



SUSTAINABILITY OF HANDLOOM: A REVIEW

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Abstract- The handloom sector has a unique place in Indian economy and plays a vital role in the economic development of the rural poor. Despite several measures taken by the government by the way of institutional support and direct financial assistance to the handloom weavers, they have been in miserable state due to myriad problems and are sustaining continuous losses. Still it is undeniable that handloom won't lose its market share because of its deep cultural and aesthetic value but it has to face head-on competition of all forms to retain its traditional importance along with its market share. Therefore for rural economic development of weaving community an active and penetrable market is necessary for the handloom products. The objective of the present study is to have an in-depth analysis of various causes that are responsible for the sustainable development of handloom. The paper basically reviews the vast literatures available to scale out different avenues for rural economic development of weaving community through sustainability of handloom.

Keywords: Sustainability, Handloom, Economic development

I. INTRODUCTION

Handloom is the oldest known form of making cloth by hand. It represents a very early stage of cloth production. Handloom is now the source of livelihood to several millions of artisans and their families all over the world. Among the third world nations, a few countries still proudly keep on the ancient tradition of hand weaving side by side with power looms as the symbols of cultural legacies. Even in these days when man is trying to win the space, people still look at the handloom as symbol of the glorious past of the entire human cultural ethos and the aspirations of generations of people to preserve the best part of culture race. Handloom products are not mere pieces of decoration but also they also symbolize the culture and civilization. That apart, it is the time-honored legacy that has been passed on to us by our ancestors.

The contribution of the textile sector including the handloom industry, towards the economic development of India can hardly be overemphasized. The textile industry plays a greater role in the growth of GDP in India. Textiles and clothing form the basic necessity of life; hence their demand will never come down. Textiles industry has an overarching presence in the economic life of India. Presently it contributes nearly 7 per cent to the industrial production, 2 per cent to the GDP and 15 per cent to the country's export earnings, as contained in the Annual Report, 2018-19, Ministry of Textiles of Government of India. Importantly, this sector is India's second largest employment provider, after agriculture. It employs over 45 million peoples directly and another 6 crore people in allied sectors which in turn includes a large number of people belonging to the scheduled caste, scheduled tribe and women.

As regards the rural economy, the contribution of handloom in specified pockets of rural India has been both substantial and appreciable. A large number of weavers depend on the handloom produce to support and sustain their livelihood. However, due to intense competition from power-looms and large industrial houses, the earnings and the consequent survival of these weavers in the rural areas is at a danger. There are other related issues also that affect the handloom industry. These issues are lack of financial assistance, technological up gradation, infrastructure development, market availability, raw material prices, cultural ignorance etc to list a few. These issues need urgent redresal for survival and growth of handloom weavers. Hence the present study has been undertaken to review the vast literatures available and find out the factors that could help in sustainable development of the handloom weavers.

II. REVIEW OF LITERATURE

For the present study different literatures are reviewed and summarized that has been conducted within and outside India, having been divided into five broad categories as follows:

- 2.1: Studies relating to financial, social, and economic aspect of handloom industry.
- 2.2: Studies related to the marketing sustainability of handloom products.
- 2.3: Studies related to the digitalization and technological up-gradation of handloom products.
- 2.4: Studies related to customers awareness about handloom products.
- 2.5: Studies related to the role of government institutions and other stakeholders in developing handloom industry.

The following paragraphs have been devoted to each of the above segments of the review.

2.1: Studies relating to financial, social, and economic aspect of handloom industry

Varghese and Salim (2015) have carried out a work entitled 'Handloom industry in Kerala: A study of the problems and challenges' to study the significance of handloom industry in India, to make a detailed study of major problems and challenges of handloom industry in Kerala state, and to suggest suitable remedial strategies and policy options for the healthy growth of the handloom sector in Kerala. This could be achieved through meaningful strategies supported by conducive policies and initiatives by government which would yield good and lasting results.

Parida (2019) conducted a study entitled 'Health Hazards Faced by Handloom Weavers in Odisha Need Urgent Attention' to critically analyze the health hazards associated with handloom workers because of the strenuous time and effort that takes while weaving. Some of the health hazards associated with handloom workers also include weakened eyesight, early cataract, loss of vision, high or low blood pressure, heart problems, lung damage, filaria, arthritis, etc. Even where the government has laid down regulations, they are rarely followed, which deteriorates the socio-economic conditions of the workers. It is critical to educate and spread awareness about MSDs that are work-related, particularly for the unorganized sector.

Narzary, (2013) in a study entitled 'A study on the challenges faced by the handloom industry in BTAD, Assam' showed the different challenges faced by the producers and retailers in the area of BTAD, Assam. The findings of the study reveals many challenges like rising input cost, low credit coverage and high cost, marketing bottlenecks, poor institutional management, poor policy dissemination, infrastructure gaps, information and resources gaps, inadequate data base, and lack of education, training and research. The paper suggests that by addressing the urgent needs of the handloom industry substantial growth in both employment and output can be achieved.

Goswami and Jain (2014) has conducted a study named, "Strategy for Sustainable Development of Handloom Industry" to explore the problems of the handloom industry and suggest a suitable strategy to bring an economic growth of handloom weavers. The data was collected through semi-structured interview schedule, observation method and secondary sources. The findings suggest that the strategy suitable for handloom sector is Differentiation strategy, which means creating something innovative which is best suited to handloom industry.

Basu (2016) has conducted a study entitled "Textile, Garment, and Fashion Industry in Odisha, Prospects and Challenges" based primarily on descriptive analysis and the author's own investigation and analysis. The paper aims to study the growth and prospects of textile, garment and fashion industry in Odisha and challenges faced by the same. The paper briefed about the need of textile industry, reasons for close down of textile mills and government initiatives to revive the sector. The findings revealed that Odisha handloom is growing but there is some drawback in form of quality, price, marketing and export of the products.

Tripathy, (2009) studied on 'Odisha handloom: Problems and Perspective' to find out the problems and perspectives of Odisha handloom. A decentralized sector like handloom, there are many problems due to illiteracy of the weavers, inadequate finance and vested interest. There are hindrances and difficulties in measuring the effectiveness of planning and controlling activities. The problems of handlooms and their link

with the problems of growth and development are not yet acute enough to crystallize in positive remedial measures.

Prem Sundar and Kannan, (2013) has conducted a study entitled 'Women in handloom industry: Problems and prospects' to familiarize with the current status and livelihood problems of unorganized women handloom workers and also to propose the importance of social protection and security. Women handloom weavers and allied workers should have specific growth and development programs and allocations in the national budget. Literacy programs should be provided to improve the standard of living and escapes from the clutches of master weavers and shed workers. The study concludes with a suggestion that women handloom workers should be given priority to participate in entrepreneurship.

Mohandas and Sumesh (2016) have conducted a study entitled 'A study of women entrepreneurs and women empowerment in the textile and garment units in Kerala' which shows in Kerala the majority of the women managed readymade garments manufacturing units are run by owners themselves who are by and large not professionally trained for this purpose. The women managed garment manufacturing units in the state mainly depend on external sources for meeting their working capital requirement. Too many formalities, insufficient security and the delay in getting loans are the major problems related to obtaining loan from financial institutions.

Sarkar (2016) in his study on 'A Study on Health Issues of Weavers (Handloom Weaving)' analyzes the health issues being faced by the weavers and suggests measures to uplift them socially i.e. more specifically from the health front. The methodology adopted for the study is a well structured questionnaire to collect primary data. The study shows that major health problems of the weavers could be categorized as musculo skeletal problems of back pain, knee, and joint pains. Further there are physiological and financial problems which come with work insecurity. A proper financial coverage of the health ailments of weavers, productive health care system, guidelines for safety standards, awareness about health issues are some of the suggestion which could improve the health conditions of the weavers.

Bari, Munnar and Khan (2015) studied on 'Status of handloom workers in Sant Kabir Nagar district UP: A case study'. It is an attempt made to explore the presence of handloom industry and analyze the socio-economic condition of handloom workers in the district. The study reveals that 70% of the respondents are satisfied with handloom industry as an occupation. The study unveils the perturbing situation of the handloom workers and total negligence of government machineries.

Tanusree (2015) has carried out a work entitled 'A study of the present situation of the traditional handloom weavers of Varanasi, Uttar Pradesh, India' to understand the various problems of the handloom weavers of Varanasi, Uttar Pradesh. The paper briefs out the reasons behind the declining situation of handloom weaving in Varanasi. It has occurred due to extensive industrialization. Thus the study concludes with a suggestion that due to industrialization, the handloom weavers of Varanasi have lost their prestigious traditional industry, so the policy maker should realize the importance of handloom sector and allocate the required funds for the upliftment of handloom weavers to avoid the decline in handloom industry.

Sadanandam (2016) has conducted a study named 'Socio-economic conditions of handloom weaving societies – A case study of Warangal district' to find out the problems and highlight them in different aspects in which it impacts the handloom sectors. The study is based on primary data collected through interview of 57 active societies in Warangal district of Telangana state. The result of the study revealed that the weavers are facing a number of challenges like financial constraints, inability to purchase updated machineries, poor working conditions, meagre remuneration and absence of government support. The paper also offers few suggestions for improving the plight of handloom weaving society.

Kar and Bhuyan, (2012) have conducted a study named, 'Integrated Handloom Cluster Development in Odisha: A case analysis of Bargarh cluster' explaining the value chain, the structure and composition, system and practises, operations and economy and socio- cultural attributes of the cluster. The paper is based on secondary data sources. It also briefs out the Indian and Odisha scenario of handloom industry, description and competitive advantage of Bargarh cluster and its SWOT analysis.

Patra and Dey (2015) in their study entitled 'Profitability Analysis of Handloom Weavers: A case study of Cuttack district of Odisha' analyzed the profitability position of the selected handloom products of Odisha, made a comparative study of profits between the selected handloom products of Odisha and provided suggestions for improving the profitability of handloom weavers in Odisha. Statistical tools like mean, standard deviation and chi-square test has been used to fulfil the objectives of the study. The findings of the study reveals that handloom industry gives a large opportunities to the rural people but at the same time every products doesn't provide same financial benefits so weavers has to analyze the profit potentiality of the products and invest accordingly.

Victoria (2013) in her study entitled 'Handlooms for livelihood in North-Eastern region: Problems and Prospects' explores the problems and scope of handloom sector in north-eastern region of India. The factors are identified for the economic upliftment of the NE people. These factors could be mobilized for promoting handloom as a livelihood activity.

Mishra (2018) in a study 'Socio economic growth of handloom: An empirical study' explores the socio-economic conditions of the people belonging to the weaving community of western Odisha. The paper culminates with a suggestion for social change in form of powerful development authority, welfare programs, multiplicity of schemes and its implementations. The study is carried out by participant observation, questionnaire, focused interview, group interview, and cross sectional collection of data for intensive analysis.

Kumar (2014) in a study 'Handloom industry in India- A study' explores the status of handloom industry in India, its growth over the years, production export capacity and the vision and strategy of 12th plan for handloom sector. The study reveals that, production in handloom sector has recorded 1.4% positive growth per annum from 2005-06 to 2013-14, whereas the exports has increased around 60% during 2011-12 with USA and EU being the biggest destination of India's products. Again during 2013-14 the highest fund goes to Tamil Nadu, i.e. 28.59% of the total share from central assistance.

Khakhlari (2018) in a study 'A study of the women workforce in a weaving village of Assam' attempts to explore the social and economic life of the women weavers of Sualkuchi cluster of Kamrup district in Assam. The study is based on both primary and secondary data. The study concludes that by enhancing the weaving skill of women with proper access to production, small business entrepreneurship, training facilities, and marketing skill, they could fight against poverty gender discrimination and marginalization.

Sasikala (2019) has conducted a study 'A study on analyzing social status of handloom weavers in Tiruvannamalai district' to get an insight about the weavers , impact of weaving occupation on social status and propose a model which influence the social status of the weavers. The paper mentions four elements on which weaver's social status depends i.e. demographic variables, participations, influence and prestige. There are number of variables under each element and the research highlights that through these sources the social status of the weavers can be gained.

Roy (2017) in a study 'The Silk handloom industry in Nadia district of West Bengal: A study on its history, performance and current problems' explores the rich heritage of silk handloom, analyzes the crisis now faced by the weavers of silk handloom in Nadia districts and makes a SWOT analysis of the handloom sector. The paper is based on extensive literature review collected from secondary sources. The study focuses on prime issues like lack of awareness and education, which have became major blocks in the way of their success. Again SHGs, Consortium formation, common facility centre, dye house & market exposure would bring economic changes for Bengal handloom saree weavers of Nadia districts.

Padhiar and Garg in their study 'Convergence of culture and economic empowerment- A multiple case study of women artisans in handicraft sector of Gujarat' attempts to analyze the efforts made by the social enterprises to empower the woman artisans & to enhance the reach and access to market their products. The study is based on a qualitative approach with three paradigms, i.e. Feminist Empowerment Poverty alleviation and Financial Self-sustainability. Six case studies are included in the study. The conclusion drawn from the case studies is that the social enterprises are important models for restoration and revivals of community based crafts and have substantial impact on women artisans to increase their reach to market, increase in terms of income & information and increase in their confidence and self esteem.

Bortamuly et.al. (2012) have conducted a study on 'Determinants of occupational choice of workers in the handloom industry in Assam' to focus on the determinants and to analyze the variables that affect the occupational choice of the workers. The study is based on primary data and multinomial and binary logistic regression models are used to analyze the data. The findings of the study showed that annual income, education, access to modern technology and family size are important determinants that help in changing the reelers to owners. Similarly annual income, education, and access to formal credit are variables that can change reelers to weavers. Again access to modern technology is the most important factor in the occupational shift from weavers to handloom owners.

Dev et.al. (2008) have conducted a study on 'Economics of handloom weaving: A field study in Andhra Pradesh' to examine the problems and prospects of the handloom sector in Andhra Pradesh. The study is based on four stage stratified purposive sampling design. The findings of the study states that the growth performance of co-operative determines the growth of other institutions like the master weavers, middlemen, and the independent weavers. Co-operatives with good performance are the best option for the handloom sector, as they protect the weaver and also provide a counter-balance to the master weaver. Competition from powerlooms is an obvious threat, but this can be countered if the sector produces high value, unique (brand value) products or medium value products which can be marketed locally or abroad, as distinct from powerloom products.

Amaravathi and Raj (2019) in their study entitled 'India handloom sector- A glimpse' elaborates the important elements of handloom sector such as dependent households, weavers, looms, worked man-days, production trends, exports trends, and imports. The paper is based on secondary data collected from various sources such as government reports, articles and online sources. The findings of the study reveal that most of the elements of the handloom sector are not impressive. There are number of indicators as stated in the study for the decrease of handloom activities. Customization of products, up-gradation of technology, implementation of awareness and skill development programs, and credit facilities will enhance the production of handloom products and motivate youngster to adopt handloom as a professional activity.

Parida and Tada (2018) in a study entitled 'The contribution of handloom and handicraft industries for rural economic growth: A study with reference to Sagalee sub-divison of Papum pare district, Arunachal Pradesh' attempted to throw light on economic contribution of handloom and handicraft in the study area, role of the industries for rural economic growth and performance of handloom and handicraft activities. Random sampling method is used to collect the sample data. The finding of the study concludes that handloom and handicraft activity contributes considerably towards the economic development in the study area.

Balaji and Mani (2012) in a study entitled 'Sustainability in traditional handlooms' evaluates and forecasts sustainability in the context of traditional handlooms in India. The study presents a comprehensive insight into traditional handlooms and their role in sustainability at the local and global scale. The morphology of the traditional handlooms provides an in-depth appreciation of the technology and its societal and environmental consonance. The role of traditional handlooms in sustainability is strong, current migration of skilled weavers to other jobs is a direct threat to the retention of traditional weaving practises. A suitable policy framework with determination towards implementation will certainly ensure a sustainable industry.

Pargai and Jahan (2016) conducted a study named 'Revival of handloom industry: Need of the hour' to focus on the present status of handloom industry to emphasize what could be done further. The paper is based on secondary data sources. The problems that are associated with the handloom industry are awareness, involvement of younger generation, grass-root level implementation of Government schemes and socio-economic condition of the weavers. The revival of handloom industry depends on number of factors which needs comprehensive framework and structural planning of stakeholders associated with handloom industry.

Goswami et.al. (2017) conducted a study named 'Determinants of financial risk attitude among the handloom micro-entrepreneurs in North East India' explores the financial risk attitude of the handloom micro-entrepreneurs in North East India. The industry is beset with manifold problems such as obsolete technologies, unorganized production system, low productivity, inadequate working capital, and weak market linkages. Based on the primary data collected from 332 respondents, the present study analyzes determinants of financial risk attitude of the handloom micro-entrepreneurs using the Ordinal Probit model. Education, access to credit, access to training, and individual's income play a crucial role in influencing the risk aversion of the micro-entrepreneurs. These determinants are found to have a more dominant influence

in lowering the risk aversion of female micro-entrepreneurs as compared to the male micro-entrepreneurs. The study suggests for providing vocational education and training programs that focus on entrepreneurship education to the rural female micro-entrepreneurs. Besides, it suggests for the provision and implementation of various financial inclusion programs for easy access to credit with proper follow up programs to ensure the efficient utilization of credit, with a primary focus on the female micro-entrepreneurs.

2.2: Studies related to marketing sustainability of handloom products.

Mamidipudi and Bijker (2018) conducted a study named 'Innovation in Indian handloom weaving' to contradict the image of handloom as a pre-modern and traditional craft that is unsustainable in current societies. The paper is based on Jamdani weaving and clashes between two perspective, i.e., modernization and preservation, but the outcome for weavers' livelihood is same in both cases. The paper suggests that innovation should not only mean increased sales and productivity but it should also recognize the beauty and sustainability as part of a continuing tradition. Such innovation seeks to stabilize livelihoods through creating value for craft skills in the market, rather than through welfare schemes, and to support existing weaving communities.

Humbe and Bhalerao (2019) have conducted a study on 'Effects of promotion on customers awareness towards handloom products of Aurangabad districts of Maharashtra' to analyze the effects of promotion mix on customers awareness towards handloom products and suggest new promotion strategies which influence the buying behaviour of handloom customers. The study is based on primary sources and secondary sources. The study concludes that respondents are aware of handloom products but very few could differentiate between handloom products and powerloom products. Again there is a need to develop educational infrastructure, awareness of weavers, transportation and communication development, effective promotion and up-gradation of technology for the betterment weavers and to increase the sale of handloom products.

Dissanayake et.al. (2017) have conducted a study on 'Sustainable and ethical manufacturing: A case study from handloom industry' to explore the manufacturing approach that is committed to fair-trade principles and designed to prevent waste. The study reveals a business model that could positively contribute towards generating employment opportunities and sustainable household income for the rural community. The paper concludes by highlighting the fact that fair trade and environmentally consciousness manufacturing process could address the three pillars of sustainability: social, economic, and environment.

Divya and Sham (2016) have conducted a study on 'An Analysis of Employee Motivation at Kerala state Handloom Weavers' Co-operative Society in Trivandrum' with an aim to analyze the effectiveness of employee motivation in State Handloom Weavers' Co-operative Society of Kerala in Trivandrum. The findings of the study reveal that central and state Government has come up with many motivational schemes to uplift the socio-economic conditions of the weavers. The paper identifies the current status of the factors that helps in increasing the employee motivation and scope for further improvement of handloom industry.

Anumala and Samala (2017) have conducted a study on 'Impact of supply chain management practises on product quality in Indian Handloom industry with reference to master weavers' to understand the issues of supply chain management practises comprising of master weavers in handloom industry and its impact on product quality. The finding of the study reveals that handloom is an unorganised sector, and hence supply chain management practises could have a substantial effect on the product quality.

Vyas et.al. (2015) have conducted a study entitled 'A study on Change Management in Handloom sector'. The paper explains the factors that are opposed for the changes brought in the handloom organisations at Bagalkot districts. It also explores the issue that the handloom organization faces due to the changes made in the organization and also the resistance made by the employees for those changes.

Rasula et.al. (2012) in their study entitled 'The Impact of Knowledge Management on Organisational Performance' examined the impact of Knowledge Management practises on performance. The paper aims to show that through creating, accumulating, organisation can improve organisational performance. The result shows that knowledge management practises positively affect organisational performance when measured through information technology, organisation and knowledge.

Gonzalez and Martins (2017) have conducted a study on 'Knowledge Management Process: A theoretical-conceptual research' to conceptualize the knowledge management process by analyzing the main approach, which guides the study at each stage and also point out the important publications on the subject classifying according to the area of their contribution. The study reveals four stages of KM process i.e. acquisition, storage, distribution and use of knowledge.

Omotayo (2015) in a study entitled 'Knowledge Management as an important tool in Organisational Management: A Review of literature' identifies that creating, managing, sharing and utilizing knowledge effectively is very important for the organisations to take full benefits of the value of knowledge. People, process and technology are three key components which must be paid attention to manage knowledge effectively.

Kar (2012) in a study 'Knowledge process of rural handloom community enterprise: A narrative study of SambalpuriBastralaya in India' explains the traditional knowledge management process of the SBHCSL community. The paper describes the process of knowledge preservation and dissemination in rural weaving community enterprises and can also be used to understand rural micro enterprises.

Roy (2013) conducted a study named "E-commerce in silk industry of Assam: A critical study" to know the benefits of E-commerce in an organisation and to provide an overview of silk industry in Assam. The study enumerates the importance and impact of E-commerce and also lists some of the limitation that electronic commerce faces during practical applicability.

Gupta (2011) has undertaken a study named 'Does Indigenous Knowledge have anything to deal with Sustainable Development?' to investigate that whether indigenous knowledge has anything to do with sustainable development. First of all this has been targeted to work out that how could knowledge be treated as an integral part of culture that has very broadly a material and a non-material part. This has been tried to see that what happens to knowledge of a folk life when culture develops in civilization. Next step is to see how knowledge of the local/folk/indigenous communities of human society systematically work and construct Traditional Knowledge System (TKS).

Mohapatra (2014) in a study entitled 'A Management Approach to Sambalpuri Sari with a sign of Cultural Facets' briefs out the cultural history of Sambalpuri sarees, problems of weavers and cooperatives and institutional mechanism for Sambalpuri sarees. The paper culminates with the findings and suggestion that to keep the Sambalpuri sarees art in tact we have to find out the possible ways how the weavers will get fair wages. In the current scene of the aggressive marketing and high competition the business needs to adopt some modern practices to keep the art, technique, and pride alive. What our handloom sector needs now is better marketing strategies and design innovations. We could experiment with our patterns and add more creativity to suit the international market.

Singh and Modi (2012) has conducted a study entitled 'From Market Separation to Market Development at Bottom of India's Socio-Economic Pyramid: A case study on Digital Empowerment Foundation's Chanderiyaan project' to understand how the project has been able to reduce the four market separations to develop market for Chanderi weavers in Handloom products. We used a case study approach to understand DEF's Chanderiyaan initiative. Our methodology primarily involved collecting and analyzing secondary data, followed by site visit/s to Chanderi, and conducting in-depth interviews of weavers, master weavers, customers, and employees of DEF, along with non-participant observations. We find that DEF along with MLA has been successful in reducing market separations, especially those dealing with knowledge and skills enhancement, across all the stages of the supply chain including, sourcing, manufacturing, and retailing. In the larger context, our study throws light on how non-profit organizations like DEF can create an ecosystem of partnerships with other NGOs such as Media Lab Asia (MLA), by working closely with Government of India's Ministry of ICT, weavers, and other stakeholders, for successfully developing markets at BOP.

2.3: Studies related to the digitalization and technological up-gradation of handloom products.

Malhotra (2015) has conducted a study entitled "Empowering Women through Digital Technology: An Indian Perspective" to highlight the position of women in newly emerging areas of information technology, different ways in which information technology has benefitted the working women class and the impact of IT in rural women empowerment. The paper is based on secondary data. It can be concluded that the women is

empowered through the help of Information technology and has changed their position from past. The development of IT has enabled the women section to participate in each and every walk of life. It has empowered the women by enhancing their skills, knowledge and income.

Gupta and Arora (2015) have conducted a study entitled “Digital India: A roadmap for the development of rural India”, which focuses on the positive impact of Digitalization of Indian economy on the growth and development of rural Indian sector. The study concludes that the outcomes of Digital India should be in creation of Wi-fi locations for people, creating job, universal phone connection, high speed internet, Digital inclusion, E-services, e-Governance, Digitally motivated people, National Scholarship Portal, Digital locker system, e-education, and e-health making India to be pioneer in IT solutions.

Bhalerao and Humbe (2018) in a study entitled “Social Media- A tool for empowering women working in handloom industry” understands and analyses the impact of social media on women in handloom industry. This helps them to reach out more customers and increase the sales and revenue. This also helps the marketers in creating brand awareness and brand image and bringing brand equity in handloom products. There are multi-benefits of social media for women handloom weavers and has a great impact on sell of these products.

Santhanamuthu and Manickam (2012) have undertaken a study entitled “The impact of Digitalization in Rural India” to examine the benefits of telecommunications on the social and economic developments of rural India. The study provides substantial evidence about the benefits that aroused from the application of telecommunications in various fields of rural sector. The key findings from research and pilot projects in rural and developing regions show that telecommunications can contribute to social and economic development.

Malecki (2003) conducted a study entitled “Digital development in rural areas: potentials and pitfalls” to examine data for the USA regarding the “digital divide” and admittance of residences and businesses, which is likely to suggest that all is (or will soon be) well. The paper also gives hand on data on aspects of digital infrastructure in pastoral America, including point of presence and digital telephone switches, which suggest that there major shortcomings in rural countryside communities.

Jain et.al. (2018) in their study “Digital empowerment for handloom cluster : The case of digital cluster development program in India” evaluated the Wireless for Communities (W4C) model that is being administered by Digital Empowerment Foundation (DEF) and the Internet Society (ISOC) in handloom clusters in India. The paper is based on a structured interview analyzed through SCALERS framework. The study foresees how digital literacy would affect the lifestyle and income levels of traditional handloom clusters in India. It suggests that ICT platforms can be effectively utilized to design and develop an ecosystem that can create integrated solutions for resolving complex challenges such as rural poverty alleviation through creation of small entrepreneurship and e-business, spread of education and social empowerment, and reinventing core competencies to better leverage them with more impact in changing times.

Humbe (2012) has conducted a study entitled “Role of social media in marketing of handloom products” which mainly focuses on the use of social media in marketing of handloom products and the benefits that is achieved by reducing marketing expenses, developing awareness of handloom products, increasing sales, providing details regarding market place and exposure towards handloom products. The paper concludes that use of social media marketing by the handloom industries can increase the awareness about the handloom products in the society, promote and enhance skills of the handloom weavers, create new employment opportunities, help in developing of new designs, boost the sale of their products, help the weavers to earn money which will to the some extent help in removing the poverty and make them economically sustainable.

Panwar (2017) conducted a study entitled “Digital India: Scope and challenges” to highlight the necessity for developing constructive attitude towards the digital India among the mass so that they can keep themselves updated of the latest technologies and embrace it as a positive step for development. The paper briefs about the advantages, scope and challenges of digitalisation and concludes with some suggestions to make digital India more successful in its endeavour.

Priyadarsini and Vijayaratnam (2016) has conducted a study “Digitalization of India: Smart villages towards Smart India” to discuss about the different components of Digital India and its nine pillars, adoption of “look

at villages” policy and the smart villages driving towards smart India and the pre-requisites of a smart village cluster. The paper concludes that the biggest barrier that would come in between is to deal with the mentality of the villagers and make them understand the real need of modernization.

Kaul and Mathur (2017) has undertaken a study “Impact of Digitalization on the Indian Economy and requirements of financial literacy” to identify the hurdles in the implementation of various programmes to make India financially literate and strategies to enforce these policies effectively and efficiently. The study was exploratory and quantitative in nature and the sources for secondary data were like special investigation team, report, and newspaper and RBI websites. The study concludes with the suggestion that with all the benefits available it is also necessary for the people to have basic financial knowledge and a push towards the importance of the financial literacy.

Shamim (2016) conducted a study named “Digital India – Scope, Impact and Challenges” to explain the technological initiatives by Government, vision of Digital India and key policies and its social and Governance impact. The study also briefs about the challenges that ICT would face during its implementation and adaption by the society and Government. The study concludes with different suggestions to make Digital India a reality.

Kumar et.al. (2017) in their study entitled “Role of Digital India in Rural Areas” showed the impact of digital India programme on the upliftment of Indian rural economy, empowerment of rural entrepreneurship and empowerment of rural women. The study suggests that with the adoption of Digital India Project, India will have a powerful digital infrastructure. The outcome of Digital India is to produce Wi-Fi locations for people, creating job, universal phone connection, High speed internet, Digital Inclusion, e-Services, e-Governance, Digitally motivated people, National Scholarships Portal, Digital Lockers System, e-education and e-health making India to be pioneer in IT use solution.

Dua (2017) has conducted a study “Digital India: Opportunities and Challenges” to brief out the opportunities that will be provided through digital India programme, enabling people to get engaged in innovation process, which is necessary for economic development. The study also point out the challenges that needs to be addressed in order to have a full utilization of the programme. The paper concludes that digital India program needs persistent attention and implementation so that the vision can be achieved.

Padhi (2017) has conducted a study “Digital India: Issues and Challenges” to find out the problems in implementation of Digital India programme and its key issues. The paper also finds out the challenges faced in implementation of this programme and to map out the practical solutions and ideas to accomplish the digital India vision into a reality. The paper also identifies the technological and connectivity impact on overall governance and standard of living of citizens. At last concludes that the goal of Digital India is far away as most of the nine pillars of digital India mission are facing serious challenges in implementation.

Ganguly and Patro (2017) has undertaken a study “Digitalization: A Paradigm shift of Agriculture” to explore the steps taken by Government for providing Digital Infrastructure such as automation, smart sensors, agricultural robots and decision support system to the farmers and also to study, how these initiatives would result in improving the income level of the farmers. The study mainly focuses on Digital Agriculture i.e. Data Intelligence, Smart Analysis and Communication.

Parviainen et.al. (2017) have conducted a study named “Tackling the digitalization challenge: how to benefit from digitalization in practice”. The paper explains the first version of the digital transformation model, obtained from composite Industrial cases, explaining a beginning point for a structured approach to address digital transformation. The model is targeted to help companies, handle the changes associated with digitalisation in a more consistent manner. The data related to this paper are collected through case studies of various companies and literature study to support the data.

Zavratnik et.al. (2018) have conducted a study entitled ‘Smart Villages: Comprehensive Review of Initiatives and Practises’. The study reviews an already existing practise of developing rural communities while focusing on the existing implementation of the Smart Village concept and the importance of digitalization for transformation of rural areas. A combination of place based approach and the smart rural development comes out to be necessary because all rural areas are not uniform.

Ansari and Tripathi (2018) in their study entitled 'Bridging Digital Divide among Weavers of Banaras, India: A framework' proposed a model of a community information system for weavers of Banaras for bridging the digital divide. The paper discusses the issues of digital divide among the weaver's community of Banaras. It draws out the reasons of the digital divide and analyzes their information needs. To fulfil the purpose of the study stratified sampling method was used followed by Interviews and Visual observations.

Sundaram and Prakash (2014) has conducted a study on 'Study on impact of CAD/CAM tools on production of punched cards by Indian Silk saree designers for handloom industry' to find out the benefits of using CAD/CAM and its impact to silk saree designers. The paper empirically studies the percentage of time saved while using CAD/CAM considering the length of work. The result of the study shows that there is considerable saving in time with the help of jacquard mechanism and also the rate of production are more in case of CAM based 'card punching' and 'card lacing' than doing it manually irrespective of their type and designs. It is also found that CAD/CAM systems provide accuracy and reduce the effort of labour that is given for weaving.

Hazarika et.al. (2016) in their study entitled 'Adoption of modern weaving technology in the handloom micro-enterprises in Assam: A Double Hurdle approach' analyses the determinants of adoption and extent of deployment of weaving technologies in the handloom micro-enterprises in rural areas of Assam. The results of the Cragg's Double Hurdle model shows the importance of financial inclusion, availability of family labour, and social network on adoption and extent of deployment of weaving technologies. The presence of proper market linkages also appears to be crucial for adoption and use of such technologies in the rural areas. The study urges for a comprehensive policy framework to tackle the existing bottlenecks related to access to credit/capital, market linkages, and extension services to promote the technology adoption among the rural micro-entrepreneurs.

Bortamuly and Goswami (2014) has conducted a study on 'Determinants of the adoption of modern technology in the handloom industry in Assam' to identify and analyze the determinants of technology adoption in the handloom industry in Assam. Binary logistic regression model is used to analyze the primary data in which the dependent factor (technology adoption) is dichotomous. Results show that education and annual income of the industry owners play a crucial role in the adoption of modern technology. In the case of small owners, gender has positive and significant influence, whereas age, education, and distance to the nearest market have significant but negative influences on the adoption of modern technology. In the case of contractual workers, age has a negative but significant influence on the adoption, whereas annual income, access to government credit, and access to training have positive and significant influences on the adoption of modern technology. As access to training and credit increases the likelihood of the adoption of modern technology for the contractual workers, adequate facilities for such determinants should be made available to the grass root workers.

Mamidipudi et.al. (2012) in their study 'Mobilising Discourses Handloom as Sustainable Socio-Technology' want to show that the standard image of weaving as pre-modern, unproductive and unsustainable is produced by being trapped in a progress discourse, a poverty discourse, and a market discourse. The paper discuss an alternative view of handloom weaving as a socio-technology is proposed, that is through understanding handloom as an ensemble of knowledge, skills, technology and social relations explains the continued sustainability of handloom, and also offers clues for socio-technical innovation and an alleviation of vulnerabilities.

2.4: Studies related to customers awareness about handloom products.

Paul and Goowalla (2018) conducted a study named 'A study on consumer awareness of handloom products with special reference to Dimapur district, Nagaland' to analyze the consumer awareness while buying and using handloom products. The data interpretation reveals that 'comfort' is the most common base for consumer's buying decision with handloom products whereas 'self' is the most common case which persuades a consumer to purchase a handloom product. The study concludes with the suggestion that co-operative societies, handloom traders and master weavers should focus on promotional activities, consumer awareness and consumer satisfaction and also efforts should be made to enhance income and socio-economic status of the weavers.

Rani and Bains (2014) in their study entitled 'Consumer behaviour towards handloom products in the state of Punjab and Haryana' have discussed about the different variables that influence consumer behaviour, like

culture, social class and personnel factors. The paper is based on secondary data collected from different literatures, journals, books and reports. The study suggests that to have an economic development, consumer awareness is very necessary towards the handloom products of Punjab and Haryana.

Poongodi and Gowri (2016) has conducted a study on 'A study on consumer satisfaction and customers expectation regarding handloom weavers among Erode town' to explore the customers satisfaction and customers expectation regarding handloom weavers situated in Erode town and to find out the problems and competition faced by the handloom weavers. As per the study consumers are well aware of the handloom products, but still producers need to make improvements for more attraction of the consumers. And also intervention of Government is needed for TQM measures and expansion programs.

Kumudha and Rizwana (2013) has undertaken a study entitled 'A study on consumer awareness about handloom products with special reference to Erode district' to identify the level of consumer awareness about different types of handloom products and rebates offered by the same and to identify the most influential source and occasion which induce consumers to buy the handloom products. The study reveals that consumers are not very much aware of the handloom products and related schemes. Again festivals are important occasions when people of Erode buy the handloom products. Therefore, it is suggested that point of sale should be increased, and awareness programs should be conducted.

Paul et.al. (2017) have conducted a study on 'Review on consumer opinions and preferences regarding interior design products made from handlooms' to understand the consumer's opinions and preferences towards handloom products regarding interior design products. The sources of information are journals, books, websites, reports and market surveys. The result of research shows consumers are very much aware of the handloom products but younger generation are not much attracted towards the products. Again there are many misconceptions regarding the handloom products like design, colour and prices, which need to be clarified through awareness programs among customers.

Krishna and Ramana (2016) have conducted a study on 'A study on customers awareness and satisfaction towards handloom products with special reference to Guntur district- Andhra Pradesh' to analyze and interpret the awareness and satisfaction level of the customers while buying and using handloom products. The study reveals that 'Quality' is the major factor that influences the customers' buying decision followed by price, comfort etc. Whereas 'self-decision' is the major motivator for purchasing decision of the customers.

Anusuya and Chinnadorai (2015) have conducted a study entitled 'A study on consumer awareness and satisfaction towards handloom products with special reference to Coimbatore district' with an aim to analyze the awareness level of customers while buying and using handloom products. The study has been conducted with special reference to Coimbatore district because of its renowned shopping areas. The data used for study is primary in nature with a sample size of 100 respondents who are customers of handloom products.

Sekar et.al. (2014) conducted a research entitled "A Study on customers' perception and marketing issues of cottage industry products in Madurai district", to study the product attributes related with the quality dimensions for cottage industries like lack of demand, poor quality and design, poor bargaining power, poor service to customers, brand preferences and ignorance of potential market areas. The findings of the survey conducted in a large population are valuable for the cottage industry manufacturers which establish customers oriented strategies. As the quality perception and importance given by the customers is influenced by socio demographic properties and it changes with time, it is recommended to the cottage industry product manufacturers to analyze their market well in order to better determine the segments of the market with up to date information.

2.5: Studies related to the role of government institutions and other stakeholders in developing handloom industry.

Lawrence and Peter (2016) have conducted a study on 'Corporate social responsibility in Indian textile industry with special reference to textile industries of Tiruppur district, Tamil Nadu' to examine the productivity growth of textile industry in Tiruppur, Tamil Nadu and its contribution towards ethics and social responsibility with the parameters of consumer protection, labour, environmental aspects, human rights, supporting the deprived, welfare of the employees, economic aspects and so on. The conclusion drawn from the analysis suggests that there are number of bottle-necks in implementing the CSR schemes which are

mostly available only on papers. Thus proper implementation of CSR activities will help in enhancing the textile industry.

Singh and Kumar (2018) in their study entitled 'Government Intervention- awareness and outreach among handloom weavers in Varanasi' focused on the policies and schemes of Government for the upliftment of the handloom weavers and the awareness level of the weavers towards these schemes and policies. The paper is descriptive in nature. The conclusion drawn out from the paper is that the awareness level among weavers is around 80.55%, where weavers are highly aware of the health schemes rather than other schemes. The newly launched Government policy, like trade facilitation has high level of satisfaction among weavers but outreach is low.

Mitra et. al. (2009) in their study entitled 'A diagnostic report on cluster development programme of Shantipur handloom cluster, Nadia, West Bengal: Part I Evolution of the cluster and cluster analysis' focused on evolution/historical background of the cluster, geographical location, cluster structure and infrastructure analysis to formulate a sustainable business-cum-marketing plan for the development of the cluster. The findings suggest that the cluster for its development needs centralized dyeing units, cost-effective machineries, market facilities, and information kiosk. There are also growing opportunity for product diversification, market diversification and exports for the Shantipur handloom cluster.

Kumar and Rao (2018) have conducted a study on 'Impact of Integrated Handloom Cluster Development Scheme (IHCDS) on social condition of the weavers: The opinion of the member weavers in Andhra Pradesh, India' to analyze the various social conditions of the weavers working in handloom sector covered under IHCDS. The findings of the analyses conclude that there is no significant impact of IHCDS on social conditions of the member weavers.

Vyshanavi and Nair (2017) has conducted a study on 'Handloom Sector in India: A literature review of Government reports' to emphasize the growing importance of handloom industry in India and the initiatives and measures undertaken by Government to retain and increase the market share of the handloom products. Again the paper takes a dig into the exports of handloom products which shows an increasing trend from 2010-11 to 2015-16. It also discusses the 12th five year plan, budget allocated and utilized and the vision and strategies for 12th five year plan.

Sarkar (2017) in a study 'A detailed analysis of cotton textile industry at Bardhaman cluster of West Bengal' evaluates the function and progress of Integrated Cluster Development Scheme in Bardhaman cluster, working condition of weavers, SWOT analysis of the cluster and formulate strategies for a better marketing system. The inherent threat from powerloom sector is still prevailing among the weavers of the cluster. Renovation of different welfare schemes and a proper link of innovative marketing strategies to develop the overall condition of the cluster is the need for the weavers of Bardhaman cluster.

Anumala and Acharyulu (2015) has undertaken a study entitled 'A demographic study on customers satisfaction about handloom products in India- A study on Andhra Pradesh State Handloom Weavers' Co-operative Society Ltd (APCO showroom)' to examine the impact of demographic variables like gender, age, educational qualification, occupation and annual income on customers satisfaction towards handloom products. From the study it was found that awareness among the public and targeting the younger customers should be the prime focus to bring any change in the demand of the handloom products.

Boruah and Kaur (2015) have conducted a study entitled 'A study on the analysis of the economics of Weavers' Co-operative Societies in Assam' with a view to find out the economic conditions of weavers. The study also focuses on the schemes of central and state government, providing incentives in different forms for the upliftment of weavers' co-operative societies. The findings are based on primary as well as secondary data with a sample size of 60 weavers' co-operative societies selected from 12 districts of Assam.

Das, Roy and Mondal (2016) have conducted a study entitled 'Handloom Cluster of India: A Case Study Shantipur Handloom Cluster'. Handlooms are a key economic activity in West Bengal. So the study is focused on the emerging Shantipur Handloom Cluster and on its production process, status of weavers and income level of weavers. The paper critically analyses the Shantipur Handloom Cluster, where it can be seen a positive change in the income level of the weavers, export potentiality of the co-operatives, proper use of

different rural development schemes, availability of health facilities and migration of weavers have decreased. But inspite of all these changes, the lack of Government role in promoting various schemes or plans can be seen. Many co-operatives have been closed, with a few active co-operatives, which is also not acting properly.

Samantaray (2004) in a study named 'Hundred Years of Co-operative Movement: Emerging Issues and Challenges' has made an attempt to take the stock of the progress of co-operatives and the emerging challenges before them in the 21st century. The study minutely examines the potential of co-operatives and the progress that it has made in these hundred years of its existence.

Vinayan (2011) in a study entitled 'Intellectual Property Rights and the Handloom Sector: Challenges in Implementation of Geographical Indications Act' examines the challenges involved in the implementation of GIs, in a traditional sector like handloom weaving in India. The paper has taken many success stories of GIs implementation around the world to form a base for discussion. GIs, a key component of IPR, are necessary for the handloom products because of its potential in protecting traditional knowledge and boost rural development.

Das (2016) in a study entitled 'Handloom & Weavers' Co-operative Societies in Assam- A Study' emphasizes the current status of Handloom Weavers' Co-operative Societies. It is revealed from the study that central and state government has come up with many schemes to uplift the economic conditions of the weavers. But the handloom units continue to be in the grip of problems.

Sawhney (2016) has undertaken a study entitled 'Make in India and its Economic impact on the Indian Handloom Sector' to understand the "Make in India" vision with respect to the handloom sector and how it might play a productive role in uplifting this sector. The paper presents a brief analysis of the manufacturing sector in India and the textile sector, with a comparison of share of cloth production of handloom and powerloom industry respectively. At last the study concludes with the challenges faced by the handloom industry and how "Make in India" initiative can overcome some of them.

Roa and Rao (2015) has conducted a study named 'An Analysis of Handloom Industry in Andhra Pradesh – Challenges vs. Government schemes' based on data that has been collected from both primary and secondary sources. The study explores the present schemes implemented by both state & central governments. It also explores the present status of Handloom Industry in Andhra Pradesh. The paper states various challenges faced by handloom weavers. Despite several measures taken by the government by the way of institutional support and direct financial assistance to the handloom weavers, they are suffering miserably due to myriad problems and are sustaining continuous losses.

Ramesh (2015) has conducted a study on 'Analysis of Profitability and Financial Health of the Handloom Weavers Co-operative Societies in Karur Districts'. Handloom of Tamil Nadu plays a crucial role of preserving the state's heritage. It is also a vital part of the state's economy. The study reveals the financial health of Handloom Weavers co-operative Societies in Karur. It has used the secondary data for the said analysis and Altman's 'Z' score to predict the financial health of the societies. The findings of the study are, inspite of being such a potential sector, the societies face losses. The Government should take necessary steps to minimize the impact of Globalisation and at last the weavers should be provided with such motivational schemes so that they could work continuously.

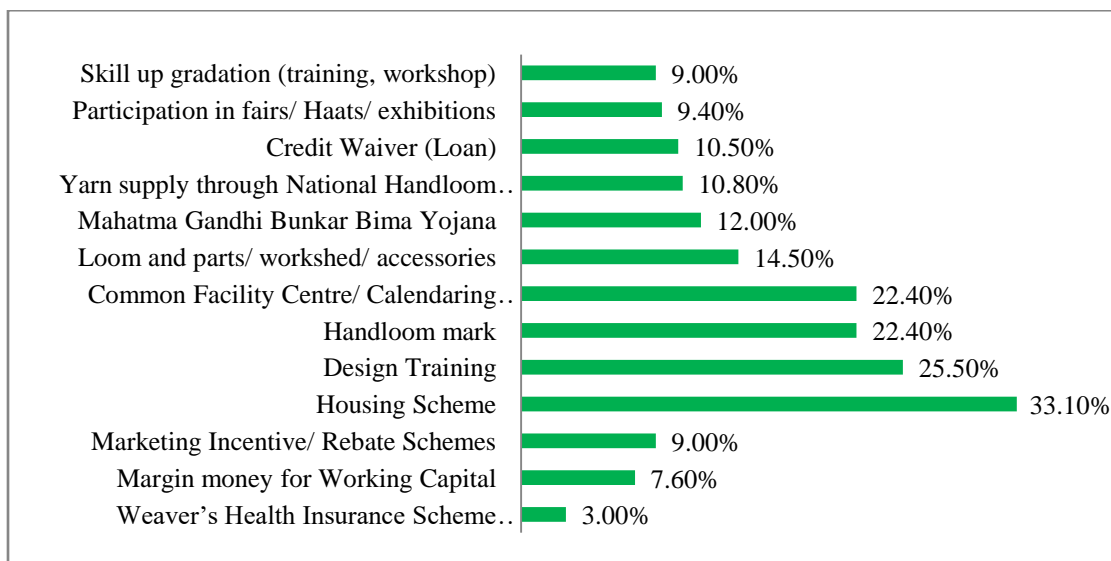
Nikaido, Pais and Sarma (2015) have conducted a study on 'What hinders and what enhances small enterprises access to formal credit in India?' to understand the factors affecting access to formal credit for small enterprises in India. The study indicates that owners' education level, size of the enterprise, registration under any agency or involved in diversified activities are associated with access to formal credit. Further the paper concludes that small enterprises due to uselessness of land as collateral for loans, female owners or less-educated owners and location mainly north-eastern regions lack access to formal credit.

III. OBSERVATION

It is observed from the review of various research studies that rural economic development through handloom dependson the sustainable development of weaving culture. Apart from that, the handloom industry is facing number of problems and challenges which needs urgent attention and action for a long term

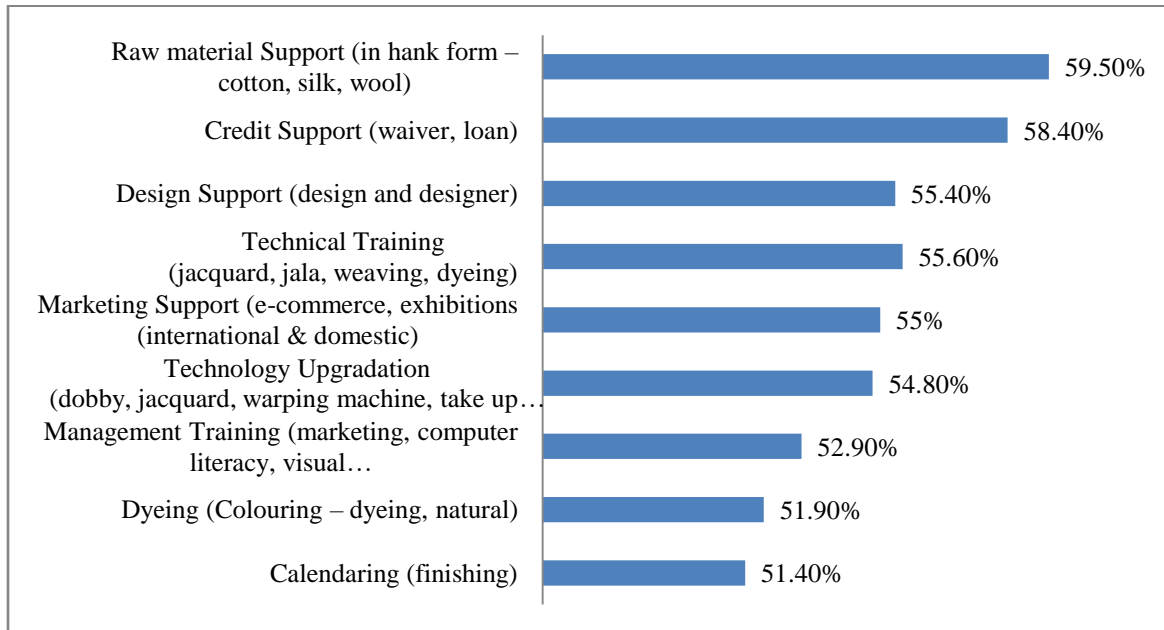
change and development of the weavers in form of socio-economic conditions. The prominent factors that came out through the review of literatures are need for institutional support, market consciousness of customers and weavers, product development, cultural promotion and digitalization of handloom products. A close look to various researches reveals that lack of awareness among weavers about various schemes and opportunities creates a bottle-neck in adopting and understanding the avenues that are available for the weavers; this again is a major issue in implementation of the schemes that are being floated by the Government. According to All India Handloom Census Survey 2019-20 a total of 13 schemes have been selected on the basis of their priority to test the awareness about the schemes among the weaving households. These shortlisted schemes include those that improve financial access, provide social security, exposure to markets, skill up-gradation, subsidized material supply, and access to production facilities. The survey reveals that majority of the weaver household members are not aware of various schemes available to enable them in the weaving and allied activities of handloom. Figure 1 shows the response on lack of awareness on the existing schemes, trainings and other enablers is more than 65% and beyond for each of the listed items; in fact, for 9 out of the 13 listed schemes, awareness levels was below 15%. Having said that, the highest awareness have been recorded against initiatives like housing scheme (33.1%), design training (25.5%), and common facility centre/ calendaring machine (22.4%) and handloom mark (22.4%). A very small section of weavers who are aware of individual schemes designed for their benefit have gone on to benefit from the same. Schemes which led to lowest benefits are schemes related to Common Facility Centre/ Calendaring Machine (15%) and; Housing scheme (16.3%); while the highest benefits were accrued for the scheme related to Skill upgradation. But given that awareness itself is below 15% in case of 9 out of the 13 schemes listed, it can be concluded that if awareness can be raised, the handloom weaver's community could utilize the benefits for economic gains.

Figure 1: Awareness of relevant welfare schemes in households (in %)



Again weavers have also been asked to share their views on the nature of support that they require in carrying out their activities and realize a sustainable living. A bucket list of nine activities that could support a weaver and an allied worker to better perform his/her tasks are presented in Figure 2. Overall, it is quite apparent that most of the weaver families can clearly elucidate their support requirements. Most (60%) need raw material support. All other forms of support, including training to technology upgrades to marketing support, are mentioned by 51-58% of the households that have participated in the survey.

Figure 2: Nature of support needed by weaver households (in %)



IV. CONCLUSION

The weakening position of handloom sector in the wake of global competition of textile industry has posed a serious threat to the socio-economic life of the traditional weaver communities. With growing competition posed by the modern textile industry, the handloom industries has steadily deteriorated over the last decade, rendering thousands of weavers to unemployed and under employed, resulting in large scale closure of several societies and production units. Still it is undeniable that handloom won't lose its market share because of its deep cultural and aesthetic value but it has to face head-on competition of all forms to retain its traditional importance along with its market share

So to bring Sustainability of handloom sector the focus should also be on customers and marketing skill building, marketing information system, common facility centers for mass storage and distribution, timely availability of all requisites at optimum cost, implementation of regulated price mechanism, management skill development, prominent involvement of co-operative institutions in the entire value chain, unduplicated role clarity and responsibility of all stakeholders, professional environment, training need, identification and bridging the skill gap, modernization of existing resources without diluting ethnicity of the product, creation of international market and promotion, policy initiative for discouraging change of occupation from weaving to industrial labor and traditional knowledge repository building and strategic knowledge management.

REFERENCES

1. All India Handloom Census Survey 2009-10
2. All India Handloom Census Survey 2019-20
3. Amaravathi, G. & Raj, K. B. (2019). Indian Handloom Sector- A Glimpse. *International Journal of Innovative Technology and Explaining Engineering*, 8(654), 645-654.
4. Ansari, M. S. & Tripathi, A. (2018). Bridging Digital Divide among Weavers of Banaras, India: A Framework. *International Journal of Information Studies & Libraries*, 3(1), 41-48.
5. Anumala, K. & Acharyulu, GVRK. (2015). A Demographic Study on Customers Satisfaction about Handloom Products in India- A Study on Andhra Pradesh State Handloom Weaver's Co-operative Society Limited (APCO showroom). *Journal of Textile and Apparel, Technology and Management*, 9(3), 1-15.

6. Anumala, K. & Samala, N. (2017). Impact of Supply Chain Management Practices on Product quality in Indian Handloom Industry with reference to Master Weavers. *International Journal of Advance Research*, 5(6), 2005-2014.
7. Balaji, N. C. & Mani, M. (2014). Sustainability in Traditional Handlooms. *Environmental Engineering and Management Journal*, 13(2), 323-331.
8. Boritamuly, A. B. & Goswami, K. (2015). Determinants of the adoption of modern technology in the handloom industry in Assam. *Technological Forecasting & Social Change*, 90, 400-409.
9. Bortamuly, A. B. , Goswami, K. & Hazarika, B. (2013). Determinants of occupational choice of workers in the handloom industry in Assam. *International Journal of Social Economics*, 40(12), 1041-1057.
10. Danskin, P., Englis, B. G., Solomon, M. R., Goldsmith, M. & Davey, J. (2005). Knowledge management as competitive advantage: lessons from the textile and apparel value chain. *Journal of Knowledge Management*, 9(2), 91-102.
11. Dash M. (2011). Marketing of Odisha Handicrafts: A study on challenges & Opportunities. *International Journal of Multidisciplinary Management Studies*, 1(2), 47-63.
12. Dev, S. M., Galab, S., Reddy, P. P. & Vinayan, S. (2008). Economics of Handloom Weaving: A field Study in Andhra Pradesh. *Economic Political Weekly*, 43-51.
13. Dissanayake, D. G. K., Perera, S. & Wanniarachchi, T. (2017). Sustainable and ethical manufacturing: a case study from handloom industry. *Textiles and Clothing Sustainability*.
14. Goswami, K., Hazarika, B. & Handique, K. (2017). Determinants of Financial risk attitude among the handloom micro-entrepreneurs in North-East India. *Asia Pacific Management Review*, 22, 168-175.
15. Goswami, R., and Jain, R. (2014). Strategy for Sustainable Development of Handloom Industry. *Global Journal of Finance and Management*, 6(2), 93-98.
16. Goswami, R., and Jain, R. (2011). An analytical study of managerial issues of handloom industry in Jaipur district. *International Journal of Research in Commerce & Management*, 2(9), 94-97.
17. Gupta, A. K. (2011). Does Indigenous Knowledge have anything to deal with Sustainable Development? *Antrocom Online Journal of Anthropology*, 7(1).
18. Gupta, N. & Arora, K. (2015). Digital India: A Roadmap for the Development of Rural India. *International Journal of Business Management*, 2(2).
19. Handloom Policy (2016), Department of Handlooms, Textiles & Handicrafts, Government of Odisha.
20. Hazarika, B., Bezbaruah, M. P. & Goswami, K. (2016). Adoption of Modern weaving technology in the handloom micro-enterprises in Assam: A Double Hurdle Approach. *Technological Forecasting & Social Change*, 102, 344-356.
21. Humbe, V. (2012). Role of social media in marketing of Handloom products. *International Journal of science and research*, 3(7), 136-139.
22. Humbe, V. R. & Bhalerao, P. (2018). Social Media – A Tool for Empowering Women Working in Handloom Industry, *International Journal for Innovative Research in Multidisciplinary*, 4(5).
23. Humbe, V. R. & Bhalerao, P. M. (2019). Effects of promotion on customers awareness towards handloom products of Aurangabad districts of Maharashtra. *International Journal of Engineering Development and Research*, 7(2), 317-321.
24. Hussain, A. (2016). Protection and Promotion of Traditional crafts and occupations in Globalising India: A case study of weavers of Mau (Uttar Pradesh). *International Journal of Research in Social Science*, 6(9), 323-338.
25. Jain, R. and Tiwari, A. (2013). Challenges in Supply Chain of Tie and Dye Handicraft Apparels. *Indian Journal of Research*. (PARIPEX), 3(5), 143-145.
26. Jain, S., Basu, S. & Majumdar, B. (2017). Digital Empowerment for Handloom Clusters: The Case of Digital Cluster Development Program In India. *Proceedings of 92nd IASTEM International Conference, Johannesburg, South Africa, 29th-30th November 2017*
27. Jaiswal, A. (2012). The Changing Occupational Structure and Economic Profile of Textile Industry of Banaras, Uttar Pradesh. *Journal of Social Science*, 30(1), 89-98.
28. Kar, S. K. (2008). KM Imperatives in Handloom Clusters-A Developmental Focus, the Research Network. *Journal of Institute of Business & Computer Studies*, III (1), 76-85.
29. Kar, S. K. (2012). Knowledge process of rural handloom community enterprise: A narrative study of Sambalpuri Bastralaya in India. *Society and Business Review*, 7(2), 114-133.
30. Khakhlari, P. (2018). A Study of the Women Workforce in a Weaving Village of Assam. *International Journal of Advanced Research*, 6(6), 510-514.
31. Kumudha, A. & Rizwana, M. (2013). A Study on Consumer Awareness about Handloom Products with Special Reference to Erode District. *Journal of Marketing and Consumer Research*, 1, 17-21.

32. Lawrence, L. S. & Peter, J. A. (2016). Corporate Social Responsibility in Indian Textile Industry with special reference to Textile Industries of Tiruppur District, TamilNadu. *International Journal in Management and Social Science*, 4(4), 354-360.
33. Malecki, E. J. (2003). Digital Development in rural areas: potentials and pitfalls. *Journal of Rural Studies*, 19, 201-214.
34. Malhotra, R. (2015). Empowering Women through Digital Technology: An Indian prospective. *International Journal of Business Management*, 2(1).
35. Mamidipudi, A. & Bijker, W. E. (2018). Innovation in Indian Handloom Weaving. *Technology and Culture*, 59(3), 509-545.
36. Mamidipudi, A., Syamasundar, B. & Bijker, W. (2012). Mobilising Discourses- Handloom as Sustainable Socio-Technology. *Economic Political Weekly*, XLVII (25), 41-51.
37. Mathiraj, S. P. & RajKumar, P. (2008). Analytical study on Handloom products production and marketing. *Tamilnadu Journal of Cooperation*, 69-73.
38. Mitra, A., Choudhuri, P. K. & Mukharjee, A. (2009). A diagnostic report on cluster development programme of Shantipur Handloom Cluster, Nadia, West Bengal, Part-I- Evolution of the cluster and cluster analysis. *Indian Journal of Traditional Knowledge*, 8(4), 502-509.
39. Mohandas, K. (2016). A study of women entrepreneurs and Women empowerment in the textile and Garment units in Kerala. 1(4), IJARIIE, C-1357, 1(4).
40. Murali Krishna, B. & Venkata Ramana, J. (2016). A study on customers Awareness and satisfaction towards handloom products with special reference to Guntur District- Andhra Pradesh. *Acme Intellects International Journal of Research in Management, Social Science & Technology*, 16 (16).
41. National Handloom Development Program (NHDP), Guideline (2017-18 to 2019-20), Office of the Development Commissioner for Handloom, Ministry of Textiles.
42. Obamuyi, T. M. (2013). Factors influencing investment decisions in capital market: A study of individual investors in Nigeria. *Organizations and Markets in Emerging Economies*. 4(1(7)), 141-160.
43. Panwar, M. (2017). Digital India: Scope and Challenges. *International Journal of Academic Research and Development*, 2(3), 412-415.
44. Pargai, D. & Jahan, S. (2016). Revival of Handloom Industry: Need of the hour. *International Journal of Textile and Fashion Technology*, 6(2), 9-14.
45. Parida, R. C. & Tada, (2018). The contribution of Handloom and Handicraft Industries for Rural Economic Growth: Study with reference Sagalee Sub-Division of Papum Pare District, Arunachal Pradesh. *Internal Journal of Management*, V (2(3)), 57-63.
46. Parmesh, S. *Transforming rural development through Digital empowerment and use of ICT: A Case of Andhra Pradesh*, Global Lead, Rural Livelihoods and Agriculture Employment, Agriculture Global Practice.
47. Paul, R. & Goowalla, H. (2018). A study on Consumer Awareness of Handloom Products with Special Reference to Dimapur District- Nagaland. *International Journal of Management Studies*, V (2(3)), 1-8.
48. Planning Commission Government of India. October, 2014: Consultation paper on handlooms.
49. Poongodi, S. & Gowri, S. (2016). A study on Customers Satisfaction and Customers Expectation regarding handloom weavers among Erode town. *International Journal of Management and Commerce Innovations*, 4(1), 576-582.
50. Premsundar, B. & Kannan, J. (2013). Women in handloom industry: Problems and prospects. *EPRA International Journal of Economic and Business Review*, 1(132).
51. Rahman, M. S., Md. Haque, M. & Hussain, B. (2012). Brand Image and its Impact on Consumer's Perception: Structural Equation Modelling Approach on Young Consumer's in Bangladesh. *Journal of Applied Sciences*, 12(8), 768-774.
52. Ramesh, A. (2015). Analysis of Profitability and Financial Health of the Handloom Weavers Co-operative Societies in Karur District. *International Journal of Scientific Research*, 4(5).
53. Rani, N. & Bains, A. (2014). Consumer Behavior towards Handloom products in the State of Punjab and Haryana. *International Journal of Advanced Research in Management and Social Science*, 3(10), 92-105.
54. Ranidas, S. (2015). Socio Economic Profile of Handloom Weaving Community – A Case Study of Bargarh district, Odisha. Dissertation submitted to *National Institute of Technology, Rourkela, Sundargarh*.
55. Rao, K. R. M. & Kumar, K. K. (2018). Impact of Integrated Handloom Cluster Development Scheme (IHCDS) on Social Conditions of Weavers: The opinion of Member Weavers in Andhra Pradesh, India. *International Journal of Trend in Scientific Research & Development*, 2(3), 355-363.
56. Rao, K. R. M. & Kumar, K. K. (2018). Weaver's Attitude on Implementation of Integrated Handloom Cluster Development Scheme (IHCDS): An Empirical Study. *International Journal of Trend in Scientific Research and Development*, 2(2), 1480-1489.

57. Raul, M. M., Radha Rani, P. & Ratna, R. K. (2017). Review on Consumer Opinions and Preferences Regarding Interior Design Products Made from Handlooms. *Advances in Research*, 11(4), 1-7.
58. Reddy, N. V. K. & Reddy, M. S. (2015). A Study on Consumer's Perception and Satisfaction towards Electronic Banking in Khammam District. *IOSR Journal of Business and Management*, 17(12), 20-27.
59. Roy, C. (2017). The Silk Handloom Industry in Nadia District Of West Bengal: A Study On Its History, Performance & Current Problems. *New Man International Journal of Multidisciplinary Studies*, 4(7), 50-66.
60. Santhanamuthu, D. & Manickam, S. (2012). The Impact of Digitalization in Rural India. *IJMTP*, 4(1).
61. Sarkar, S. (2017). A Detailed Analysis of Cotton Textile Industry at Bardhaman Cluster of West Bengal. *The International Journal of Engineering and Science*, 6(1), 33-39.
62. Sasikala, M. S. (2019). A Study on analyzing Social status of handloom weavers in Tiruvannamalai District. *International Journal of Advance Research, Ideas and Innovation in Technology*, 5(3), 317-319.
63. Singh, S. & Kumar, R. (2018). Government Intervention- Awareness & Outreach among Handloom Weavers in Varanasi. *IJJ Journal of Management*, 6(2), 51-56.
64. SreeVyshnavi, P. V. & Nair, S. S. (2017). Handloom sector in India: A Literature Review of Government Reports. *International Research Journal of Management and Commerce*, 4(8), 418-438.
65. Sundaram, K. S. & Prakash, M. (2014). Study on impact of CAD/CAM tools on production of punched cards by Indian Silk Saree designers for handloom industry. *Variety Management in Manufacturing Proceedings of the 47th CIRP Conference on Manufacturing Systems*, 818-823.
66. Surya Kumar, P. (2015). Handloom Industry in India: A Study. *International Journal of Multidisciplinary Research and Development*, 2(1), 24-29.
67. Tanushree, S. (2015). A Study of the Present Situation of the Traditional Handloom Weavers of Varanasi, Uttar Pradesh, India. *International Research Journal of Social Sciences*, 4(3), 48-53.
68. Tirpude, R., Alam, T. & Saha, N. C. (2019). Effect of Package Design of Handloom Products to Influence Consumer Perception. *Journal of Packaging Technology and Research*, 3, 169-179.
69. Tripathy, G. (2009). Odisha Handlooms: Problems and Perspectives. *Orissa Review*, 54-56.
70. Venkateswaran, A. (2014). A Study on Production of a saree and various schemes available to Handloom Weavers. *International Journal of Research in Social Sciences*, 4(2), 140-154.
71. Victor, V., Thoppan, J.J., Nathan, R.J. & Maria, F.F. (2018). Factor Influencing Consumer Behavior and Prospective Purchase Decisions in a Dynamic Pricing Environment- An Exploratory Factor Analysis Approach. *Social Sciences*, 7, 1-14.