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Industrial Subsidies and MSME Performance in Assam: In reference to Kamrup District

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Abstract

Globally, MSMEs are considered as major drivers of economic growth and expansion. The sector is considered an indispensable part of Indian economy as it has made substantial contributions to employment generation, country's GDP, export and industrialization of rural and underdeveloped regions. In case of Assam, which is considered an industrially underdeveloped states in the country, MSMEs can play a pivotal role both in terms of rapid industrialization and creation of employment opportunities of skilled and unskilled labor force. However, the growth of this sector is underprivileged in Assam. The central government and state government of Assam has been giving special attention by undertaking various industrial policies from time to time wherein subsidies and incentives are offered to the industrial units particularly the MSMEs for its growth and development. A significant portion of financial resources had been allocated to the MSMEs of Assam under central and state industrial policies. Therefore, the present paper attempts to study the trend and composition of central and state industrial subsidies during the period 2008-09 to 2017-18 when some of the major industrial policies were operative. It will enable to understand whether the dependence of MSMEs on subsidies have increased or decreased over time. Additionally, the study also attempts to examine the various factors that impacts the performance of MSMEs in the Kamrup district (which is acclaimed as one of the industrially developed districts of the state) of Assam. The idea is to investigate whether subsidy has contributed towards improving the performance of MSME sector in Kamrup district.

Keywords: *MSMEs, Assam, Subsidies, Trend, Composition, Performance, Kamrup district.*

Introduction

Micro, small and medium enterprises are considered as pre-dominant drivers of economic growth in almost all the economies of the world. Studies have shown that economic growth of any country is closely linked with development of the Small and Medium Enterprises (SME) sector (Beck et al., 2005; Ardic et al., 2011; Pandya, 2012). In case of Indian economy, the sector has emerged as a highly vibrant and dynamic sector over the past five decades contributing significantly to employment opportunities at a lower capital cost than large industries, industrialization of rural and backward areas, thereby bringing about balanced regional development, equitable distribution of income and wealth and mobilizing small savings for productive channels (Deb, 1993; Ministry of MSME, 2016). More recently, in India also MSMEs are considered as the backbone of the Indian economy because at present the sector is contributing to 30% of GDP, 50% of export and provides employment to nearly 40% of India's labour force (Ministry of MSME, 2021; Mukherjee, 2018). All these provide evidence to the significant role played by MSMEs in India.

Background of the Study

Assam found its place in the industrially developed map of the world during the pre-independence period[2]. However, at present Assam is regarded as an industrially underdeveloped states in the country due to declining percentage contribution of the industry sector to the state's economy[3] (Directorate of Economics

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and Statistics, Assam, 2016-17). Considering the importance of MSME sector for a populous state like Assam in terms of employment opportunities for both skilled and unskilled labour force, the growth of this sector has been under privileged (Saikia, 2012). In Assam, the MSMEs contribute to 39 per cent of the state's GDP. As per the fourth all India Census of MSMEs only 1.27 per cent of country's working MSMEs are functional in Assam (Ministry of MSME, 2011).

There were only 41,434 MSME units in Assam providing employment to 2.35 lakh persons till the end of March 2015 and the number marginally rose to 47,048 MSMEs providing employment to 2.82 lakh persons till the end of 2017-18 (Directorate of Economics and Statistics, Assam, 2018-19). Therefore, the growth rate in the number of MSMEs was 13.5 per cent and that of employment was 20 per cent during the same period. It is in this context, Saikia (2012) considered the contribution of MSMEs in terms of employment is negligible and under privileged. The statement can be backed by the fact that in comparison to states like Andhra Pradesh which has 30 lakhs unit generating employment of 55.9 lakhs jobs in 2015-16, Assam has only 11.9 lakh units creating employment of 18.14 lakhs jobs[4].

The Government of Assam has been giving special attention on development of the MSME sector for generation of economic activities and skill development in employable trades with a view to generate rural income and employment, through its various schemes and policies (Directorate of Economics and Statistics, Assam, 2016-17).

A brief overview of Subsidies under the Central and State Industrial Policies in Assam

In any economy the level of industrial development is determined by many factors like investment opportunities, availability of capital, efficiency of management and entrepreneurship abilities, stable political scenario, infrastructural development (both physical and social), adequate scope for innovation, research and development, marketing opportunities, etc (Goswami, 1981; Srivastav & Syngkon, 2008; Deb, 1993; Mathew, 2008; Neff, 2004). In the creation of such a suitable environment where the industries can flourish appropriately creating a compass of further economic and social development, though not completely yet to certain extent, the state has a role to play.

It is in this context the efforts of the government of India and Assam are visible in terms of formulation of a series of Industrial Policies wherein various subsidies[5] and incentives[6] have been offered by the Central and State Government for promoting a solid base of industrial development in the northeastern region and Assam respectively. But it should be borne in mind that industrial growth and development depends not only on financial incentives and subsidies but also on relative cheap labour and energy along with good infrastructures (Das, 2012). However, some facilitation processes like identification and dissemination of information on viable locations to set up industry, raw materials and capital availability, skill training in targeted sectors, etc could help in initiation of industrial activities and performances (Brusco, 1992).

The first attempt to formulate a central industrial policy specifically for the Northeastern region (NER) was the North East Industrial Policy (NEIP), 1997. The policy was announced by the Ministry of Commerce and Industry, Department of Industrial Policy and Promotion (DIPP), Government of India and was effective from 24th December, 1997 for a period of ten years. It focussed on the role and significance of private capital and enterprises so as to address the concerns of industrial backwardness in the region focussing on a two-pronged approach namely, development of industrial infrastructure; and provision of fiscal subsidies and incentives (Bhattacharjee & Bhattacharya, 2018; Tata Economic Consultancy Services, 2004).

[4] MSME Sector in Assam in Poor Shape, Northeast Now, December 30, 2021.

[5] A Subsidy is a form of financial aid or support extended to an economic sector generally with the aim of promoting economic and social policy (Myers & Kent, 1998).

[6] An incentive is something that motivates an individual to perform an action. Ultimately incentives aim to provide value for money and contribute to organizational success (Armstrong, 2015).

Subsequent to NEIP, 1997, the policy which had been in vogue from 1st April, 2007 was North East Industrial and Investment Promotion Policy (NEIIPP), 2007 for a period of another ten years till 2017. Under this policy the government had approved a package of fiscal incentives and other subsidies including the State of Sikkim which was earlier not covered in the NEIP, 1997. The North Eastern Development Finance Corporation Limited (NEDFi) was given the responsibility to act as the nodal agency for disbursal of subsidies under NEIIPP, 2007.

The latest policy under the central government was the North East Industrial Development Scheme (NEIDS), 2017 which remained effective from 1st April 2017 to 31st March, 2022. This policy also prioritised the MSME units and the subsidies and benefits were almost same as the NEIIPP, 2007. Yet, unlike NEIIPP, 2007 where subsidies were available for both new and existing enterprises, NEIDS offered subsidies only to the new units.

Likewise, the state government of Assam has been making efforts for rapid industrial development and for this, numerous industrial policies of the state has been undertaken and renewed every five years since 1969 (Mali,2011). The people of Assam more specifically the entrepreneurial section became aware of the policy incentives and benefits of schemes only after the formulation of Industrial Policy of Assam (IPA), 1997. This is due to the fact, that, during that time the NEIP, 1997 was announced with special package of incentives and benefits favouring the development of MSMEs and large industries of NER. As a result, there had been an inflow of a large number of entrepreneurs from outside the region to start industries within NER with the sole purpose of taking the advantage of the schemes. Seeing the influx of large number of entrepreneurs inside NER especially Assam, made the local entrepreneurs to take interest in the various incentives, subsidies and other benefits that were being offered by the State Industrial Policies of Assam. These policies focussed on the development of MSME sector in the state based on available local resources, local demands, local scarcity condition and local environment for the benefit of the rural youth.

The subsidies and incentives under the industrial policies of Assam are meant to attract the entrepreneurs and thus increase the number of MSMEs which are able to function efficiently in the state. Earlier till the Industrial and Investment Policy of Assam (IIPA), 2014 the benefits under the State policies were meant for both new and existing units but recently (since IIPA, 2019) only the new units were made eligible for claiming the various incentives. The idea is to make the existing units self-sufficient and also to prevent wastage and misallocation of resources by directing the resources to its most efficient use.

The present research paper will concentrate on the subsidies received under NEIIPP, 2007; IPA 2003, IPA 2008 and IIPA, 2014. The various categories of subsidies received under the NEIIPP, 2007 include Central Capital Investment Subsidy (CCIS) provided at the rate of 30 per cent on investment in plant and machineries; Central Interest Subsidy (CIS) offered at the rate of 3 per cent on working capital loan; Central Comprehensive Insurance (CCI) subsidy where eligible units can avail 100 per cent reimbursement of their insurance premium; and finally Transport Subsidy was granted at the rate of 90 per cent of the cost of transport of raw materials from the source to the factory gate and at 50 per cent on the cost of transport of finished goods from factory to the destination.

The subsidies offered under the industrial policies of Assam included Power subsidy on power tariff paid by the enterprises on actual units consumed at the rate of 30 per cent and 25 per cent on connected load of up to 1 MW and above 1 MW respectively; interest subsidy paid to micro units at the rate of 30 per cent of the amount of interest paid on term loan; subsidy on Drawal of Power Line (DPL) at the rate of 25 per cent of cost on drawing of power line to the premises of the unit including the cost of transformer to micro and small units; and diesel generating (DG) subsidy.

The present study attempts to investigate whether the various subsidies under the industrial policies have been able to improve the performance of business enterprises of Assam. In doing so, the study will analyse the role of different factors that have impacted the performance of MSMEs. The study focusses on the MSMEs as these industries have played a vital role in the fulfilment of socio-economic objectives of growth in generation of income, employment and fostering entrepreneurship in Assam (Dutta and Singh, 2003). Moreover, more than 90 per cent of enterprises in the industrial sector belongs to the MSME category (The Economic Times, 2022).

Objectives of the Study

i. To study the trend and composition of state and central industrial subsidies in Assam.
ii. To the examine the factors influencing the performance of the MSME units in the Kamrup district of Assam.
iii. To analyse whether subsidy has any influence in determining the performance of MSME units.

Materials and Methods

Data Source

The study is based on both primary and secondary data. The secondary data are collected from various government sources and reports like Statistical Handbook, Government of Assam; Economic Survey of Assam, Directorate of Economics and Statistics, Economic survey of Assam (2016-17); Entrepreneurs Memorandum (Part II) Data on MSME Sector 2007-08 to 2014-15; State Industrial Profile, Assam 2014-15. Additionally, information and data on MSMEs and subsidies are collected from the official records of Commissionerate of Industries and Commerce (CI&C), Bamunimaidam, Guwahati, Assam; District Industries Corporation Limited (DIC), Assam and from Office NEDFi, Guwahati Branch, Guwahati, Assam. It should be noted that secondary data on central and state subsidy are collected separately from different sources as depicted in the following table:

Table 1: Sources of central and state subsidy data

Central Subsidy			State Subsidy		
Micro and Small Enterprises	Medium Enterprises	Scale	Micro and Small Enterprises	Medium Enterprises	Scale
NEDFi	NEDFi		CI&C; DIC	AIDC	

Source: Author's own representation

Simple arithmetic calculations, statistical tools and diagrams are used in order to study first objective. The study period for the first objective is from 2008-09 to 2017-18 for Central Subsidy since it examines the different type of subsidies under the NEIIPP, 2007 which was operational during the same period. For the State Subsidy, the study period from 2009-10 to 2017-18 is considered since most of the MSMEs which applied for subsidies under the State Government policies of 2003, 2008 and 2014 availed subsidies mostly during this period.

For studying the second and third objectives, primary data were collected by conducting field survey and relevant questionnaires were framed for the purpose. To study the factors influencing the performance of MSMEs, a multiple linear regression model is used with four performance parameters that includes Return on Asset (ROA), Return on Investment (ROI), Employees Growth Rate (EGR) and Asset Growth Rate (AGR). For estimating the regression equation, the software SPSS16 has been used.

The study area for the Primary data collection is the Kamrup district of Assam. The justification for selecting the Kamrup district is that it has the highest position with regards to the total number of MSMEs in 2017-18 and also the highest number of newly registered MSMEs in 2017-18.

Sampling Design and Sample Size

The total population size comprises of the total number of registered MSME units in the Kamrup district of Assam from the period 2007-08 to 2017-18 which is 3,183 MSME units. The reason for taking total number of registered MSME units as the population size is that the units, in order to be eligible for claiming subsidies under the policies, need to get themselves registered during the respective policy period. In the present study, the policies (both central and state) which were effective during the period 2007-08 to 2017-18 have been chosen.

Now, for the purpose of field survey 10% of the total registered MSME units have been taken as sample units. Accordingly, primary data were collected from 318 sample units. The data were mostly collected through face-to-face and telephonic interview. However, due to non-response and insufficient replies on the

part of respondents, only 280 out of 318 units are chosen for the study. The sample units are equally divided into two groups, namely, the treatment group (i.e., the units that received subsidy) and the controlled group (i.e., the units that did not receive subsidy) comprising of 140 registered MSME units in each group.

Results and Discussion

Trend and composition of state and central industrial subsidies in Assam.

State Subsidies

The trend of state subsidies gives some idea regarding the flow of state subsidies in Assam during the period 2009-10 to 2017-18. This indicates whether the flux of state subsidy for MSMEs of Assam have increased, decreased, or have remained the same during the mentioned period.

Table 2: Trend of total state subsidies in Assam

Year	All Assam Total State Subsidies (in Rs.)
2009-10	26404779
2010-11	77944901
2011-12	150587039
2012-13	100452117
2013-14	44016113
2014-15	59761327
2016-17	115455657
2017-18	268353556
CAGR	**26.09**

Source: CI&C

Figure 1: Trend of total state subsidies in Assam

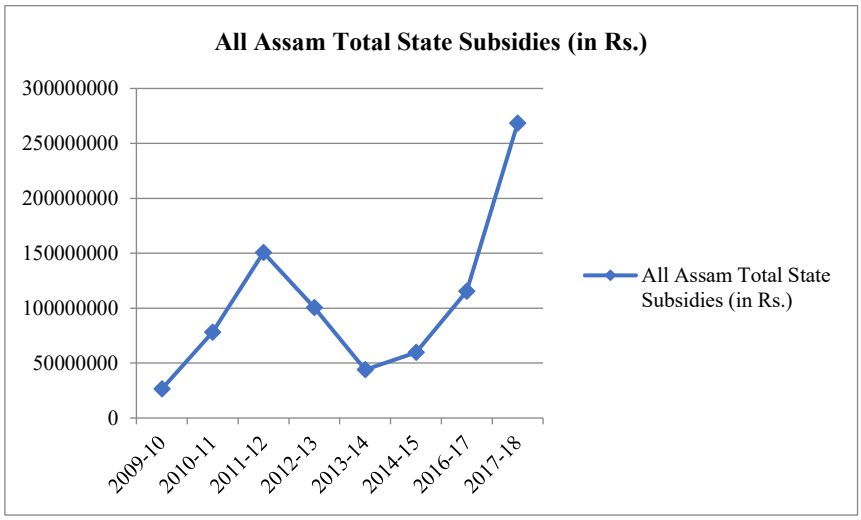

Figure 2 and Table 1 clearly shows that the quantum of state subsidies disbursed to the MSME units of Assam have overall increased during the study period. However, there had been a sudden decline in the amount disbursed in 2013-14. During this year the State Government suffered financial shortages which could possibly be due to the fact that the country was going through economic slowdown during that time period which became more pronounced in the allocation of subsidy funds by the state government. But it should be noted that in the year 2015-16 the outstanding subsidy amounts were due to the MSME units and were not disbursed during that year but were continued in the succeeding years. Thus overall, the period has marked an increasing trend which is reflected in the CAGR that stood at 26.09 per cent during the period under study.

To know more about State subsidies in Assam we look at its composition and try to find out the types of subsidies which have been availed more by the MSMEs of Assam. Table 3 shows the composition of state subsidies in Assam during the period 2009-10 to 2017-18.

Table 3: Amount and percentage share of different types of state subsidies

Year	Amount of Power Subsidies (in Rs Lakh)	Amount of DG Subsidy (in Rs Lakh)	Amount of DPL (in Rs Lakh)	Amount of Interest Subsidy (in Rs Lakh)	Amount of SCIS (in Rs Lakh)
2009-10	24081890 (91.2%)	2010300 (7.61%)	312589 (1.18%)	0 (0%)	0 (0%)
2010-11	27896577 (35.7%)	2696250 (3.4%)	236709 (0.3%)	1408228 (1.8%)	45707137 (58.6%)
2011-12	90891091 (60.3%)	5819804 (3.8%)	17696625 (11.7%)	1077761 (0.7%)	35101758 (23.3%)
2012-13	71540671 (71.2%)	4423438 (4.4%)	2000000 (2%)	0 (0%)	22488008 (22.3%)
2013-14	35577392 (81%)	2062300 (4.6%)	976340 (2.2%)	0 (0%)	5400081 (12.2%)
2014-15	59159381 (99%)	0 (0%)	563156 (0.9%)	38790 (0.06%)	0 (0%)
2015-16	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
2016-17	114178573 (99%)	0 (0%)	327388 (0.28%)	200000 (0.17%)	749696 (0.6%)
2017-18	219368753 (82%)	0 (0%)	12780084 (5%)	2000000 (0.7%)	34204719 (13%)

Source: CI&C and AIDC

Note: Figures in parenthesis are percentage shares of different types of State Subsidies in Assam

It is quite evident from table 3 that more than 90 per cent of the total subsidies availed were power subsidy during the years 2009-10, 2014-15 and 2016-17. MSME units mostly prefer power subsidy since power is a basic necessity while starting an industrial unit and earlier around 50 per cent of the total power consumption cost were borne by the Government by providing subsidy. Therefore, it becomes beneficial for the units when they claim power subsidy as it reduces a relevant portion of their cost while beginning their industrial unit.

The dependence of MSME units on DG and DPL subsidy have declined over time owing to the availability of power connection in most of the remote districts of Assam. The interest subsidy on working capital is also sparsely availed by the MSME units as earlier the ceiling limit was only Rs 5 lakhs and since the policy of 2008 the interest subsidy were made available only for the micro units with a ceiling limit of only Rs 1 lakh per year. It is the SCIS which is the next most availed/disbursed after power subsidy. However, the dependence of the MSME units on that too has declined because prior to 2014 the SCIS were available to all MSME units but since 2014, only the new micro units have become eligible to claim SCIS.

Central Subsidies

In order to understand whether the flow of subsidies for MSMEs of Assam during the period under study (i.e., 2008-09 to 2017-18) it is necessary to look into the trend of total and composition of central subsidies availed by the MSME units of Assam during the same period.

Table 4: Trend of total central subsidies in Assam

Year	All Assam Total Central Subsidies (in Rs. Lakh)
2008-09	2,85,47,57,092 (49%)
2009-10	1,87,67,68,748 (45%)
2010-11	1,85,75,42,388 (44%)
2011-12	1,53,52,58,816 (46%)
2012-13	1,48,84,97,491 (59%)
2013-14	26,19,15,175 (10%)
2014-15	61,68,47,889 (17%)
2015-16	88,54,83,136 (43%)
2016-17	1,21,10,05,212 (69%)
2017-18	74,42,88,725 (15%)
CAGR	**-12.5%**

Source: NEDFi

Note: Figures in parenthesis are percentage shares of Assam in the total Central Subsidies received by NE States

Figure 2: Trend of total central subsidies in Assam

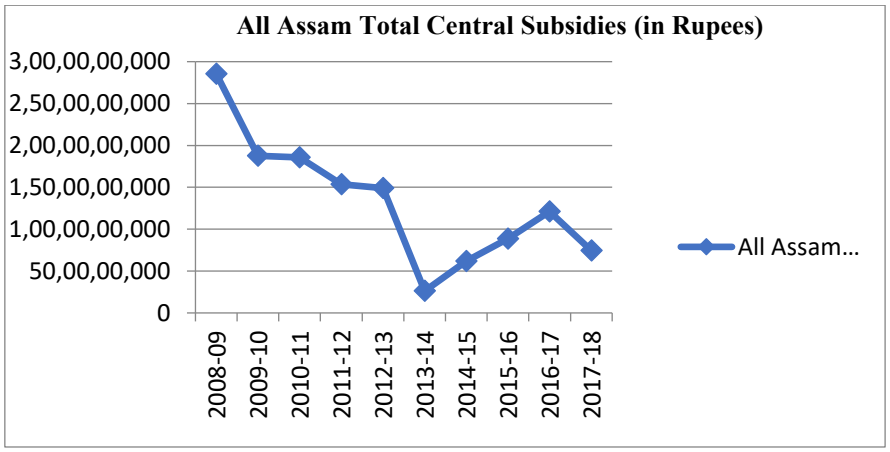

Table 4 and Figure 2 clearly depicts that the quantum of central subsidies disbursed to the MSME units of Assam have continually declined over time from 2008-09 to in 2012-13. However, there has been a sudden fall in the amount in 2013-14. A discussion on this matter from the officials of District Industries Centre, Assam revealed that the probable reason might be that during some years the allocation of subsidy funds by the central government has been low for some or all states. Also, the meetings at the District Level Committee (DLC) and State Level Committee (SLC) that are meant for approval of the subsidy claims are sparsely held. There is a little rise in the amount disbursed in 2016-17 which may be due to the simplification of procedures of registration of MSME units and subsequently in the processes of applying for subsidies. Hence, with the advancement in the era of digitalisation since 2015, not only a large number of MSME units got registered under Entrepreneur's Memorandum-II but also applied for different types of subsidies. It is worth noting that there is huge reduction in the amount of central subsidy disbursed in Assam which stands at -12.5 per cent CAGR.

To understand the reasons for the decline in central subsidies, we look at the composition of central subsidies over the period of study.

Table 5: Amount and percentage share of different types of central subsidies

Year	Amount of Transport Subsidies (in Rs. Lakh)	Amount of Investment Subsidies (in Rs.Lakh)	Amount of Insurance Subsidies (in Rs.Lakh)	Amount of Interest Subsidy (in Rs.Lakh)
2008-09	2,48,32,62,586 (86.98%)	23,72,76,005 (8.31%)	44,63,997 (0.15%)	12,97,54,504 (4.54%)
2009-10	1,54,28,27,237 (82.2%)	4,20,40,266 (2.24%)	56,60,438 (0.3%)	28,62,40,807 (15.25%)
2010-11	1,47,35,25,218 (79.32%)	24,27,92,011 (13.07%)	49,51,882 (0.26%)	13,62,73,277 (7.33%)
2011-12	1,45,51,79,918 (94.78%)	61,37,781 (0.39%)	68,12,523 (0.44%)	6,71,28,594 (4.37%)
2012-13	1,00,12,12,571 (67.26%)	36,07,76,147 (24.23%)	11,48,715 (0.07%)	12,53,60,058 (8.42%)
2013-14	3,78,40,338 (14.44%)	17,00,89,703 (64.94%)	6,60,569 (0.25%)	5,33,24,565 (20.35%)
2014-15	27,16,19,282 (44.03%)	30,69,95,642 (49.76%)	11,44,766 (0.18%)	3,70,88,199 (6.01%)
2015-16	8,93,18,524 (10.08%)	79,60,90,584 (89.9%)	74,028 (0.08%)	0 (0%)
2016-17	16,52,45,199 (13.64%)	1,00,41,94,568 (82.92%)	30,38,250 (0.25%)	3,85,27,195 (3.18%)
2017-18	24,25,39,454 (32.58%)	36,72,38,613 (49.34%)	5,56,425 (0.07%)	13,39,54,233 (17.99%)

Source: NEDFi

Note: Figures in parenthesis are percentage shares of different types of Central Subsidies in Assam

Table 5 clearly shows that of the different types of subsidies; transport subsidy covers the highest share in percentage terms right from the year 2008-09 to 2012-13. This had been one of the very popular subsidies as is evident from the amount of transport subsidy availed by the MSME units of Assam with more than 90 per cent in the year 2011-12. However, the percentage share of transport subsidy has declined from 2012-13 with some fluctuations in between taking the total share from 67.26 per cent in 2012-13 to 32.58 per cent in 2017-18. An enquiry into the secondary data of transport subsidy reveals that units manufacturing coke, coal, medicine and food mainly received transport subsidies. For such units, the amount of investment in plant and machineries is comparatively less but a hefty amount is expended on transportation of raw materials and finished goods. This makes it beneficial for them to avail the provisions under transport subsidy. However, it needs to be pointed out that transport subsidy becomes more advantageous for MSMEs only if the entrepreneurs are purchasing raw materials from outside state in a very large quantity, enabling them to reap the economies of scale.

The popularity of Transport subsidy eventually declined and that the MSME units are now more dependent on the Investment subsidy. Subsequently, investment subsidy has overall shown a rising trend from 2008-09 to 2017-18 with some fluctuations in between. However, it covered highest percentage share in the period 2013-14 to 2017-18 amongst the four categories of subsidy. Mostly the medium and small-scale units like tea estates, tea companies, plastic and polymer producing units, cement manufacturing units and services like hotels, hospitals and advertising companies have availed very large amount of investment subsidy.

In case of Interest subsidy, the percentage share has overall shown a rising trend with some fluctuations in between from the period 2008-09 to 2017-18, but it is lesser than that of transport and investment subsidy.

The data from NEDFi reveals that mostly tea estates received interest subsidy for repaying large amounts of outstanding loans.

Insurance subsidy occupies the lowest shares in percentage terms among all the types of subsidies. Mostly the tea estates and tea manufacturing companies of upper Assam received insurance subsidy.

From the above analysis it is clear that state subsidy in Assam had shown an upward rising trend whereas central subsidy showed a declining trend as visible from the CAGR. However, the quantum and the number of units receiving central subsidies is substantially higher than that of state subsidies. The reason for this difference is that central subsidies were availed by all categories of units- micro, small and medium. Conversely, many of the state subsidies were available exclusively for the micro units. As majority of the units in Assam belong to the micro category, they were able to avail more of state subsidies contributing to the rising trend in state subsidy utilization.

The above analysis does not give us any insight about the performances of the units that have availed subsidy. Therefore, in order to examine the factors and whether subsidy has any influence in determining the performance of MSME units in Assam we have undertaken a primary survey in the Kamrup (both rural and metro) districts of Assam.

Identification of significant factors affecting firms' performances

This section tries to throw light on the factors which have influenced the performances of the MSME units for both the treated and controlled group. It also tries to examine whether the firms that have availed subsidy have been able to improve their performance.

Model and Estimation

In order to identify the significant factors that have influenced the performances of the MSME units, a multiple linear regression model have been used. In the model the dependent variable indicates the firms' performance, that includes ROA, ROI, EGR and AGR. These outcome dependent variables represent the firms' performance for the year 2019-2020 during which data was collected. The independent variables include a set of covariates and are thus considered as various factors which may have influence in determining the firms' performance.

Accordingly, the model to be estimated for determining the significant factors influencing firms' performances:

$$\text{Performance} = \beta_0 + \beta_1\ \text{age} + \beta_2\ \text{gender} + \beta_3\ \text{marstat} + \beta_4\ \text{assamese} + \beta_5\ \text{EduAttain} + \beta_6\ \text{BusiTrai} + \beta_7\ \text{Parents\_Ocu} + \beta_8\ \text{YearE} + \beta_9\ \text{yearCP} + \beta_{10}\ \text{location} + \beta_{11}\text{rentedinsideIE} + \beta_{12}\ \text{rentedfmpvt} + \beta_{13}\ \text{inherited} + \beta_{14}\ \text{micro} + \beta_{15}\ \text{small} + \beta_{16}\ \text{noofacti} + \beta_{17}\ \text{powerkw} + \beta_{18}\ \text{chngproduct} + \beta_{19}\ \text{advsalesratio} + \beta_{20}\ \text{RM\_Source} + \beta_{21}\ \text{Fin\_Bank} + \beta_{22}\ \text{Fin\_others} + \beta_{23}\ \text{GROUP} + \in_i$$

Where, $\in_i$ is the error term and βs are the coefficient of the parameters.

On the basis of various previous studies, the following independent variables are selected which may have influence on firms' performance:

Age: Age here indicates the age of the entrepreneurs and is denoted as '***age***.' Studies like (Cortes et al. 1987; Jovanovic 1982; Munoz et al. 2014; Papadaki et al. 2002) have analysed the importance of age of entrepreneurs in determining firms' success interpreting that young age owners are likely to take more risks.

Gender: The dummy variable ***gender*** which is defined as **gender=1,** if the entrepreneur is a male and 0 if female. McPherson (1995); Mead and Liedholm (1998) found in their study that female entrepreneurs are more risk averse which may accordingly influence firms' performance.

Marital Status: Marital Status which is also a dummy variable and shows that ***marstat*=**1 if the entrepreneur is married and 0 if the entrepreneur is unmarried.

Community: Here only the Assamese community is taken which too is a dummy variable and stand as,

assamese=1, for Assamese community

= 0, for other communities.

Educational Attainment of Entrepreneurs: Studies (Campbell 1992; Goedhuys and Sleuwaegen 2000; Millán et al. 2014) have shown that education of the entrepreneurs have a significantly positive impact on the success of small firms. The variable is denoted as ***EduAttain* = 1** for graduate and above and 0 for non-graduate and below.

Business Training: Entrepreneurs undergoing any kind of entrepreneurial or business training may gather more knowledge and information about business and thereby may come up with more innovative ideas which might help them in improving their business performance. The variable is denoted by ***BusiTrai,*** which is again a dummy variable and is given as,

BusiTrai = 1, if the entrepreneur has undergone any kind of business training

=0, if the entrepreneur has not undergone any entrepreneurial training.

Occupation of Parents: The entrepreneurs who belong to a family having a business background are more likely gather ideas and experience which might lead to their success. It is taken as dummy variable and is given as,

Parents_ocu = 1, for parents of entrepreneurs in business
= 0, for parents of entrepreneurs on other profession.

Years of Business Experience: This variable is denoted by ***YearE***. Baum (1994); Dahl and Reichstein (2007) have shown that entrepreneurs apply their knowledge from previous business experience in their current business avenues.

Year of Commercial Production: The longevity of a business may be regarded as a testament to its success as it is likely to have achieved more stability and excel in its performance. Consequently, business with more years of commercial production tend to demonstrate better overall performance. The variable is denoted as ***year CP.***

Rural/Urban Location of the enterprise: Units located in urban areas can have better access to infrastructural facilities, marketing and other sources of institutional finance (Goswami, 2006) than rural areas that can potentially enhance their business performance. The ***location*** is a dummy variable,

Location = 1, for units located in urban areas that is Kamrup (M) district.
= 0, for units located in rural areas that is Kamrup (R) district.

Land on which the unit is located: In this variable, for four categories of land three dummies are created and the category of land purchased from private party is taken as a base category. It is believed that units located inside industrial estates are subject to greater benefits in terms of rent, power supply and other industrial operations and thereby improve their performance. Thus, the dummies are,

rentedinsideIE = 1, for units that are located on land rented inside industrial estates
= 0, for others.

rentedfmpvt = 1, for units that are located on land rented from private party
= 0, for others.

inherited = 1, for units that are located on land inherited from family
= 0, for others.

Category of unit: A unit can be in the category of a micro or small or medium enterprise. In this variable the medium category enterprise is considered as the base category and the dummies created for the other two categories are-

micro = 1, for micro enterprise unit
= 0, for others
small = 1, for small enterprise unit
= 0, for others.

Line of activities: The MSME units are engaged in different line of business activities like manufacturing, processing, trading, services and assembling. Sometimes, a single unit may be engaged in more than one line of activity. The variable is denoted as ***noofacti.*** This variable is measured as follows:
noofacti = 1, for units engaged in only line of economic activity,
noofacti = 2, for units engaged in two lines of economic activity and so on.

Power installed in KW: The variable is referred to as '***powerkw.'*** This variable is measured by the units of power installed in kilowatt in a particular enterprise.

Change/Extension in product line: The business unit will respond to the demand situation of the products/services being produced by them. Depending on the situation of market demand some business units may change the type of product/services being produced by them. Or that some units may extend their product line from the production of a single good/service to the production of more than one good/service. Both cases have an impact on firms' performance. The variable is again a dummy variable and is indicated as,
chngproduct = 1, if the unit has either changed/extended the product line,

= 0, if not.

Ratio of Advertisement to sales: The variable is denoted by ***'advsalesratio.'*** This variable is measured by the ratio of expenditure on advertisement to the sales of the firm in a particular year.

Procurement of Raw Materials: Firms generally become eligible for applying transport subsidy if the raw materials are transported from outside the state. This will reduce their cost of production and thereby has an influence on business performance. This is a dummy variable and thus

RM_Source =1, if the raw materials are transported from outside the state
= 0, if raw materials are procured from within the state.

Sources of finance: For a smooth functioning of commercial production, the availability of finance is considered a very important factor. This variable is a dummy variable and is denoted as

Fin_Bank = 1, yes if the source of finance is bank,
= 0, no

Fin_others = 1, yes if financed from other sources like friends/relatives, other government schemes, etc
= 0, no.

Since four outcome parameters are used, therefore the results will be explained in terms of four multiple linear regression of the above-mentioned model.

Result of multiple linear regression model with ROA for the current year as the dependent variable.

The result of the estimation is presented in the Table 6. The value of R^2 of the model is 0.413 and the F-statistic for the overall regression model is highly significant which signifies the explanatory power of the model. The value of VIF<10 for all the independent variables indicating absence of multicollinearity problem.

The coefficient of '*gender'* and '*EduAttain*' is negative and significant at 1% level of significance. This indicates that female entrepreneurs are earning higher ROA compared to men; and the base category 'non-graduates' are earning higher ROA than the 'graduate' entrepreneurs.

The coefficient of marital status ***'marstat',*** '***rentedfmpvt',*** '***micro'*** and ***'chngproduct'*** is positive and significant at 5% level of significance. This implies that married entrepreneurs; units which are located on land rented from private party; micro enterprises; and those units that have extended/changed their line of business activity have higher ROA than their counterparts.

Table 6: Results of multiple regression analysis with ROA as performance outcome

Variables	Estimated coefficients	Standard Error of coefficients	t-values	VIF
Intercept	-7.680	6.063	-1.267	
age	-.034	.005	-.287	5.976
gender	-.225	.070	-4.155***	1.263
assamese	-.193	.069	-2.369	2.847
EduAttain	-.301	.057	-4.912***	1.618
marstat	.114	.104	2.023**	1.361
Parents_Ocu	.065	.051	1.038	1.671
Busi_Trai	.031	.047	.570	1.241
YearE	-.051	.005	-.420	6.352
YearCP	.094	.003	1.373	2.014
location	.052	.051	.861	1.576
rentedinsideIE	.137	.073	1.605	3.142
rentedfmpvt	.193	.071	2.182**	3.359
Inherited	.027	.099	.375	2.203
micro	.283	.088	2.878**	4.153
small	.101	.063	1.292	2.648
Noofacti	-.011	.027	-.189	1.349
powerkw	.032	.000	.476	1.902
chngproduct	.190	.056	3.140**	1.570
advsalesratio	-.084	.148	-1.407	1.535
RM_Source	-.166	.052	-2.831**	1.473
Fin_Bank	.095	.163	1.767	1.234
Fin_others	.081	.055	1.332	1.599
GROUP	.079	.045	1.425	1.340
R^2	0.413			
F	6.832***			

Source: Field Survey

Note: ***indicates significance at 1% level of significance

**indicates significance at 5% level of significance

The co-efficient of ***RM_Source*** is negative at 5% level of significance. This means that units that are transporting raw materials from outside the state have lower ROA than units transporting raw materials within the state. This is because transportation of raw materials from outside the state adds to the cost production and therefore the ROA decreases.

The coefficient of the ***GROUP*** variable is noticed to be insignificant implying that the firms availing subsidy have not brought any differential impact in performance of AGR.

The result of the estimation is presented in the following table 7. In the table 7 though the R^2 value is less at .209, yet the value of F statistic is again highly significant. Here also the value of VIF<10 for all the independent variables indicating absence of multicollinearity.

The coefficient of ***yearCP*** is positive at 5 % level of significance. The result of this finding reveals that year of commercial production signifies the age of the firm in the field of business activity. Firms which have matured in terms of number of years of commercial production are able to secure a higher understanding of when and how to invest their resources and thus achieve higher returns on investment.

It is important to note that the coefficient of ***GROUP*** is insignificant denoting that subsidy acts as an insignificant factor in determining firms' performance in terms of ROI.

Result of multiple linear regression model with ROI as the dependent variable

Table 7: Results of multiple regression analysis with ROI as performance outcome

Variables	Estimated coefficients	Standard Error of coefficients	t-values	VIF
Intercept	-4812.023	2239.007	-2.149**	
Age	.021	1.992	.150	5.976
Gender	.029	25.697	.459	1.263
Assamese	-.105	25.316	-1.116	2.847
Bengali	-.002	27.869	-.026	2.214
Marwari	-.176	26.118	-1.901	2.745
EduAttain	-.118	21.174	-1.664	1.618
Marstat	.014	38.399	.213	1.361
Fath_Ocu	-.046	18.827	-.633	1.671
Moth_Ocu	-.058	27.647	-.960	1.164
Busi_Trai	.110	17.326	1.770	1.241
YearE	-.005	1.674	-.035	6.352
YearCP	.178	1.104	2.246**	2.014
Location	-.068	18.973	-.973	1.576
rentedinsideIE	.151	26.923	1.521	3.142
Rentedfmpvt	.155	26.349	1.508	3.359
Inherited	.065	36.681	.779	2.203
Micro	.135	32.357	1.186	4.153
Small	-.057	23.373	-.629	2.648
Noofacti	-.074	9.961	-1.133	1.349
Powerkw	-.104	.111	-1.352	1.902
Chngproduct	.019	20.757	.266	1.570
advsalesratio	-.070	54.532	-1.010	1.535
RM_Source	-.077	19.199	-1.132	1.473
Fin_Bank	.037	60.179	.600	1.234
Fin_others	.018	20.154	.254	1.599
GROUP	-.048	16.610	-.742	1.340
R^2	.209			
F	2.569***			

Source: Field Survey

Notes: ***indicates significance at 1% level of significance; **indicates significance at 5% level of significance

Result of multiple linear regression model with EGR as the dependent variable.

Initially while running the model though the R^2 was high at 0.609. But the model was detected with multicollinearity problem where the value of VIF>10 for the independent variables ***rentedinsideIE*** and ***rentedfmpvt.*** After dropping the above two independent variables no multicollinearity problem was found and the result of the estimation is presented in the following table 8.

The coefficient of the factors such as small category firms, units engaged in more diversified line of activities, and the units that have extended their productive activities are seen to be positively significant at 5% and 1% level of significance respectively. This is because majority of such firms are labour intensive firms with higher employment growth.

The coefficient of ***yearCP*** is negative and significant at 5% level of significance indicating that older firms hire lesser manpower by reducing their additional cost on casual or temporary workers and also resorting to more capital-intensive methods of production.

The coefficient of the variable ***GROUP*** is found to be insignificant indicating that subsidy has no influencing role in determining the employment growth rate of the MSME units.

Table 8: Results of multiple regression analysis with EGR as performance outcome

Variables	Estimated coefficients	Standard Error of coefficients	t-values	VIF
Intercept	2873.992	1191.886	2.411**	
Age	-.057	.826	-.746	3.791
Gender	.070	13.519	1.541	1.330
Assamese	-.074	13.999	-1.156	2.655
Bengali	-.066	15.807	-1.171	2.065
Marwari	-.134	16.067	-2.036	2.787
EduAttain	.008	11.901	.152	1.654
Marstat	.040	19.203	.842	1.425
Fath_Ocu	.044	10.596	.885	1.600
Moth_Ocu	-.045	16.437	-1.017	1.233
Busi_Trai	-.020	10.177	-.439	1.320
YearE	-.046	.822	-.538	4.736
YearCP	-.132	.590	-2.451**	1.874
Location	-.008	11.104	-.169	1.553
Inherited	.003	15.473	.058	1.411
Micro	.033	19.463	.384	4.771
Small	.164	15.573	2.222**	3.494
Noofacti	.111	6.397	2.070**	1.852
Powerkw	-.071	.070	-1.250	2.049
Chngproduct	.609	13.950	9.697***	2.533
advsalesratio	-.012	34.285	-.267	1.267
RM_Source	.047	13.607	.918	1.700
Fin_Bank	.057	34.043	1.330	1.185
Fin_others	-.015	11.406	-.305	1.639
GROUP	-.058	10.083	-1.208	1.471
R^2	0.608			
F	15.640***			

Source: Field Survey; Note: ***indicates significance at 1% level of significance; **indicates significance at 5% level of significance

Result of multiple linear regression model with AGR for the current year as the dependent variable.

In the beginning when the model was run two independent variables viz. ***rentedinsideIE*** and ***rentedfmpvt*** were detected with the problem of multicollinearity. Thus, these two variables were dropped and the model was estimated again which gave the following result as presented in Table 9.

The coefficient of the factors like parents' occupation and business training are seen to be positively significant at 5% level of significance.

The coefficient of ***GROUP*** is positively significant at 5% level of significance. This implies that firms which have received subsidies have purchased more assets like additional plot of land, building, machineries, etc and thus have added to the growth rate of their assets.

Therefore, from the above analysis it stands clear that out of the four outcome performance parameters, the result of three outcome variables show that industrial subsidy has no significant impact in determining firms' performance. Only in case of AGR, subsidy is seen to have a differential impact and thus act as a significant

factor influencing firms' performance. This therefore, enables us to conclude that industrial subsidy has no influencing role in determining firms' performance in Assam.

Table 9: Results of multiple regression analysis with AGR as performance outcome

Variables	Estimated coefficients	Standard Error of coefficients	t-values	VIF
Intercept	27896.663	6440.752	4.331***	
Age	-.074	3.615	-.882	2.302
Gender	.027	75.774	.423	1.324
Assamese	.202	79.009	2.242	2.681
EduAttain	-.023	67.794	-.327	1.702
Marstat	-.104	106.433	-1.613	1.387
parents_Ocu	.144	59.569	2.066**	1.603
Busi_Trai	.199	57.606	3.131**	1.340
YearE	.196	4.783	1.929	3.409
YearCP	-.314	3.171	-4.360***	1.714
Location	-.008	62.869	-.113	1.578
Inherited	-.013	86.729	-.202	1.405
Micro	-.283	109.439	-2.358	4.781
Small	-.270	87.830	-2.621	3.523
Noofacti	.078	35.799	1.045	1.839
Powerkw	-.159	.391	-2.031	2.028
chngproduct	-.160	78.454	-1.832	2.540
advsalesratio	-.010	188.973	-.167	1.221
RM_Source	.032	76.175	.451	1.689
Fin_Bank	.034	191.156	.561	1.184
Fin_others	-.105	63.996	-1.494	1.635
GROUP	.247	78.459	2.676**	2.823
R^2	.239			
F	3.167***			

Source: Field Survey

Notes: ***indicates significance at 1% level of significance; **indicates significance at 5% level of significance

Conclusion

Therefore, from the above analysis it can be concluded that MSMEs are playing a very pertinent role in industrial development of Assam. Both the central and state government of Assam have been giving focus on the development of the MSME sector and thus have formulated various industrial policies from time to time. The respective governments have also made provisions for numerous industrial subsidies and incentives under the policies in order to boost the sector. It has been observed that a total of Rs.1333.23 crores[7] of central industrial subsidies was disbursed in Assam during the period 2008-09 to 2017-18. On the other hand, a total of Rs. 84.29 crores[8] of state government industrial subsidies had been disbursed in Assam during the period 2008-09 to 2017-18. However, it has been observed that the firms even after receiving such huge allocation of financial resources have not been able to improve their performance. Except for AGR, the influence of subsidy on the performance of the rest of the outcome variables is insignificant.

This implies that along with monetary measures other non-monetary incentives and benefits like training of entrepreneurs, scope for innovation, invention, research and development (R&D), encouragement of female and less educated people to take up entrepreneurship, enabling micro and small category enterprises to be

[7] *Disbursement Status of the Central Subsidies, 2008-09 to 2017-18*- NEDFi [Data File].

[8] *Disbursement Status of State Subsidies, 2009-10 to 2017-18* – Commissionerate of Industries & Commerce, Government of Assam [Unpublished data].

more competitive, etc should be given greater emphasis. All such initiatives will empower the firms to become more self-sufficient and improve their productivity and productive efficiency thereby making entrepreneurship a lucrative source of livelihood for both educated and uneducated unemployed people.

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