



Volume : 10  
2022

# SAMANVAYA

ISSN : 2249-4545

Peer Reviewed

*An Annual Research Journal of Business, Management and Accounting*

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- Published by** : PRINCIPAL  
Gurucharan College, Silchar
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Volume – 10, 2022

“SAMANVAYA”

ISSN-2249-4545

Peer Reviewed

An Annual Research Journal of Business, Management and Accounting

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*The "Samanvaya" a peer reviewed annual research journal of Business, Management and Accountancy - addresses a wide-ranging choice of research related to Business, Management, Commerce, Economics, Finance, Marketing, Human Resource, Banking, Insurance, Corporate Governance and upcoming paradigms as allied areas of knowledge. The journal welcomes excellent experimental and academic contributions in research and associated research methodology. Articles deal with above various discipline have been publishing in the various issues of "Samanvaya".*

*It is true that Business, Commerce and Industry have been playing a significant role in the development of our nation and increase the standard of living. It is the fact that without the development of business, economic developments of a nation remind a dream. For the past two years, Indian as well as world's economies has been struggling because severe affects of COVID-19. The government of India have been undertaking several measures to accelerate growth, which is the immediate challenge before it. For finding out the solution for speedy recovery of Indian economy from the COVID-19 pandemic, researchers can play an important role. Research findings can help the nations to find out the solution of different problems that helps the country to move on its path of progress not only in the field of commerce and economics but also science and technology, art, culture, language etc.*

*Department of Commerce, Gurucharan College, Assam, India has made many advances in academic and extra-academic activities. A sharp glimpse in this issue verifies our continued dedication and resolve to publish a journal of the highest standards devoted exclusively to generate and protect knowledge. "Samanvaya" is an annual research journal dedicated to national and international research and learners.*

*"Samanvaya" being the research journal of the Department of Commerce, Gurucharan College has been trying its best to address different issues by priceless research article since its first issue. Editorial Board of "Samanvaya" is committed to a published valuable research article by selecting better one among the best; so that readers can get the maximum benefit. Keeping this view in mind, upgraded the "Samanvaya" to blind peer reviewed from its volum-8.*

*The global commercial, economic and political environment is sparkling with great hopes and aspirations of sound economic and political health along with growing graph of Industry, Trade and Commerce. As such, it becomes humble and honest responsibility of the Editorial Board of the Journal to invite research articles with critical suggestions in its related fields from academicians and scholars. This volume of the journal consists of papers from some outstanding scholars in the diverse fields. I express my sincere thanks to all the esteemed authors who contributes research papers for this journal. We make all effort to ensure the accuracy of all the information / content included in its publications. However,*

*Editor, Board members and peer-reviewed members make no representations or guarantee what-so-ever as to the accuracy, completeness or suitability for any purpose of the content and disclaim all such representations and warranties whether express or implied to the maximum extent permitted by law. Any views expressed in this publication are the views of the author(s) and are not the views of the publisher, editor and board members. For further improvement of the standard of the journal, the valuable suggestion is always well come from readers, researchers and academician. I express my gratitude to all the peer reviewed members for their untied support and reviewed the articles within a short time period. I express my sincere gratitude to the Managing Editor Dr. Suvendra Kumar Das and all the advisory and editorial board members for their kind support and suggestions. I am very much thankful to our principal Dr. Bibhas Deb for his all round support in the publication of the journal. I extend my thanks to HOD and all my colleagues in the Department of Commerce, Gurucharan College, Assam for giving me all round support in completion of the journal.*

*Finally, yet importantly, I extend my thanks to all the staff of Gurucharan College Printing Press to help us by printing the journal within a short span of time.*

Silchar,  
10<sup>th</sup> December, 2022

Dr. Jogeswar Barman  
Chief Editor  
'SAMANVYA'

Peer Reviewed

An Annual Research Journal of Business, Management and Accounting

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## A Study on the Role of Entrepreneurship in Economic Development and Social Transformation

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Received : August 05, 2022

Accepted : October 05, 2022

### Abstract

*Entrepreneurship is a creative discipline having innovative scope for developing economy of a nation. It assures human empowerment and secures life with all-round development activities. It acts as the soul of socio-economic activities as architectural foundation for nation building, human progress and social transformation in all-comprehensive manner to solve the problems of human deprivation, social marginalization and regional disparities. So, the study seeks to analyze all such objectives for increasing opportunities and act as the rejoinder to strengthen potential value of human life bringing possibilities with respect to holistic growth, sustainable development and dynamic social rolling in forward moving tendencies. Hence, role of entrepreneurship laudably discusses issues pertaining to the picture of civil society norms for economic development and social transformation. The study provides relevant findings, appropriate suggestions and judicious recommendations in 'path-goal' relativity approach. At the end, conclusion provides to make the study relevant to policymakers, administrators, researchers, social architects, academicians and others for building the foundation of civil society to the existential autonomy of life with value added norms of human living pursuits for better future, healthy growth and potential development.*

**Keywords:** *Economic Integration, Human Marginalization, Make-in-India, Regional Disparity, Smart City.*

### Introduction

Entrepreneurship is a vibrant discipline in modern world in an age of technological reformation, social transformation and global population growth in market complexities as well as business redesign for complementary scale of operating the socio-economic productive activities with competitive edge, integrative nature of human living parameters and dynamic social rolling. Empirical studies on the role of entrepreneurship in economic growth reveal mixed evidences. Whatever be the case, it is observed that entrepreneurship has long been considered as a crucial mechanism of economic development<sup>1</sup>. It is clear therefore that in modern times, we cannot ignore the role of entrepreneurship for high income generation, employment creation and transition of the prospective growth of modern civil societies, in so far as the imbalances of the rich and poor are concerned to the social living parameters with respect to free existential autonomy of life bringing possibilities are there in the economies. Thus, it needs to be mentioned here undoubtedly that the 'Global Entrepreneurship Monitor' (GEM) provides comparative data on entrepreneurship from a wide range of countries, which predicts there is positive correlation between growth oriented

concept and human development that ultimately concerns to social transformation. As a matter of fact, we may cite the case of China, Hungary, Poland, Russia and Slovenia which are having effects of the entrepreneurial activity on economic growth in high income social transition; whereas, the countries as observed having low income are Argentina, Brazil, Chile, India, Mexico, South Africa and Thailand. Thus, the role of entrepreneurial activities for growth in general and the growth with transformative development in particular is quite evident from these examples. Again, it can be said that the production factors: capital, labor, technology and entrepreneurship are all the proximate causes of economic development, whereas institutions are a fundamental cause of economic development<sup>2</sup>. Hence, the argument of Nelson and Pack<sup>3</sup> that next to productivity growth and technological change in established sectors, the development process in less advanced countries is largely about structural change holds good under the circumstances. So, it can be predicted well that the role of entrepreneurs in developing countries does not equal innovation and R&D commonly understood in advanced economies. Their role is to discover that a certain good, well established in world markets can be produced at home at low cost<sup>4</sup>. From the discussions made so far, it is clear that in modern times entrepreneurship has to reinvent its role in new dimensional way with level playing norms of institutional mechanism for social transformation, in terms of economic development through income generation, employment creation and higher order of growth rate by means of assured quality services, excellent productive activities, innovative skill development and business policy redesign with reformative means, along with the change of market competitiveness to come out successfully in competitive edge through business process reengineering<sup>5</sup> (BPR). All such paradigms shift in reformative technological order of changing global business world will find healthy discourses in this paper, in coagulating the reinventing process of entrepreneurship role model to illuminate the picture of the civil society for existential freedom of human life bringing possibilities.

### **Objectives of the Study**

The study is devoted to wide range of parameters on reinventing the role of entrepreneurship for economic development and social transformation in holistic approach. Entire research is based on development goals for bringing quality of work life (QWL), to rejuvenate the structure of civil society as per norms of business vision, entrepreneurial mission of work and strategies for balanced growth. These facts are illuminated in sparkling manner with empirical research findings to embrace the policy framework issues for effective entrepreneurial activities. Thus, the study is expected to find out means and ways for eliminating social poverty, eradicating regional imbalances and reducing gaps between rich and poor in terms of committed services to solve the problems of social inequalities with justice-driven principles of work, in overcoming all types of social ills and maladies with good governance paradigms. Hence, the objectives of the study are to take into account fundamental aspects of human entrepreneurial life to professionalization of entrepreneurship discipline with visionary goal, missionary way of dealing with the things and strategic solution of human social problems for regional development, peace initiating

measures and existential freedom of life bringing possibilities for purposive economic development and social transformation. Thus, the role of entrepreneurship fulfills the agenda of development mantra: 'Sabka Saath, Sabka Vikas and Sabka Prayas' through creative business pursuit, innovative work culture and realistic growth perspective in nurturing human resources, protecting social assets with cost-benefit analysis and making holistic progress in dynamic nature to march in forward looking tendencies reaching at the goal of integral humanity. The entire research endeavor has been focused to enlightening the path of modern civil society in dealing with issues, policies and strategies of entrepreneurship in objective manner.

### **Scope of the Study**

This is an exploratory research endeavor made to study the role of entrepreneurship in holistic approach for professionalization of the discipline with judicious policy framework, reformative business guidelines, ethics, values and code of conduct for performing socio-economic activities with valuable economic measures and transformative practices concerning human economic development agenda. The study has wide scope to illuminate the picture of civil society on the screen of human social living foundation with prudent administrative guidelines for good governance paradigm shift to lift the corporate veil. It recommends securing life of deprived masses to the promotion of civil living existential autonomy with business driven principles, QWL and continuous improvement. Hence, there is ample opportunity to ensure nurture of scarce resources with justice driven principles of entrepreneurial work in equanimity thought. As a whole, the role of entrepreneurship can be seen as the vista and rejoinder for fundamental breakthrough in ice-breaking reformative social reconstruction and transformative nature of business performance. Thus, the edifice of liberal living goal can be strengthened for emancipation of human beings from severe social sufferings. With a view to reduce human poverty, eliminate regional disparity and disseminate social transformation in terms of reformative business policy, resurgent work quality and entrepreneurial skill building excellence norms, the empirical research is relevant for cementing effective public relationships and explore avenues for peace, progress and prosperity in the long-run perspective to dynamic rolling of society. Findings and conclusion of such theoretical research effort will provide suggestions to policymakers, administrators, entrepreneurs, researchers, academicians, reformers, social thinkers and others for framing models of development with BPR techniques in integrated approach.

### **Methodology**

The study is mainly devoted on the basis of theoretical research practices, and therefore, all secondary sources are taken care of for historical analysis of things and thereby, the essential facts are reflected in terms of government reports, reports of international institutions, agencies and organizations. Policy decisions of government institutions and international organizations are attentively observed with path-goal relational approach under the empirical study. Again, information technology and internet services, books, journals, newspapers, magazines periodicals, business reviews and bulletins and some other important sources well warrant the methodology of discussions for correctly understanding

the role of entrepreneurship pertaining to employment creation, income generation, social growth initiatives and alike elements for economic development and social progress in equipoise nature of doing things with a view to profess, promote and practice such discipline. Thus, the entire study ranges to the protection of human beings from their deprivation and social marginalization for the greater interest of eliminating poverty and social injustices to establishment of peaceful living measures. All these are accentuated scientifically, discussed chronologically and lamented for healthy exercises with relativity aspects for objective conceptualization purposes to adopting entrepreneurship policies, programs and procedures. As a whole, the secondary sources strengthen the pillars of civil society in terms of academic discourses for developing models of social progress, implementing policies for dynamic growth and framing strategies for realistic journey of life with civil liberties in the existential autonomy of human life bringing processes. Hence, the secondary sources adopted under the study for scientific explanations of things have enriched the whole research in holistic and all-comprehensive manner, to work as complementary for preparing the road map to economic development and social transformation.

### **Entrepreneurship and Innovation**

Innovation is essential part of entrepreneurship development activities. By means of innovative research, it is possible to carry out creative and productive activities for economic empowerment of people and bringing higher growth rates in the overall economy of a country. It can therefore be argued that high rates of investment in human and physical capital are themselves stimulated by effective innovation. It cannot be maintained in the absence of innovation. So, it can be said permeably that entrepreneurs experiment with new combinations of which the outcomes are uncertain, but in order to progress, many new variations have to be tried in order to find out which ones will improve economic life<sup>6</sup>. Thus, empirical research findings substantiate the view point that entrepreneurship is the driver of economic development, for which it requires fourth generation reform in production factor through innovative practices in the macroeconomic policy making issues with a view to enhance production function<sup>7</sup>, to accelerate the objectives of social transformation in terms of human capital formation. Innovation, therefore, acts as a rejoinder to entrepreneurship as a factor in the production function activities for creating wealth by combining existing production factors in new ways. Under the circumstantial evidences on the role of entrepreneurs, it can be undoubtedly suggested that the developing countries where innovation and R&D does not equal unlike commonly understood in advanced economies should put due importance on such principles, rather than relying on their entrepreneurs only to play dominant role to discover that a certain good, already well established in world markets can be produced at home at low cost<sup>8</sup>.

### **Entrepreneurship and Economic Development**

Development is a wide concept entailing the raising of human capabilities<sup>9</sup>. It is one of the central challenges in improving the standards of living for individuals and growth of the economy in holistic manner. Economic growth in itself is a narrow target. But, the fact about

economic growth cannot be denied probably because; it is to be one of the important targets for development policies. Hence, it is treated to be as one of the measures which are very easy to access for the researchers and analysts. Maddison<sup>10</sup> opines that it is the best measure of historical analyses of the development economies. Again, Barro and others are of the opinion that the subject-matter of development is mainly concerned with the best measure to make cross-national analyses<sup>11</sup>. From such discourses, it is clear that the empirical evidence on the relationship between entrepreneurship and economic development gives fresh insights on the postulates of making entrepreneurship policy. Accordingly, it is predicted that development is multidimensional concept; whereas, entrepreneurship is the innovative practices adopted for the purpose of holistic development thought in creative endeavors with realistic growth perspective for reducing human poverty, social marginalization and bringing overall social transformation. From this standpoint, development scholars assert their view that entrepreneurs are those who facilitate adjustment to change by spotting opportunities for profitable arbitrage (and disequilibrium situation in the market). Baumol further comments thus: entrepreneurial ability can be allocated towards productive, unproductive, or even destructive activities<sup>12</sup>. Whatever be the case, it is suggested that the role of entrepreneurship for economic development should be associated with innovativeness and is required to be characterized by shouldering high risk and uncertainties. From the viewpoint of development scholars, government policy implications require to reduce uncertainty and transaction costs; so that economic development becomes more convenient, reliable and viable through entrepreneurship activities. Thus, the synthesis between entrepreneurship and economic development can be found from the combining role of behavioral and occupational views and it percolates three major areas: (a) the resource, (b) process and (c) the state of being through, in which individuals utilize positive opportunities in the market by creating and growing new business firms<sup>13</sup>.

### **Entrepreneurship-Economic Development Interface**

Entrepreneurship plays an influential role in the economic growth of a country and helps raising standard of living of people for reducing regional disparities in terms of job creation, wealth creation and sharing, increasing per capita income, export promotion, community development and so on. In this way, there is effective interface between entrepreneurship and economic development for social transformation, human existential freedom of life bringing capacities and empowerment of people for forward moving tendencies. Thus, entrepreneurship role model helps reinventing the whole spectrum of socio-economic activities. Accordingly, it is observed that entrepreneurs by establishing business entities invest resources and attract capital in the form of debt, equity, etc. from aspirant investors, lenders and the public at large. Thus, public resources are mobilized<sup>14</sup>. This kind of pooled capital in business venture strengthens the base of the economy and brings overall socio-economic development. Another aspect of interface between entrepreneurship and economic development is done by way of creating jobs, because entrepreneurs are basically job creators. The new horizons of business growth in the economy multiply other job seekers and provide employment to many people. For this reason, at present the government of

India has launched many initiatives such as Startup India, promote and support new startups, Make-in-India initiative to attract foreign companies and inflow of foreign direct investment<sup>15</sup> (FDI) into the economy. All these help entrepreneurs for setting new business and industrial units in different regions of the country. As a result, regional development is made by locating less developed areas for industrial infrastructure, effective rail-road coordination, airports, stable electricity, water supply, schools, colleges, universities, hospitals, shopping malls and many other public and private services. Consequently, by creating direct and indirect jobs entrepreneurship helps lifting backward regional economies in different ways. Under this system, the central and respective state governments promote registered MSME in terms of various concessions and benefits for speedy regional development through employment generation<sup>16</sup>, income yield and standard of living. Entrepreneurship activities in this way promotes export, increases per capita income, stabilizes gross domestic product (GDP), strengthens human capacity building, capabilities, initiates community development projects, builds up social infrastructure, reforms markets and so on for the purposive nature of economic development. Thus, there is effective interface between entrepreneurship and economic development. The reinventing role model of entrepreneurship acts as catalytic element of growth.

### **Entrepreneurship and Economic Integration**

Entrepreneurship activities provide economic integration by way of reducing concentration of economic power in a few hands and creating employment opportunities. Equitable distribution of income is made possible through new business entities and venture capital pool for ameliorating sufferings of people in needy areas. It is further observed that government adopts certain business and economic policies from time to time and frames laws for the purpose of economic integration<sup>17</sup>. It is done with a view to relocate industries, renovate existing business enterprises and diversify economic activities in backward areas through special economic zones (SEZs) on urgent basis to optimize income potentials of the masses, minimize crisis in those areas and realize the goals of welfare with the objectives of citizens' development charter (CDC) and agenda of Sabka Saath, Sabka Vikas<sup>18</sup>. The present government at the center has initiated many programs by chalking out plan of action and road map for balanced development; so that economic integration is made possible in terms of regional development, holistic growth and realistic progress of the whole country in dynamic nature. Thus, the vista of peace, prosperity and progress is harmonized by way of reform, perform and transform policy measures of the government with the norms of economic integration, regional diversification and socio-economic developmental strategies. The central government at present with many other state governments have been making collective efforts to implement policies and complete projects on the basis of time-line approach with radical administrative measures and vibrant entrepreneurship development activities such as skill development programs, Pradhan Mantri Mudra Yojana (PMMY) schemes<sup>19</sup>, social infrastructural packages for rediscovering the fields of regional integration and economic empowerment of people. As a matter of fact, it is observed that backward areas are given due stress for their speedy development through various means of

entrepreneurial services, quality assurance process and human skill building norms for social transformation and living excellence to restore cordial balance in living standard of people between rich and poor. The impact of such type of lateral integration<sup>20</sup> has strengthened the pillars of national economy, stabilized the base of regional growth and cemented human interrelationships for reducing gaps between forward and backward zones. Hence, it is suggested that entrepreneurship policies should work more efficiently as reformative path to attain the goal of liberal administrative guidance and judicious governance mechanism for incrementing benefit to people, reducing social marginalization<sup>21</sup> and eradicating all sorts of human deprivation. In the long-run, it will bring in holistic development towards social transformation in never-ending manner for realization of the objective of New India slogan through Make-in-India program.

### **Entrepreneurship and Business Process Reengineering (BPR)**

Entrepreneurs work as the agent of social change. They rediscover new innovative ideas, reshape policy implications by means of their strategies adopted for the purpose of business growth, frame different models of development and implement the resurgent socio-economic packages with BPR<sup>22</sup> for social transformation, human empowerment and living freedom with existential autonomy of life bringing possibilities. Thus, it is observed that there is positive relationship between entrepreneurship and regional growth<sup>23</sup>. Another important observation from the empirical studies reveals the fact that the impact of entrepreneurship on productivity change over time. Hence, it can be predicted that variations in the birth rate and the death rate for firms are related mainly to positive changes and productivity<sup>24</sup>. Accordingly, entrepreneurs redesign business models for taking opportunities out of the competitive market advantages to strengthen business potentials through BPR techniques, streamline productive possibility curve in positive direction and with cost-benefit analysis. All these require quality assurance excellence building norms, skill development<sup>25</sup> initiatives and innovative ideas of business growth perspectives. Consequently, the BPR provides a paradigm shift in productive activities in regard to inventive creativity, fund management efficiency and enrichment of human capabilities for social transformation in terms of steady business growth, enormous scope of human empowerment and employment generation facilities. Thus, there is positive relationship between entrepreneurship and BPR, which helps to overcome redundant business situations by means of ice-breaking between entrepreneurial abilities and government policy measures. It is therefore pertinent to predict that unbounded quality of human knowledge characterized by special training and bounded rationality of modern entrepreneurs in technical know-how society makes entrepreneurship activities possible to reshape society in new dimensional way with strategic decision-making<sup>26</sup>, to cope up with the market changes in terms of BPR techniques, methods and policies. Building on these insights, Hayek had observed long back with visionary idea that the key feature of market economy is the distribution of knowledge across a large number of individuals<sup>27</sup>. BPR principles help entrepreneurship preparation in holistic approach to attain realistic success working in this line for self-actualization purposes with redesign of core business values, ethics and code of

conduct to the substantial improvements in business performance, productivity and quality. The whole process interlinks business tasks and activities performed to achieve a specified outcome<sup>28</sup>. Adopting BPR in entrepreneurship adjusts with change, the way an individual performs the work to attain the better results accomplished by means of dramatically improving customer service, achieve higher levels of efficiency, cut operational costs and entrepreneurs become a world-class competitor.

### **Findings, Suggestions and Recommendations**

There are ample scope and enough opportunities in entrepreneurship for growth and stability of economy, development and advancement in nation building process and progress and prosperity to citizens, which require appropriate study on the role of entrepreneurship with correct policy implications, judicious government regulations and adequate skill building operations. Thus, various discourses made so far provide some important findings as noted below:

(1) Entrepreneurship is a creative discipline and innovative idea of developing the superstructure of the civil social living norms with human existential freedom of autonomy in life bringing possibilities requiring professionalism, human values, business ethics and code of conduct. It is therefore needed due attention for human skill building qualities in terms of special training and executing policies of the government for continuous improvement of business, initiating holistic economic growth with realistic development process in purposive manner.

(2) Entrepreneurship requires reinventing role model for economic development in terms of responsibility building notion and responding nature of quality services, efficient productive mechanism and accountability. In all these lines there should be CDC agenda, road-map for carrying out activities with good governance paradigms and liberal business environment to eliminate social gaps between rich and poor.

(3) Adequate role of entrepreneurship should focus on human empowerment, employment generation and increasing capabilities of people by way of creative and productive activities and innovative nature of doing things for initiating Make-in-India through Digital India programs and skill building policies to implement resources in efficient manner with resource pool, financial transparency and administrative justice.

(4) Regional disparities are due to backwardness of people and their social marginalization. Hence, entrepreneurial activities are required to be performed in professional manner for human satisfaction, customer value orientation, QWL and efficient utilization of local resources for mitigating local needs. In this way, there will be economic development, social peace and human prosperity in equitable manner.

(5) Last but not the least, it is essential to reinvent the role of entrepreneurship on the grounds of reducing regional imbalances, increasing national development and realizing the welfare goal with BPR techniques for quality assurance in human living norms to bring in social transformation in terms of economic growth perspective.

Some suggestive measures are recommended below which need special attention on the role of entrepreneurship in varied fields of socio-economic activities:

(I) It is essential to develop whole economy in holistic approach for increasing income of people, decreasing human sufferings and realizing goal of social transformation by various means and ways in speedy as well as urgent manner for balancing gaps between rich and poor and forward zones and backward zones.

(II) Entrepreneurship discipline should be made a compulsory subject in school, college and university levels to cater the needs of job creation by means of academic discourses in bringing consciousness amongst the young generation.

(III) Skill building training should be imparted to young educated citizens with professional ethics, business value-driven guidelines and liberal code of human conduct. Thus, all the principles of entrepreneurship should be made practical oriented in syllabi with research backgrounds to reinvent the role of entrepreneurial activities in new dimensional way.

(IV) Entrepreneurship knowledge should be made compulsory agenda of human socio-economic development process in all walks of life for easy, convenient and reliable living pursuits with existential autonomy and freedom towards social rolling in moving for forward looking tendencies. It will thus pave the way for 'Sabka Saath, Sabka Vikas and Sabka Prayas' through holistic development.

(V) Professionalization of entrepreneurship is concerned with the philosophy of business mantra: 'Vasudhaiva Kutumbakam', which is needed for citizens' care with fair treatment to sustainable development model. This ideology can be propagated with profound knowledge of civil society living norms where entrepreneurial activities are required quality circle (QC) concept and human excellence building objectives. All these are possible through inventive creativity, nurturing system and human capabilities. Hence, the research and development (R&D) policy should be made working culture of human life with convergent business combinations and continuous improvement goal to reform, permorm and transform modern civil society in dynamic approach.

### **Conclusion**

Role of entrepreneurship is essential for reducing regional imbalances, creating employment opportunities and empowering people with quality-driven work culture, service delivery norms and good governance mechanism. All these are essential for economic development and initiating balanced growth in society to minimize gaps between rich and poor. Thus, innovative nature of work and creative research base will strengthen the foundation of modern civil society free existential living pursuits of human beings. Hence, the principles of entrepreneurship are coagulated in terms of inventive creativity for good governance, quality assurance and service related excellence building norms driven by judicious administrative affairs and guided by the policy of work culture. Thus, it is permeably said that reinventing the role of entrepreneurship can diversify business activities with continuous improvement for reaching at the goal of New India slogan: 'Vocal for Local and Local to Global' through Make-in-India project and the subsequent programs such as,

Startups, Standup, Skill India, Digital India and so on of the central and respective state governments to safeguard human beings from social marginalization, regional inequalities and living deprivation for the existential freedom of life. As a whole, entrepreneurship with its inventive creativity in holistic approach can build up social pyramid with the agenda of reform, perform and transform to eliminate human poverty from societal foundation, eradicate problems of growing volume of unemployment by creating new job opportunities and cement human relationships for social peace, progress and prosperity to achieve the objectives: 'Sabka Saath, Sabka Vikas and Sabka Prayas', common welfare and integral humanity. There should be effective interface between entrepreneurship and BPR techniques for quality assurance and human excellence building norms with skill initiating processes to greater economic integration purposes. All these are fundamental principles of innovation needed creative research base backed by strong professionalism and special attention, for bringing social transformation in terms of reducing gaps between forward and backward zones through accentuating the role of entrepreneurship, and relocating the process of industrialization measures with rationalization schemes and resurgent business policies on the part of government authorities, administrators and legal experts. Thus, entrepreneurship as a creative discipline and social changing instrument can help to stabilize economic development process, harmonize human living pursuits with the 'Ease of Doing Business', 'Swadeshi Movement' and 'Vasudhaiva Kutumbakam' ideology of work culture for bringing social transformation in terms of reformative performance criterion, to restore growth potentials, revisit regional balance and move in forward looking tendencies in dynamic approach.

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An Annual Research Journal of Business, Management and Accounting

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## Analysis of Challenges Facing Human Resource Manager in Current Scenario

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Received : August 10, 2022

Accepted : October 05, 2022

### Abstract

*It is really a huge challenge to understand the psychology of workforce, retain the best talents of the industry, motivate them to perform better and handle diversity while maintaining unity simultaneously. Globalization has resulted in many positive developments but it has left many concerns for HR managers. In today's business environment, it's not enough for HR professionals to simply react to change. HR must be quick enough to lead the change. The proliferations of technology and changes in the business environment have increased the importance of human resources in the modern world. Human resource management is a process of bringing people and organizations together so that the goal of each other is met. The role of HR manager is shifting from that of a protector and screener to the role of a planner and change agent. The major challenges facing human resources arise from this elevation of human resource activities to a core strategic function. The demands of today's businesses are constantly evolving, and with it, HR leaders have to move with the trends and act as the performance increase in the number of organisations that have internationalized their operations. The focus of today's HR Manager is on strategic personnel retention and talents development. HR professionals will be coaches, counselors, mentors, and succession planners to help motivate organization's members and their loyalty. The HR manager will also promote and fight for values, ethics, beliefs, and spirituality within their organizations, especially in the management of workplace diversity. The study is about the challenges and trends that the HRM profession currently faces and might face in the future and the resulting changing roles and competencies required of HRM practitioners*

**Key Words:** *Workforce Diversity, Retention, Human Capital, HR Effectiveness, Employee Advocacy, Talent Acquisition*

### 1.1. Introduction

The proliferations of technology and changes in the business environment have increased the importance of human resources in the modern world. Human resource management is a process of bringing people and organizations together so that the goals of each other are met. The role of HR manager is shifting from that of a protector and screener to the role of a planner and change agent. The major challenges facing human resources arise from this elevation of human resource activities to a core strategic function. The demands of today's businesses are constantly evolving, and with it, HR leaders have to move with the

trends and act as the performance increase in the number of organisations that have internationalised their operations. The focus of today's HR Manager is on strategic personnel retention and talents development. HR professionals will be coaches, counselors, mentors, and succession planners to help motivate organization's members and their loyalty. The HR manager will also promote and fight for values, ethics, beliefs, and spirituality within their organizations, especially in the management of workplace diversity.

### **1.2. Objectives of the Study**

- To study the current trends on human resource manager for policy makers and other key challenges.
- To increase an appreciation of participation in educating values, ethics, beliefs of organizations.

### **1.3. Literature Review**

A range of challenges are faced by organisations and HRM professionals in managing and implementing effective HR, particularly in the climate of globalisation, and the new technological revolution begins with the importance of human capital in HRD practice, their education and technical training, and also their communication and language skills. Human resources' learning and motivation are also described as important features of effective HRD practices. However, their deficiencies in supporting the effectiveness of HRM pose a challenge to the development, management and implementation of effective HRP in organisations. Furthermore, the workforce's changing demographics are also seen to have an impact on HRM practices, alongside the organizations of different HR strategies. The central factor in HRD is the human resources or the human capital in an organisation. They are viewed as the driving force for the success of organizations because of their skills, competencies, knowledge and experience (Becker, 1975; Schmidt & Lines, 2002; Harrison & Kessels, 2004). Moreover, it has been suggested that for organisations to compete successfully in a global economy, it is important to hire sufficiently educated and skilled employees and provide them with lifelong learning (Nadler & Wiggs, 1986; Chalofsky & Reinhart, 1988; Nadler & Nadler, 1989; O'Connell, 1999; Streumer et al, 1999; Low, 1998; Harrison, 2000; Sadler-Smith et al, 2000). However, these are some of the problems faced by employers and organisations and seen as a hindrance to the effective management, training and development of human resources in a global economy (Roberts & McDonald, 1995; Fernald et al, 1999; Shim, 2001; Lloyd, 2002; Budhwar et al, 2002; Bates et al, 2002). In the specific context of HRD professionals, the literature has indicated that there is a shortage of HRD professionals who are skilled and experienced systems thinkers (Bing et al, 2003), and who have the ability to manage the vast and specialised function of HRD across organisations (Eidgahy, 1995; Buyens et al, 2001; Garavan, et al, 2002). For instance, it was reported by Budhwar et al (2002) that the lack of HRD professionals in Oman is a major obstacle to the nation's HRD efforts. Kerr & McDougall (1999) argued that problems also arise due to a lack of experience and understanding of HR T&D on the part of managers. Indeed, some writers have claimed that HRM professionals do have an important role, as

they possess expertise in learning and in developing others to become experts (Wright et al, 1999; Eichinger & Ulrich, 1998; Chermack et al, 2003).

### 1.4. Research Methodology

The study is based exclusively on secondary data, which have been compiled from various relevant Books, Journals, Reports of National and International level and internet etc.

### 1.5. Challenges of Human Resource Management (HRM)

#### 1.5.1: Managing Work Force Diversity

Generally, diversity may be defined as the presence of differences among members of a social group or unit. Future success of any organizations relies on the ability to manage a diverse body of talent that can bring innovative ideas, perspectives and views to their work. Deresky (1994) highlighted that the differences between the group members may be illustrated in terms of the dimensions such as national origin, language, religious belief, culture, age, physical ability, socio-economic status, and marital status, the legal standing of a person in regard to his or her marriage status. With the mixture of talents of diverse cultural backgrounds, genders, ages and lifestyles, an organization can respond to business opportunities more rapidly and creativity, especially in the global arena, which must be one of the important organizational goals to be attained. This is especially true for multinational companies who have operations on a global scale and employ people of different countries, ethical and cultural backgrounds. Thus, a HR manager needs to be mindful and may employ a “Think Global, Act Local” approach in most circumstances. The future success of any organizations relies on the ability to manage a diverse body of talent that can bring innovative ideas, perspectives and views to their work. Diversity in workforce will also help firms when they compete in foreign markets. It helps in the fulfillment of competitive environment. It helps in committing the success in an organization and prepares employees for high task which is strength to a company. It makes the environment friendly that builds flexibility.

**Table: 1.1 Workforce Diversity Across Industries**

	Share of Female employees	Share of Females in senior management	Share of Employees Under 25	Share of Employees Over 65	Share of Non-national employees	Share of Part-time employees
Banking	53%	21%	12%	1.4%	3.3%	7%
Business Services	45%	30%	9%	5.1%	5.8%	14%
Energy/ Chemicals	26%	26%	10%	0.9%	1.6%	2%
Heavy Manufacturing	23%	21%	14%	1.6%	2.8%	4%
Insurance	58%	30%	10%	2.4%	6.6%	11%
Pharmaceuticals	41%	32%	9%	0.2%	1.7%	3%
Retail	52%	34%	25%	3.9%	3.9%	19%
IT Services	30%	37%	11%	0.8%	4.6%	8%
Manufacturing	30%	26%	13%	1.1%	2.3%	3%

Source: Oxford Economics

This study reveals that specifically at four key facts of diversity: Gender, Age, Nationality and workplace flexibility. It also reviews Industries approach to part-time employment.

### **1.5.2. Required Tools and Strategies adopted HR managers for Managing Diversity**

- Ward off change resistance with inclusion: Involve every employee possible in formulating and executing diversity initiatives in your workplace.
- Foster an attitude of openness in your organization,-Encourage employees to express their ideas and opinions and attribute a sense of equal value to all.
- Promote diversity in leadership positions, - This practice provides visibility and realizes the benefits of diversity in the workplace.
- Utilize diversity training; - Use it as tool to shape your diversity policy.
- Launch a customizable employee satisfaction survey that provides comprehensive reporting,-Use the results to build and implement successful diversity in the workplace policies.

### **1.5.3. Trends setters - Initiatives taken by MNC to balance and manage diversity.**

The new company law, passed in 2013, mandates a specified class of companies to have at least one woman on the board .Since this became law in August; dozens of companies are looking to rope in woman directors on their boards. Case in point : Irena Vital ,a former ,partner at Mckinsey, has joined the boards of Axis Bank, GlaxoSmithKline consumer healthcare, Godrej Consumer Products , Tata Global Beverages , Titan and Wipro in the past year.

IBM was one of the first companies in history to embrace the hiring of qualified personnel regardless of the race ,color , gender or creed - IBM's diversity policy was written in 1954 9(at the very start of the Civil Rights movement ). IBM received innumerable awards for workforce diversity.

In Dec 2009, Tata Group Chairman Cyrus Mistry has established his progressive credentials by unequivocally stating that he was looking forward to seeing more women in key leadership positions at Tata Global Beverages (TGB). Its joint venture with Starbucks is headed by a woman.

Infosys was the first Indian IT company to establish an office for diversity and inclusivity .Their workforce comprises people from 89 nationalities working from 32 countries with 34.7% women on board and multi -generational representation.

### **1.5.4. Talent Acquisition**

According to an online survey by HT Shine.com and Absolute Data, in which 350 HR professionals (manager level and above) and 1200 other employees were contracted, the biggest challenge for HR managers today is talent acquisition and employee engagement. Talent Acquisition describes identifying the sources of talent pool by assigning job to HR consultant, headhunter's .Going through the process of selection through newspaper advertisement, online selection and through conference recruitment. Talent acquisition

involves all these processes and also includes finding attractive and highly experienced individual into the organization.

### 1.5.5 Critical aspect of poor Talent Acquisition

- It is estimated that a least 1/3 of business failures are due to poor hiring decisions and inability to attract and retain the right talent.
- The average cost of replacing a manager or professional is 1.5 to 3 times to salary.
- The cost of working around an under –performer can run as high as six figures.
- The cost consistently failing to attract and retain good talent – including declining productivity, morale, culture and reputation – is inestimable.
- Each vacant position costs your organization Rs 60,000 on average.
- For some management positions, it can easily run into six figures.

HR managers are continuously in hunt of talent. Various prevailing sources of recruitment are E-Recruitments , Recruitment process Outsourcing( RPO), Job portals , Social Networking sites (Likedin, Xing, Facebook, Twitter etc ), Referral hiring ,Employer Branding , Mobile Recruiting , Outsourcing and raiding / poaching.

### 1.6 Current practices followed by Multinational corporations to acquire large pool of talent across national frontiers

- Accenture is a global management consulting, technology services and outsourcing company, with more than 244,000 people serving clients in more than 120 countries.
- American Express is a global financial service company. The company operates in more than 130 countries and employees 58,300 employees worldwide.
- The Carrefour Group, with 9,500 stores in 32 countries around the world, it is the largest retailer in Europe, South America and Asia.
- Infosys has 65 sales offices and 63 developmental centers spread across 32 Countries.
- KPMG operates in 144 countries and has 137,000 professionals working in member firms around the world.
- Volvo has sales activities in more than 180 Countries, production facilities in 19 Countries and employs about 90,000 people worldwide. The company has a presence in over 35 countries and a global workforce of 100,000 employees comprising over 70 nationalities.

### 1.7. Retention Challenge faced by HR

Employee retention refers to the ability of an organization to retain its employees. Some alarming numbers: 40% of workers are planning to look for a new job within the next six months, and 69% say they're already passively looking. Retaining talent in companies is a major challenge before HR professionals but one must not go overboard with rewards and incentives .Focus on employer branding: For in house recruiters, employer branding will be the key to attracting talent. More companies will implement flexible work programmes as the Government continues to encourage work life harmony Offer a competitive benefits package, including health and life insurance and a retirement plans.

- Monetary dissatisfaction is one of the major reasons for an employee to look for a change
- In the current scenario, where there is no dearth of opportunities, stopping people to look for a change is a big challenge.
- Unrealistic expectations from the job also lead to employees looking for a change. Some individuals have a tendency to get bored in a short span of time.
- Work should never become monotonous and must offer a new learning each day.
- Every individual should enjoy privacy at the workplace.
- Incentives, cash prizes, trophies, perks should be given to deserving employees to motivate them to perform up to the mark every time.

Over 50% of people recruited in to an organization will leave within 2 years. One in four of new hires will leave within 6 months. Nearly 70% of organizations report that staff turnover has a negative financial impact due to the cost of recruiting, hiring, and training a replacement employee and the overtime work of current employees that's required until the organization can fill the vacant position. Nearly 70% of organizations report having difficulties in replacing staffs. Approximately 50% of organizations experience regular problems with employee retention.

The top retention strategies' of the Indian work force are promotion/ job advancement (57%). Additional compensation (53%) and Opportunity to work abroad (46%) .Retention Strategies of MNC for young professionals.

- FMCG giant Coca-Cola has started new employee-friendly programmes such as crèche support policy, which allows employees to get their children admitted in a crèche of their choice and reimburse annual costs from the company.
- Even Hindustan Unilever (HUL) has introduced a new employee retention scheme called Talent Excel-Rator, a one-year program which will include workshops on lead.
- In the manufacturing sector, Exide Batteries has started clubs and entertainment activities for the families of its employees. On weekends, activities such as cricket matches for the kids or drawing competition, antakshari is played.
- In the IT industry, Google, which has been touted as the best company to work with by Fortune magazine, has different employee retention strategy. A recent scheme that has been introduced by the search engine is to give the spouse of a deceased employee half of his salary for 10 years to take care of the financial responsibilities.
- US based management and engineering firm Tetra has 'flexi-hours policy' in place.

HR managers also focus on Retention Tools such as Employee Surveys, Exit Interviews and Employee Retention Consultants in routine basis. The organization can then use this information to make necessary changes to their company to retain top talent.

### **1.8. Changing Role of HR**

The role of human resource management is changing very fast. This change is required in order to help corporate to achieve their goals. In recent years we have seen that

HRM has undergone many phases. The role of an HR is drastically changed today due to the emerging industrial growth in India

Strategic Human Resource Management has been developed to give companies a competitive edge over other companies. Since widespread access to and the use of technology have resulted in tighter margins for maintaining a competitive edge, corporations are looking for new ways to beat their competitors. The University of Michigan study first finds that fully 43% of HR's impact on business performance is directly linked to its strategic contribution. The blend between strategic and functional day - to - day work of HR is one of the emerging themes in ' Human Resource Advocates'. The employee advocate role of HR professionals encompasses their involvement in the day- to -day problems, concerns and needs of employees. As an employee advocate, the HR professional plays an integral role in organizational success via his knowledge about the advocacy of people. This advocacy includes expertise in how to create a work environment in which people will choose to be motivated, contributing, and happy.

### 1.9. Conclusion

The capacity to face the challenges of globalization and industrialization of business towards the 21<sup>st</sup> century depends heavily on the human resources. Firms have the capital, technology and human resources; but the HR is the one who can help facing the challenges of business globalization. Capital can be generated. So can technology. But the human resources are needed to propel the organization and the nation through the coming challenges with encouragement and motivation. HR managers should identify and overcome the barriers that have inhibited the employment, retention, development and promotion of diverse groups in the workplace.

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## Dividend Policy Practices and Share Price Behaviour -A Case Study on Oil and Natural Gas Corporation Limited

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Received : August 20, 2022

Accepted : October 05, 2022

### Abstract

*A dividend policy decision is one of the important financial decisions for a company. The dividend policy decision is closely related to the share price of the company in the market, it is also related with the liquidity position and internal sources of the fund for the firm. A good policy decision on a dividend may increase the share price of the company in the market and vice versa. Oil and Natural Gas Corporation Limited (ONGC) is the biggest and largest crude oil and natural gas manufacturing company in India. It contributes around 71 percent to Indian domestic production of Oil and Gas. This paper attempts to explore the dividend policy practices and behaviour of share price in the context of the declaration of dividends by ONGC. The study has been conducted based on secondary data collected from Annual Reports and share prices of ONGC in BSE. This study analysed the trend and pattern of the EPS, DPS and Price Earnings Ratio of ONGC. The study also covered the share price behaviour of ONGC after and before the declaration of dividends. Statistical measures used in this study are mean, standard deviation and straight-line trend equation with respect to time. Moreover, statistical tests such as Run Test and Mann-Whitney U Test are also being used. The study observed that there was an downward trend in the EPS and DPS of ONGC. The study does not observe any pattern for the EPS, DPS and price-earnings ratio (P/E ratio) of ONGC during the study period. The study also observed a mixture of the response of share price behaviour in terms of increase and decrease after the declaration of dividends by ONGC during the study period.*

**Keywords:** - Dividend policy, Share price, Earnings per share, Dividend per share, Price earnings ratio.

### Introduction

The primary goal of the management of a company is to maximize the shareholder wealth through three key decisions such as investment, financing and dividend. Dividends are the percentages of a company's net profit that are distributed to its shareholders. Dividend policy is a fundamental principle of a company that decides how much of its earnings

expectations are to be paid out to shareholders and in which form, so that company can improve its share price in the market and thus satisfies its shareholders. The dividend policy of the company may also be in favour of retaining a share of its profits to plough back into the business which may further yield the shareholders' wealth. Therefore it is so crucial and technical decision for the management of any company.

There are three types of dividends- "the stock dividend, which increases the number of shares outstanding and generally lowers the price per share in the market," "the regular dividend, which is paid at regular intervals" (quarterly, semi-annually, or annually), and "the special dividend, which is paid in addition to the periodic dividend". Furthermore, a company may use few other dividend policies such as "the residual dividend policy", "the stable dividend policy" and "the hybrid dividend policy". Companies choose these policies based on their potential for growth.

The capital market is one where a business can raise long-term capital and shareholders can participate in the share capital by buying and selling the stock of the company. The share prices of companies are always volatile due to the effects of various factors. There are micro as well as macro-economic factors that influence investors to buy of a share in the market. Among the most important factors influencing investors to buy shares is the share price. The dividend policy has an impact on the company's stock market price. However, the true impact of dividend policy in the share market is still vague and unresolved. The study also examines the trend of Earnings per Share (EPS) and Dividend per Share (DPS) of ONGC during this study. The study also examines the relationship between share prices before and after the dividend payment.

Pandit Jawahar Lal Nehru, a visionary leader, established ONGC. Pandit Nehru had belief in Shri Keshav Dev Malviya, who founded ONGC in 1955 as the Oil and Gas Division of the Geological Survey of India and a few months later it was transformed into an Oil and Natural Gas Directorate. On August 14, 1956, the Directorate was transformed into a Commission and renamed the Oil and Natural Gas Commission. The Oil and Natural Gas Commission converted into a corporation in 1994, and the Government of India designated it as a Navratna in 1997. ONGC has got Maharatna status in 2010. ONGC has grown from a small beginning to become one of the world's largest E&P firms in terms of income and manufacturing. ONGC has developed in-house capacity in all aspects of the exploration and production business, including acquisition, processing, and explanation of seismic data, drilling, work-over, and well stimulation operations, construction and engineering manufacturing, processing, refining, mass transit, marketing, applied R&D and training, and so on.

### **Review of Literatures**

A review has been made to witness the study on dividend policy practices and share price behaviour in different companies in respective of industry in India as well as outside the country. A summary of the relevant literature is highlighted below:

**Chelimo and Kiprop (2017)** investigated how dividend policy affects insurance company's share prices. The results reveal that earnings distribution, dividend yield, per-share earnings and inflation all play a role in predicting share price value. **Rehman and Hussain (2013)** used a regression model with panel data to measure performance using ROA, ROE, dividend policy proportion and per-share earnings to measure dividends. They discovered that firm performance can be explained by using calculated dividend policy alone. **Hasan, Asaduzzaman and Karim (2012)** researched "The Impact of Dividend Policy on Share Price." The study's main goal was to evaluate the impact of dividend policy on share market price in Bangladesh using tools such as dividend payout, share price, earnings per share correlation, and multiple linear regression models. According to the findings, the impact of dividend payout on market price supports the theory relating to dividend policy. **Miller and Modigliani (1966)** discovered that dividend changes convey a healthy amount of information, particularly about management's expectations for long-run future profit. **Phoebus and Mordecai (1967)** discovered in their study that firm financing decisions and investment decisions are linked, and influence a company's various policies including dividend policies. **Manigagi and El Khoury (2014)** in his study justified that once the dividend-initiation decision becomes public, the market will react favourably to the positive information. **Pettit (1972)** in his study discovered that dividend announcements can convey valuable information, which used cross-sectional data from 40 public limited companies. **McManneh and Naser (2015)** in their study investigated the French market and supported the Lintner revelation. According to them, the investment or external financing levels do not have any impact on dividend. The past dividends and current earnings is the major indicator of variation in dividends. **Miller and Rock (1985)** found that investors lack access to insider information, they buy and invest in company shares, which increases demand and raises prices. **Arif, A. and Akbar, F. (2013)** discovered that the dividend distribution policy and investment opportunity set have a remarkable negative relationship. However, the impact of several corporate finance metrics, such as financial leverage, outside funding and debt maturity on the dividend distribution policy is negligible.

The above-mentioned literature shows the study on different aspect of dividend policy and shares price behaviour in India and well outside India. A study on ONGC concerning its dividend policy practices and share price behaviour is yet to be covered. Therefore an attempt has been made to study the same to help investors and companies in their decision-making process.

### **Objectives of the Study**

- To study the dividend policy practices in terms of trend and pattern of Earning per Share (EPS) and Dividend per Share (DPS) of ONGC
- To study the trend and pattern of the Price Earnings Ratio(P/E Ratio) of ONGC
- To study the behaviour of stock price before and after the declaration of dividends by ONGC

### Hypotheses of the Study

- $H_0$  : There is no significant pattern in the EPS of ONGC
- $H_0$  : There is no significant pattern in the DPS of ONGC
- $H_0$  : There is no significant pattern in the P/E Ratio of ONGC
- $H_0$  : There is no significant difference between the average Market Price per Share (MPS) before and after the dividend declared by ONGC.

### Methodology of the Study

It is a case study on ONGC in relation to its dividend policy practices and shares price behaviour. Parameters considered in the study are Earning per Share (EPS), Dividend per Share (DPS), Price Earnings Ratio (P/E Ratio) and the average market price of ONGC. The relevant data has been collected from secondary sources such as various issues of Annual reports of ONGC, the website of ONGC and BSE. EPS, DPS and P/E Ratio has been analysed for 15 years from 2007-08 to 2021-22. However to analyse the behaviour of share price, daily market price per share for seven days considering before and after the declaration of dividends for 11 years from 2011-12 to 2021-22 has been considered. Statistical measures used in this study are mean, standard deviation and straight line trend equation and graph with respect to time. Moreover, statistical tests such as Run Test and Mann-Whitney U Test are also being used.

### Results and Discussion

Discussion has been made in four segments. Trend and pattern of Earning Per share (EPS), Trend and pattern of Dividend Per share (DPS), Trend and pattern of Price Earning Ratio (P/E Ratio) and Share price behaviour of ONGC by analysing the significant difference in average market price before and after declaration of dividend.

- **Earnings per Share (EPS) of ONGC**

Earnings per share (EPS) indicates the power of a company's earnings. One of the most important factors that influence the company's dividend policy and stock price in the market. EPS is calculated by dividing net income available to equity shareholders by the total number of outstanding common shares. Stocks of ONGC have split from Rs.10 to Rs.5 in the year 2009-10. Therefore trend for the EPS of ONGC has been analysed for the period from 2010-11 to 2021-22 i.e. period after the stocks of ONGC are split.

**Table 1: Earnings Per Share (EPS) of ONGC**

Years	EPS (Rs.)	Remarks
2007-08	96.39	Period before the stocks are split from Rs.10 to Rs.5
2008-09	95.76	
2009-10	102.90	
<b>Average</b>	<b>98.35</b>	
<b>Standard Deviation</b>	<b>3.95</b>	
2010-11	40.73	-
2011-12	49.04	A
2012-13	45.98	B
2013-14	47.75	A

2014-15	46.42	B
2015-16	31.84	B
2016-17	23.45	B
2017-18	26.82	A
2018-19	33.78	A
2019-20	25.49	B
2020-21	21.92	B
2021-22	46.41	A
<b>Average</b>	<b>36.64</b>	r=7
<b>Standard Deviation</b>	<b>10.51</b>	n <sub>1</sub> =5 n <sub>2</sub> =6

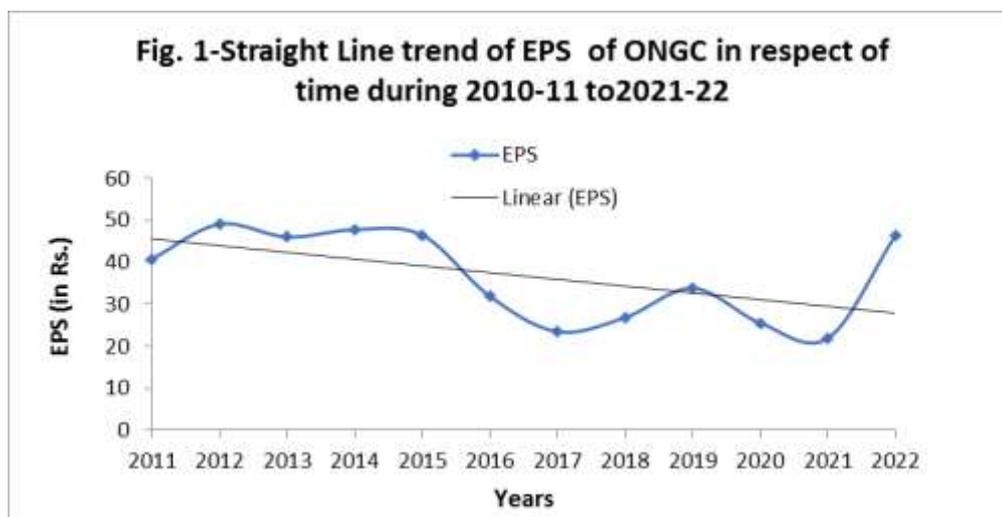
Source: Annual Report of ONGC various issues.

# A-increase in EPS, B-decrease in EPS

As shown in the table-1, the EPS of ONGC is ranging between Rs. 95.76 to Rs. 102.9 during the period before stocks are split. On the other hand, it is ranging between Rs. 49.04 to Rs. 21.92 after the split of its shares. It is observed that the average EPS of ONGC before the split has recorded at Rs.98.35 and the SD at Rs.3.95. On the contrary, the EPS of ONGC after the split has been recorded at Rs.36.64 and the SD at Rs.10.51. From the above, it may be said that the stock split resulted in declining the EPS for ONGC. Moreover, the volatility of earnings has increased during after split period.

- **Trend of Earning per Share of ONGC in respect of time**

The trend of EPS of ONGC has been analysed for after split period i.e from 2010-11 to 2021-22. The trend is analysed based on a line chart, linear trend line with respect to time and straight line trend equation.



The line chart in Figure 1 shows the line chart of EPS has fluctuated during the study period. The linear trend line with respect to time is declining from left to right which indicates that the EPS of ONGC is decreasing during the study period. Linear trend line again may be verified with the help of a straight line trend equation i.e.  $y = 3294 - 1.615t$ , where regression coefficient with respect to time shows negative and it implies a downward trend. However,

the coefficient of determination ( $R^2$ ) recorded at 0.3072 indicates that only 30.72% variations in EPS are explained by the time factor.

- **Test of Randomness or Pattern of Earning per Share (EPS) of ONGC**

Run Test used to examine whether EPS of ONGC during the period after split follows any pattern or it is purely random. For that purpose, the EPS of the current year is compared with the EPS of the previous year and coding them as **A** and **B**. **A** indicates EPS of the current year is greater than the EPS of the previous year and **B** indicates its opposite as shown in table-1.

The table indicates the total number of Runs i.e. test statistic  $r = 7$ ,  $n_1 = 5$  i.e. number of elements in run A and  $n_2 = 6$  i.e. a number of elements in run B. Since  $n_1$  and  $n_2 < 15$ , we considered critical value table for the Run test at 5% level of significance. The lower critical value ( $U_1$ ) is 3 and the upper critical value ( $U_2$ ) is 10 as observed. Since  $r = 7$ , which is higher than the lower critical value and less than the upper critical value and therefore null hypothesis is accepted and concluded that EPS of ONGC does not follow any pattern, in other words, EPS of ONGC is purely random.

- **Dividend per Share (DPS) of ONGC**

DPS refers to the amount of profit distributed to common stockholders per share held. Higher DPS generally creates a positive impact among stockholders. It is calculated by dividing net earnings paid to common shareholders by the total number of common shares outstanding.

**Table 2 : Dividend Per Share (DPS) of ONGC**

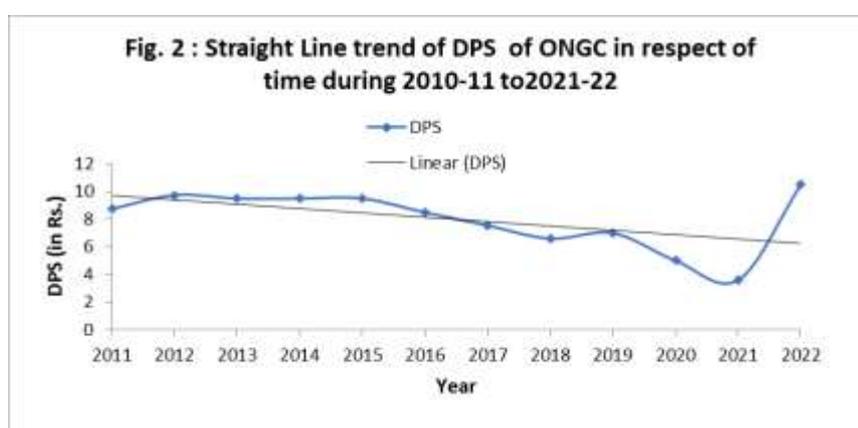
Years	DPS (Rs.)	Remarks
2007-08	32.00	Period before the stocks are split from Rs.10 to Rs.5
2008-09	32.00	
2009-10	33.00	
<b>Average</b>	<b>32.33</b>	
<b>Standard Deviation</b>	<b>0.58</b>	
2010-11	8.75	-
2011-12	9.75	A
2012-13	9.50	B
2013-14	9.50	A
2014-15	9.50	B
2015-16	8.50	B
2016-17	7.55	B
2017-18	6.60	A
2018-19	7.00	A
2019-20	5.00	B
2020-21	3.60	B
2021-22	10.50	A
<b>Average</b>	<b>7.98</b>	$r=7$ $n_1=5$ $n_2=6$
<b>Standard Deviation</b>	<b>2.10</b>	

Source: Annual Report of ONGC various issues.  
# A-increase in DPS, B-decrease in DPS

Table 2 shows that the range of DPS before stocks are split in ONGC recorded lowest at Rs. 32 and highest at Rs. 33 during the period. On the other hand, after stock split period, DPS of ONGC recorded its lowest at Rs.3.60 and highest at Rs. 10.50. Furthermore, the average DPS of ONGC before the split has recorded at Rs.32.33 and the SD at Rs.0.58. On the other hand, the average DPS for ONGC after the split has recorded at Rs.7.98 and the SD at Rs.2.10. Therefore, it implies that like EPS, the average DPS of ONGC declined with increased volatility in the post-split period.

- **Trend of Dividend per Share (DPS) of ONGC in respect of time**

The trend of DPS of ONGC in respect of time has been analysed for after the split period. It is analysed based on a line chart, linear trend line and straight line trend equation.



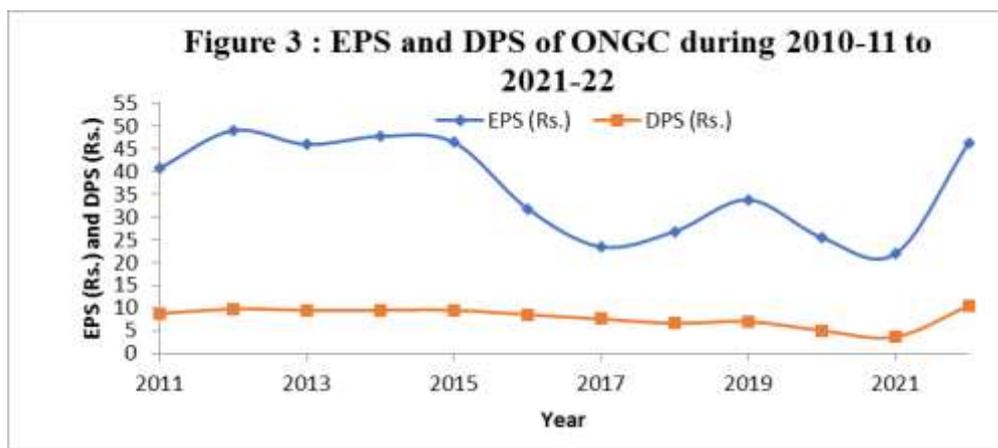
The line chart in Figure 2 shows DPS was moving downward with minor ups and down. However, it has shown a correction in the year 2021-22. In the case of the linear trend line, it is too slow-moving downward from left to right which indicates a deteriorating trend of DPS for ONGC. Straight line trend equation for DPS of ONGC is  $y = 640.7 - 0.313t$ , where the regression coefficient with respect to time shows negative and it implies a downward trend. Furthermore, the coefficient of determination ( $R^2$ ) recorded at 0.291 indicates that only 29.10% variations in EPS are explained by the time factor which is very low. Since DPS trend which are declining but is not significant and therefore we may also conclude that DPS trend is by and large stable.

- **Test of Randomness or Pattern of Dividend per Share (DPS) by ONGC**

To examine the randomness or pattern of DPS of ONGC, Run Test is being used for the period after the split of its share. The procedure is the same as that used for examining the randomness of EPS in ONGC. It is observed that the total number of Runs  $r=7$ ,  $n_1=5$  and  $n_2=6$  respectively. Critical value table at 5% level of significance  $U_1=3$  and  $U_2=10$ . Since  $r = 7$  falls within  $U_1$  and  $U_2$  therefore null hypothesis is accepted and concluded that the DPS of ONGC too does not follow any pattern, in other words, the DPS of ONGC is purely random.

- **Gap between EPS and DPS of ONGC during the study period**

The figure shown below indicates the gap between EPS and DPS during the study period. It is observed that the EPS line is above the DPS line.



It is apparent from the above figure that the DPS of ONGC is quite stable during the study period despite having fluctuation in the EPS. It is also evident a clear gap between EPS and DPS, it implies that the earnings of the ONGC are not entirely distributed as dividends. In other words, ONGC has been following a regular retention policy for its profit.

• **Price Earnings Ratio (P/E ratio) of ONGC during 2010-11 to 2021-22**

Price Earnings ratio (P/E ratio) is one of the most popular valuation techniques of stocks. It is used to compare the market value of a stock with the company's earnings. A high P/E ratio indicates the stock price is greater relative to its earnings and also indicates possibly overvalued of the share and vice versa. It is of the most important factors influencing a company's dividend policy and stock price. The P/E ratio is calculated by dividing the market price of a share by the earnings per share.

**Table 3 : Price Earnings Ratio of ONGC**

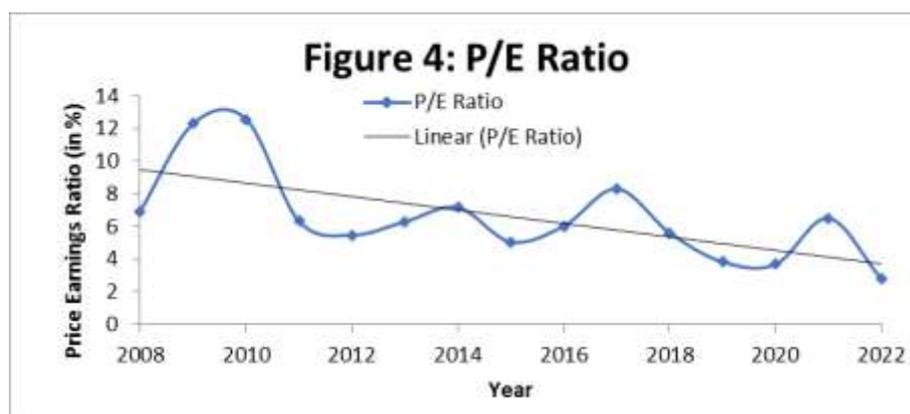
Years	P/E Ratio (%)	Remark
2007-08	6.93	-
2008-09	12.30	A
2009-10	12.57	A
2010-11	6.31	B
2011-12	5.45	B
2012-13	6.28	A
2013-14	7.15	A
2014-15	5.04	B
2015-16	6.01	A
2016-17	8.30	A
2017-18	5.60	B
2018-19	3.81	B
2019-20	3.66	B
2020-21	6.49	A
2021-22	2.75	B
<b>Average</b>	<b>6.58</b>	r=8
<b>Standard Deviation</b>	<b>2.78</b>	n <sub>1</sub> =7 n <sub>2</sub> =7

Source: Annual Report of ONGC various issues.  
# A-Increases, B-Decreases

The above table shows that the highest P/E ratio 12.57% was recorded in the year 2009-2010 and the lowest 2.75% in the year 2010-2022. It is also observed that the average P/E ratio of ONGC is recorded at 6.58% and a standard deviation of 2.78%.

- **Trend of Price Earnings Ratio (P/E Ratio) of ONGC in respect of time**

The price Earnings Ratio (P/E Ratio) of ONGC in respect of time has been analysed for the entire period of study. It is analysed based on a line chart, linear trend line and straight line trend equation.



The line chart in Figure 4 shows P/E ratio was moving downward with fluctuation during the study period. The linear trend line with respect to time shows a downward trend and it indicates that stock prices in relation to its earnings are decreasing during the period.

The straight line trend equation for the P/E Ratio of ONGC is  $y = 836.4 - 0.411t$ , where the regression coefficient with respect of time shows negative and it implies a downward trend. Besides, the coefficient of determination ( $R^2$ ) was recorded at 0.439 which indicates that only 43.9% variations in the P/E ratio are explained by the time factor which is below the standard proportion to explain the variation.

- **Test of Randomness or Pattern of Price Earnings Ratio (P/E Ratio) of ONGC**

The randomness of the price-earnings ratio of ONGC has been examined by using the Run test. Total number of Runs i.e. test statistic  $r = 8$ ,  $n_1 = 7$  i.e. number of elements in run A and  $n_2 = 7$  i.e. number of elements in run B. Since  $n_1$  and  $n_2 < 15$ , we considered the critical value table for a Run test at 5% level of significance. The lower critical value ( $U_1$ ) is 3 and the upper critical value ( $U_2$ ) is 13 as observed. Since  $r = 8$ , which is higher than the lower critical value and less than the upper critical value and therefore null hypothesis is accepted and concluded that the P/E ratio of ONGC does not follow any pattern, in other words, it may say that P/E ratio of ONGC is purely random.

- **Behaviour of Share Price Before and After Dividend Declared by ONGC**

Behaviour of share price of ONGC has been studied by examining the average market price of the share. For that purpose, the market share price of ONGC before and after declaration of the dividend is considered for seven days each. Mann Whitney U Test has been used to

test the significant difference of the average market share price before and after the declaration of dividend..

**Result of Mann Whitney U Test**

Year	Size of Samples	$\alpha$ -value	U Values	Smallest U Value	Comparison with Critical Value (8)	Remarks
2011-12	$n_1=7; n_2=7$	5	$U_1=43 ; U_2=6$	6	$6<8$	<b>Significant</b>
2012-13	$n_1=7; n_2=7$	5	$U_1=16 ; U_2=33$	16	$16>8$	Insignificant
2013-14	$n_1=7; n_2=7$	5	$U_1=0 ; U_2=49$	0	$0<8$	<b>Significant</b>
2014-15	$n_1=7; n_2=7$	5	$U_1=25 ; U_2=24$	25	$25>8$	Insignificant
2015-16	$n_1=7; n_2=7$	5	$U_1=38 ; U_2=11$	11	$11>8$	Insignificant
2016-17	$n_1=7; n_2=7$	5	$U_1=39 ; U_2=10$	10	$10>8$	Insignificant
2017-18	$n_1=7; n_2=7$	5	$U_1=48 ; U_2=1$	1	$1<8$	<b>Significant</b>
2018-19	$n_1=7; n_2=7$	5	$U_1=14 ; U_2=36$	14	$14>8$	Insignificant
2019-20	$n_1=7; n_2=7$	5	$U_1=42 ; U_2=7$	7	$7<8$	<b>Significant</b>
2020-21	$n_1=7; n_2=7$	5	$U_1=47 ; U_2=2$	2	$2<8$	<b>Significant</b>
2021-22	$n_1=7; n_2=7$	5	$U_1=17 ; U_2=32$	17	$17>8$	Insignificant

Source: Computer by the Researcher

As  $n_1 = n_2 < 10$ , therefore critical value table for Mann Whitney U Test is being used. At 5% level of significance, the critical U value is 8 for  $n_1=7$  and  $n_2=7$ . The null hypothesis cannot be accepted if the table value is more than U-statistic. By following the rule, it is observed that the average market share price is significantly different for five years period as shown in the table that is before and after the declaration of dividend by ONGC. On the contrary, the difference is not significant for the other six years. It implies that dividend declaration has a mixture of impacts on the market price of the share for ONGC.

**Conclusion**

From the above discussion, it appears that ONGC has been following a regular and stable dividend policy. ONGC has also been following cash dividends during the study period. ONGC has a regular retention policy of its profit. There is no pattern in the EPS, DPS and Price Earnings Ratio of ONGC, it is purely random. It also reveals that dividend declaration has a mixture of impacts on the market price of the ONGC’s share. The performance of ONGC may be improve further by increasing its earnings so as to increase its dividend to its shareholders. Moreover, the retention policy may be more rational to improve the share price in the market.

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An Annual Research Journal of Business, Management and Accounting

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## Self Help Groups In Assets Accumulation - An Overview

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Received : September 10, 2022

Accepted : October 10, 2022

### Abstract

*Self help groups cum Micro-finance have been assumed to have the capacity to eradicate poverty to the members by ensuring them the availability of credit to the poor, with high repayment rate. The programme credit is not provided to individual persons directly, rather to the members of the some groups. These groups are popularly known as Self Help Groups in India. Credit is a very important Economic tool necessary for the poor community to overcome from poverty. The source of credit may be either formal financial institutions or informal financial sources. The SHG's are most important economic units of attacking poverty and unemployment in the economically backward state like Assam. These units have given a rate of opportunity of tapping useful human resources in terms of skill development and self engagement in their chosen activities SHG has good prospects of future developments and it is found to be suitable agent for extending credit in a small scale to the needy masses and thus generating employment opportunities to the common people.*

**Key Words:** *Self help Groups, Micro-finance, Credit, Employment.*

### Introduction

Self help groups cum Micro-finance have assumed to have the capacity to reduce poverty to the members by ensuring them the availability of credit to the poor, with high repayment rate. The programme credit is not provided to individual persons directly, rather to the members of the some groups. These groups are popularly known as Self Help Groups in India. Self Help Groups are informal association of the people who choose to come together to find ways to improve their living standards. Self Help Groups basically perform three most important functions – a) It motivate and encourage its member for higher saving, b) It persuade member to frame plan and policy to generate additional income, and c) SHG act as a conduit for formal banking service to reach them.

### Main features of a Good Self Help Group

- 1) All member of SHG should belong to homogeneous socio-economic strata especially poor.
- 2) A good SHG comprises 15-20 members.
- 3) The process of decision making in SHG should be democratic in nature.

- 4) The member of SHG will frame the rule and regulation which are required for its effective functioning.
- 5) Member should attend the meetings, save, and participate in all activities voluntarily and regularly.

Credit is a very important Economic device necessary for the poor community to overcome from poverty. The source of credit may be either formal financial institutions or informal financial sources. But whatever may be the sources of credit, while providing credit, the lenders confronted with two types of risk (Ray, 2000) such as, voluntary defaulters and involuntary defaulters. The people who are living below the poverty line, have very little or no assets to be provided as collateral. This is the main cause that makes them excluded from the credit market, especially from the Formal Financial Institutions (FFIs). Another notable problem arises while dealing with the credit needs of the poor is that they need small amount loans frequently. But such a small amount is not feasible for the Formal Financial Institutions (FFIs).

### **Importance of the Study**

There are number of debates in the literature on Micro-financial on the issue like the homogeneity of the SHGs, the regulation of micro finance institutions, impact of micro-finance on poverty, impact of micro finance on Women empowerment, micro finance as alternative source in the rural credit system etc. Among these the debate about the impact of micro finance on poverty alleviation seems to be somewhat more important. It is clear that to reduce poverty the programme must provide some income source to the members or there must be growth in the assets level of members. Hence, the concept of "impact of micro finance on poverty" can be substituted by the term "impact of micro finance on assets creation."

### **Objectives of the Study**

Every study has been some objectives that direct the sides of the study. This research paper has also such character through which the objectives have been reflected. The main objectives of this paper are -

1. To acquaint about the self help groups and its role.
2. To study the dependence of SHG and its members on informal money lenders.
3. To examine the asset accumulation by the self help groups.

### **Methodology**

This study is purely based on the secondary rather than on the primary data. The secondary data were collected from the sources like NSS Report, Statistical Hand Book of Assam, Economic Survey of Assam, various research articles and papers, the block office, from banks and NGOs concerned with the promotion of SHGs in the concern area and internet. The primary data was collected from the field survey made in the study area is Purposive sampling was used to collect the required data, so that people from each category of the society can be selected and SHGs promoted by NGOs as well as from those come

under SGSY can be collected. Two kinds of data from these SHGs were collected. In the first stage 12 SHG were selected. Out of these 12 SHGs 9 SHGs were under SGSY and the left were initiated by an NGO name Weavers Development Society (WDS). Again these 12 SHGs include both male and female SHGs and also Hindu as well as Muslim SHGs. To collect data from these SHGs structured Schedule and Questionnaire were used.

### Area of the Study

Nalbari is one of the relatively backward district of Assam. So it is assumed that perhaps SHGs may play a major role to fulfill the credits needs of the people in this area. This study is made in the Nalbari District of Assam. More over this district is familiar to the researcher. So this district was purposively selected.

### Discussion and Result

From the above study we observed the income level of the members of SHGs increased after joining the groups. This will be clearer from the following discussion.

**Table-1 : Comparative income level before and after joining SHG**

Sl. No.	Income of SHG members	Income before SHG	%	Income after SHG	%
1	No Income	17	35.41	9	15.75
2	0-10000	15	31.25	16	33.33
3	10000-20000	7	14.58	8	16.67
4	20000-30000	4	8.33	4	8.33
5	30000-40000	3	6.25	4	8.33
6	40000-50000	1	2.08	3	6.25
7	50000-60000	1	2.08	2	4.17
8	60000-70000	-	-	1	2.08
9	70000 & above	-	-	1	2.08
	Total	48	100	48	100
	Mean	7901	-	16194	
	Minimum	1800	-	2000	
	Maximum	56000	-	96000	

Source : Primary Data cum Field based study

The above table distinctly showing that the income level of the members of SHGs increased after joining the SHG. After joining the SHG, members are able to generate some income, number of unearned individual declined to 9 from 17 which is significant in terms of percentage. The average income level of the members of the group also increased.

#### (1) Impact on Level of Income

The more visible positive impact of impact of SHG is observed in the form of increase in level of income after joining the SHG group. Our observation on the basis of sample is presented below :

**Table-2 : SHGs Member's Income Position**

Sl. No.	Income of SHG members	Income before SHG	%	Income after SHG	%
1	No Income	17	17	9	19.6
2	0-10000	15	32.6	16	34.8
3	10000-20000	7	15.2	8	17.4
4	20000-30000	4	8.7	4	8.7
5	30000-40000	3	6.5	4	8.7
6	40000-50000	-	-	2	4.3
7	50000-60000	-	-	1	2.2
8	60000-70000	-	-	1	2.2
9	70000 & above	-	-	1	2.2
	Total	46	100	46	100
	Mean	8245	-	16899	
	Minimum	1800	-	2000	
	Maximum	36000	-	1200000	

Source : Primary Data cum Field based study

We observe following changes in the income of the SHG participants as result of joining the SHG group.

- i) The increase in lowest bottom is only from 1800 to 2000 showing very small change in income but if we consider the top income category it is observed that the income jumped from 36000 to 1200000.
- ii) The average income of the respondents was Rs. 8245 which increase to 16899 indicating an increase of 105% during the period of 5 years. It gives growth of 21% increase in income.
- iii) The gap in the income of the SHG members have widened during the period under study as reflected in increase in the variance.
- iv) The members of SHG were benefited positively in terms of finding better opportunity of income. But the activities in which they have joined have benefited differently due to their skill, initial capital and knowledge about the opportunities.

## (2) Impact on Saving

The increase in saving is one important healthy indicator of economic prosperity. The change in level of savings before joining the SHG and after joining the SHG is noteworthy feature to study the impact of SHG. In the following table the monthly savings of the respondent are presented.

**Table-3 : SHG Member's Monthly Savings**

Sl. No.	Monthly Saving of SHGs	Before Joining	%	After Joining	%
1	No Saving	40	87.0	0	0
2	30	0	0	1	2.2
3	40	2	4.3	2	4.3
4	50	0	0	9	19.6
5	80	0	0	1	2.2
6	100	0	0	3	6.5

7	120	0	0	2	4.3
8	160	2	4.3	1	2.2
9	200	2	4.3	24	52.2
10	400	0	0	3	6.5
	Total	46	100	46	100
	Mean	17.39		159.56	
	Minimum	00		30.00	
	Maximum	200.00		400.00	

Source : Primary Data cum Field based study

The increase in income if followed by an increase in savings results in sustainable increase in standard of living both at macro level and micro level. The experience of the SHG in terms of increase in savings is presented in the above table. Following conclusions can be derived on the basis of it.

- i) The average savings of the people stood at Rs. 17.39 which increased to Rs. 159.56. This implies that the savings of the SHG members increased by more than nine times or by 917%.
- ii) The variance in the savings has also increased during the period under study. This shows an increase in inequality in the savings of the members.
- iii) The increase in savings of the members is attributed to the strong will of the members for their economic betterment and institutional requirement as the bank finances the SHG on the basis of the funds generated by SHG.

### Findings of the Study

The working of SHG has benefited the members in various ways.

1. The percentage of females spending their time in house work has been reduced indicating that they are finding gainful employment after joining the SHG.
2. The proportion on employment with multiple activities is also significant. It shows that the females are adopting the job which suits their needs.
3. The members of SHG were benefited positively in terms of finding better opportunity of income.
4. The average savings of the people stood at Rs. 25/- which increased to Rs. 230/- . This implies that the savings of the SHG members increase by more than nine times.
5. The increase in savings of the members is attributed to the strong will of the members for their economic betterment and institutional requirement as the bank finances the SHG on the basis of the funds generated by SHG.
6. The SHG helped in increasing the savings and channelized them in institutional setup.
7. The joining of SHG has replaced the informal sources of borrowing and the share of borrowing through SHG increased to almost hundred percent.
8. The SHG movement has not only resulted in improvement in economic standard of the rural women but more importantly it has resulted increase in social status of the women on various parameters. It is to be noted here that of

the sample SHG units female SHG units are found more active as compared to male SHG unit.

### Conclusion

The SHG's are indispensable economic units of attacking poverty and unemployment in the economically backward state like Assam. These units have given a rate of opportunity of tapping useful human resources in terms of skill development and self engagement in their chosen activities. In the concluding remark I am happy to mention the word of MUHAMMAD YUNUS who is known as father of Micro Finance, he told that, "If we can come up with a system which allow everybody's access to credit while ensuring excellent repayment - I can give you a guarantee that poverty well not last long" (Cited in CHAVAN AND RAMAKUMAR, 2002, Pp - 955). Again SHG has good prospects of future developments and it is found to be suitable agent for extending credit in a small scale to the needy masses and thus generating employment opportunities to the common people. For ensuring better pace of SHG development the following recommendations may deserve -

- 1) To sensitize the collective responsibilities of sponsors or promoters bank and other institutes having close relationship with the development of SHG's.
- 2) The setup SHG with proper appraisal of the constituent members for maintaining homogeneity and collective action.
- 3) To organize forums at various levels such as block level, district level, and state level for ensuring effective operationalisation of various backward and forward linkages.

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Peer Reviewed

An Annual Research Journal of Business, Management and Accounting

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## A Study of the Problems of Small Scale Industries in Assam and Suggested Strategies/Government Policies for Their Revival

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Received : September 12, 2022

Accepted : October 12, 2022

### Abstract

*The policies of liberalization, globalization and marketization brought out fundamental changes in the business environment in which industries operate. The New Economic Policy followed by Structural Adjustment Programme introduced by Government of India in 1991 substantially changed the rules of business games as far as entry, pricing and host of other decision variables are concerned. This changed the market structure, character and focus of marketing strategies. In the Industrial Policy Resolutions of 1948 and 1956, the small sector was given special role for creating additional employment with low capital investment. Small and Medium Enterprises play very important role in socio-economic development of our country on account of their inherent advantages like low capital requirement, high employment generation, decentralization of industrial activity, utilization of locally available resources and widening of entrepreneurial base. This sector is the second largest manpower employer, after agriculture, in our country. A wide range of products, from simple traditional crafts and consumer goods to highly sophisticated products like micro-processors, mini computers, electronic components, electro-medical devices, etc. are manufactured by small and medium enterprises. Despite numerous policy measures during the past four decades, Indian small scale units have remained mostly tiny, technologically backward and tacking in competitive strength. 11 percent of the small scale units are located in Uttar Pradesh, over one third of registered SSI units are located in four southern states. Six states, namely, Assam, Bihar, Chhattisgarh, Jharkhand, Orissa and West Bengal account for just about 13 percent of total SSI units. It has been noted that while there has been phenomenal growth in SSIs sector in India, the same has been low in Assam. The share of Assam in the industrial level is well below what may be considered reasonable. Assam contributes only 6.5% of gross value of output and 5.5% of net value added at the country level. It is a matter of concern that the relative position of state in the industrial economy is slipping back as other states are moving at a faster pace.*

**Keyword :** MSME, SSI, Assam, Policy, Government, Industries

### A. Introduction

India provides an interesting case for the study of the impact of industrial policies and institutional arrangements upon industrial growth and patterns of industrial transformation because the two periods viz. 1951-91 and post 1991 represent policy regimes, institutional frameworks, an industrial development patterns, making possible systematic analysis and the generation of hypothesis concerning causal relationships. Since 1991, Indian policy makers have tried to learn from the East Asian experiences and they have been under pressure from the International Monetary Fund (IMF), the World Bank and other global

actors to liberalize and open up the Indian economy to the world market. Over the period from 1950–1990, the Indian economy underwent significant political change. The contribution of industry to GDP went up from around 15% in 1950 to almost 30% in 1990. This relative increase was due mainly to significant growth of output and value added in the manufacturing sector. However, in the 1980s, a powerful academic lobby emerged against the policy regime of controls and regulations. The new policy regime marked a fundamental break with the past. They drastically reduced the degree of state regulations in several respects and introduced a more market friendly and open economy policy environment. This led to increased competition while on the other hand opened the opportunities for business process reengineering, outsourcing, technology transfer, foreign collaboration, joint venture ship, foreign investment etc. However, increasing competition and free market environment led to industrial sickness due to failure in coping with changes and managerial inefficiency (Martinussen 2000). Small scale industries constitute an important and crucial segment of the industrial sector. This sector has enjoyed the status of priority sector in terms of bank lending. Importantly, several internal and external factors have put considerable pressure on the performance of the small scale industries resulting in industrial sickness. Of late, the incidence of sickness in SSI sector is showing an increasing trend and a large number of SSI units were found potentially non-viable. To address the problem of industrial sickness in SSI sector, a working group on rehabilitation of sick SSIs was constituted by RBI, as it's Chairman Sri. S.S. Kohli in November 2000. The group has submitted the report and the recommendations have been accepted by the RBI.

## **B. Objectives**

The prime objective of the study is to find out

- Status of MSME sector in Assam
- Role of Small Scale Industries
- Problems faced by the Small Scale Industries in Assam
- Strategies/Government initiative towards MSME sector in Assam

## **C. Methodology**

The present study is empirical one and qualitative in approach. For the purpose of study a comprehensive literature review has been done. Only available secondary resources has been counted for this purpose.

## **D. Concept of Small Scale Industries**

All countries do not use the same definition for classifying their SME sector. Nor does universal definition appear to be necessary. The definition in use depends on the purpose these definitions are required to serve and the policies which govern the SME sector thus defined. SSIs were first defined in 1950 on the basis of twin criteria of gross investment in fixed assets and work force. The workforce criteria was changed from a per day basis to a per shift basis in 1958, and finally dropped from the definition of SSIs in 1960. Since 1966, the original value of the plant and machinery has been revised periodically since 1966. The

current limit of gross investment in plant and machinery for SSI units is Rs. 10 million. The cut off limits for preferential has been revised from time to time to accommodate the changes in the price indices, emerging needs of the industry for additional investments in machinery/ laboratory equipment, pollution control equipment, modernization, technology upgradation, products standardization etc. besides providing greater export thrust and other considerations of protection of SSIs.

### **E. Role and Importance of SCI**

Small and Medium Enterprises (SMEs) play a major role in most economies, particularly in developing countries. SMEs account for the majority of businesses worldwide and are important contributors to job creation and global economic development. They represent about 90% of businesses and more than 50% of employment worldwide. Formal SMEs contribute up to 40% of national income (GDP) in emerging economies. These numbers are significantly higher when informal SMEs are included. According to our estimates, 600 million jobs will be needed by 2030 to absorb the growing global workforce, which makes SME development a high priority for many governments around the world. In emerging markets, most formal jobs are generated by SMEs, which create 7 out of 10 jobs. However, access to finance is a key constraint to SME growth, it is the second most cited obstacle facing SMEs to grow their businesses in emerging markets and developing countries.

The Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades. It contributes significantly in the economic and social development of the country by fostering entrepreneurship and generating large employment opportunities at comparatively lower capital cost, next only to agriculture. MSMEs are complementary to large industries as ancillary units and this sector contributes significantly in the inclusive industrial development of the country. The MSMEs are widening their domain across sectors of the economy, producing diverse range of products and services to meet demands of domestic as well as global markets<sup>1</sup>.

### **F. MSME sector in Assam**

MSME sector in India contributes 8% of the country's GDP, 45% of manufactured outputs, and 40% of its exports. The MSME sector employs over 6 crore people through 2.5 crore micro-enterprises and creates 13 lakh jobs every year. Given that the majority of India's population lives in village and Tier1/Tier2 cities, the MSME sector has also emerged as a key factor to urbanize rural India. MSME sector is the second in terms of growing the economy after agriculture. Whereas Assam GDP is 4.09 lakhs and the industry sectors contribute to 39% of the state's GDP. Where Assam has 11.95 lakh units which generate employment of 18.14 lakh jobs while Andhra Pradesh which is top in the list has 30 lakh units which generate employment of 55.9 lakh jobs in 2015-16. It took, on average, 63 days to set up a business in Tamil Nadu and 67 days in Andhra Pradesh whereas, for Kerala and Assam, firms took 214 days and 248 days respectively.

The Micro, Small and Medium Enterprises (MSME) Development Institute, Guwahati (formerly Small Industries Service Institute) was established in 1958. This institute is a field office of Micro, Small and Medium Enterprises-Development Organisation (MSME-DO) under Ministry of Micro, Small and Medium, Govt. of India. Over the years, it has seen its role evolve into an agency for advocacy, hand holding and facilitation for the small industries sector of Assam, Meghalaya and Arunachal Pradesh. With the enactment of the MSMED Act 2006, the institute has worked with the wider mandate of promotion and development of MSME sector.

Presently, the small scale industries have been sub-divided into Micro, Small and Medium enterprises (MSME) under the Micro, Small and Medium enterprises development act 2006. The categorization of enterprises is made based on their investment in plant and machineries in case of manufacturing sector or in equipment's in case of service sector<sup>2</sup>. The table: 1, below shows the growth of MSME units, employment and investment till the year 2020.

Table 1: Growth of MSMEs units, employment and investment in Assam

Year	No. of units	No. of workers	Average worker	Investment (Rs. in lakh)	Average investment
2010-11	1214	9002	7.4	25557.59	21.05
2011-12	1287	13886	10.8	27776.15	21.59
2012-13	1451	11671	8.0	27397.47	18.89
2013-14	1860	12971	7.0	31099.08	16.70
2014-15	2629	20496	7.8	26923.29	10.23
2015-16	1898	13848	7.3	25597.96	13.49
2016-17	2177	19355	8.89	60687.43	27.88
2017-18	1539	14442	9.38	47452.71	30.82
Average annual growth rate	3.39	6.76		8.83	

Source: Directorate of industries and commerce, Assam

In Assam as on 2010-11 there was a total number of 1214 units of registered MSMEs and these provide working to the 9002 numbers of peoples in Assam. There is Rs. 25557.59 lakh investment for 1214 units in the period of 2010-11. Tables shows that the number of units, employment and investments are increasing with increase in time period. It becomes highest in the year of 2014-15 and then becomes fall but still remain higher than the year 2010-11. The average annual growth rate of no. of units, employment and investments are 3.39, 6.76 and 8.83 respectively which shows positive growth rate. It is also evident from the table that average employment per unit of MSMEs in Assam is around 8 person and average investment per unit is around 20 lakh during the period of 210-11 to 2019-20 which is less than the national average.

### G. Problems of Small and Medium Enterprises

Small and Medium Enterprises face problems relating to project implementation, production, marketing, finance, administration etc. The identified problems in U.P. may be summarized as: -

### **I . Problems relating to Project Implementation**

- Non- availability of land at the selected site.
- Non- availability/ difficulty in procuring construction materials like cement steel etc.
- Delay in delivery of machines
- Difficulties/delay in tying up financial arrangements with other financial institutions and banks.
- Inability of the promoters to bring in funds to the extent proposed.
- Delay in disbursement of assistance due to non- compliance of the major terms and conditions of the loan agreement.
- Delay in getting power connection, water connection, permission of concerned authorities to discharge effluents, etc.
- Changes in certain project concepts due to subsequent detailed advice received from collaborators/ consultants.
- Increase in project cost under different heads due to price escalation, underestimation of cost, etc.
- Siphoning of funds by the promoters from the project by unfair practices.

### **II . Problems relating to Production**

- Non- availability of raw materials or increase in the price of raw materials without a corresponding increase in sale price of the products.
- Non- availability of important infrastructure facilities like power, water, transport etc.
- Unsatisfactory performance of certain machines resulting in low production due to lack of routine and preventive maintenance leading to frequent breakdown.
- Lack of coordination between marketing and production planning.
- Obsolescence of the manufacturing process following technological development.

### **III . Problems relating to Marketing**

- Introduction of better substitutes.
- Entry of many new manufacturers leading to cut-throat competition.
- Poor quality of products.
- Lack of sales promotion.
- Poor delivery schedules and lack of proper distribution system.

### **IV . Problems relating to Finance**

- Low promoters contribution.
- High debt- equity ratio leading to high interest burden.
- Inadequate bank finance.
- Lack of proper follow up action for realization of debts.
- Lack of proper planning to pay creditors.
- Diversion of working capital funds for acquisition of fixed assets.

## **V . Problems relating to Management**

- Dissension within the management.
- Absence of man power planning.
- Poor industrial relations.
- Lack of coordination and control.
- Non- availability of skilled man- power.

Reforms in SSI sector are crucial for India to emerge as a competitive manufacturing base. SSI showed a growth rate of 12.32 per cent in 2005-06 onwards and the sector growth rates have been higher than the industry as a whole which was 8.10 percent in 2005-06. However, official estimates put SSI sickness at 10 per cent, while unofficial estimates put SSI sickness at 40 per cent.

## **H. Government Initiatives**

Various organizations have been set up by the Central and State governments and banks to support the development of the small scale enterprises. The main organizations are as follows : -

### **I . Central Government**

- National Board for Micro, Small and Medium Enterprises.
- Small Industries Development Organization (SIDO).
- Micro , Small and Medium Industries Services Institute.
- National Small Industries Corporation Limited.(NSIC).
- National Institute for Micro, Small and Medium Enterprises (NIMSME).
- Entrepreneurship Development Institute of India.

### **II . State Government**

- District Industries Centers (DIC)
- State Financial Corporations (SFCs)
- State Industrial Development Corporations/ State Industrial Investment Corporations(SIDC/SIIC)
- State Small Industries Development Corporation (SSIDC)

A strong digital ecosystem to increase the outreach among buyers and suppliers in the market. The government has made efforts e MSMEs registered under UAM, efforts have been made by the government under the Digital India campaign to spread awareness on the ease and benefits of different modes of digital payments such as BHIM, UPI, and Bharat QR code.

The KVI (khadi and village industries) which are mostly in the village provide an important ingredient for the local economic ecosystem. Khadi and Village Industries activities are the key source of livelihood for rural and urban people who largely include spinners, weavers, and other artisans spread across the country. In a significant number, they also are inter-related and inter-dependent on the agricultural/horticultural/other forest and non-forest produce. It adds wealth to the local economy and at the same time provides major

employment. The ISEC Scheme is applicable for all registered Khadi Institutions under KVIC / KVIB implementing Khadi and Polyvastra programme. Under the scheme, credit at the concessional rate of Interest @ 4% per annum is given for Capital Expenditure (CE) as well as for Working Capital (WC) by Khadi and Village Industries Commission (KVIC).

National Small Industries Corporation (NSIC) provides credit support for raw material procurement by making the payment to suppliers in the Raw Material Assistance scheme against Bank Guarantee. NSIC also facilitates financing by assisting MSMEs under schemes such as the Tender Marketing Scheme fulfilling the requirement of steady and timely delivery of their raw materials in requisite quantities at the most affordable and competitive prices. This not only enhances the competence of MSMEs but also contributes to increasing their business volumes. The state-wise assistance under the RMA scheme in FY21 assisted entrepreneurs in Assam with Rs 8.42 crore<sup>3</sup>.

Apart from that, the Government of India has decided to continue the following 4 schemes during the 11th Plan period (2007–2012) to assist small scale industries for technology up – gradation .

- Credit Linked Capital Subsidy Scheme for Technology UP–gradation of Small Industries (CLCSS).
- Technology Up–gradation Fund Scheme (TUFS) for Textile and Jute Industry .
- Scheme of Technology Up– gradation / Setting – up / Modernization / Expansion of Food Processing Industries .
- Integrated Development of Leather Sector Scheme (IDLSS).

### **I. Recommendations and Strategies for revival of SSIs in Assam**

1. Manufacturing capabilities should be developed to a level where products are competitive across global markets in terms of price, quality, technology, delivery of services. To achieve this, Indian firms should be enabled to access the latest technology from across the globe, indigenous research and development innovation need to be encouraged and a passion for manufacturing needs to be created while infrastructure, public services and utilities should be improved and made more efficient to assist manufacturing growth. Government, industry, research institutions and academicians should be facilitated and encouraged to work in collaboration to improve industry capabilities. Moreover, firms should be able to obtain funds easily and cheaply, and be encouraged to invest in developing technology.

2. To improve standard of living through manufacturing growth, workers should be enabled to move from lower value added to higher value added jobs. SSIs and cottage industries should be encouraged to grow and become competitive. Moreover, education should focus on fostering a culture that encourage innovation and manufacturing so that people are training for alternate avenues of employment.

3. It is recommended that a State Technology Development Fund for small industries be established in the state to act as the main conduct of transmission mechanism of the Sate Mission on Technology. The fund should be routed through SIDBI because it is the principal

financial institution for SSIs. The fund should support SSI units in absorbing technology transfer costs, meeting with initial ground work related expenditure. The fund should initiate efforts at the earliest to set up technology packages, clusters for SSIs in important zones to promote induction of new technologies, incremental innovations and effective transfer.

## J. Conclusion

Assam is the largest state in the NER both in terms of geographic spread and the size of the state economy. It shares borders with seven states and two neighbouring countries, i.e., Bangladesh and Bhutan. Assam is the gateway to Southeast Asia. There is an ample number of opportunities for Assam to grow. But it needs to aggressively promote industrial and infrastructural growth. MSME plays a vital role in the development of Assam as it contributes 39 % to state GDP. MSME in Assam has a huge potential and also to triple the Assam economy with employment generation. To make Assam a prosperous state MSME sector has to be supreme. There is a lack of an entrepreneurial mindset among the people of Assam. The youth of Assam is more focused on getting a job. But the main problem is there are not many jobs available which leads to migration from the state. Government should create awareness among the students for setting up new enterprises after completion of their studies instead of searching for jobs only. Government should create awareness about entrepreneurship among the youth aspiring for building their career and hand-holding them to create their small business ventures. The Assam government has taken an initiative namely Advantage Assam in 2017 which aims at providing 1 lakhs jobs and a minimum of 1000 enterprises in under 5 years. But how successful the initiative will be known in the coming years.

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An Annual Research Journal of Business, Management and Accounting

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## A study on the Prospects, Problems and Government Policies towards the Bell Metal Industry of Assam, with Special Referance of Sarthebari

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Received : September 20, 2022

Accepted : October 20, 2022

### Abstract

*The bell metal industry of Assam has its own unique characteristics. Bell-metal industry, the second largest handicraft of Assam, and has made significant contribution in the economic regeneration of the state opening the door of hope for an ever increasing export trade and creating employment opportunities to thousands of people directly. The objects made of bell-metal are heavier and bulkier in weight because of the extensive use of metal. This craftsmen inherit the knowledge from their elders and thus the industry runs on hereditary system. Modern tools and technology has not yet touched the lives of the artisans and they still adhere to primitive tools and equipments in bell-metal production. One major problem faced by the industry is the supply of raw materials which is usually purchased from the middleman. The industry mainly revels around the Sarthebari area of Barpeta district of Assam. Presently more than 280 bell metal units working in this area. The primary raw materials for this industry is bell. The bell metal industry of Sarthebari is not properly developing due to non-availability of local infrastructure, raw material and market, and many other factors. The major factors of growth of such industry have been mainly because of the availability of skilled artisans and their entrepreneurship. The conditions of the artisans are not well. Lack of government assistance are seen in this area. The government is taking various measures to provide fillip to the bell metal industry in Assam, also approving the setting up of a model common facility centre at the bell metal cluster at Hajo Kamrup with an outlay of Rs 160.61 lakhs.*

**Keywords:** Bell Metal, Assam, Industry, Government, Policy, Sarthebari

### A. Introduction

Assam is relatively developed among NE states. It is known for its tea, oil and handicraft materials. But the state yet to see development inspite of having vast resources. Agriculture is the backbone of the state economy. About 69% of states working force are engaged in agriculture and allied activities. In every five year plan this sectors were given priority but till it is underdeveloped due to outdated methods and lack of government intentions. The bell metal Industry of Sarthebari one of the leading industry of Assam, which has a unique character and it has importance in all over the world. But lack of modern trainings and

government intentions this industry does not develop properly. Bell metal made kanhi (Bell Metal Disc) and Bati are important parts of culture; offerings with respect are made using these during festivals and religious ceremonies and are seen as respectable items. Assam has a rich tradition of crafts; presently, Cane and bamboo craft, bell metal and brass craft, silk and cotton weaving, toy and mask making, pottery and terracotta work, wood craft, jewellery making, musical instruments making, etc remained as major traditions. Historically, Assam also excelled in making boats, traditional guns and gunpowder, ivory crafts, colours and paints, articles of lac, agar wood products, traditional building materials, ut from iron, etc.

### **B. The Bell Metal Industry of Assam**

The industry mainly established in the Sarthebari area of Barpeta district of Assam. Presently more than 280 bell metal units working in this area. The study reveals that the bell metal units are established in huts or sheds in Sarthebari, which are in an unplanned manner. About 39% of this industry has not their own sheds. About 61% stopped working during this rainy season. Interestingly they functions from their own house. The workers are mainly belongs to the Sarthebari, only a small portion of them coming from the outsiders.

Bell metal craft is one of the hereditary crafts of Assam. Bell metal is an alloy of copper and tin. A large number of utility items are made out of this metal which has certain distinctive characteristic features of its own as compared to other metals. For example, food kept in the utensils made out of bell metal is not spoiled. For Bengali and Assamese families, it is traditional utility cum gift item. They are in common use in every household because of some religious sentiments attached to it.

The methods used by the artisans is not scientific and outdated, so production is not impressive and they do not compete with such out dated methods in the era of globalization, where modern equipments occupied their place in every sphere of life. 11% of the total artesian population of the bell metal industry in Sarthebari. Like other industrial workers Assam their condition is very poor. They are buried under debt. There is no actual figure available to find indebtedness statistic prevailing among the bell metal workers of the area. However the study reveals that nearly two third of the artisans are indebted.

### **C. Objectives**

This study will make an effort to analyze the causes of contestation between the state and the people over the issue of development in the light the movement of the people towards the Bell Metal Industry. The proposed study aims at examining the development policy in the light of Right Based Approach (RBA). The main objectives of this study, therefore, are as follows:

- i). to analyze the impact of Bell metal Industry on the life and livelihood of different communities and to find out people's participation in the Industrial work.
- ii) To examine the problems related with this Industry and the problems faced by the workers of this Industry.
- iii) Another objective of the study is to analyze prospects of Bell Metal Industry.

#### **D. Methodology**

As far as this study is concerned, we have adopted systematic investigation approach. Where, we depends solely on existing data in the course of the research process. This research design involves organizing, collating and analyzing these data samples for valid research conclusions.

#### **E. Statement of the Problem**

The bell metal industry of Assam has its own unique characteristics. And has made significant contribution in the economic regeneration of the state, opening the door of hope for an ever increasing export trade and creating employment opportunities to thousands of people directly. Now many NGO and other voluntary organization are established to promote the bell metal goods. The Assam Co-Operative Bell Metal Utensils Manufacturing society Ltd, Sarthebari plays an important role in marketing of the Bell Metal production. But due to proper plan the society unable to control the marketing division<sup>1</sup>.

Bell-metal industry, the second largest handicraft of Assam. The Sarthebari, the city of Kanh silpa(Bell Metal) is situated in the west of Guwahati City in Barpeta District. The bell-metal industry of Sarthebari has a prestigious past. The people of Assam are emotionally and culturally attached with the utensils of the bell-metal industry. As of 2001 India census Sarthebari had a population of 7545. Males constitute 51% of the population and females 49%. Sarthebari has an average literacy rate of 83%, higher than the national average of 59.5%: male literacy is 88%, and female literacy is 77%. In Sarthebari, 9% of the population is under 6 years of age. Sarthebari is famous for its historic Assamese bell metal utensils and for traditional Assamese structure called horai. In Sarthebari morning comes with the sound of Haturi(Iron), not with the sound of birds.

The Government of Assam has taken some measures for development of this Industry, like providing short term loan to the Artisans. And promote the products in the International level through arranging workshop in different times. The study mainly reflects the views of the people about the Bell metal Industry of Sarthebari, Barpeta district of lower Assam. Therefore the villages located in that area which are related with this Industry, constitute the universe of this study.

#### **F. The Industry**

The Ahom regime was considered as the golden era of Kanh Silpa(Bell Metal Arts). It was durin the Ahom period that Kanh Silpa(Bell Metal) got serious attention in both the royal families as well as privet households. The Kanhars(bell metal artisans) were encouraged by the Ahom kings. Their beautiful products like Bati(Small bell metal pot), Gud Gudi, Temibata,etc were used in the royal places in the Ahom kingdom. Even their artilleries like Bortop(A large canon) made of Kanh(Bell Metal). During the rule of Rudra Singha Assamese Kanh Silpa(Bell Metal Art) attracted many people in India and outside. At that time these products were exported to Tibbet, Bhutan and China. Jiudhan Kanhar(bell metal artisans) of Sarthebari got special recognition by the Ahom king Shiva Singha. As his reward he got Hundred bigha of land from the Ahom King. At the time of Ahom kingdom one Tiibbetian

market was established for buying the bell metal goods at Chouna and one ahom Market was established in Jeeganusar<sup>2</sup>.

During the British rule Kanh(Bell metal products) products of Sarthebari were also highly praised. As for example in 1893, during the rule of Queen Victoria the products of Sarthebari were got high privilege. During that time, Pusparam Kanhar (Bell Metal Artisan) of Sarthebari got opportunity to participate in an exhibition of handicraft Arts held in London.

As the modern metallic goods are present in the market at comparatively low coast then the bell metal goods yet its importance is not decrease. Kanh(Bell metal) is placed as precious just after the gold in Assamese society. Assamese people fond of these metallic goods.

#### **No of Registered Bell Industries in different Districts of Assam**

District	No. of Industries
Dhubri	42
Kokrajhar	29
Bongaigaon	33
Goalpara	8
Barpeta	32
Nalbari	10
Kamrup	577
Darrang	213
Sonitpur	24
Lakhimpur	3
Dhemaji	21
Morigaon	21
Nagaon	142
Golaghat	194
Jorhat	194
Sibsagar	138
Dibrugarh	377
Tinsukia	286
Karbi Anglong	24
N.C. Hills	20
Karimganj	63
Hailakandi	25
Cachar	145
<b>Assam</b>	<b>2691</b>

Source: Census of India, 2001

#### **G. Present Condition of Bell Metal Industry and Their Employee**

The bell metal industry of Sarthebari is not properly developing due to non-availability of local infrastructure, raw material and market, and many other factors. The major factors of growth of such industry have been mainly because of the availability of skilled artisans and their entrepreneurship. The skilled achieved by them are purely hereditary.

The conditions of the workers are very worse. Our study revels that more than 64.16% of artisans are lived under the poverty line. They are buried under the debt. Out of 1465 artisans only 586(40%) could afford Assam type House, 688(47%) and remaining 191(13%) in

huts. Table 1. reveals their living conditions of some artisans family with their monthly incomes. (Which are select on the basis of stratified random sampling method). Their monthly income is very low compare to other skilled worker. Many of them worked as tenant, and major portion of their income goes to their land holders and the owners. The working environment is not idle for the work. Proper equipments are absent; above this most of them have not their own extra shed to work. They work from their own home.

Table: 1. Living Conditions of the Artisans Working in Bell Metal Industries

Sample	No. of sample households	Kutchha		Semi-pucca		Pucca	
		No	percentage	No	percentage	No	%
Sample size	200	103	51.5	69	34.5	28	14
General	110	77	70	27	24.5	6	5.4
OBC	45	26	57.7	14	31.1	5	11.1
Others	45	26	57.7	15	66	6	27

Source: Field survey, Field survey

### H. Prospects of Bell Metal Industry

1. Utilization of huge volume of human resources has become possible with the development of these various types of unorganised industries in the State. Assam is still possessing a huge volume fit human resources which are mostly remain unutilised. Development of these industries can tap these resources to the fullest extent.
2. Development of these industries would increase the job opportunities for huge number of population of the State. If more such industries materialize fully, the problem of unemployment could be solved easily in the state.
3. The bell metal industry of Sarthebari are contributing a good portion state income. These industries has contributed 5.5 percent of the total state income in 1993-94.
4. Development of these industries has led to the growth of a good number of ancillary industries in the state.
5. Development of these different industries has to the development of markets for various raw materials and finished product in the state.

### I. Problems of Bell Metal Industry

Problem is everywhere. No one can get rid from it. Basically in NE India which is a macro geographical region characterized by diverse landforms and climatic patterns. Bell-metal industry, the second largest handicraft of Assam, is now struggling for survival. Shortage of raw material is the main problem today. The bell-metal industry of Sarthebari has a prestigious past. The people of Assam are emotionally and culturally attached with the utensils of the bell-metal industry. But, in the last two years, this industry has faced some serious problems threatening its existence. The present condition of this industry is very

critical. Hundreds of artisans are forced to leave the industry. Some are even unable to earn their livelihood.

The Bell Metal Industry in Assam are suffering from major problems which are mostly responsible for their large scale sickness. The following are some of the important causes of such large scale sickness of this industry :

1. Under-utilization of production capacities are quite common.
2. Absence of rational pricing is also responsible for large scale sickness
3. This industries are suffering from technological gap as these enterprises could not adopt up-to-date technologies.
4. Mismanagement and unimaginative functioning of State PSUs in the past years.
5. Heavy social costs of SLPSEs is also responsible for their large scale sickness.
6. They are suffering from operational and managerial inadequacies.
7. Evil competition from the other like metal industry.
8. Marketing constraint is a big problem for which they could not collect good market for their commodities, resulting huge losses.
9. Surplus manpower, which is creating drainage of resources unnecessarily, followed by sickness.

This bell metal Industry has a bright potentiality, but now this industry is running on uncertainty. In this paper we will discuss the basic problems faced by this Industry as the following heads:

1. Out Dated Techniques and Lack of Proper Training: It is no doubt that the artisans of the bell metal Industries are skilled, but their technical and scientific approach are weak. They are not ready to use the modern technology. Still they continue to use traditional instruments, i.e. Haturi(Iron), Sena, Khanti(One Kind of Knife), etc. in production which in turn resulted in misuse of time and resources. They manually could not increase the quantity of production and they are compelled to raise the price of the product.
2. Lack of Infrastructure is another Problem Faced by the Bell Metal Industry of Assam: Despite the bright potentiality of this Industry still it undeveloped due to lack of infrastructure. Our study reveals that the bell metal units are established in huts or sheds in Sarthebari, which are in an unplanned manner. There is no specification about their sizes and shapes.
3. Shortage of Raw Materials: Shortage of raw materials is another problems related to this industry. As we earlier mentioned that primary raw materials for this industry is bell. The requirement of raw materials for per unit minimum 10 kgs per day. The existing 280 bell metal units requires 10 kg raw materials per day per unit, at least 3 weeks a months.
4. Un-availability of Market: Proper market has not yet developed in the State for the marketing of produced by the industries in Assam. Excepting the Guwahati Tea Auction Centre, the marketing arrangements for other industrial sectors are totally lacking. This creates a problem for the industries to sell their products. Thus both these large and medium

industries had to depend on the markets outside the State resulting higher unit cost of transport and higher administrative cost.

5. Lack of Well Packaging System: The items that are produced in Sarthebari are not properly or scientifically packaged. These items are openly stored in Elmira or in floor without much care. Due to this reason after some days these are got discolored due to polluted air. Therefore customers are not much interested to buy these items. Hence if packing is done properly with care the trade of these items will be naturally increased.

At last we can say that the historical and glorious history of Sarthebari's Bell metal Industry is now under fire. Many problems are seen in this industry, basically the shortage of raw materials and price rise of raw materials is most important one. Despite it is a leading handicraft industry of Assam, government's proper intentions is not found, along with low wages forced the workers to leave the work, and the new generation is not willing to carry their parental jobs.

#### **J. Government Policies/Initiatives towards the Industry**

However, the problems faced by this industry, due to the constant effort both from the office of the Development commissioner (Handicraft), Government of India and from the local NGO a tremendous change has been sensed from the recent past. Innovations in both theme and technique have taken place, as younger generation artisans have preferred this activity. But the Industry still retain its traditional touch and cultural heritage though modernized and diversified into decorative cum utility products like wall hanging, flower plots, ashtrays napkin holders etc, which gain importance in consumer market.

The government is taking various measures to provide fillip to the bell metal industry in Assam, also approving the setting up of a model common facility centre at the bell metal cluster at Hajo Kamrup with an outlay of Rs 160.61 lakhs. The initiative has been taken by the Ministry of micro, small and medium enterprises (MSME) under MSE-Cluster Development Programme. The benefits are also provided under NEIIP (North East Industrial Investment Promotion Policy) and under state industrial policy to the bell metal industry in Assam, said Minister of State for Commerce and Industry, E M Sudarsana Natchiappan in parliament today.

According to official data, the proposal for setting up a Model Common Facility centre at Bell Metal Cluster at Hajo Kamrup of Assam was approved by the Ministry with a financial involvement of Rs 160.61 lakhs of which Rs 81.66 lakhs has been released as 1st instalment.

In addition, Development Commissioner (Handicrafts), Ministry of Textiles is implementing seven generic schemes for promotion and development of handicrafts (including bell-metal craft), namely; Baba Sahib Ambedkar Hastshilp Vikas Yojana, Design and Technology Upgradation Scheme, Marketing Support Service Scheme, Research and Development Scheme, Handicraft Artisans Comprehensive Welfare Scheme and Infrastructure and Technology Development Scheme. Further, the DC (Handicrafts), Government of Assam has sanctioned Rs 49.15 lakhs for 15 SHG (315 artisans) at Sarthebari at Barpeta District of Assam under Baba Sabeh Ambedkar Hastshilp Vikas Yojana (AHVY). It has also sanctioned one

Common Facility Centre involving an amount of Rs 49.76 lakhs and one raw material bank amounting to Rs 100 lakhs for the cluster. An amount of Rs 157.34 lakhs was released under the State Priority Scheme for Bell Metal Industries, Sarthebari ; and from the funds for raw material assistance, Rs 50 lakhs was provided to 280 nos of Bell Metal artisans, and Rs 25 lakhs to 200 brass metal artisans. Bell metal is a mixture of 20 per cent tin and 80 per cent copper. At one time, about 90 per cent of people of Sarthebari were engaged in this Industry. The industry presently runs on scrap metal thus putting the strain on availability of raw material, especially when finished products are either exported or sent to far away markets. The technique adopted by the artisans is traditional, simple and in fact very crude. The whole production process is 100 per cent manual. Tools and equipment are simple and unsophisticated. No electricity or modern sophisticated machinery is involved in the manufacturing process. Other programmes being implemented by the MSME ministry are National Manufacturing Competitiveness Programme and Credit Linked Capital Subsidy Scheme. (KNN/ES)<sup>3</sup>.

Under the present socio-political condition of mistrust, instability, chaos and confusion, leading to huge capital flight from the state and stardy inflow of capital resources any new policy will find it difficult to achieve its goal unless sufficient confidence building measures are taken by the Government as well as the people, in general, to gain the confidence of the investors. This will pave the way for smooth passage of large investment in the industrial sector to tap the huge industrial development potential of the state as well as to reap the benefit of liberalisation. Otherwise, the goal of attaining industrial development and the practical implementation of the policy will remain a distant dream for an industrially backward state like Assam<sup>4</sup>.

## **K. Conclusion**

Assam is lagging behind other states in regard to industrial development. This is due to absence of large investments in industry during preceding plans and Assam's geographical isolation. The volume of private investment in Assam is very low due to heavy risk involved in the investment. These risks are both natural risks, arising through natural calamities and political risks as the State itself is a border State. Thus the factory industries in the State are growing at a very slow rate. The present state of Industrial Development in Assam is not up to the mark. Although the pace of industrialisation in Assam had its origin during the British period, with the growth of tea and petroleum industry but the State could not attain the required progress in its industrialisation path even after completing more than four evades of economic planning. In spite of having a rich potential for the development of different types resources based industries, the state could not achieve much diversification in its industrial base, leading to restriction of its industrial activities mostly into tea and petroleum.

In spite of having a huge potential for industrial development, Assam remained an industrially backward state even after 46 years of economic planning. Although the industrial development process started in Assam even in the early British period with the development of tea and petroleum industry but the industrial development in the State

could not be given its momentum due to various constraints faced by the State. Thus immediate steps must be taken for promoting industrial development in the State.

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Peer Reviewed

An Annual Research Journal of Business, Management and Accounting

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# Total Factor Productivity Growth and Technical Efficiency in Selected Tea Gardens of Barak Valley, Assam

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Received : October 01, 2022

Accepted : October 24, 2022

## Abstract

The present study measures TFPG on the one hand and technical efficiency on the other on the basis of garden level panel data of 10 selected tea gardens of Barak valley for a period of ten years (2010-20). Selected non input factors are modelled to explain firm level technical efficiency. TFPG is measured using the Solow divisia index and the Törnqvist divisia index. Technical efficiency is found by estimating a Cobb- Douglas stochastic production frontier with inefficiency effects. TFPG is found to be negative. The wages to workers has grown at a very rapid pace, out pacing the rate of output growth. Almost all companies exhibit negative TFPG every year with a very few exceptions. Cultivated area coefficient is statistically insignificant. Same is the case of, fertilizers and pesticides. Labour is the only significant factor in explaining output. Among the inefficiency effects variables, experience of the garden and employee's welfare expenses have a negative influence on firm level technical efficiency. However MC, the degree of managerial control has a negative influence on firm level technical inefficiency or positive influence on firm level technical efficiency.

## 1. Introduction

Tea as a beverage is enjoyed by more than half of the world's population. India ranks second in tea production as well as consumption and while China ranks first. India and China together account for around half of the world's tea production. They export about a quarter of their production. The countries like Kenya, Sri Lanka and Indonesia produce only 24% of the world tea but controls 50% of the global trade. These countries export about 90% of their consumption. Tea production is concentrated in a few countries due to certain climatic factors, soil factors and availability of cheap labour. The healthy growth of tea output in East African countries in double digit due to favourable weather conditions and expansion in processing capacity. The major challenge facing the tea industry in the subcontinent is the rising labour cost resulting in rising cost of production.

### Tea Profile in India

The tea industry occupies a place of considerable importance in the Indian economy, producing a fourth of the world's annual tea output – among them some gardens producing

high quality tea and employing around 1.26 million people at tea plantations and 2 million people indirectly.

Although tea is produced in 14 States of India, five of them—Assam and West Bengal in North India, and Tamil Nadu, Kerala and Karnataka in South India account for over 98% of India's tea production. Within that, North India alone accounts for around 75% of India's total tea production,

### **1.1 Tea Profile of Barak Valley-Success and Failure**

The tea industry in Barak Valley is passing through hard days. Labour problem, including availability of less number of tea labourers due to the implementation of NREGA scheme, inadequate communication system, power crisis, increased revenue tax for Barak tea garden, cess on green leaf, increased pollution fee, less transport subsidy etc. have put Barak tea industry in a hopeless condition (Stated by D.P. Maheswari, president, Tea Association of India Barak valley branch at the 39<sup>th</sup> annual conference of the body); Barak valley region has also registered a fall in the production of tea in last several years. He said the need of the day was to go for better quality tea, after keeping aside the common varieties of the produce in the state gardens in general and Barak garden in particular for blending purpose.

Keeping these points in mind the present study aims to measure TFPG on the one hand and technical efficiency on the other on the basis of garden level panel data of 10 selected tea gardens of Barak valley for a period of ten years (2010-19). Selected non input factors are modelled to explain firm level technical efficiency. TFPG is measured using the Solow divisia index and the Törnqvist divisia index. Technical efficiency is found by estimating a Cobb- Douglas stochastic production frontier.

The study is presented in the following sections. After presenting introduction and objectives in section 1, review of literature is presented in section 2, followed by methodology in section 3, empirical results and discussion in section 4 and finally summary and conclusions in section 5.

## **2. Review of Literatures**

Studies on technical efficiency, growth of total factor productivity (TFP) and its decomposition, in plantation and farm sector and the question of how to measure them, is an important subject in developing countries' agriculture (Shah, 1995; Hazarika and Subramaniam, 1999). Jayatilake (2007) applies the Stochastic Frontier Approach to estimate the technical efficiency of tea manufacturing firms in Sri Lanka and reveals that the output capacity of the larger factories is higher than that of the smaller factories. They also identifies that the production capacity of tea factories vary between the regions. Baten, Kamil and Haque (2009) in their study revealed that there exists a negative relationship between size and yield and their findings suggested that 49% technical inefficiency existed in tea yield. Hazarika and Subramaniam (1999) analyses the production efficiency of tea estates with the objectives of facilitating the removal of production constraints particularly in Assam and helping policy makers to strengthen the production base of the tea industry. Their analysis showed that even under existing technology, potential exists for improving productivity

with proper allocation of existing resources. Hence extension strategies need to be taken to educate estate owners about the rational use of inputs. According to Jayasinghe and Toyoda (2004), the characteristic crop diversification observed in the organic tea farming system has significantly reduced the efficiency. Mahesh, Ajjan and Raveendran (2002) analysed the technical efficiency of Indian tea production and concluded that there exists a good scope for improving tea productivity with the proper allocation of existing resources. Sivaram (2000) examines recent experience in productivity improvement schemes in South Asia tea plantations, with particular attention to labour productivity. The author discusses the role of social services, particularly in the provision of childcare facilities, which are seen as essential for the largely female workforce on tea plantations. Basnayake and Gunaratne (2002) study technical efficiency of the tea small holdings sector. The result indicates that age of farmer, education, occupation, type of crop and type clone have significant effects on efficiency. The coefficients for age, education, occupation and type of crop showed negative values. Interestingly it is found that globally studies on technical efficiency, cost efficiency and its determinants in tea production are relatively more common, whereas studies on trends and patterns of total factor productivity growth or its decomposition in tea industry are rare. In fact Sivaram's (2000) study focuses on labour productivity trend which is simply a partial factor productivity study and not a total factor productivity growth study.

### 3. Methodology

#### 3.1 Measuring TFPG

In order to compute the growth of total factor productivity, we shall proceed as follows. Given the production function

$$Y = F(X_1, X_2, \dots, X_k, t) \quad (1)$$

Under constant returns to scale, the construction of the Divisia or the geometric index of total factor productivity that belongs to the growth accounting approach for measuring productivity is based on the following formula

$$DI = \frac{Y_t}{Y_0} \exp \left[ - \sum_{i=1}^k \int_0^t Sh_i \frac{\dot{X}_i}{X_i} \right] \quad (2)$$

where  $Y$  is output,  $X$ 's are inputs,  $t$  is time and  $Sh$  is the share of input in the value of output. This type of index was used by Abramowitz (1956), Solow (1956), and Jorgenson and Griliches (1967) in their empirical studies. The logical foundation of this index was developed and enriched by Richter (1966), Gorman (1970), Hillinger (1970) and Hulten (1973).

Based on the production function (3.4), the total differential is

$$dY = F_1 dX_1 + F_2 dX_2 + \dots + F_k dX_k + F_t dt$$

or, 
$$\frac{dY}{dt} = F_1 \frac{dX_1}{dt} + F_2 \frac{dX_2}{dt} + \dots + F_k \frac{dX_k}{dt} + F_t$$

or, 
$$\frac{1}{Y} \frac{dY}{dt} = \frac{X_1 F_1}{Y} \frac{1}{X_1} \frac{dX_1}{dt} + \frac{X_2 F_2}{Y} \frac{1}{X_2} \frac{dX_2}{dt} + \dots + \frac{X_k F_k}{Y} \frac{1}{X_k} \frac{dX_k}{dt} + \frac{F_t}{Y}$$

or, 
$$\frac{F_t}{Y} = \frac{1}{Y} \frac{dY}{dt} - \sum_{i=1}^k \left[ \left( \frac{X_i F_i}{Y} \right) \left( \frac{1}{X_i} \frac{dX_i}{dt} \right) \right]$$

Thus, the divisia index is given as

$$DI = \frac{\dot{Y}}{Y} - \sum_{i=1}^k Sh_i \frac{\dot{X}_i}{X_i} \tag{3}$$

where  $Sh_i = \frac{\partial \ln Y}{\partial \ln X_i} \approx \frac{X_i F_i}{Y}$  and  $\sum_{i=1}^k Sh_i = 1$

The divisia index that shows the rate of technical change is defined as the difference between the rate of growth of output and the weighted average of rates of growth of inputs, the weights being the shares of inputs in the value of output. For the economic time series data, Solow (1957) computed the divisia index by using the formula

$$DI_t = \left( \frac{\dot{Y}}{Y} - \frac{\dot{X}_k}{X_k} \right) - \sum_{i=1}^{k-1} Sh_i \left( \frac{\dot{X}_i}{X_i} - \frac{\dot{X}_k}{X_k} \right) = \left( \frac{\Delta Y}{Y} - \frac{\Delta X_k}{X_k} \right) - \sum_{i=1}^{k-1} Sh_i \left( \frac{\Delta X_i}{X_i} - \frac{\Delta X_k}{X_k} \right) \tag{4}$$

Equation gives the Solow residual measure of total factor productivity growth. For the present study where we have only two inputs, namely, capital (K) and labour (L), Solow residual for annual time series data, is

$$DI_t = \left( \frac{\Delta Y}{Y} - \frac{\Delta L}{L} \right) - (1 - Sh_L) \left( \frac{\Delta K}{K} - \frac{\Delta L}{L} \right) \tag{5}$$

where  $Sh_L$  is the share of labour.

Contrasted with the divisia index Solow used, Tornqvist index is another important variant of the divisia index. Under the specification of a translog production function under constant returns to scale, Diewart (1976) proved that the Tornqvist index is the exact measure of technical change. Thus, if there is a transcendental logarithmic production function as

$$\ln Y = \alpha_0 + \alpha_t t + \beta_{tt} t^2 + \sum_{i=1}^k \alpha_i \ln X_i + \frac{1}{2} \sum_i \sum_j \beta_{ij} \ln X_i \ln X_j + \sum_{i=1}^k \beta_{it} t \ln X_i \tag{6}$$

, the Tornqvist approximation of the divisia index as introduced by Jorgensen and Grilliches (1967), can be written as

$$\overline{DI}_t = \ln \left( \frac{Y_t}{Y_{t-1}} \right) - \sum_{i=1}^k \overline{Sh}_i \ln \left( \frac{X_{i,t}}{X_{i,t-1}} \right) \tag{7}$$

where  $\overline{Sh}_i = \frac{1}{2} [Sh_{i,t} + Sh_{i,t-1}]$ . The average rate of technical change,  $\overline{DI}_t$ , is also called translog index of technical change.

It should be noted that the translog measure of the total factor productivity growth is not significantly different from the Solow residual measure under two conditions. First, the elasticity of substitution is not significantly different from one. Second, variation in the growth rates of inputs over time is not significant (see, Ahluwalia 1991).

Using equation (5) and (7), we shall compute the growth of total factor productivity. Total factor productivity and the rate of technical progress are synonymous.

The discrete time version of Tornqvist index is presented below.

$$\Delta \ln TFP = \Delta \ln Y(t) - [(sh_L(t) + sh_L(t-1))/2] \cdot \Delta \ln L(t) - [(\{1 - sh_L(t)\} + \{1 - sh_L(t-1)\})/2] \cdot \Delta \ln K(t) \quad (7a)$$

The higher the rate of technical progress, the higher will be the growth of output. Hence, the estimation of the rate of technical progress and its input bias is relevant. Under the specification of production function as (6), the expression for the rate of technical progress is given as

$$\frac{\partial \ln Y}{\partial t} = \alpha_t + \beta_{it} t + \sum \beta_{ii} X_i \quad (8)$$

where  $\alpha_t$  stands for the rate of autonomous growth of total factor productivity,  $\beta_{it}$  for the bias in the growth of total factor productivity and  $\beta_{ii}$  for the rate of change in the growth of total factor productivity. If  $\beta_{ii} = 0$ , technical progress is Hicks neutral. If  $\beta_{ii} > 0$ , technical progress is non-neutral in the Hicksian sense and is biased with respect to the  $i$ -th input

For empirical estimation, we have used garden level annual balance sheet data for Tea processing industries of Assam for a period of 10 years (2010-2019). Nominal values were deflated by appropriate wholesale price indices from RBI: *Report on Currency and Finance* (various issues). The price indices of machinery and equipment were used to deflate fixed capital stock at current. We measure labour in terms of number of workers engaged in production.

Admittedly there is no satisfactory or universally accepted way of measuring capital stock. Since measurement of true economic depreciation is a very complex exercise we choose to work with estimates of gross fixed capital stock. In this study, we have computed gross fixed capital stock at constant prices by using the perpetual inventory accumulation (PIA) method (Goldsmith, 1951). As regards the gross fixed capital stock at replacement cost for the benchmark year (1980-81), we have used the rule of thumb after Roychaudhury (1977), "...doubling the value of fixed capital stock at book value at current prices for the benchmark year..." to estimate the replacement cost figures of machinery and equipment.

### 3.2 Measurement of Technical Efficiency: The Stochastic Production Frontier

The stochastic production frontier developed separately by Aigner, Lovell and Schmidt, (1977) and Meeusen and Van den Broeck, (1977) decomposes the error term of the usual econometric production function model into a white random noise component and a one

sided inefficiency random component. Following Farrell (1957) both works define the output-oriented measure of technical efficiency (in percentage) of a firm as, the ratio between observed output and the corresponding frontier output (maximum output possible in the absence of technical inefficiency) in the absence of the one-sided inefficiency random error component. The ‘frontier’ is supposed to envelope the data set instead of intersecting it, as done by application of OLS. The concept does not deal with theoretical engineering maximum but with the maximum actually achieved or attained in reality. Extensive reviews of major contribution to the stochastic frontier approach (both production and cost) have been done by Forsund, Lovell and Schmidt (1980), Coelli (1995), Fried, Lovell and Schmidt (1993), Greene (1993), Kumbhakar and Lovell (2000) amongst others. Kumbhakar *et al* (1991), Huang and Liu (1994), Battese and Coelli (1995) amongst many others developed a family of stochastic frontier models in which technical inefficiency effects are modeled as function of firm specific and exogenous variables (excluding inputs) which vary across firms and may be responsible for the inter-firm variations in inefficiency.

For the present, we assume a cross-sectional stochastic production frontier model specified by Kumbhakar, Ghosh and McGuckin (1991) as

$$\ln y_i = \ln f(x; \beta) + v_i - u_i \tag{1}$$

$$u_i = \gamma' z_i + \varepsilon_i \tag{2}$$

The random noise component in the production process is introduced through the error component  $v_i$  which is *iid*  $N(0, \sigma_v^2)$  in equation (2.1). The second error component which captures the effects of technical inefficiency has a systematic component  $\gamma' z_i$  associated with the firm specific variables and exogenous variables along with a random component  $\varepsilon_i$ . Inserting equation (2.2) in (2.1) gives the single stage production frontier model

$$\ln y_i = \ln f(x_i; \beta) + v_i - (\gamma z_i + \varepsilon_i). \tag{3}$$

The condition that  $u_i \geq 0$  requires that  $\varepsilon_i \geq -\gamma' z_i$  which does not require  $\gamma' z_i \geq 0$  for each producer. It is now necessary to impose distributional assumptions on  $v_i$  and  $\varepsilon_i$  and to impose the restriction  $\varepsilon_i \geq -\gamma' z_i$  in order to derive the likelihood function.

Kumbhakar *et al* (1991) imposed distributional assumptions on  $v_i$  and  $u_i$  and ignored  $\varepsilon_i$ . They assumed that  $u_i \sim N^+(\gamma' z_i, \sigma_u^2)$  i.e., the one-sided technical inefficiency error component has truncated normal structure with variable mode depending on  $z_i$ . It is still not necessary that  $\gamma' z_i \geq 0$ . If  $z_{1i} = 1$  and  $\gamma_2 = \gamma_3 = \dots \gamma_Q = 0$ , this model collapses to Stevenson’s (1980) truncated normal stochastic frontier model with constant mode  $\gamma_1$ , which further collapses to the Aigner, Lovell and Schmidt (1977) half normal stochastic frontier model with zero mode if  $\gamma_1 = 0$ . Each of these restrictions can be statistically tested. Finally if  $u_i$  and  $v_i$  are independently distributed, all parameters of equation (2.1) can be estimated by using maximum likelihood estimation method. The log likelihood function is a simple

generalization of that of Stevenson's (1980) truncated normal model having constant mode  $\mu$ , with only one change. Constant mode  $\mu$  is now replaced by the variable mode  $\mu_i = \gamma' z_i$ , so that the log likelihood function is

$$\ln L = \text{constant} - \frac{N}{2} \ln(\sigma_v^2 + \sigma_u^2) - \sum_{i=1}^N \ln \Phi\left(\frac{\gamma' z_i}{\sigma_u}\right) + \sum_{i=1}^N \ln \Phi\left(\frac{\mu_i^*}{\sigma^*}\right) - \frac{1}{2} \sum_{i=1}^N \left(\frac{(e_i + \gamma' z_i)^2}{\sigma_u^2 + \sigma_v^2}\right) \quad (4)$$

$$\text{where } \mu_i^* = \frac{\sigma_v^2 \gamma' z_i - \sigma_u^2 e_i}{\sigma_v^2 + \sigma_u^2}, \quad \sigma^{*2} = \frac{\sigma_v^2 \sigma_u^2}{\sigma_v^2 + \sigma_u^2}$$

and the  $e_i = \ln y_i - \ln f(x_i; \beta)$  are the residuals obtained from estimating equation (1) simply by OLS. The log likelihood function of (2.4) can be maximized to obtain ML estimates of  $(\beta, \gamma, \sigma_v^2, \sigma_u^2)$ . These estimates can then be used to obtain producer specific estimates of technical efficiency, employing the Jondrow, Lovell, Materov and Schmidt (1982) approach to find the best point estimates of technical efficiency. These estimates are either

$$E(u_i / e_i) = \mu_i^* + \sigma^* \frac{\phi(\mu_i^* / \sigma^*)}{\Phi(\mu_i^* / \sigma^*)} \quad (5)$$

or

$$M(u_i / e_i) = \begin{cases} \mu_i^* & \text{if } \mu_i^* \geq 0 \\ 0 & \text{otherwise.} \end{cases} \quad (6)$$

Once technical efficiency has been estimated, the effect of each exogenous or environmental variable on technical efficiency can be calculated from either

$[\partial E(u_i / e_i) / \partial z_{ik}]$  or  $[\partial M(u_i / e_i) / \partial z_{ik}]$ . Battese and Coelli (1995) model is an improvement over the Kumbhakar *et al* (1991) model as, (i) it is based on panel data and (ii) the non-negativity requirement  $u_i = (\gamma' z_i + \varepsilon_i) \geq 0$  is modeled as  $\varepsilon_i \sim N(0, \sigma_\varepsilon^2)$  with the distribution of  $\varepsilon_i$  bounded below by the variable truncation point  $-\gamma' z_i$ . Battese and Coelli (1995) have verified that this new distributional assumption on  $\varepsilon_i$  is consistent with the distributional assumption on  $u_i$  that  $u_i \sim N^+(\gamma' z_i, \sigma_u^2)$ . We assume a Cobb-Douglas production function with four inputs to specify the underlying technology in the automobile industry in India. The advantage is that the Cobb-Douglas stochastic frontier model is nested in the translog model so that a representative functional form can be selected on the basis of statistical tests of hypotheses. The inefficiency effects variables are

- (1) percentage expenses on employee's welfare (EEW) as captured by the sum total of bonus, contributions to provident fund, medical allowances, house rent allowance and other benefits, as proportion of total employee cost.
- (2) number of years of production experience (EXP) in India (since establishment in India). This is basically age of the firm since inception.

(3) degree of managerial control (MC) as indicated by the sum of administration expenses, director's remuneration, technical fees paid, audit expenses, and travel expenses as a proportion of total labour cost.

Wage cost, excluding bonus and other emoluments, is taken as a suitable proxy for labour quantity. The data set used in this study is not plant level data; rather it is company level or garden level data.

#### 4. Empirical Results

##### 4.1 TFPG Estimates of Barak Valley Gardens

Summary statistics (for Barak Valley) of variables used to estimate production function and TFPG are presented in table 4.3.

**Table 4.1.** Summary Statistics of Variables used to Estimate Production Function and TFPG

Variables	Mean	Standard deviation	Min. value	Max. Value	C.V
Output (kg)	1721672.89	1957587.54	198788	8727946	1.13
Land (hectares)	600.78	235.76	190.4	1152.11	0.39
Wages (Rs)	16539099.74	10210722.02	170038.56	37281168.41	0.62
Pesticides & fertilizers(Rs)	6276908.368	7413717.09	96589	33398964.96	1.18
Irrigation (Rs)	1396326.71	2890481	4808	14374037	2.07
Implements (Rs)	1675936.57	3720993	12454	15981352.28	2.22

Source: Author's estimates based on firm level primary data.

Garden Wise mean TFPG Estimates (Barak Valley) during 2010-19 are presented in table 4.2.

**Table 4.2.** Garden Wise Mean TFPG Estimates (Barak Valley) during 2004-14

Garden ID NO.	Solow Divisia index	Tornqvist Index
1	5.76	25.20
2	-0.44	-13.75
3	-0.44	-19.26
4	-0.38	-10.67
5	9.66	9.62
6	-3.04	-34.22
7	0.70	10.72
8	-1.29	-15.01
9	2.79	13.88
10	-4.69	-38.83
Mean	0.86	-7.23
S.D.	4.22	21.32

Source: Author's estimates based on firm level primary data.

Table 4.2 shows the garden wise mean TFPG estimates (for Barak Valley) during 2010-19. The sample mean TFPG is 0.86 and -7.23 for Solow divisia index and Tornqvist Index respectively. The standard deviation turns out to be 4.22 and 21.32 for two indices

respectively. Thus, the Solow Divisia index reflects positive TFPG while the Tornqvist Index shows negative TFPG in the tea industry in Barak Valley.

Year-wise mean TFPG Estimates (Barak Valley) during 2010-19 are presented in table 4.3.

**Table 4.3.** Year Wise Mean TFPG Estimates (Barak Valley) during 2010-19

Year	Solow Divisia	Tornqvist
2010-11	0.323	-0.751
2011-12	-0.643	-3.889
2012-13	-1.423	-9.566
2013-14	-1.542	-9.421
2014-15	-0.974	-11.323
2015-16	-0.825	-11.654
2016-17	-0.062	-10.99
2017-18	0.314	-7.24
2018-19	1.024	-2.23
<b>A.M.</b>	<b>-0.30</b>	<b>-7.45</b>
<b>S.D.</b>	<b>0.84</b>	<b>4.16</b>

*Source:* Author's estimates based on firm level primary data.

Table 4.3 represents year wise mean TFPG estimates (For Barak Valley) during 2004-14. Sample Mean TFPG for the period 2010-19 is -0.30 (for Solow Divisia index) and -7.45 (for Tornqvist index). The standard deviation turns out to be 0.84 and 4.16 (for the two indices respectively). It is clear from the above table, TFPG is negative in case of both Solow Divisia index and the Tornqvist index. Interpretation of the numerical values of the table needs to be done cautiously. In the table, for instance, the Solow Divisia measure for 2017-18 computed separately for each of the 10 Barak Valley tea estates yield a sample mean TFPG value of 0.314 is the average TFPG for the year 2017-18, computed over the entire cross section of 10 Barak Valley estates. Quite naturally there are positive and negative TFPG estates in each region and also each year. The negative mean for a year just indicates the fact that some of the estates have performed poorly in terms of TFPG and further that negative quantities have dominated over the positive ones. In this context it is worth noting that negative TFPG is something that has commonly been observed in Indian industries (Ahluwalia, 1985 and 1991). As exhibited by table 4.1.8, there seems to be a turnaround in terms of TFPG at the industry level post 2017. For the Solow measure TFPG is found positive and rising during the last two years and in case of Tornqvist measure TFPG is found to be negative but falling in absolute terms, thereby implying a rise in TFPG.

TFPG, irrespective of the method or technique of measurement, is basically a difference between output growth (in a real sense) and the factor share weighted sum of factor growths. Hence both theoretically and practically high output growth at the tea estate level may or may not be associated by high growth of total factor productivity. The converse is also true for obvious reasons. A firm having a high output growth during a period may exhibit high, low or even negative TFPG depending on the factor shares and the factor growth rates over that period. Thus generally speaking, TFPG and output growth rates may not be statistically associated.

**Table 4.4.** Ordinary Least Square Estimate of the Cob-Douglas Production Function (Barak Valley)

coefficients of	Estimated value	t ratio	Sig.
Constant	5.523	4.185	0.000
Land	1.292	5.924	0.000
Wages	0.143	1.744	0.087
P & F	-0.021	-0.218	0.828
Irrigation	-0.133	-1.871	0.067
R square :0.466 ; adjusted R <sup>2</sup> =0.425; F =11.148			
Output Elasticity w. r. t Land		= 1.292	
Output Elasticity w. r. t wages		= 0.143	
Output Elasticity w. r. t pesticides & fertilizers		= -0.281	
Output Elasticity w. r. t Irrigation		= -0.871	
Scale Elasticity of output		=1.281	

*Source:* Author's estimates based on firm level primary data.

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Output Elasticity w. r. t Irrigation		= -0.871	
Scale Elasticity of output		=1.281	

*Source:* Author's estimates based on firm level primary data.

The OLS estimate of the Cobb-Douglas production function (Barak Valley) in table 4.4 reflects that land and wage influence output positively while pesticides & fertilizers and irrigation play a negative role in determining output. Among all Inputs only the area under cultivation is statistically significant while labour, pesticides and fertilizers and irrigation are not. The scale elasticity of output turns out to be 1.281 representing the case of Increasing Returns to Scale. Frequency distribution of garden wise time varying technical efficiency for Barak Valley is presented in table 4.5.

**Table 4.5.** Frequency Distribution of Garden Wise Time Varying Technical Efficiency (Barak Valley)

Class Interval	Absolute Frequency	Relative Frequency (%)
35 - 45	1	10
45 - 55	2	20
55 - 65	2	20
65 - 75	2	20
75 - 85	2	20
85 - 95	1	10
Mean Technical Efficiency (%)	67.00	
Minimum Technical Efficiency (%)	38.19	
Maximum Technical Efficiency (%)	88.57	
Standard Deviation of Garden Wise Technical Efficiency (%)	15.32	

*Source:* Author's estimates based on firm level primary data.

In case of Barak Valley, the maximum technical efficiency is estimated at 88.57% while the minimum is 38.19%. The calculated standard deviation of technical efficiency across firms turned out to be 15.32 for and Barak . From the table, it is evident that in Barak Valley only 30 percent of producers have technical efficiency in between 75 percent and 95 percent.

## 5. Summary and Conclusions

After analysing the technical efficiency of Barak Valley tea production it can be concluded that there exists a good scope for improving tea productivity with the proper allocation of existing resources.. One of the main reasons for slow growth is that the rising labour wage rates have outpaced the output growth. However labour stand to be significant factor in explaining output. Interestingly it is found that globally studies on trends and patterns of total factor productivity growth or its decomposition in tea industry are rare. At last, higher level of technical efficiency should be targeted so that higher growth of output can be achieved.

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Peer Reviewed

An Annual Research Journal of Business, Management and Accounting

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## Ethical Codes in Advertising

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Received : October 10, 2022

Accepted : November 01, 2022

### Abstract

*Advertising has been considered as the techniques and practices used to bring products, services, opinions, or causes to public notice for the purpose of persuading the prospective customer to respond in a certain way toward what is advertised. Most advertising involves promoting a good that is for sale, but similar methods are used to encourage people to drive safely, to support various charities, or to vote for political candidates, among many other examples. In many countries advertising is the most important source of income for the media. In the noncommunist world advertising has become a large and important service industry. Sometimes these advertisements provide the customers with wrong message and the customers get cheated. In this context, the paper discusses on the legal aspects and ethical codes for advertising*

**Key Words:** *Advertising, Promotion, Customer, Ethics Law, Media*

Advertising has been considered as the techniques and practices used to bring products, services, opinions, or causes to public notice for the purpose of persuading the prospective customer to respond in a certain way toward what is advertised. Most advertising involves promoting a good that is for sale, but similar methods are used to encourage people to drive safely, to support various charities, or to vote for political candidates, among many other examples. In many countries advertising is the most important source of income for the media. In the noncommunist world advertising has become a large and important service industry.

In the ancient and medieval world such advertising as existed was conducted by word of mouth. The first step toward modern advertising came with the development of printing in the 15th and 16th centuries. In the 17th century weekly newspapers in London began to carry advertisements, and by the 18th century such advertising was flourishing.

The great expansion of business in the 19th century was accompanied by the growth of an advertising industry; it was that century, primarily in the United States, that saw the establishment of advertising agencies. The first agencies were, in essence, brokers for space in newspapers. But by the early 20th century agencies became involved in producing the advertising message itself, including copy and artwork, and by the 1920s agencies had come

into being that could plan and execute complete advertising campaigns, from initial research to copy preparation to placement in various media.

The importance of advertising is steadily on the increase in the modern society. The commercial and the non-commercial organizations advertise their products and services. Advertisement helps the organization to build an image. According to Philip Kotler and Gary Armstrong

“advertising is any paid form of non-personal presentation and promotion of ideas, goods, or services by an identified sponsor”

Billions are spent on advertisement. Many industries exist solely due to the influx of money on advertisement brings in. The cable TV industries, magazines, newspapers, internet websites and many other media industries would drastically change if they are not able to sell advertising space.

The growing business of advertisement on the one hand and confusing nature of the buyers on the other hand, make the organizations try all sorts of tactics to get buyers' attention and money. Sometimes, these attempts involve underhand or dirty tricks, which are ethically improper.

However, considering the fact that Advertising has itself become an industry and is employing many creative artists, need some sort of supervision for the benefit of the customers and of course, the common people. Certain laws are there to control the message given by the media house or the companies. These laws are -

1. **Emblems and Names (Prevention of Improper Use) Act, 1950:** The law lays down that no person will use name or national emblem, or their colourful imitation, or register any firm, or any other institution containing some emblems or names for any commercial purpose. Some of these emblems or names include that of the United Nations, WHO, National Flag of India, any insignia of India's central or state governments; Rashtrapati Bhawan; Mahatama Gandhi, President or the Prime Minister of India; medals or badges, such as Ashok Chakra, etc.
2. **Drugs and Cosmetic Control Act, 1940:** Though enacted before independence, the law still stands on India's statute book in a somewhat amended form. The primary objective of the Act is to ensure that the drugs and cosmetics sold in India are safe, effective and conform to state quality standards. This law regulates import, manufacture, distribution and sale of drugs and cosmetics at the national level.
3. **Objectionable Advertisement Act, 1954:** This Act controls advertising of drugs in India. It prohibits advertisements of drugs and remedies that claim to have magical properties, and makes doing so a cognizable offence.
4. **Prize Competition Act, 1955:** It is an offence under this law to issue or publish any advertisements or notices, offering money in which prizes are offered for solution of any puzzle based on the building up, arrangement, combination or permutation, of letters, words or figures.

5. **Prevention of Food Adulteration Act, 1955 and the Food Safety and Standards Act, 2006:** These Acts relate to advertisements of food products put out for sale and which are adulterated with ingredients bad or harmful to human health. The provisions of these laws also prescribe standards to be observed for ensuring science-based standards for articles of food.
6. **The Copyright Law, 1957:** The law was enacted to ensure that all the creators of original works of art, painting, architecture, music, literature and dramatic are exclusively able to enjoy the fruit of their labour in creating these works. The law lays down terms and conditions for holding copyright, transfer of ownership of copyright, duration of copyright, punishment for the infringement of the copyright.
7. **Cigarettes and other Tobacco Products Advertisement law of 2003:** This law prohibits publication of advertisements for production, supply and trading of cigarettes and other tobacco products. Terms and conditions of seizure, destruction of such goods and punishment are laid down in the law. The law also implements measures for the protection of non-smokers from involuntary exposure to tobacco smoke.
8. **Indecent Representation of Women (Prohibition) Act, 1986:** The law prohibits indecent representation of women through advertisements or in publications, writings, paintings, figures or in any other manner and for matters connected therewith or incidental thereto.
9. **Consumer Protection Act, 1986:** Advertising Ethics & Laws This law is termed as 'benevolent social legislation' and lays down the rights of consumer. It provides for promotion and protection of rights of consumer. The law details the meanings of goods, services and unfair trade practices punishable under the law.
10. **Trade Marks Act, 1999:** Laws such as the Trade Marks Act, 1999, the Patents Act, 1970, and similar enactments protect the rights of owners of intellectual property. No advertisement that violates intellectual rights of any owner can be published. As per law "trade mark means a mark capable of being represented graphically and which is capable of distinguishing the goods or services of one person from those of others and may include shape of goods, their packaging and combination of colours." The law prescribes punishment for its infringement.

Advertising Standards Council of India (ISCI): ISCI was founded in 1985. It is committed to the cause of self-regulation in advertising and ensuring that customers' interests are protected. ASCI was formed with the support of all four advertising related sectors-advertisers, advertising agencies, media (including broadcasters and the press) and other sectors such as PR agencies and market research firms (<https://ascionline.org/index.php/ascicodes.html>).

Consumer Complaints Council is the heart and soul of ASCI. It is the dedicated work that this group of eminent people has put in, which has given tremendous impetus to ASCI's

work and advertising self - regulation. ASCI's objectives include monitoring, administering and promoting advertising standards in India. Its prime aim is to -

1. Ensure the truthfulness and honesty of advertising representations and claims and safeguards against misleading advertising.
2. Ensure that advertising does not offend generally accepted public decency norms and standards.
3. Protection against the indiscriminate use of advertising to promote products or services that are generally considered to be harmful to society or to individuals or that are not acceptable to society as a whole.
4. Ensuring fairness in competition and the canons of generally accepted competitive behaviour by advertising.

Thus, various laws are there to control the advertising in the country. Infact, various other acts are there to supervise the advertising in India. This may be done on the matter that these advertisements have become open in the era of IT. Moreover, certain ethics should also exist among the advertisers to promote their advertising campaign.

Ethics means moral principles that govern a person's behaviour or the conducting of an activity. The term *ethics* may refer to the philosophical study of the concepts of moral right and wrong and moral good and bad, to any philosophical theory of what is morally right and wrong or morally good and bad, and to any system or code of moral rules, principles, or values. The last may be associated with particular religions, cultures, professions, or virtually any other group that is at least partly characterized by its moral tools.

According to Peggy H. Cunningham, advertising ethics may be defined as

“what is good or right in the conduct of the advertising function. It is concerned with questions of what ought to be done.”

Considering the fact certain ethical codes should be there, from all sides, in advertising in order to provide a moral guidance. The following are excerpts from the Code of Ethics for Advertising issued by the Advertising Council of India:

- Advertising should be so designed as to conform not only to the laws but also the moral, aesthetic and religious sentiments of the country.
- No advertisement likely to bring advertising into contempt or disrepute should be permitted. Advertising should not take advantage of the superstition or ignorance of the general public.
- No advertisements of talismans, charms and character reading from photographs or such other matter as will trade on the superstition of general public shall be permitted.
- Advertising should be truthful avoid distorting facts and misleading the public by means of implications and omissions. For instance, it should not mislead the consumer by false

The following issues should be considered while framing the layout of advertising:

1. Disclosure of facts
2. Exceptional techniques
3. Avoidance of derogatory portrayals
4. Based on reality
5. Ethics in technology era

Thus, the ethical part of advertising is considered as an important aspect and that has to be taken care of in order to advertise the product in a proper manner.

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4. Code of Commercial Broadcasting by All India Radio.

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# Sustainable Development Necessitates Students Awareness

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Received : November 7, 2022

Accepted : November 28, 2022

## ABSTRACT

Rational use of natural resources in such a way that it can meet the needs of the present generation without compromising the availability for future generations to fulfill their needs is called Sustainable development. It deals with the environmental problems as well as other related issues like economic, social and cultural etc. Due to environmental degradation every year we extract an estimated 55 billion tons of fossil energy, minerals, metals and bio mass from the earth. Again, we have already lost 80 per cent of world's forest and we are continually losing them at the rate of 375 square kilometer per day. It results in more destruction of natural resources and environmental degradation. The present study is an attempt to analyze the level of students' awareness in sustainable development.

**Keywords:** Sustainable, Environment, Degradation, Natural resources.

## Introduction

The term sustainable development referred to as the rational use of natural resources in such a way that it can meet the needs of the present generation without compromising the availability for future generations to fulfill their needs. Thus, sustainable development deals with not only the environmental problems, but also some other related issues like economic, social and cultural etc. With a rapid increase in population and also increased demand for goods and services by them leads to heavy pressure on the environment which in turn attached to some other factors like increased human migration, increased urbanization and industrialization. The trend of ongoing depletion of non-renewable resources tells that, global awareness and action is very urgently required to create a more sustainable future.

Due to environmental degradation, it is calculated that every year we extract an estimated 55 billion tons of fossil energy, minerals, metals and bio mass from the earth. Again, we have already lost 80 per cent of world's forest and we are continually losing them at the rate of 375 square kilometer per day. It results in more destruction of natural resources and environmental degradation. From the statistical information, it is calculated that due to deforestation, 5 to 10 per cent of tropical forest species will be vanished in every decade. The

current degradation of natural resources leads to the fact that every hour, 1692 acres of productive dry land become desert. It has been found that 27 per cent of our coral reefs have destroyed. If the rate continues, remaining 60 per cent will be gone in 30 years. Moreover, we are using up 50 per cent more natural resources than the earth can provide to us. The present generation needs 1.5 per cent of earths' resources which is impossible to manage.

Based on these basic requirements, to grow sustainable development, the prime responsibility goes to the educational sector. In this connection higher education can play an important role to create a more sustainable future. Hence, the concept of 'education for sustainable development' has become one of the compulsory subjects in the educational institutions to minimize the problems associated with human development and sustainable development.

Since students are the main part of the education system, hence they should play the leading role in promoting sustainable development in the society. As we believe that, students are the builders of future nation and that they have the full capacity to influence their fellow youths and the different communities of the society in the right way, hence they can promote sustainable development through education and awareness. They can also help to promote an eco-friendly environment. Students' community can promote sustainable development by adopting some practices like Plantation, Waste recycling, Economical transport management etc. Thus, to save our life from rapid environmental degradation, it is very essential that, we should create awareness among all sections of people in our society. In this connection, it is one of the moral duties of the educated students that, they should take initiative on this ground.

But, to serve that task efficiently, it is very much important that the students should have full knowledge on environmental issues and also on sustainable development. Most necessarily, it is simultaneously important that they should practice all the required habits to promote sustainable development; so that they can influence others.

### **Objectives of the Study**

This paper is prepared by considering the following Objectives.

1. To know about students' awareness on sustainable development.
2. To analyze their practical habits on sustainable development in their daily lives.
3. To verify their knowledge that they received from their course.

### **Methodology**

This paper is completely based on primary data. The inclusion of some secondary information is collected from different secondary sources. The primary data are collected from the students studying in colleges located in Barak Valley. Total 60 students are surveyed from four colleges. The respondents are selected through a random sampling method. The information is collected with the help of a well tested questionnaire.

**Findings of the Study**

1. Awareness on Sustainable Development

The most important issue for promoting sustainable development is that, we should possess full knowledge on it. Without a basic knowledge it is meaningless to talk about the promotion of sustainable development and its required habit. In this regard we have tried to know whether the respondents acquired full knowledge on sustainable development or not and we have received the following response from them.

**Table 1: Students Awareness on Sustainable Development**

Comment	No. Of Students
Know properly	15
Heard, but do not have sufficient knowledge	30
Have a little knowledge on it	10
Do not know	05
Others	00
Total	60

Source: Field survey

The above results express that, there is a lack of sufficient knowledge of the students on sustainable development. Only 25 per cent of students have the full knowledge on sustainable development. There is a lack of proper knowledge on this issue among the students which is revealed by the survey that, around 67 per cent of students have insufficient knowledge on it. Most surprisingly, we come to know that around 8 per cent of student’s view that they do not know anything about sustainable development.

The above results represent the real picture on the awareness of the students on sustainable development. If the student community is not well aware of the issue, then it carries no meaning to depend on them to promote sustainable development. This result also reflects our prime responsibility that we should make them aware of environmental issues.

2. Knowledge on Sustainable Development Promotion Measures

Among the students who are aware about the issue of sustainable development, we were trying to know about their idea on different habits that one should practice to promote sustainable development. We have got the following result in this regard.

**Table 2: Knowledge on Sustainable Development Promotion Measures**

Items	No of Students
Never put interest in the class.	00
The topic sustainable development is never discussed in the class.	09
I was not able to follow the concept while the teacher taught us about Sustainable Development.	04
The teacher was not able to make me understand about sustainable development.	47
No Comment.	00
Total	60

Source: Field survey

The table reveals a very unsatisfactory result that, 83.63 per cent of students are not aware about the habits that, we should practice to promote sustainable development. This result shows their depth of knowledge regarding environmental degradation. In this connection we feel that proper classes are required to make them conceptually clear.

### 3. Factor responsible for Insufficient Knowledge on Sustainable Development by the Students

In this present education system where the subject matter of environment and its related issues are included in all the courses, but the lack of knowledge on sustainable development among the students of higher education. Thus, it reflects a big question, that is, who is responsible for that? So the study took the opportunity to find out the reason for low level knowledge on sustainable development by the students. The following table will show the results in this issue.

**Table3: Reason for Insufficient Knowledge on Sustainable Development**

Responses	Awareness on sustainable promotion measure
Yes	06
No	46
A Little	03
Total	55

Source: Field survey

This result expresses that the surveyed students are like to blame the teacher community for their lack of knowledge on sustainable development. Around 78.33 percent students report that, the respective teachers who were teaching such topics are responsible for their

ignorance. This result also raises the question of expectancy and willingness of the teacher concerned on the topic.

We know that, Subject expectancy of a teacher is very essential to establish his view among the students. A teacher who is well-equipped with a particular subject, he is able to carry his discussion among the students in such a way that, the students can easily able to follow him and thus, the class will become more effective. If we see the educational scenario of Assam, we shall find that, in almost all the schools and colleges, the classes on environmental science are done by those teachers who are not specialized with that subject. Since the Board as well as the Universities includes the subject of environmental science as a part of the syllabus, the classes are managed by those teachers who have interest in this field. Most probably no teacher is appointed either in school or college with the specialization on environmental science and if the appointment is given also, it is very less compared to its demand. In that situation for a teacher from different subjects, it is very hard to carry a fruitful class on environmental issues with the different qualities of students.

#### 4. Habit to Culture on Sustainable Development Promotion Measures

The survey also made an attempt to find out their habits to promote sustainable development in their daily lives from the surveyed students who are familiar with the term sustainable development. In this regard, there are many important measures and habit that one should follow, and among them, we put a few parameters to verify their responses from the respondents which are shown below.

**Table 4: Habit of Sustainable Development Measures By the Students**

Items/Responses	No. Of Students				
	Yes	No	Sometime	Never thought on it	Total
Put off of the light before leaving the room	05	10	13	27	55
Do you care about the wastage of water by you in the toilet and bathroom	04	26	08	17	55
Use of dustbin for waste materials	02	06	41	06	55
Use of petroleum oil consuming vehicles to come to the college or to go nearby distance.	46	04	03	02	55

Source: Field Survey

This table represents the real picture of application of sustainable development measures by the students. As we know that, rational use of Electric Power is one of the most important measures to promote sustainable development, because it is produced by using coals, hence it is our duty to put off the lights/ TV/Fans etc. before leaving the room. In the educational institution it is more necessary because many numbers of Fans, lights etc. are used. Although

the institution employs individuals to serve the task, yet it is one responsibility of the others to look after the issue and hence students can do that habit to promote sustainable development.

But our survey reveals an unwanted result that, 91.00 percent of the students are not conscious of the misuse of electrical energy. Only 09.00 percent of students are adopting a measure to promote sustainable development. Thus, this result shows the lack of eco-friendly habits among the students.

Now-a-days, saving water is considered as one of the most important habits to save our earth. Many people are dying without water whereas some people are wasting it. Since sustainable use of water is important for promoting sustainable development, hence the research tried to examine the water use habits of the students and we got the surprising result that 78.00 percent of students do not border on wastage of water. Thus, if the educated young generation is showing their ignorance, then how can we expect such a habit from less educated people?

Air pollution and the shortage of petrol production is a burning problem of the present world. With the introduction of different qualities of vehicles, we usually prefer to a motor journey rather than a walk. In this connection, our surveyed young students' response was that, around 89.09 per cent of students do their regular work by riding motor vehicles. This type of result also discourages to the society that, we are expecting right action and habit from the educated youths.

### **Suggestions and Conclusion**

The above result from the field survey expresses that, there is a shortage of depth of knowledge on sustainable development among the students. Being a part of higher education the students' ignorance on sustainable development is a really big issue for the society. From the survey it was observed that, the main reason for this issue is the communication gap between education providers and the receivers. This gap must be filled up if we really expect sustainable development. Without the cooperation of the students it is impossible to promote sustainable development. So to maintain it, it is our main duty that we should make them aware for sustainable development first.

To save our earth from rapid environmental degradation it is very essential that, we all must adopt all the measures in our daily life which are essential to promote sustainable development. In this connection also, the students from higher education can take initiative to build eco-friendly habits in their daily lives and create themselves as a guide for others. But the survey reflects that, some of the students are still not yet familiar with the recent impact on the earth due to environmental degradation. Due to this fact they are not conscious of promoting sustainable development.

In that situation, our moral duty is that, we must create awareness among the students. Hence there is a need for the arrangement of classes for the students on environmental

issues. In those classes the design of the class should be informative and knowledge based rather than examination based. Opportunity should provide to the students to express their views and hence the class should be arranged in a discussion mode. Again the arrangement of frequent seminars, workshops, awareness camps etc may be able to enhance the depth of knowledge of the students on sustainable development. Again, there is a requirement of an action plan of the college to continue eco-friendly habits by the students to promote sustainable development.

Most necessarily it is the urge of all the educational institutions that, the government should appoint some specialized teachers to teach the subject environmental science. Only inclusion of the subject environmental science in the course of study will not serve the purpose, because the present scenario of climate change in the world demands immediate action on environmental protection. Hence the subject teacher for environmental studies must have the capacity to influence the student community. Hence a properly trained and eligible teacher can only make the students conceptually clear on the issues related to the environment. So there is a need for a plan of the government to enhance awareness among the students to save the earth.

Thus, if we all the members of the society, at least who are aware about sustainable development should come forward to save the earth. It is our duty that, we should cultivate all the eco-friendly habits among us so that the students as well as other members of the society can follow the path of sustainable development.

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## **DECLARATION**

Name of Publication	:	<b>SAMANVAYA</b>
ISSN No.	:	2249-4545
Language	:	English
Periodicity of Publication	:	Annual
Price	:	Individual Rs. 250/- Institution Rs. 500/-
Name of Publisher	:	Principal Gurucharan College, Silchar
Nationality	:	Indian
Address	:	Department of Commerce Gurucharan College Silchar-788 004
Name of Managing Editor	:	Dr. Suvendra Kr. Das Associate Professor (Retired), Department of Commerce Gurucharan College, Silchar
Name of Chief Editor	:	Dr. Jogeswar Barman
Nationality Address	:	Indian
Address	:	Department of Commerce Gurucharan College Silchar-788 004
Owner of Publication	:	Department of Commerce
Name of the Printer/Press	:	Gurucharan College Printing Press Gurucharan College Silchar-788004

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