionally, datasets with time series are collected from various sources particularly World Bank and Nepal's census reports. Some facts are also collected from national and international daily newspapers. However, the researcher has given enough consideration to triangulate numerical data based on various sources and archives.

Jay Forrester as cited in Sterman (2000) suggests three types of data used in model building. They are numerical, written and mental model data. Numerical data are from different database whereas written are recorded information from reports, media sources, archive, etc. The mental model data related with reality/story based on system understanding as cited in (Sterman, 2000).

*Table 2: Exogenous Variables used*

SN	Variables	Value	Unit	Source	Base Year
1	Average stay in destination	17	Year	DoFE	2000
2	Normal fractional migration rate	0.003	Unitless	Mental	
3	Normal expected wage in Nepal	2	USD/day	LC, 2016	
4	Normal earning in Nepal	2	USD/day	GoN	
5	Normal earning in destination	6	USD/day	MO, 2016	
6	Normal expected earning in Nepal	2	USD/day	GoN	
7	Normal migration cost	1000	USD/people	Jha, 2010	
8	Time to adjust the migration cost	3	Month	Mental	
9	Beneficiaries	100000	People	Mental	
10	Training cost per project	20000	USD	Mental	
11	Young Fractional birth rate	0.032	Unitless	WB	
12	Adult Fractional death rate	0.002	Unitless	WB	
13	Retirement Time	58	Year	GoN	
14	Young maturation time	18	Year		

15	Adult maturation time	58	Year		
16	Fractional elder death rate	0.0075	Unitless	WB	
17	Fractional young death rate	0.0056	Unitless	WB	
18	People trained per project	5000	People	Mental	
19	Interest rate	9	Per year	GoN	

*Table 3: Initial Values of Stocks*

SN	Stocks	Initial values	Source Verification
1	Nepalese migrant labors in Malaysia	10000	GoN
2	Potential labor in Nepal	12027023	GoN
3	Employed people in Nepal	8226348	GoN, Census
4	Young population in Nepal	9733460	GoN, Census
5	Elder population in Nepal	949605	GoN, Census
6	Employment generation	0	Not applicable
7	Additional budget	0 USD	Not applicable
8	Borrowing fund	0 USD	Not Applicable
9	Employment generation	0 people	Not Applicable
10	Net present value	0 USD	Not Applicable

Regarding the sources of the data of exogenous variables and initial values of stocks (refer to table 2 and table 3) are accessed from different reports of the government of Nepal (GoN) including census reports. The birth rate and death rate are accessed from the WB data sheet that is also shortly mentioned in the 'documentation' bottom of the Stella Architect software. The initial values of stocks in the policy section are not verified from the authentic sources and estimation is based on the mental basis. Moreover, data of exogenous variables and initial values of stocks of the policy model are based on mental assumptions.

## System Dynamic Method

The method applied in the study of the problematic behavior of the labor migration is system dynamic. The simulation software- Stella Architect with interface and storytelling components is used to build the model of the labor migration to explain the problematic behavior of the labor migration trend.

The SD is a causal explanation of complex system that focuses on stock & flow structure and searches for the endogenous explanation for systemic behavior. The endogenous explanation arises from an analysis of the feedback structure in the model. The analysis may identify some non-linear effects. It equally looks mathematical foundation on theories and model that are developed for showing problematic behavior and policy to solve the problem (Sterman, 2000). The simulation is powerful to reasoning causal explanation of endogenous variables within the system. The labor migration consists a complex system in which various parameters for examples, wage rate and earning in both labor sending and receiving country, number of potential labors, migrant workers in destination country, and cost of migration and many more. The change in one convertor of the endogenous variable causes change in overall migration system. Some exogenous variables are used in the model as per need. The numerical values used in the model are of the base year. The boundary of the model is defined in the model building to explain the causal linkage among used variables.

The mental model cannot explain these variables with causal relationship without the simulation. The simulation result gives clear and realistic pictures of all these variables of the migration system. The SD methods can give clear picture how the migrant labors in destination change, through which variable the migration rate changes, etc. that would provide in policy formulation to avoid the unintended behavior.

## Limitation of Study

The study relies on data of the base year however, the thesis studies migratory trend of 16 year from 2000 to 2016. The exogenous variables such as the fractional birth rate, normal employment rate, wage rate, normal earning, normal migration cost, adjustment time to update the migration cost, normal fractional migration rate, death rate, and initial values of all stocks. These exogenous variables certainly affect endogenized variables. Similarly, exogenous values are also introduced in the policy model that is intended to avoid the historical increasing trend of the labor migration.

The study is the partial fulfillment of the Masters in Philosophy in the system dynamic as the result the study do not extensively deals with the history of the labor migration from Nepal, and situation of Nepalese labors in Malaysia. It is because of time and resource constraints.



Moreover, the study primarily focuses on the problematic behavior of the migration from Nepal to Malaysia. The study does not reflect entire labor migration pattern of Nepal. The model does not extensively deal the policy with detail implementation strategies and challenges; however, the policy is supposed to generate employment opportunities with high wage rate through the increased GDP.

## Result and Analysis

The section mainly has two folds. The first fold is about the description of underlying structure that is responsible to show the behavior of the stock that is Nepalese migrant labors in Malaysia. The stock is changed with the dynamic of different variables that are endogenized in the model. The second fold of this section is a brief analysis of simulation results.

### Brief Description of Underlying Structure of Model

This section briefly highlights the structure of the model that changes the labor migration rate that shows Nepalese migrant labors in Malaysia. The labor migration rate changes with the potential labor in Nepal and the fractional migration rate. However, the analysis part will focus on dealing with the dynamism of the fractional migration rate that changes the labor migration rate.

The migration rate increases with the Nepalese potential labors and the fractional migration rate. The fractional migration rate changes with the effect of the earning gap and the effect of network of the migrants. However, the effect of the earning gap on the fractional migration rate is higher than the effect of the migration cost. Before dealing detail about the two effects the immediate section deals about the population model that particularly deals accumulation and subtraction in the potential labors.

As shown in figure 10 below, the population model consists of three cohorts- young population, active population and elder population- that are represented by three stocks. The potential labors (PL) are the working age population of aged group 18 to 58 and they are eligible to migrate. The young maturation rate flows to the PL and is subtracted by the adult population (AP) death rate and adult maturation rate and migration rate. Please refer to the equation below 1.1. Similarly, the return rate inflows to the PL. Once they return to Nepal the returnees are again eligible to migrate until the age of 58. The retirement age in Nepal is 58.

$$\begin{aligned} \text{Potential\_labor\_in\_home}(t) = & \text{Potential\_labor\_in\_home}(t - dt) + (\text{Young\_maturation\_rate} + \\ & \text{Return\_rate\_to\_home} - \text{Adult\_maturation\_rate} - \text{Adult\_population\_death\_rate} - \\ & \text{Labor\_migration}) * dt \end{aligned}$$

*Equation 1.1*

The PL in Nepal at time point t, is equal to the pervious PL in Nepal at time point 't-dt' and inflows of young maturation rate and the return rate. At the same time, it is get subtraction by the adult maturation rate, the adult death rate and the labor migration rate. The AP death rate outflows the PL and the model considers the fractional AP death rate of 0.0056 per year of the BY. The young population aged 0-17 years is being accumulated by the birth rate. The crude birth rate was 32.12 per 1000 people with the fractional birthrate of 0.32 per year in Nepal in

the BY. Two outflows the young population death rate and maturation rate subtract the YP. Similarly, the mortality death rate (death of child under five per 1000 live births) in the BY is accounted in the model.

The mathematical formulation of the young population is represented by the following equation;

$$\text{Young\_Population}(t) = \text{Young\_Population}(t - dt) + (\text{Birth\_rate} - \text{Young\_Maturation\_rate} - \text{Young\_Population\_Death\_rate}) * dt$$

Equation 1.2

The young population at the given time t is equal to the young population at the previous time point. The birth rate is accumulated on the young population while the young maturation rate, and young population death rate deduct the young population.

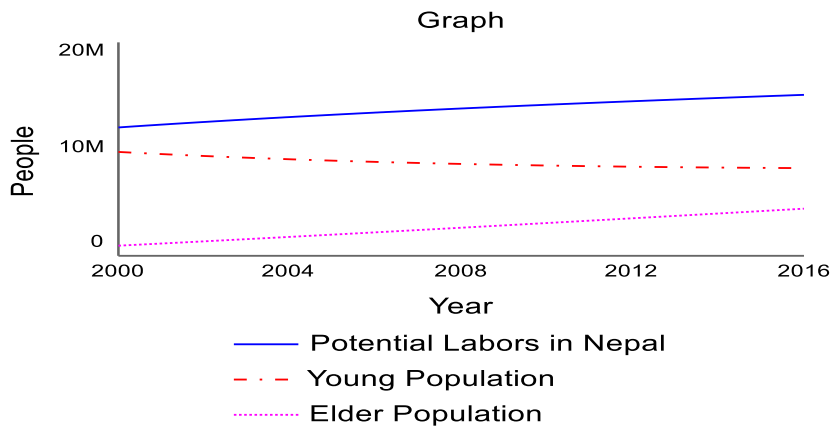
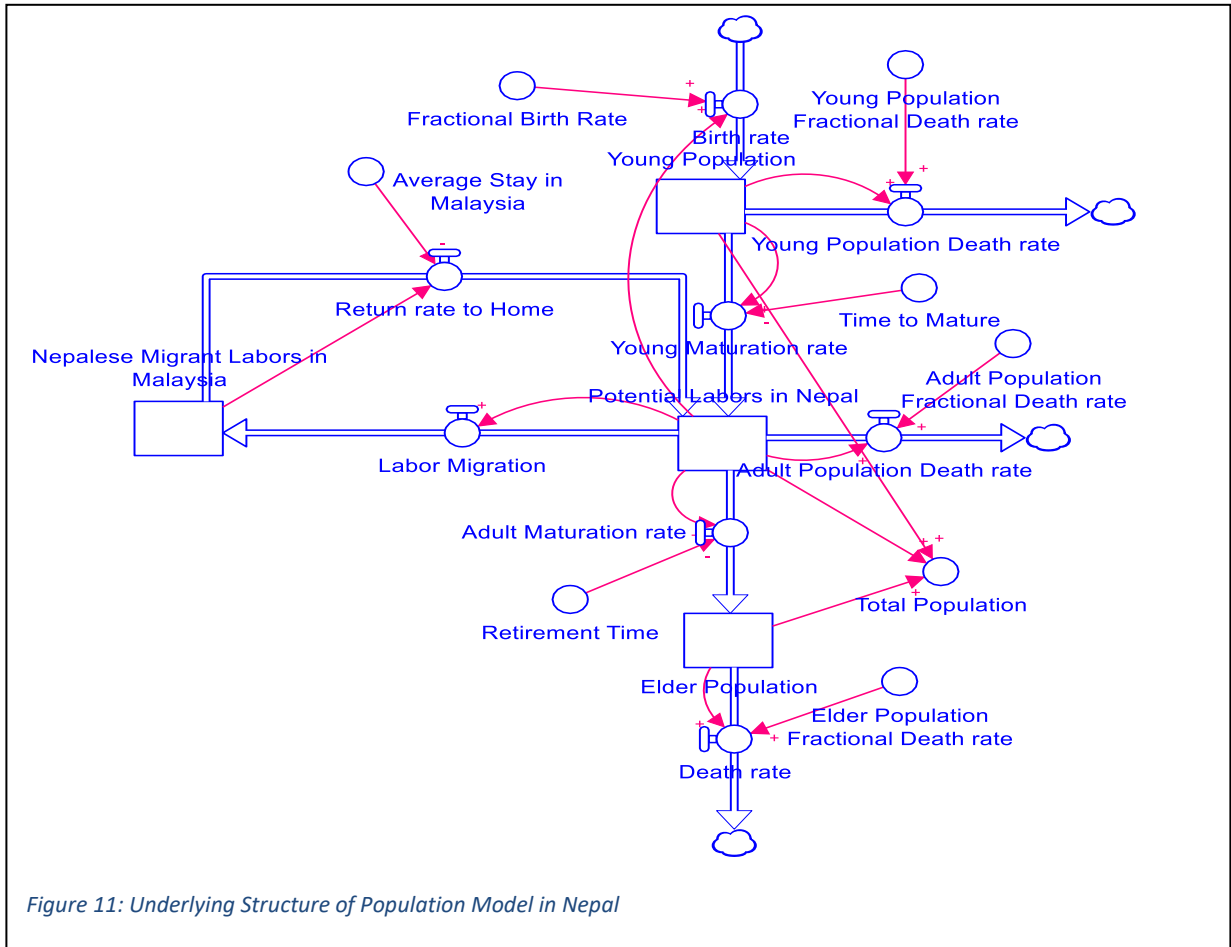


Figure 10: Simulation Result of Population Cohorts in Nepal

The simulation result in figure 9 shows the increment trend in the potential labors in and elder population in Nepal whereas the trend is slightly decreasing in case of the young population. Nepal has done the significant improvement in social indicators that also increases the elder death rate. The simulation result of three stocks in the population cohort is guided by the underlying structure that is given in figure 11. The structure is responsible to reveal the behavior of the PL, the young population, the elderly population and the total population of Nepal.

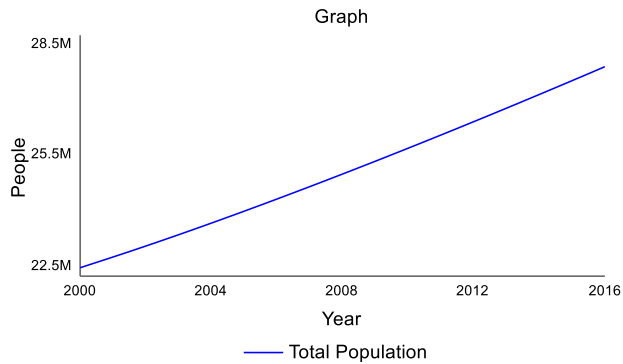


In the figure 11 above in which the adult maturation rate inflows to the elder population (EP) and is outflowed by the death rate. However, there is not any causal effect of the elder population to other variables. However, the PL in Nepal feeds to the birth rate. The increment in the PL leads to the higher rate of inflow to the young population through the birthrate.

The summation of three stocks is equal to the total population in Nepal that is represented by the equation 1.2 below;

$$\text{Total\_Population} = \text{Elder\_Population} + \text{Potential\_Labors\_in\_Nepal} + \text{Young\_Population}$$

Equation 1.2



*Figure 12: Simulation Result of Population in Nepal*

As shown in figure 12, the Nepalese population is increasing increasingly. The simulation result shows the population of 18.5 Million in the date of 2016 that is close to the national data of Nepal. However, there are some limitations that affect the simulation result. The data of the exogenous variables such as the fractional birth rate, the death rate is of base year that could have changed during the simulation period. However, the behavior of the population age groups (obtained from time series historical data) has followed the trend of the three population cohorts as shown in figure 10.

## Labor Migration

The model mainly analyzes the two effects that causes change in the labor migration from Nepal to Malaysia. The labor migration is a combine effect of the earning gap and the labor migration cost. It increases with the increment in the earning gap and the labor migration cost and fractional migration rate.

As shown 13, initially, it goes suddenly up because of the sudden increment on the effect of the labor migration cost. However, the cost slowly goes down with the higher social network in Malaysia, but the migration rate still increases increasingly because the effect of the earning gap that goes to the increasing trend. Please refer to the equation 1.3 below for the mathematical formulation of the labor migration rate.

$$\text{Labor\_migration} = \text{Potential\_labor\_in\_home} * \text{Fractional\_migration\_rate}$$

Equation 1.3

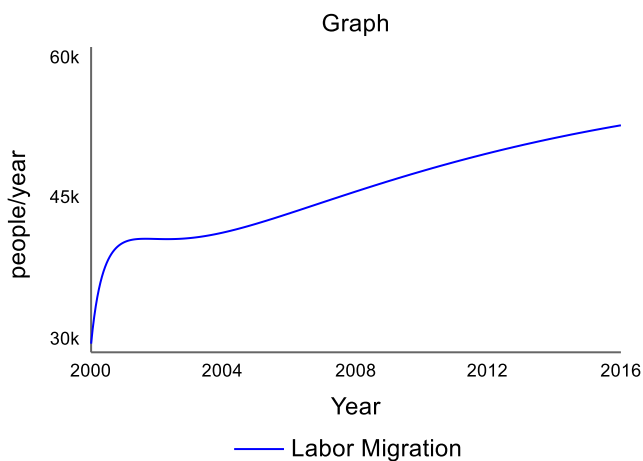


Figure 13: Simulation Result of Labor Migration

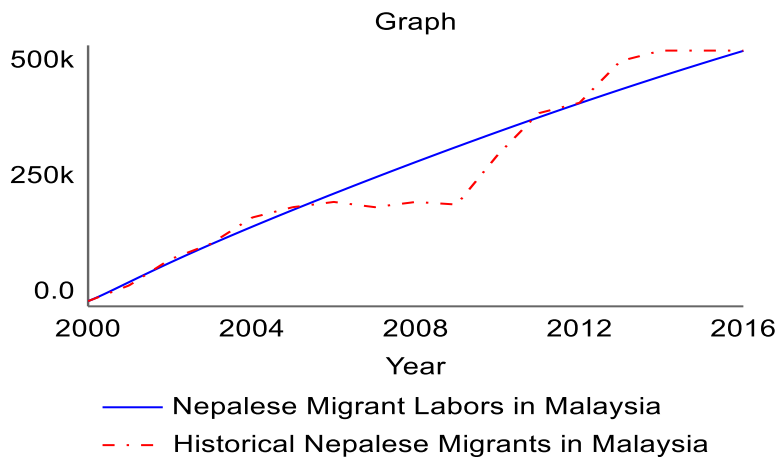


Figure 14: Simulation Result of Nepalese migrants in Malaysia and Time Series graph

As shown in the figure 13, the labor migration goes up with the increment on the fractional migration rate. The fractional migration rate is higher than the normal fractional rate because of earning gap and effect of labor migration cost act as push factor for migration. The fractional migration rate goes up if effect of earning gap is increased. The fractional migration rate is the multiply of the normal fractional migration rate and the effect of earning gap and the effect of labor migration cost.

The figure 14 is a graph that shows the simulation result with the historical time series data that is also call as the reference mode. The graph -Historical Nepalese Migrants in Malaysia- is obtained from the data. The behavior of the labor migration that is obtained from the simulation result is increasing trend and follows the similar trend of the data of historical Nepalese migrant labor in Malaysia.

The close fit of the simulation result with the reference mode (historical Nepalese migrants in Malaysia) is because of the internal dynamics of effect of earning gap in fractional migration rate and other variables that are simply represented in the causal loop diagram in figure 17. The exogenous variables normal employment rate and normal expected wage in Nepal also brings changes in the labor migration trend. Another effect-labor migration cost is also responsible for the dynamic of the labor migration. The internal dynamics of the variables (refer to causal loop diagram in figure 20) bring changes in the labor migration trend. The external variable useful size network equally plays key role in behavior of the fractional migration rate and finally to the labor migration.

However, the simulation trend is not followed the similar nature after 2005 to 2008 in which period Nepalese government has new labor agreements with countries that has provided the

Nepalese labors new attractive migration destination in terms of the wage and the earning. Another reason for the change of trend in the middle of the graph is the worldwide recession due to the financial crisis. The emigration showed everywhere due to reduced job opportunities abroad.

### Fractional Migration Rate

The fractional migration rate changes with the effect of earning gap and the effect of labor migration cost. Please refer to the figure15 below for the simulation behavior.

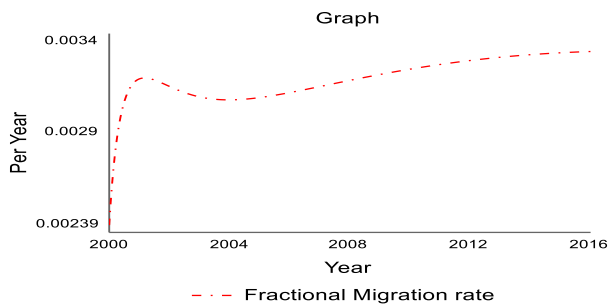


Figure 15: Simulation Result of Fractional Migration Rate

Both fractional migration rate and the labor migration rate depends on the two effects-the earning gaps and the labor migration cost. The immediate section below deals with the effect of the earning gap on the fractional migration rate.

### Effect of Earning Gap on Fractional Migration Rate

As shown in figure 15 and described above immediate section shortly, the fractional migration rate suddenly increased with the start of simulation period due to the two effects and it goes on increasing trend, however, the trend is slow due to the less effect. The same trend is observed in the labor migration rate. Please refer to figure 13 above. The fractional migration rate goes up if both earning gap and labor migration cost effect are increased. The figure 16 shows the simulation trend of two effects. The effect of the earning gap is increased increasingly during the simulation period that shows high weightage over the effect of the migration cost.



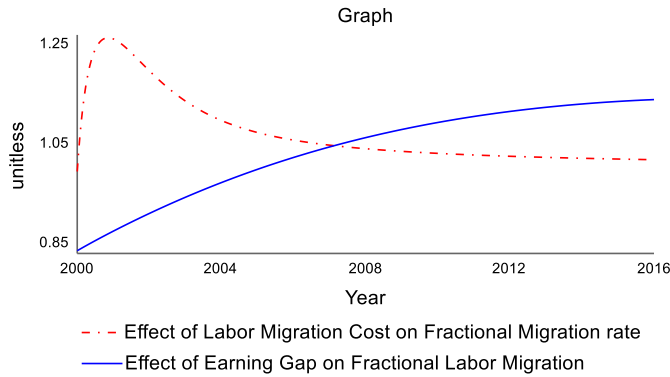


Figure 16: Two Effects on Fractional Migration Rate

The earning gap effect is the ratio of expected earning gap and normal earning gap with the unit of dimensionless. It increases with the increment in the expected earning gap while it goes down with the normal earning gap. Please refer to equation 1.4.

$$\text{Effect\_of\_Earning\_Gap\_on\_Fractional\_Labor\_Migration} = \text{Expected\_Earning\_Gap} / \text{Normal\_Earning\_Gap}$$

Equation: 1.4

The expected earning gap is increased with the expected earning in Malaysia. It is a ratio of the expected earning gap in Malaysia and that in Nepal. Please refer to equation 1.5. The expected earning in Malaysia depends on the expected earning in Malaysia if they are employed while the model has considered the expected employment rate in Malaysia is 1 for Nepalese migrant labors. However, the employment rate could not be 1 in case of Malaysian labors. The model considers 100 percent job guarantee for Nepalese labors in Malaysia. Nepalese labors take decision of migration once having full job guarantee in Malaysia. Therefore, the expected employment rate is considered 1. The earning in Malaysia is 10 US dollars per day (MO, 2016) and that in the Nepal is about 3 US dollar per day (LC, 2016).

$$\text{Expected\_Earning\_Gap} = \text{Expected\_Earning\_in\_Malaysia} / \text{Expected\_Earning\_in\_Nepal}$$

Equation: 1.5

The expected earning in Nepal is endogenized in the model. It is calculated through the equation below 1.6.

$$\text{Expected\_Earning\_in\_Nepal} = \text{Employment\_rate\_in\_Nepal} * \text{Expected\_Wage\_if\_Employed\_in\_Nepal}$$

Equation: 1.6

If both the employment rate and the expected wage are increased, then the expected earning in Nepal is increased. In this case the expected earning gap would go down due to the increment on the employment rate in Nepal and the expected wage if employed in Nepal. The job creation rate is lower to absorb the potential labors coming to the market every year and the wage rate is low in compare to the remittances. At year of 2016, the minimum wage in Nepal is 3.75 USD per day however, the rate is supposed to be lower in the base year of the simulation period.

The expected wage if employed in Nepal is the multiply of the normal expected wage and the effect of employment rate on expected wage. The wage is increased with both the employment effect and the normal expected wage if employed. Please refer to the equation 1.7 below.

$$\text{Expected\_Wage\_if\_Employed\_in\_Nepal} = \text{Normal\_Expected\_Wage\_if\_Employed} * \text{Effect\_of\_Employment\_rate\_on\_Expected\_Wage}$$

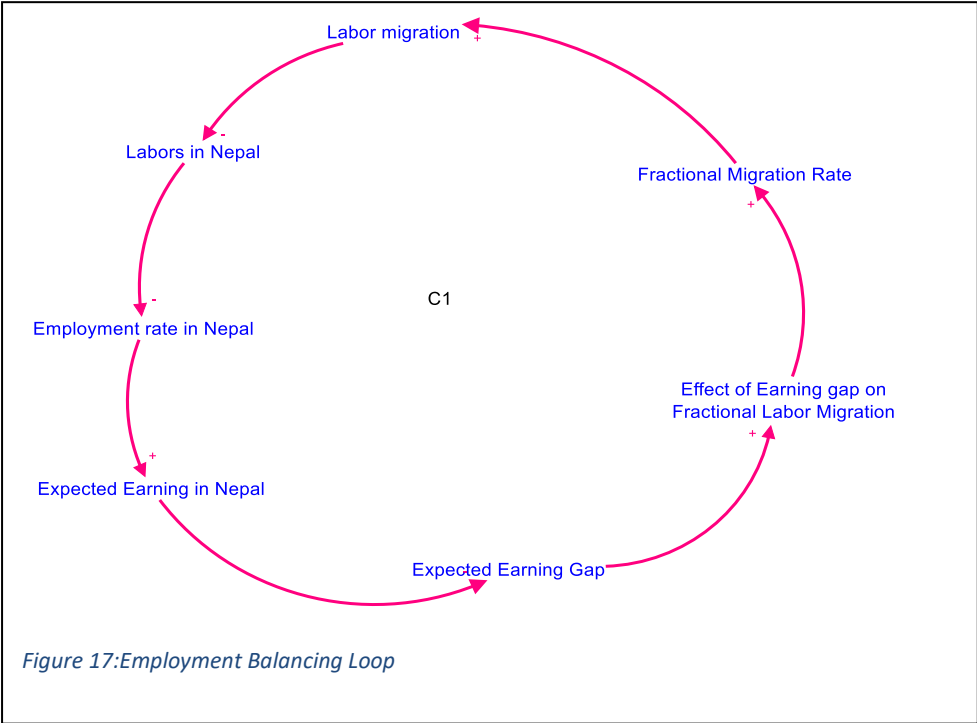
Equation 1.7

Moreover, the effect of employment rate on expected wage in Nepal is increased with the increment of the employment rate and decreased with the normal employment rate. The employment options in Nepal are limited and the wage rate is lower than in Malaysia. The employment rate is decreased because of increased number of unemployed Nepalese labors. Nepalese people who work in agriculture sectors are supposed as employed (national census categorized those people as employed) but outcomes of the agriculture is lower than from remittances and other service sectors. The productivity from the agriculture is also lower than other sectors in Nepal. Therefore, the agricultural labors in Nepal also prefer to migrate leaving the agriculture occupation.

While calculating the employment rate in Nepal the researcher has considered the fraction of GDP growth rate as the basis of the net job creation rate. The GDP growth rate in Nepal is about 3 percent in Nepal in 2000. However, the variable is treated as exogenous variable in the model. Furthermore, the employment rate decreases with the increasing number of Nepalese labors. The net change in labors is the subtraction of the labor migration from the young maturation rate. Every year new labors about 457000 come into Nepalese labor market through the young maturation rate.

The figure 17 shows the balancing loop. The employment balancing loop decreases the employment rate in Nepal while acts as push factor for Nepalese labors to migrate to Malaysia. The similar nature of loop type is also described in above section entitled literature review section. The labor migration decreases numbers of Nepalese labors in Nepal. The employment rate decreases with the increase of labors in home while the expected wage goes up which decreases the expected earning gap. The effect of the earning gaps increases with the expected

earning gap. Similarly, the effect of earning gap on the fractional migration rate goes up with the expected earning gap. When the effect of earning gap is increased then the fractional migration rate also goes up that results the higher migration rate from Nepal.



### Effect of Labor Migration Cost on Fractional Migration Rate

The average labor migration cost in Nepal ranges from 1000 to 1500 US dollars (Jha, 2010). Though the effect of the labor migration cost on the fractional migration rate is lower than that of the earning gap the model considers the two effects that bring change on the labor migration. The figure 18 below reveals the behavior of the effect of labor migration cost on the fractional migration rate. The rate increases initially due to the delay effect and continuously goes on decreasing trend. The effect increases with the perceived migration cost and decreases with the normal migration cost that is considered as exogenous variable in the model. Please refer to the equation 1.8 below.

$$\text{Effect\_of\_Labor\_Migration\_Cost\_on\_Fractional\_Migration\_rate} = \frac{\text{Perceived\_Migration\_Cost}}{\text{Normal\_Migration\_Cost}}$$

Equation: 1.8

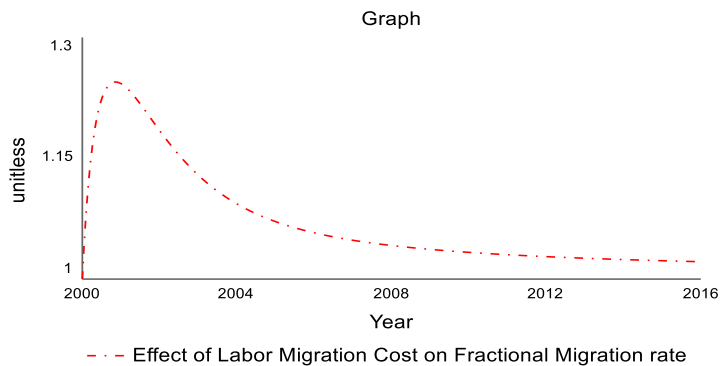
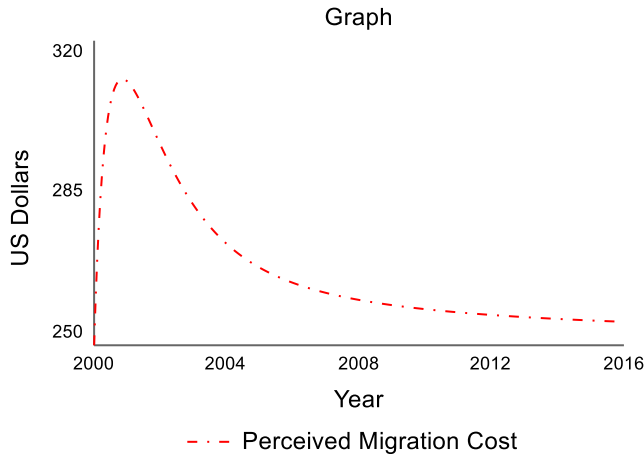


Figure 18: Effect of Labor Migration cost on Fractional Migration rate

The effect goes suddenly up initially, however, it goes down over the years due to the decrement on the perceived migration cost. Please refer to the figure 19 for the behavior of the perceived migration cost that also shows the same behavior.

$$\text{Perceived\_Migration\_Cost} = \text{SMTH1}(\text{Normal\_Cost\_of\_Labor\_Migration} * \text{Effect\_of\_Network\_Capacity\_on\_Labor\_Migration\_Cost}, \text{Time\_to\_Perceive\_Migration\_Cost}, \text{Normal\_Cost\_of\_Labor\_Migration})$$

Equation: 1.9



*Figure 19: Simulation Result of Perceived Migration Cost*

The figure 19 shows the behavior of perceived migration cost. Initially, it goes up suddenly due to the delay function followed by the decreasing trend in the following years. However, it takes some time to update the decreased cost of the migration for fellow labors and this is information delay. The time to update the information regarding the new change in the migration cost is 3 months. The cost of labor migration is exogenous variable at the time of base year. The adjustment time is short in a sense that many labors get update quickly from their migrant labors, relatives, friends, social/print media and local Frequency Modulation (FM) radios in Nepal.

When there is no network effect the perceived migration cost is equal to the normal migration cost. The perceived migration cost goes on decreasing trend in long run with the increment on effect of network capacity on the migration cost. The perceived migration cost increases with the effect of network capacity. The minimum network capacity is considered as 1 in this model. It increases with the migrant network capacity. The mathematical formulation is given in equation 1.10;

$$\text{IF Migrants\_Network\_Capacity} > 0 \text{ THEN } (1 + \text{Migrants\_Network\_Capacity}) \text{ ELSE } 1$$

Equation: 1.10

The network effect increases with the migrant network capacity. The migrants network capacity is calculated dividing the useful size network by the migrant social network in Malaysia. It increases with the useful size of network and decreases with the migrant social network in Malaysia. Though all migrants do not help to the fellow labors. Therefore, the useful size of network only helps the fellow labors. The helps are in many forms such as information, logistic support while arriving in Malaysia, and other supports until they started new job through the useful size of network.

$\text{Migrants\_Network\_Capacity} = \text{Migrant\_Social\_Network\_Malaysia} / \text{Useful Size of Network}$

Equation 2.1

The migrant network capacity is increased with the migrant social network. While the migrant social network is the # of Nepalese migrant labors in Malaysia.

The figure 20 below shows the reinforcing loop within the structure of the social network. The reinforcing loop (R1) increases Nepalese social network in Malaysia and finally increases the labor migration. The labor migration increases Nepalese migrants social network in Malaysia that decreases migrant network capacity. The effect of the network capacity is increased with the migrant network capacity.

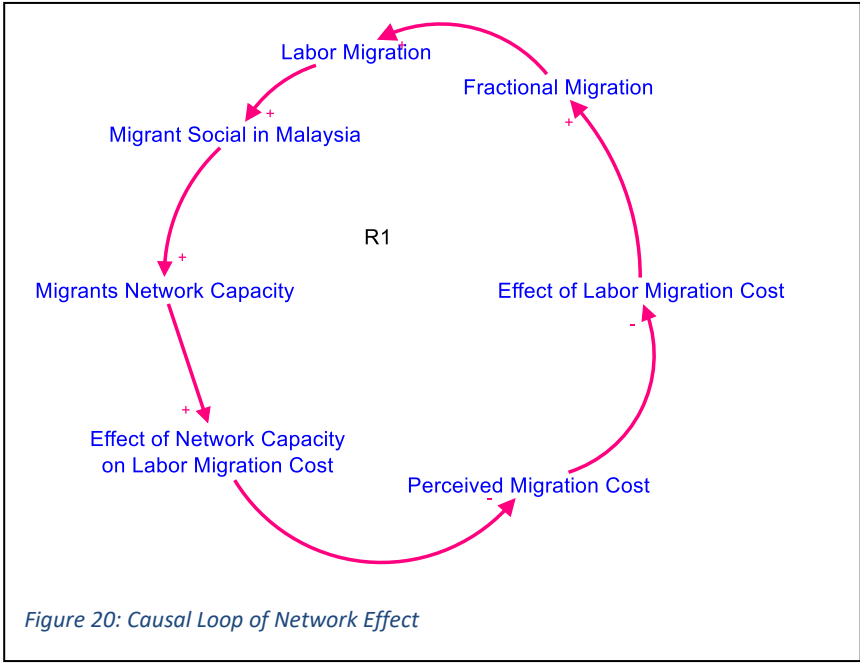


Figure 20: Causal Loop of Network Effect

## Proposed Policy

The productivity from the agriculture is low in Nepal. The insufficiency outputs from agriculture and limited work options in non- agricultural sectors are driving factors for the migration. Therefore, Nepalese people whose occupation is agriculture easily switch to other sectors if they have better options. Nepalese agricultural labors engage in the agricultural sector is during the season of plantation of crops in June-July and during harvesting of crops in November to December (Jha, 2010). A brief discussion of the agricultural labors in Nepal is dealt in above section entitled 'effect of the earning gap on fractional migration rate'. Therefore, the policy is supposed to increase agricultural productivity through training that includes hi tech improved farming methods to convert the subsistence based agriculture to the commercial one. The policy proposed is government driven concept that focuses on the training components.

### System Dynamic Structure of Proposed Policy

The figure 21 represents the simple SD structure of the proposed policy. The initial additional budget in agriculture is zero US Dollar however, annual investment is accumulated in this stock. The stock is subtracted by the annul borrowing rate and is being accumulated in the borrowing fund. The outflow repayment rate subtracts the second stock in one hand while it inflows to the additional government budget in agriculture. Both the repayment rate and the annual investment rate inflow to the first stock.

The investment of the government is based on the budget required for this policy and the repayment rate. The budget required is the multiply of number of beneficiaries and the average budget required per beneficiary (refer to the equation 2.2 below).

$$\text{Budget\_Required} = \text{Beneficiaries} * \text{Average\_Fund\_Required\_per\_Beneficiary}$$

Equation 2.2

The proposed average fund per people is 2000 USD. However, the amount could be varying in consideration with the detail assessment, project types, number of training to be conducted and project implementation arrangement. The standards and practices of Nepal's national planning commission (NPC) are the basis for the allocation of average fund for the policy. The NPC is Nepal's apex government body to formulate policies for development including employment through coordinating all relevant ministries and their departments (NPC, 2017 ).



The annual borrowing rate that is being accumulated in the second stock is calculated by the following formulation;

$$\text{Annual\_Borrowing\_rate} = \text{Additional\_Budget}/\text{Time\_to\_Borrow}$$

Equation 2.3

The policy model accounts the time to borrow (however, in the figure 22 it is denoted by the Time 1) is 1 year and the estimation is guesstimate. The equation of the second stock is given represented as below;

$$\text{Borrowing\_Fund}(t) = \text{Borrowing\_Fund}(t - dt) + (\text{Annual\_Borrowing\_rate} - \text{Repayment\_rate}) * dt$$

Equation 2.4

The equation 2.5 is the mathematical formulation of the repayment rate. The duration of time to pay the borrowed money is considered as 3 years and the estimation is guess.

$$\text{Repayment\_rate} = \text{Borrowing\_Fund}/\text{Time\_to\_Pay}$$

Equation 2.5

The third -stock employment generation accumulates the annual employment rate while the inflow employment rate increases with the annual borrowing rate and decreases with the average fund (refer to equation 2.6 and equation 2.7).

$$\text{Employment\_Generation}(t) = \text{Employment\_Generation}(t - dt) + (\text{Net\_Annual\_Employment\_rate}) * dt$$

Equation 2.6

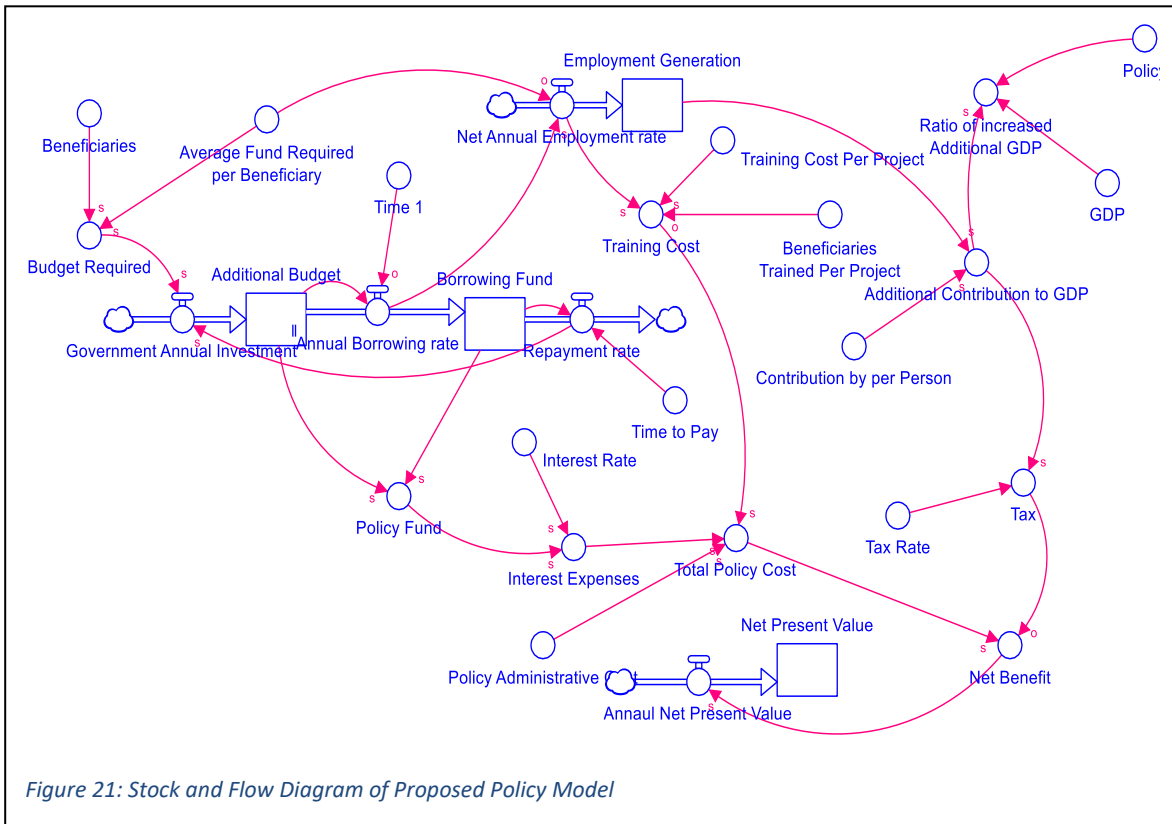
$$\text{Net\_Annual\_Employment\_rate} = \text{Annual\_Borrowing\_rate}/\text{Average\_Fund\_Required\_per\_Beneficiary}$$

Equation 2.7

The employment generation increases the contribution to Nepal's GDP that leads to increases the tax. Once the GDP is increased in the country the wage rate also goes up that lowers the earning gap effect and finally it will decrease the fractional migration rate.

$$\text{Additional\_Contribution\_to\_GDP} = \text{Employment\_Generation} * \text{Contribution\_by\_per\_Person}$$

Equation 2.8



Furthermore, the net job creation rate also increased (please refer to the migration model) the employed people in Nepal will also increase. Hence, it is supposed that the migration rate decreases with two reasons. First, the wage rate increases that decreases the earning gap and on the other hand unemployed people are now employed due to the employment generation that is represented by the third stock.

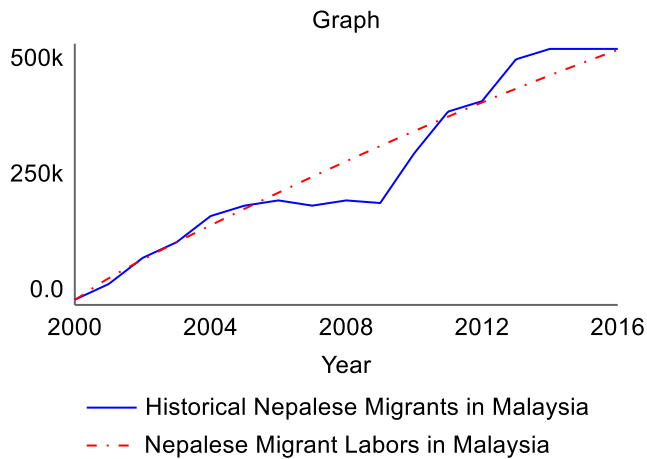


Figure 22: Simulation Result Without Policy

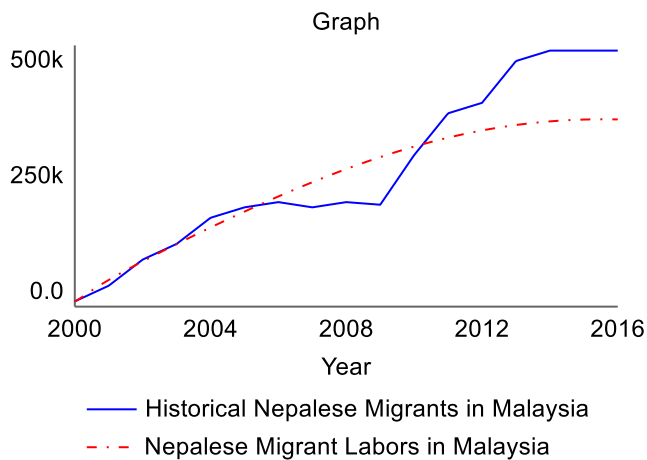


Figure 23: Simulation Result with Policy

Once the policy is introduced the gdp in Nepal increased with the new employment generations, that downs the migration rate resulting the decreasing trend of Nepalese migrant labors in Malaysia (refer to Figure 23). The figure 22 is the simulation result without the policy.

The policy model also envisions the policy cost that includes the training cost, the policy administrative cost plus the interest expenses. The three equations 2.9, 2.10, 2.11 and 2.12 below are helpful to envision the total policy cost.

$$\text{Total\_Policy\_Cost} = \text{Interest\_Expenses} + \text{Policy\_Administrative\_Cost} + \text{Training\_Cost}$$

Equation 2.9

$$\text{Interest\_Expenses} = \text{Policy\_Fund} * \text{Interest\_Rate}$$

Equation 2.10

$$\text{Policy\_Fund} = \text{Additional\_Budget} + \text{Borrowing\_Fund}$$

Equation 2.11

$$\text{Training\_Cost} =$$

$$(\text{Net\_Annual\_Employment\_rate} / \text{Beneficiaries\_Trained\_Per\_Project}) * \text{Training\_Cost\_Per\_Project}$$

Equation 2.12

However, the beneficiaries trained per project and training cost per project are exogenous variables in the policy model. The estimation used in the model is based on the guesstimate and need to verify while going to the implementation.

Once the gdp is increased the tax is also increased (refer to the equation 2.13 below). The tax rate is varied in Nepal however, the model accounts 8 percent per year tax rate (Upadhya, 2017).

$$\text{Tax} = \text{Additional\_Contribution\_to\_GDP} * \text{Tax\_Rate}$$

Equation 2.13

The net benefit of the policy decreases with the increasing of the tax as the equation 2.13 below shows;

$$\text{Net\_Benefit} = \text{Total\_Policy\_Cost} - \text{Tax}$$

Equation 2.14

The last stock- net present value (NPV), accumulates the annual net present value (refer to equation 2.15).

$$\text{Net\_Present\_Value}(t) = \text{Net\_Present\_Value}(t - dt) + (\text{Annual\_Net\_Present\_Value}) * dt$$

Equation 2.15

### Implementation Arrangements

As mentioned above section, the policy is government driven initiatives therefore, Nepal's governmental bodies are responsible for the implementation of the policy. However, detail assessment regarding policy feasibility is needed before going to the implementation stage. The NPC with the Ministry of Cooperatives and Poverty Alleviation (MoCPA) implement the proposed project. However, the policy model does not suggest the detail implementation structure. The MoCPA has official setups throughout the country. The NPC and MoCPA in coordination with the local bodies are responsible for the selection of the beneficiaries.

### Policy Implementation Challenges

The financing risk is the prime risk factor associated to this policy. Before going to the implementation, the ensure of repay of the debts is very important for sustainability of the project. The repayment of the borrowed money for the project is high matter to concern. On the other hand, cost estimating risk, delay risk, operating and organizational risks are to be accounted (Jaafari, 2001).

## Model Validity and Testing

Sterman extensively deals with model testing and its' validation. He argues that the modelers should take considerations about the model testing in regard to model purpose, boundary, suitability, robustness, and sensitivity (Sterman, 2000). The following model validity and testing tools are considered.

### Model Purpose

The purpose of the model is to reveal the problematic behavior of Nepalese migrant labors in Malaysia. The model is developed with the assumption that effect of earning gap and the effect of labor migration cost on the fractional migration rate leads to the labor migration rate from Nepal.

### Unit Consistency

The unit of the variables are properly fixed in consideration various standard setups. The initial values of stocks and exogenous variables are placed from authentic sources with standard units. The unit of endogenized variables is fixed with the mathematical formulation.

### Boundary of Model

Once the purpose of the model is identified the boundary of the model is also defined with the endogenized variables. The exogenous variables are placed that affect the endogenized variables that ultimately brings change in the internal dynamics of labor migration.

## Sensitivity Test

The SD model of the labor migration is sensitive particularly to the gdp growth rate, normal expected wage in Nepal. However, when the growth rate is increased the net job creation rate goes up that shows the decreasing trend (figure 24) in the stock value of Nepalese labors in Malaysia.

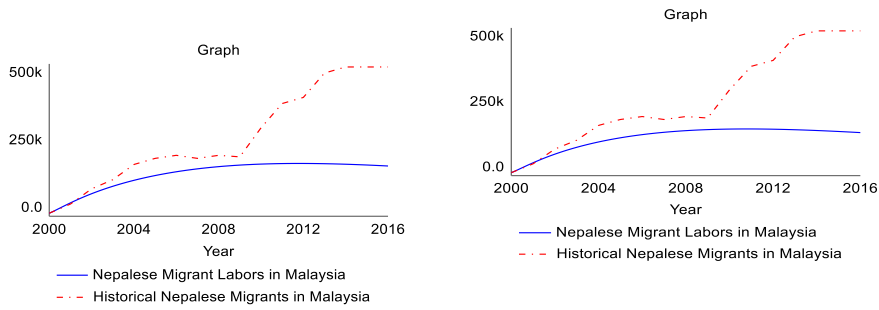


Figure 24: Sensitivity Test

## Conclusion

The wage rate and job creation rate in Nepal are crucial factors for the labor migration. Due to limited employment options and slow economic growth; wage rate and job creation rate are low in Nepal. The dynamic of Nepalese labors in Malaysia is because of the earning gap effect and effect of labor migration cost on the fractional migration rate. Importantly, the migration trend is also determined by the change in the potential labor in Nepal.

The effect of the earning gap is accounted high weightage than the effect of the labor migration cost on the fractional migration rate. Though the model has considered two effects to drive the migration some other factors could also contribute for the migration. The model does not account the dynamism regarding their work types-skilled, unskilled- and payment variation in Malaysian labor markets that are supposed to bring change in the migratory trend.

The model is particularly sensitive to the fractional gdp growth rate and normal wage rate in Nepal. The lower rate of job creation increases the labor migration rate. The suggested policy is supposed to increase employed people in Nepal that will contribute for the gdp growth. However, different challenges-loan payback, selection of beneficiaries, allocation of average fund per beneficiaries are to be accounted at the policy implementation stage.

Once, Nepal's gdp is increased the job creation rate will go up. On the other hand, the wage rate and the earning rate are also supposed to increase. From the simulation result of the sensitivity test it is concluded that higher job creation rate decreases Nepalese migrant labors in destination country.



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