

System Dynamics Modelling for Assessment of Mudra Scheme in Socio-Economic Sustainable Development of India

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Abstract - India facing two major problems has been unemployment and poverty, to tackle these problems Indian government putting especial emphasis on entrepreneurship development. Pradhan Mantri MUDRA scheme or PMMY initiated by government in this favour. PMMY launch in 2015 with objective to provide financial support to non-farm enterprise. The scheme synergizes with other schemes like national rural livelihoods mission, make in India and credit guarantee fund for micro units to fulfil the individual scheme objectives with MUDRA scheme. In this paper system dynamics modelling has been applied for the assessment of MUDRA scheme in socio-economic sustainable development of India. The causal loop diagram drawn based on that stock flow diagram has been constructed. Research is descriptive in nature and it is covered the time span of ten years. It is based on the secondary data which is collected from official websites, government reports, journals and newspaper. From the result it could be concluded MUDRA scheme substantially contributing to socio-economic sustainable development of India.

Keywords: MUDRA, PMMY, financial support, system dynamics modelling, sustainable development

I. INTRODUCTION

Since independence, India facing two major problems of socio-economic development has been unemployment and poverty. These problems lead to other problems like illiteracy, gap between financial status, corruption/ bribe, leakages, gender discrimination, lack of financial literacy etc. hence there is a need for poverty alleviation and wage employment programs. Tackle these problems government of India putting special emphasis on entrepreneurship promotion. It has been also emphasizing by different groups and committees to make these schemes more effective. In the past, government of India has taken various steps to eradicate these socio-economic problems in India through various schemes are MGNREGA, Start-up India, Pradhan Mantri Jan Dhan Yojna and YUVA scheme etc.

After identifying the need of self-employment in India government has launched the MUDRA or Micro units development and refinance agency ltd. scheme on 8 April, 2015 to provide financial and managerial assistance to entrepreneurs who will further provide employment to a large number of people targeted towards mainstreaming young, educated or skilled workers (Mudra, 2020).

People of weaker section of the economy are unaware of credit, insurance, loan, and other financial services and generally depend on local lenders who grant them money on high interest rates. Shortage of enough financial resources is the major problems facing by these peoples, to improve this weaker section MUDRA scheme facilitate them and those who are not capable to start their own business.

Under MUDRA scheme relaxation provided to women as almost 50% of the Indian population is women and directly or indirectly, they contribute to the economic parameters of the nation. It has been noticed that most of micro and small enterprise run by women. Since ages, their economic contribution has been ignored and their services have been taken for granted. Now it's a time to recognize the role of women fraternity in the growth of an economy and take necessary steps to involve the rural uneducated females in the growth process simultaneously along with the urban uneducated as well as educated females (Ramesh, 2016). It also aims to eradicate poverty by providing easy access to self-employment to poor household which results the improvement in livelihood on sustainable basis.

II. REVIEW OF LITERATURE

Satyanarayana (2011) demonstrated the effectiveness of SEEU scheme. The scheme was welcome among unemployed educated youth due to crucial formalities and procedures the scheme was faced many challenges in implementation.

Nair (2012) in her paper "Development of entrepreneurship and role of EDII in Gujarat – An entrepreneurs prospective" conclude that to create the multiplier effect on economic viability entrepreneurship development institute of India is committed to entrepreneurship training, research and education which leads to self-employment among young youth.

Raj (2014) stated that females are more involved in small scale businesses as time passing, they are moving towards tech businesses. To enhance the role of women in these sectors several schemes should launched to enhance the role of women in entrepreneurship.

Venkatesh & Kumari (2015) concluded that the micro, small and medium enterprises (MSME) play an important role in the Indian economic growth. MUDRA Bank will spur the growth of Indian MSME Sector and help them to increase their contribution in Indian GDP from its current level of 38%. This will create confidence in young, educated or skilled workers who aspire to become first generation entrepreneurs and able to expand their activities. The schemes will add to the well-being of the individuals engaged in small scale industries which will positively affect the progress of the economy.

Vijayaravan (2015) concluded that banks are essential for every country in the world as they contribute to economic development. On an average bank provide financial services to government, businesses or the individual. Due to obstacles many people especially those who live in rural and interior parts of India, have been excluded from the benefit of formal banking system like credit, insurance, loan or other financial services. Most of them depend on local money lenders who charged lofty interest rate for this reason there is a need of requirement of development of financial sector and this will lead to the expansion of entrepreneurship.

Soni (2016) demonstrated that in India non-corporate small business is playing important role in economic and social development as it contribute to the growth of the GDP, employment generation, national income, foreign trade, poverty eradication according to the survey by NSSO (2013), there are 5.77 crore micro and small scale units which providing employment to around 12 crore peoples. Above 60% of units are owned by SC, ST, and other backward classes. Due to the shortage of the fund this sector facing the hurdles, to overcome with this government has launched MUDRA schemes to facilitate these weaker sections of the society and help those who are not capable to start their own business.

Shahid and Irshad (2016) found that Indian economy depend upon micro, small and medium enterprises. Most of these enterprises are rely on unorganized sectors to take loan and other credit facility on which they charge high interest rate along with unbearable conditions. Unorganized sectors find it difficult to take loan from the banks, now MUDRA bank is the solution.

T. (2016) suggested that MUDRA bank is an impactful way to finance the small business as small business face lot of obstacles to get loan from the banks, these obstacles includes high interest rate, requirement of documents, time taking process and many procedural formalities. To overcome, these obstacles it is necessary increase the confidence of young educated people so the MUDRA bank will help to do so.

Giri (2017) investigated the "Rural Development in India: Through Employment Programmes." Poverty eradication is the major objective of the government of India, to do so time to time government running many poverty alleviations

programs still government facing the mass level poverty and related problems. To overcome with mass level poverty government had implemented MGNREGA. It was the India's largest employment generation program, but scheme was failed due to leakages and corruption.

H E & Aditya (2017) reveals that business incubation contributing in the development of entrepreneurship being its managerial support, physical space, mentoring or financial assistance etc. MUDRA scheme also providing such support as access to fund or appropriate business solutions to entrepreneurs in order to exploit it as opportunity.

Jaiparkash (2017) in her paper "Mudra Bank – A new way toward financial inclusion" found that financial inclusion is crucial for the sustainable development and inclusive growth.

Gupta, Matho & Dubey (2017) disclosed that financial inclusion is the need of Indian economy, to boost the financial inclusion government of India implemented many schemes. Pradhan Mantri Mudra Yojna also has the same objective and it will add to the well-being of individual engaged in small scale industries which will positively shape the progress of the economy.

Kumar (2017) concluded that major problem in promotion of entrepreneurship is the lack of financial support to the non-corporate small-scale industries which contribute major part in GDP (Gross domestic product). These industries significantly contribute to national income also. To deal with financial constraints the PMMY was launched.

Godha & Nama (2017) throw some light on "Pradhan Mantri Mudra Yojana: A New Financial Inclusion Initiative." GOI (Government of India) has introduced PMMY to fund the unfunded micro enterprises segment through a new financial inclusion initiative. There were various other schemes also launched by GOI but PMMY plays a major role in achieving of greater financial inclusion in India. It is launched on 8th April 2015.

Singh (2018) identified that development of micro, small and medium enterprises through MUDRA loans performed well in the country and especially in Manipur state.

Fotopoulos & Storey (2019) "Public policies to enhance regional entrepreneurship: another program failing to deliver?" suggested that to increase entrepreneurship, there are factors such as motivational factors and individual traits that merit attention, use of public subsidies to raise business formation rates is not important.

Owned, Haddock-Miller, Sepulveda, Sanyal, Syrrret, Kaye & Deakins (2019) in their work "The Role of Mentoring in Youth Entrepreneurship Finance: A Global Perspective" concluded that youth mentoring can enhance overall performance of the business. They found for youth entrepreneur, external financing in the form of loans and grants are not available.

III. IMPORTANCE OF THE STUDY

Every country faces economic and social hurdles, government take necessary steps to eradicate these hurdles. Present study focuses on the MUDRA Scheme which was one of the recent initiatives taken by the Indian government for overall sustainable development and inclusive growth. Based on review of literature various variables were identified, through these variables causal loop diagram has been developed to understand how MUDRA scheme contributing to socio- economic sustainable development of India. Further the stock flow diagram constructed to recognize the key role of this scheme in capacity development and mitigating vulnerabilities to facilitate socio- economic sustainable development.

Under this scheme financial support provided along with managerial support, which is often difficult for entrepreneurs as financial assistance provided by venture capitalist and angel investors, but they don't give managerial support which is often needed by them. This scheme has also overcome other disadvantages like requirement of collateral security, paperwork; longer procedures etc. this distinguish MUDRA scheme from other schemes. Research will help entrepreneurs or persons in decision making through system dynamics modelling who wishes to take loan under this scheme but due to experience, red-tapism and negative word of mouth they could not able do so. This research paper facilitates the users/public to understand the role of scheme in creating economic viability.

IV. OBJECTIVE OF THE STUDY

To develop causal loop diagram and stock flow diagram of socio- economic sustainable development of India through MUDRA scheme.

V. RESEARCH METHODOLOGY

The research is descriptive in nature as it reveals the key role of MUDRA scheme and identified various variables which affecting the socio-economic sustainable development of India. After identifying variables, the causal loop diagram is developed, and system dynamics model is constructed which aid to create a positive and negative condition loops for the sustainable development through MUDRA scheme. This research is based on secondary data, this data access from official government websites, articles, journals and past research papers. The research covers the time span of 10 years to get the authentic result as it is based on secondary data. Scope of the study is India through this scheme beneficiary from urban or rural area, individual or group can get the benefit. System dynamics modelling has been used for the purpose of research analysis.

VI. CAUSAL LOOP DIAGRAM OF SOCIO-ECONOMIC SUSTAINABLE DEVELOPMENT OF INDIA THROUGH MUDRA SCHEME

MUDRA Scheme has been introduced by the government of India for development of the nation. Fig- 1 represents the causal loop diagram MUDRA scheme contribution in the socio-economic sustainable development of India, it describe as pictorial visualization of variables relations positive or negative in a system which consist many nodes and edges in a system (Sterman, 2008). Major problem encountered by the entrepreneur are the lack of financial support to non-corporate sectors on fact that this sector contributes major part in the country development it because of vast part of this sector is unorganized. Expansion of this sector requires development of credit facility which brings growth to in volume of businesses. With the help of review of literature various variables has been identified and causal loop diagram is developed.

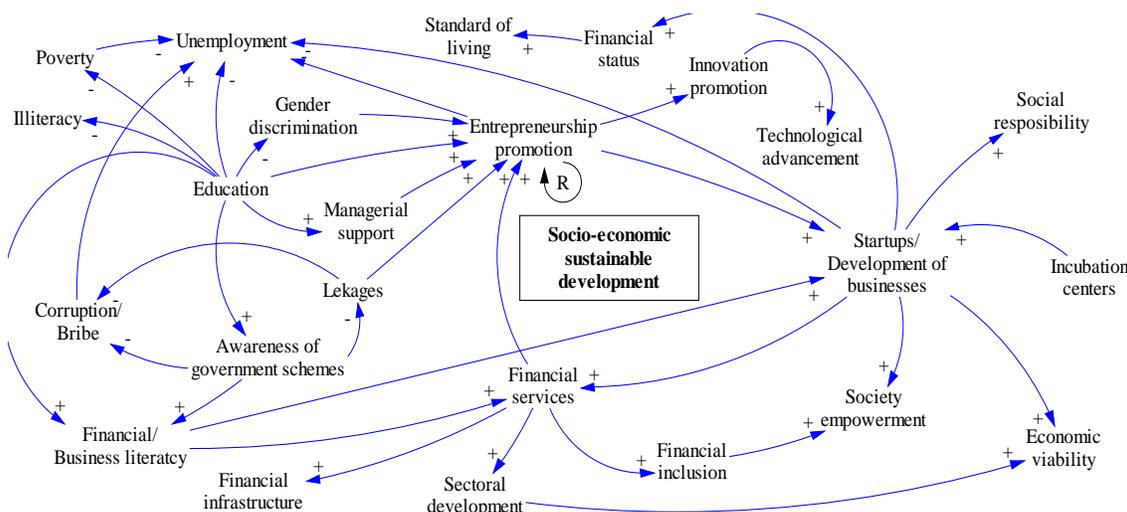


Fig.1 Causal loop diagram of socio-economic sustainable development of india through mudra scheme source: self-constructed

A. Positive Feedback

As education level improves in India it increases the awareness of government scheme, financial/business literacy, and technological advancement and entrepreneurship development. Further the awareness of government scheme affects the financial/ business literacy positively there is more demand of financial services which lead the development of financial infrastructure. Increase demand of financial service encourages the financial inclusion where more people involve in banking system, this fulfil the national agenda of financial inclusion. Financial inclusion facilitates the society empowerment. As financial services increase more entrepreneurs would be able to take loan this raise the sectoral development and add to economic viability. With the help of MUDRA scheme entrepreneurship as a subject is introduced in school and colleges, so that entrepreneurship spirit could be develop in students from the beginning, it encourage the no. of start-ups/ expansion of business, this further add value to social responsibility and improve the financial status which raise standard of living. If education level improves in India, more managerial support provided to the people, it promotes entrepreneurship, it direct innovation promotion it bring technological change can be called as technological advancement. Education itself promotes the entrepreneurship as more people aware of importance of self-employment. Entrepreneurship promotion boosts the start-ups/ expansion of the businesses, this increase the demand of financial services and financial services further help in entrepreneurship promotion. Startups grow in India it empowered the society and the economic viability as it creates the platform for job creation. Incubation centers uplift the growth of start-ups/ development of businesses.

B. Negative Feedback

Education helps India to eradicate the gender discrimination, this encourage the involvement of women in business activity, as MUDRA scheme provides the needed financial support to aspiring females who want to start their own business. It has been observed that most of non-corporate business run by the female but due to gender discrimination there effort have been neglected, this scheme initiated to promote the women entrepreneurship as they can have financial support as well as managerial support and they can acquire necessary skills which required to run business operations successfully. Women entrepreneurship fulfils the objective of MUDRA scheme entrepreneurship promotion. Education further reduces the poverty by enabling poor people to access to self-employment and employment opportunity result in decrease in unemployment. Level of education increase in the nation it eradicates unemployment and illiteracy. Awareness of government scheme decreases the leakages from the system as officials and beneficiaries have the knowledge of scheme, this reduces the corruption/ bribe from the system. Leakages

remove from the system it led smooth growth of start-ups/development of businesses. Corruption/ bribe reduce from the system like no/less role of mediator is the key interventions made under MUDRA scheme with the aim to facilitate the easy access to credit facility to improve the credit worthiness, this reduces unemployment. Entrepreneurship promotion and increase in start-ups/ development of businesses ultimately reduce the unemployment from India.

VII. STOCK FLOW DIAGRAM OF SOCIO-ECONOMIC SUSTAINABLE DEVELOPMENT OF INDIA THROUGH MUDRA SCHEME

Stock flow diagram signifies the system in which inflow and outflow is controlled by stock (Sterman, 2008). Fig. 2 represents the stock flow diagram of socio-economic sustainable development of India through MUDRA scheme, here stock is socio-economic sustainable development of India, inflow is capacity development and vulnerabilities are outflow. There are various variables which contributes capacity development, capacity development facilitates the socio-economic sustainable development of India this eventually mitigate vulnerabilities. There are various virtuous and vicious loops.

A. Virtuous Loop

This loop can be characterized as variable which affect other variables positively. Education increase in India it creates awareness of government schemes (MUDRA scheme). It helps in entrepreneurship promotion and provides managerial support which lead viable business solution, mentoring and profitable business ideas. This increase the financial/ business literacy or financial education where people familiar with reward and risk of financial market to make informed choice among the alternatives. Entrepreneurship promotion further promotes the innovation and lead to technological advancement. Entrepreneurship promotion and technological advancement both contributes to economic development of country. Financial literacy increases the number of start-ups/ development of businesses. Incubation centers facilitate friendly eco-system for entrepreneurs which further increase the growth of start-ups. Start-ups/ development of businesses substantially contribute to economic development. According to NSSO (National sample survey organization) report in 2013 there was approximately 5.77 crore small scale enterprises and they provide employment to 1.25 crore peoples (Mudra, 2020). This add value to social responsibility and increases the economic viability, expansion of businesses further increases the requirements of financial service. Demand of financial service need the development of financial infrastructure for example internet banking, e-wallets, ATM machines etc. this increase the financial inclusion as more people avail the financial services, it empowers the society. Financial services direct

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