

Working of Puffed Rice Units

OPEN ACCESS

Harish Tigari

Assistant Professor and Co-ordinator, Davan PG Studies, Davangere, Karnataka, India

Volume: 8

 <https://orcid.org/0000-0002-3770-6045>

Issue: 2

H.C. Ramesh

Davan PG Studies, Davangere, Karnataka, India

Month: April

Year: 2020

P-ISSN: 2320-4168

E-ISSN: 2582-0729

Received: 18.01.2020

Accepted: 20.02.2020

Published: 01.04.2020

Citation:

Tigari, Harish, and HC Ramesh. "Working of Puffed Rice Units." *Shanlax International Journal of Commerce*, vol. 8, no. 2, 2020, pp. 45–52.

DOI:

<https://doi.org/10.34293/commerce.v8i2.2309>



This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License

Abstract

Industrialization is a progressive measure that creates social and economic change by transforming human society from pre-industrialization to industrial era; Industrialization plays a predominant role in the development of the economy, acts as a basic fundamental factor that is influenced by the growth prospects of the economy of a country. The prominence of industrialization creates employment opportunities, balancing the regional development living and poverty eradication, etc. In this context, the unorganized sector acts as a factory for entrepreneurship and self-employment opportunities as well as a tool for poverty eradication. So the present study attempts to analyze the working of puffed rice units in the Davangere region. These industries are providing various employment opportunities to the poor and illiterate people. Because these are labor-intensive industries. The present study is based on the puffed rice workers and their working conditions and environment. In malebennur town there are more than 50 puffed rice industries are working. In the study area, people depend on the making of puffed rice for their livelihood. The main purpose of the study is to know about the current status, growth, and development of the puffed rice units and also discuss the government initiative in the development of an unorganized puffed rice cluster in Davangere. The study is based on primary data with field survey and secondary data, which includes different reference books, journals, research papers, seminar proceedings, articles, and government publications, annual reports, etc.

Keywords: Puffed Rice, Small Scale Industries, Mandakki and Socio-Economic

Introduction

The puffed rice units come under the small scale industries. Small scale industries are generally comprised of those industries which manufacture, production and rendering the services with the help of small machines and less workforce. The small scale industries are the lifeline of a developing countries economy, like India. These are labor-intensive and providing employment opportunities for people. There is no skill required for employees. These Industries are using local resources for production. SSIs account for almost 40% of the production of goods and services in India. SSIs are the best example for the make in India initiative; there are a variety of small scale industries that are there, like Khadi industries, Handlooms, Cottage industries, tiny industries, etc. in that puffed rice units are also small scale industries.

Puffed rice is locally known as Mandakki, Kallepuri, and churmuri. It is processed food, which is a popular snack in India. It is prepared by roasting conditioned rice gains in a hot and bed. India is the world's largest producer of the puffed rice. Due to its favorable agro-climatic conditions and rich natural resources. It is suitable for consumption as breakfast and snack food. In the United States and parts of Europe, sweet puffed rice is a popular breakfast cereal as well as being used in sweet snacks.

The puffed rice is produced by raw rice (paddy). It is very popular in many countries as a cereal breakfast component or as light food and snack. Puffed rice formed by the reaction of both starch and moisture when heated within the

shell of the grain. Unlike popcorn, rice kernels are naturally lacking in moisture and must first be conditioned with steam. Puffed rice can be created by heating the steam conditioned kernels, either with oil or an oven. Puffed rice is very lightweight food to eat. It is originated in India around the 15th century when it was made as a sweet offering to the Hindu Gods.

Review of Literature

(Dr. Umesh D Jadhav) Their objective is to examine the growth and performance of SSIs, to analyze the problems of SSIs, to examine the remedies for SSIs. The study is fully based on secondary data. The definition of SSI in India changed from time to time. It is currently defined in terms of investment ceilings on the original value of installed plant and machinery is Rs 1,00,00,000. SSIs help to the generation of more employment opportunities with less investment & reducing regional imbalances etc. Lack of skilled workforce, the defective supply of raw materials, inadequate credit assistance, lack of machinery & equipment, absence of organized marketing facility, lack of latest technology, lack of infrastructure, and competition from large scale units are problems of SSIs. To remove these problems, remedies are necessary; they are training & development, effective planning, providing infrastructural facilities, the supply of raw materials in time, and credit arrangements are required. Finally, they conclude that the government should provide the necessary support to SSIs. It will help with the growth of the Indian economy.

(A Bharadwaj & et al.) SSIs are usually situated in semi-urban or rural areas. They don't need skilled labor to work in the units. The objective of this study was, to study and examine the working of SSIs, and to analyze the problems faced in different aspects of manufacturing, by the industry. The study and analysis are based on the information collected by the authors on an industry. And some information is gathered from a secondary source. The study is related to an industry which is located in the Mancheswar Industrial estate of Bhubaneswar city. The industry was established in 2005. It manages to earn 10-15% of profit annually. The industry has more problems like production problems, inventory problems, and

supply chain problems. They were suggested to improve the working environment for workers. It helps to mote effort and punctuality towards there work. Use proper inventory control and quality control techniques to earn more profit. Machines must be renewed to avoid the improve performance and quality of the output. They conclude that, in developing nations like India, quite a proportions of the industries are SSIs and are still emerging to succeed; they must work on the constraints which are act as hurdles in their paths. In India, either the government or large scale industries that can help the sector to grow.

(Tara Chand Saxena) His objective is to study the growth and development of small scale industries in India, and also contribute to the distribution of national income and provide employment opportunities in the rural people. The study was based on primary as well as secondary data. SSIs are classified into two types, traditional and modern SSIs. both the segments have their characteristics in terms of capital, labor intensity, locational, orientation, manufacturing process, and skill requirements. The small scale industrial sector has played a vital role in shaping the destiny of the nations since independence. During the period of Mahatma Gandhi, the small scale industry movement has been largely regarded as a vehicle for uplifting the weaker sections of the society in the .country. SSIs were developing from 67.9 lakh SSIs in the 1990-91 to 510.6 lakh SSIs in 2014-15. With the number of small scale industries, the performance of the SSIs is also developing from 1990-91 to date. The number of units, value of production, numbers of persons employed, and value of exports are also increased from 1990-91 to 2014-25. He concludes that the SSIs sector has made a significant contribution to employment generation and rural industrial and rural development.

(Anirudh Malay U and et al.) are researched “ Semi-automated Puffed Rice Machine Using Agricultural Waste Burnt Low Smoke Stove.” (5 May 2018), in the traditional method of puffed rice production, it causes to bone marrow shrinks due to the red blood cells get deoxygenated, and lung problems. To limit these disadvantages, much attention is required to design and fabricate the portable, low-cost stove keeping because of human

health. As per a survey conducted by the authors in Shimoga, Chitra Durga, and Belagavi, most common problems are identified. Majorly health issues. The traditional method of production of puffed rice is more popular. As they use low cost. But it requires three skilled labor. And seeks to work in a risky environment. In this paper, they sided about various risk factors of conventional puffed rice machine and construction & working principal of stove(new machine). They explained about the major parts of the new machine, and their functions of the designed and fabricated low smoke stove are also described. Finally, conclude that the Semi-automated puffed rice machine is designed and fabricated to limit the disadvantages of currently used conventional clay stoves. It designed to operate by a single user; he can do multiple tasks simultaneously. It use dry agricultural waste as fuel; it also helps to reduce the production cost and to produce good quality puffed rice.

Objectives of the Study

- To study the working condition of puffed rice units.
- To study the socio-economic background of the puffed rice entrepreneurs and workers.

The Methodology of the Study

The present study is conducted by using both methods of data primary as well as secondary data.

Primary data: the primary data is collected from direct interaction and a structured questionnaire and answers to the questions from the respondents. Respondents are selected randomly.

Secondary data: secondary data is collected from the various articles, which are already published, magazines, newspapers, journals, and internet sources, etc.

Scope of the Study

The present study will be covering the working condition of puffed rice units and the socio-economic background of puffed rice entrepreneurs. The study is conducted in malebennur town. The study will provide information about the working condition of the puffed rice workers and problems faced by the puffed rice entrepreneurs in Malebennur town. The

result of the study will help puffed entrepreneurs or workers to improve the working condition and profitability.

Need for the Study

In malebennur area, rice is the major agricultural product, because of irrigation facilities. Rice and its derived products are very popular in the area. More than 50 rice mills and puffed rice units are operating with different rice products. Like rice, puffed rice, flaked rice, etc. so there is a need to understand the working condition of these rice mills in the study area.

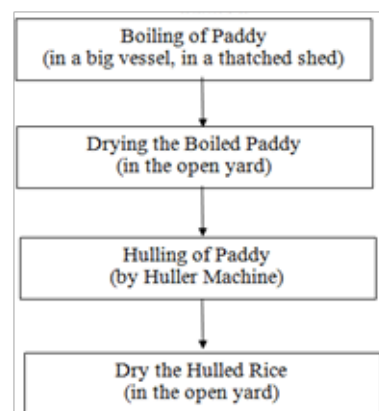
Limitations of the Study

- The accuracy of the data majorly depends on the respondents.
- The study is restricted to malebennur town only.
- The study is essentially a micro-level study. Sampling is taken by only 30 respondents.
- The result of the study is purely based on the information given by the respondents.

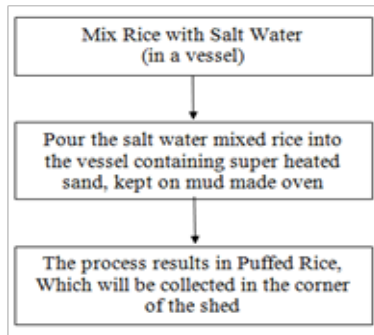
Puffed Rice Making: Process and Needs

Puffed rice making involves largely skill-based processes and, therefore, requires hardly any equipment. A puffed rice maker requires paddy, salt and water as inputs, a drum, three vessels of various sizes, one spatula and one sieve – all to transform the inputs into output (puffed rice), with the help of energy inputs – rice husk, groundnut husk and scrap automobile tires.

Puffed Rice Making Process Phase 1



Phase 2 (in a thatched shed)



Source: EERC Working Paper Series: IPP-2, 2002

The puffed rice making process involves two phases

The first phase involves the conversion of paddy into rice. The procured paddy is boiled in a drum and then dried up in an open yard. Then the paddy is hulled in a huller machine to separate the husk from rice. The hulled rice is then dried in an open yard. The first phase generates rice as the main product and rice husk as the by-product. The by-product rice husk is used as a source of fuel by all the puffed rice making units in Davanagere.

The second phase of puffed rice making consists of converting rice into puffed rice. The whole process takes place inside a thatched shed. The process begins with the mixing of rice with saltwater in a vessel. Then, the saltwater mixed rice is put into the vessel containing heated sand, kept on an oven made of mud. The rice is mixed with the hot sand with a spatula, and as puffed rice emerges, it is separated from the sand with a sieve.

To boil paddy and heat the sand, three kinds of energy inputs are used: rice husk, groundnut husk, and used scrap tires. It is the high heating intensity of scrap tires, which has made many a puffed rice maker to use them along with rice and groundnut husks. While rice husk is the by-product of the first stage of the process of puffed rice making, groundnut husk is available in plenty as Davanagere district is one of the major centers of groundnut cultivation.

The concentration of 810 units in one locality and their usage of scrap tires in olden days, it has resulted in ‘visibly intensive’ air pollution in the Mandakki Layout. The entire atmosphere in the layout is thickened with black smoke all around. Thus, air pollution is the major environmental problem caused

by puffed rice making units in Mandakki Layout in Davanagere. Further, the whole process of puffed rice making generates waste in the form of ash, which causes land pollution. This adds to the ‘untidy environment’ of puffed rice units (which do not have properly constructed building and floor space).

Data Analysis and Interpretation

Table 1: Classification based on Age and Education of Puffed rice Workers

Age	Fq	%	Education	Fq	%
18-25	10	33.33	Illiterate	24	80
25-35	20	66.67	Primary	6	20
35-45	0	0	High school	0	0
Above 45	0	0	PUC	0	0
Total	30	100	Total	30	100

Source: Field survey

Age: From the above table shows that the age information regarding workers of the puffed rice units. In this case, maximum respondents are from the age group 25-35 years, 66.67% of puffed rice owners are from the age group. And 33.33% of people from the age group of 18-25 years. It shows that in these units, the majorly middle age group people are working.

Education: From the above table shows, the education information regarding the workers of puffed rice units. In this, we have observed that most of the people are illiterate because it’s not required any educational qualification to the workers. 80% of the people are illiterate, and only 20% of people have primary education.

Table 2: Classification based on Work and working hours of Puffed rice Workers

Work	Fq	%	Working Hours	Fq	%
Puffed Rice Making	14	46.67	7 – 8	00	00
Paddy Drying	16	53.33	8 – 9	14	46.67
			Above 10	16	53.33
Total	30	100	Total	30	100

Source: Field survey

Work: The above table shows that the information about the puffed rice workers and their working hours. In these units, there are mainly two works are there, one is drying of paddy, and another one is making of puffed rice. 53.33% of people with the work of drying the paddy and remaining 46.67% of people with the work of puffed rice making. In some cases, workers are needed to do both works in the industry.

Working Hours: The table shows that the information about the working hours of workers in puffed rice units. Comparing to other industries workers, puffed rice industries workers are working more time. Maybe, they need to complete a certain level of task per day. So, it needs more time to complete the task. As per the source collected by the survey, 53.33% of workers are working more than 10 hours per day. And 46.67% of workers working 8-9 hours per day.

Table 3: Classification based on Income and Family members of Puffed rice Workers

Income	Fq	%	Family Members	Fq	%
0-5,000	00	0	0-3	2	6.67
5,000-10,000	26	86.67	3-5	22	73.33
10,000-15,000	2	6.67	5-10	6	20
Above 15,000	2	6.67	Above 10	0	0
Total	30	100	Total	30	100

Source: Field survey

Income: The table shows information about the income of puffed rice workers. They have a fixed wage per day in the industry. The wage is fixed at Rs 500 per day for a worker. 86.67% people have 5000-10000 income per month, 6.67% people have Rs10,000-15,000 & above 15,000 income per month. Among the 30 respondents.

Family Members: The table also shows the information about the family members or dependents on the workers. The data shows that 73.33% of people have 3-5 dependents on them. And 20% of people have 5-10 family members in their families. And the remaining 6.67% of people have 0-3 family members in their family.

Table 4

Marital status	Frequency	Percentage
Married	24	80
Unmarried	6	20
Total	30	100

Source: Field survey

Marital Status: The table helps to know about the marital status of the workers in puffed rice units. Here most of the respondents were married. To lead their life and to protect their family, they depend on the work. Some unmarried people are also working in these industries due to unemployment and lack of education. In this case, majorly, 80% of people are married, and the remaining 20% is unmarried.

Table 5: Classification based on Age and Education of Puffed rice Entrepreneurs

Age	Fq	%	Education	Fq	%
18-25	2	6.67	Illiterate	22	73.33
25-35	18	60	Primary	4	13.33
35-45	6	20	High School	0	0
Above 45	4	13.33	PUC	4	13.33
Total	30	100	Total	30	100

Source: Field survey

Age: The above table shows the information regarding the age details of puffed rice owners. Here, most of the respondents of puffed rice units are belongs to the age group of 25-35 years; 60 % of people are from the age group. And followed by 20% of people from the age group of 35-45 years and 6.67% of people from the age group of 18-25 years. It indicates that more than 25 years age-older adults are majorly doing the business.

Education: The table shows the educational qualification of puffed rice owners. The data shows that majorly illiterate people are doing the business. Because to run the business, they don't need any prescribed qualifications for the owners. And some people have minimum education like, SSLC and very few cases have PU level education.

Table 6: Classification based on Income and Family members of Puffed rice Entrepreneurs

Income	Fq	%	Family Members	Fq	%
0-5,000	0	0	0-3	2	6.67

5,000-10,000	16	53.34	3-5	18	60
10,000-15,000	10	33.33	5-10	8	26.66
Above 15,000	4	13.33	Above 10	2	6.67
Total	30	100	Total	30	100

Source: Field survey

Income: The above table shows the information regarding the Income of puffed rice owners. In this case, they have very low income from the business. Only 13.33% of people have more than Rs15,000 income per month. Most of the people have Rs 5,000-10,000 per month. These are getting very low income from the business. Remaining 33.33% of people have middle income from the business. They have Rs10,000-15,000 income for a month. It shows that they are doing the business only for leading their life; there is no more profit to the owners also.

Family Members: The above table shows the information regarding the family members or dependents on the owners/entrepreneur of puffed rice units. The data shows that most people have 3-5 dependents on them. Some people have 5-10 people in their families. Few cases only less than three members and more than ten members in their families. It shows that it is not suitable for the big family holder to do the business. Because it's not providing more income to lead their life, it is only suitable for the small family holder; they will lead their life from the lower income.

Table 7: Classification based on Investment and Experience of Puffed rice owners

Investment	Fq	%	Experience	Fq	%
1,00,000-2,00,000	0	0	18-25	18	60
2,00,000-3,00,000	14	46.67	25-35	8	26.67
3,00,000-4,00,000	12	40	35-45	4	13.33
More than 4,00,000	4	13.33	Above 45	0	0
Total	30	100	Total	30	100

Source: Field survey

Investment: The above table shows that the information about the starting investment of the

puffed rice industries. In this, 46.67% of units are started from the investment of Rs 2,00,000 – 3,00,000, and 40% of units are started with the investment of Rs 3,00,000-4,00,000, and only 13.33% of business started from the investment of more than Rs 4,00,000. The investment is required to set up small machines for production of puffed rice. To invest in this, they are brought the money from the various sector. Like nationalized banks, co-operative societies, friends, and relations, etc.

Experience: The above table shows the information on the experience of puffed rice owners. According to the data collected by the survey, the owners of these units have more experience. Because they were run the business from their childhood. The data shows that 40% of people have more than 25 years of experience, and the remaining 60% of people have 18-25 years of experience in the business.

Table 8: Purchasing of Raw Materials and Selling of Puffed Rice

Selling of Puffed rice	Fq	%	Purchase Paddy	Fq	%
Through Middlemen	26	86.67	Through Middlemen	26	86.67
Retail Seller	0	0	Local Market	0	0
Direct to consumer	4	13.33	Direct from Farmers	4	13.33
Total	30	100	Total	30	100

Source: Field survey

Purchasing of raw materials and selling of puffed rice; The above table shows the information about the selling of puffed rice and the purchasing of raw materials details of puffed rice units. In this case, 86.67% of purchasing and selling activities are done through the middlemen, and the remaining 13.33% of purchasing of raw materials(paddy) and selling of puffed rice is direct from the farmers and direct to the consumers.

Findings

Based on the analysis and discussion in the study of “working conditions of puffed rice units.” In these units, workers’ owners are facing many problems in the production of puffed rice. We found the following problems in the area.

Poverty: Basically, puffed rice units are cottage industries with unorganized. The worker's wage is very low compared to the organized sector.

Religion: The majority of the owners and workers belong to the Muslim community, education, socio-economic status, or condition is a very low standard.

Marketing: Puffed rice is selling preferably through intermediaries and some extent they may sell directly to the consumers.

Purchase Paddy: For producing puffed rice, the entrepreneurs preferably purchase the paddy through intermediaries and some extent they may purchase directly from farmers.

Livelihood: The reason for choosing the activity by owners and workers of the units is the only livelihood. Because puffed rice making is a marginalized economic activity with limited profit.

Housing and Other Basic Facilities: The major problem faced by workers in the puffed rice sector is lack of affordable houses with minimum required facilities like water, sanitation, clean environment, etc.

Working Days and Hours: There is only four day's work is there in a week and the remaining three days in the week they don't have any work. For this reason, they can't be able to get more income from the production of puffed rice. The work starts from morning 2 to 3 am. So, they can't be able to sleep well.

Working Environment: It is very difficult to work, because they need to work with fire, and hot environment. Workers are facing many health problems due to their bad working environment, those people who are work in the industries. There is no security by the owners to the workers.

Illiteracy: Majorly in these units, illiterate people are working, because there is not required any educational qualifications to the employees or workers. Due to poverty, they can't be able to get a proper education. The puffed rice production is helping to them to lead their life on society.

Women Employment: There is no employment to women and children because of the time duration of work. The work starts from morning 2 to 3 am in every working day. In these units, workers and owners are male only. No women involved in this sector.

Ownership: Workers and owners majorly depend on the business to lead their life in society. They don't have their plant to establish their units. Now they are working in another plant by rent-paying to them.

Lower-Income: The business is providing very lower income to the workers and owners. In the rainy season, the duration of work is very high. It is more than 12 to 14 hours per day.

Suggestion

The MSME sector act as a factory for generating entrepreneurial personality and self-employment, by this reason as well as reviewing the existing statistics and literature relating to MSME, the present study suggests that there is a chance to take revolutionary measures about MSME sector growth and development for tackle the faster economic growth. In Davangere, there is a need to intervene by the government. To solve the problems in the puffed rice production units, these suggestions and recommendations are necessary.

The people are working only four days a week, i.e., Monday to Thursday every week. Friday, Saturday, and Sunday, they were not working. That the reason they are getting lower income from the business. If they work at least 5 to 6 days in a week, their income will be increase.

They need government support by providing loans and subsidies to the industries. It will help those industries to increase their production by set up the new machinery and update technology.

Conclusion

The present study finally concludes that Micro Small Medium Enterprises plays a significant role in the growth and development of the economy of every country. The MSME sector contributes the highest return to the GDP growth as well as the total exports of the country. In 2015 – 16 MSME sector has its share of 49.86% of total exports. The industrialization act's as an indicator of economic growth and development. The MSME sector helps to create employment opportunities, achieving regional development by removing regional imbalances, etc. The Micro Small Medium Enterprises sector now emerged as a highly vigorous and dynamic sector of the Indian economy. It plays a key role in the growth and development of rural economy and backward

areas thereby accomplishing the socio-economic development of the country. As per the interaction with the workers of puffed rice units, they said that in the past few years there are more than the 30 puffed rice units were producing the puffed rice. But now there are only 10 to 12 units as there. Those units were closed due to the reason for their lower income. To protect these units, government interventions are required. The government should be supporting these industries by providing financial support and subsidies to the units. They need financial support to construct their own production units.

References

- Anirudh Mallya, U. et al. "Semi-Automated Puffed Rice Machine Using Agricultural Waste Burnt Low Smoke Stove." *International Journal of science, Engineering & Management*, vol. 3, no. 5, 2018, pp. 90-93.
- BalaSubrahmanya, M.H. "Technological Innovation in Small Enterprises: Comparative Study of Bangalore and North-East England." *Economic and Political Weekly*, vol. 38, no. 21, 2003, pp. 2067-2074.
- Balasubramanya, M.H. and Balachandra, P. "An Exploratory Study of Environmental Pollution by Small Scale Industries Sector in Karnataka." *EERC Working Paper Series: IPP-2*, 2002.
- Basole, Amit. "The Informal Sector from a Knowledge Perspective." *YOJANA*, 2014, pp. 8-13.
- Bhardwaj, A. "Basic Problems faced by the Small-Scale Industry Sector." *The 3rd International Conference on Materials and Manufacturing Engineering*, 2018.
- Chandraiah, M. and Vani, R. "The Prospects and Problems of MSMEs Sector in India - An Analytical study." *International Journal of Business and Management Invention*, vol. 3, no. 8, 2014, pp. 27-40.
- Hoke, K., Jirina Housova and Milan Houska. "Optimum Conditions of Rice Puffing." *Czech Journal of Food Sciences*, vol. 23, no. 1, 2005, pp. 1-11.
- Jadhav, U.D. "Problems of Small Scale Industries in India." *Research Nebula*, vol. 5, no. 3, 2016, pp. 56-59.
- Khandare, V.B. "Small Scale Industry in India: Performance and Sickness."
- Patil, S.G. and Chaudhari, P.T. "Problems of Small Scale Industries in India." *International Journal of Engineering and Management Research*, vol. 4, no. 2, 2014, pp. 19-21.
- Pratibha, S. and Katyayani, J. "Impact of HRM Practices on the Performance of Small Scale Industries." *International Journal of management*, vol. 8, no. 5, 2017, pp. 1-7.
- Radhakrishna, M. and Shripathi Kalluraya, P. "Employment and Working Conditions in Urban Informal Sector: A Study." *International Journal of Management and Development Studies*, vol. 5, no. 4, 2016, pp. 74-80.
- Ramacharran, Harri. "Bank Lending to Small Business in India: Analyzing Productivity and Efficiency." *The Quarterly Review of Economics and Finance*, vol. 65, 2017, pp. 16-24.
- Saxena, T.C. "Role and Development of Small Scale Industries in India." *International Research Journal of Management Sociology & Humanity*, vol. 8, no. 1, 2017, pp. 52-64.
- Selvaraj, N. and Suganya, M. "A Study on the Development of Small-Scale Industries in India." *International Journal of Research in IT, Management and Engineering*, vol. 5, no. 3, 2015, pp. 86-105.
- Subhasish Chatterjee. "Labourers of Unorganised Sectors and their Problems." *International Journal of Emerging Trends in Science and Technology*, vol. 3, no. 7, 2016, pp. 4397-4405.

Author Details

Mr. Harish Tigari, Assistant Professor and Co-ordinator, Davan PG Studies, Davangere, Karnataka, India,
Email ID: hstklr148@gmail.com

Mr. H.C. Ramesh, Davan PG Studies, Davangere, Karnataka, India