

SUPPLY CHAIN CHALLENGES: A CASE STUDY OF UTTARAKHAND WOOLEN HANDICRAFT INDUSTRY

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Abstract

Woolen handicraft is a traditional skill practiced in hill district of Uttarakhand and has been vertically passed on for generations. The geography of hill districts viz. high altitude, mountainous terrain, cold climate but excellent sunshine provides ideal conditions for rearing of animals like sheep, Angora rabbits and Pashmina goats. This creates an environment, which permits extraction of finest quality of wool. The major advantage of woolen handicraft sector is its enormous employment potential despite low investment of capital; however, the industry is not geared up to tap this opportunity. In Uttarakhand, weavers produce a lot of woolen craft per year, yet the socio economic condition of the weavers continues to be poor. The woolen carpet business needs to address various challenges at different stages i.e. improving availability of requisite quality and quantity of raw material, wool processing, grading, design improvement, strengthening of marketing arrangements and mobilizing institutional finance for growth of this industry. All these stages involve a chain of intermediaries. The present paper is an attempt to explore the existing supply chain scenario of the woolen handicraft sector in hill districts of Uttarakhand. Exploratory research design was used for the study and Chamoli and Pithoragarh district of Uttarakhand were selected purposively as they had highest production among the districts. Primary data was collected from traders, retailers and artisans involved in the trade through interviews and structured questionnaire. The result of the study highlights various constraints and the issues afflicting the supply chain.

Keywords: Artisans, marketing, supply chain

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INTRODUCTION: Woolen handicraft is an inherited, traditional skill practiced in the mountainous region of Uttarakhand. Uttarakhand government has identified major clusters in the state where people have been engaged in weaving since ages. These clusters are Dunda in Uttarkashi, Dharchula and Munsiyari in Pithoragarh, Manglore in Haridwar, Chinka in Chamoli and Kalsi in Dehradun district (Prashant, 2008). In all these clusters artisans are engaged in making carpets and other woolen crafts. The woolen handmade carpet industry of Uttarakhand employs around 11000 weavers (Planning Commission, 2006). These weavers produce a lot of woolen craft per year, yet the socio economic condition of the weavers continues to be poor.

In Uttarakhand, a separate body has been set up as Uttarakhand Handloom & Handicraft Development Council (UHHDC). It is a registered council constituted by the Government of Uttarakhand and acts as the apex body for the overall development and promotion of handicrafts in the state. It aims at generating sustainable employment opportunities by promoting specialized products for commercialization. It acts as a catalyst to encourage, guide and organize the artisans and provide platforms to producers and buyers where they can meet and engage in fruitful interactions.

Besides, wool banks have been set up by the Khadi and Village Industries Board (KVIB) to provide all kinds of wool varieties required for the production of variety of products. KVIB also encourages hand spinning by promoting use of efficient charkhas in homes. As a result, buyers who are looking for actual handmade woolen products can find these in Uttarakhand.

District Industrial Centers (DICs) are also actively engaged in supporting weavers in Uttarakhand. A number of wool-based firms registered between 2000-01 to 2010-11 in different DICs are shown in table 1

Table 1: Number of registered wool based firm (producing carpet/rug) with DICs

District Industrial Center	Number of Registered firm	
	(2000-01 to 2007-08)	(2008-09 to 2010-11)
Chamoli	95	NIL
Pithoragarh	15	1
Uttarkashi	07	NIL

Source: Directorate of Industries, Govt. of Uttarakhand

Despite of the above registered firms, there is a substantial decline in number of registered firm since 2000-01 to 2010-11. In case of Chamoli district, 95 firms were registered

till 2007-08 and since then there has been no more registration seen in the area. In Pithoragarh district, 15 firms were registered before 2007-08 and since then only one firm has been registered till 2010-11. If we consider Uttarkashi district, 7 firms were registered before 2007-08 and since then there has been no any increment seen in the list. i.e. the industry is declining in a pace. However, DIC is continuously trying to facilitate the weavers with the introduction of information centers, counseling centers and training centers under MSME act.

Although woolen handicraft industry of Uttarakhand is well known for the uniqueness of its design and weaving patterns, it has not been able to capture a substantial market share even in the domestic market let alone the international market. There exist several inefficiencies in the supply chain of woolen handicraft industry which need serious managerial attention.

OBJECTIVES OF THE STUDY

- 1) To study the supply chain of woolen handicraft industry in Uttarakhand
- 2) To identify the gaps in different stages of supply chain
- 3) To recommend a suitable supply chain model for woolen handicraft business for the area under study

METHODOLOGY: For attainment of the research objective exploratory research design was selected which involves secondary as well as primary data. Chamoli and Pithoragarh district of Uttarakhand were considered for primary data and primary data were collected from traders, retailers and artisans involved in the trade through structured questionnaire and interviews. While for Secondary data prior research publications, newspapers, magazines, online data from various Government agencies like Planning commission, Ministry of Textile, Carpet Export Promotion Council (CEPC), Indian Institute of Carpet Technology (IICT), Wool Research Association (WRA) and other nongovernmental web services were considered. The result of the study highlights the constraints and the issues afflicting the supply chain.

FINDINGS AND ANALYSIS: One of the notable features of woolen handicraft industry of Uttarakhand is that entire workforce is women. Majority of them work part time for 3-4 hours and do it along with agricultural activities. This implies that every other woman in the region is involved with handloom in one-way or the other. Major findings of the study are described under following heads.

Existing supply chain of woolen handicraft industry of Uttarakhand: The woolen handicraft making activity undertaken depends on the season. In summers, artisans focus primarily on

weaving activities and procurement of wool. Winter is the season when they sell their produce. The commonly used marketing channels are local melas (fairs), trade fairs and exhibitions. Major proportion of artisans have created SHGs (Self help groups); an initiative under Integrated handloom development plan promoted by Uttarakhand government. Existing supply chain of the industry is described under following heads (Figure 1):

a) Backward Linkage

b) Forward Linkage

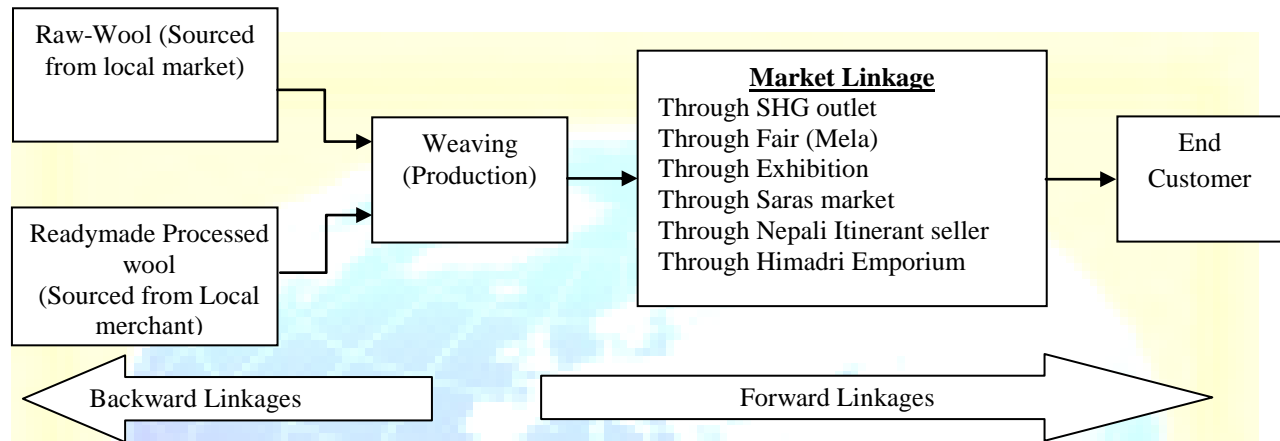


Figure 1: Existing supply chain of Woolen handicraft industry of Uttarakhand

Backward Linkages: It was found that majority of weavers source their wool requirement from local merchants. Table 2 clearly shows that 97% of respondents source processed wool yarn ready for weaving whereas 45% of respondents source raw wool (unprocessed) from nearby area. However, the share of local raw wool from sheep rearing has been declining continuously as raw wool requires complex processes like washing, carding, spinning etc. before it can be made ready for weaving which in itself requires heavy labour inputs.

Table 2: Sources of wool

Source	Respondents	Percentage of
Reared from self-owned sheep	6	6%
Raw wool procured from nearby area	45	45%
Processed wool	97	97%

Source: Field survey

Forward Linkage: The role of distribution channels in carpet industry is extremely important as they help transfer a handicraft item from a remote district of Uttarakhand to consumers living in various parts of the country thus providing livelihood to thousands of weavers. Different distribution channels adopted by carpet weavers of Uttarakhand are shown in figure 2.

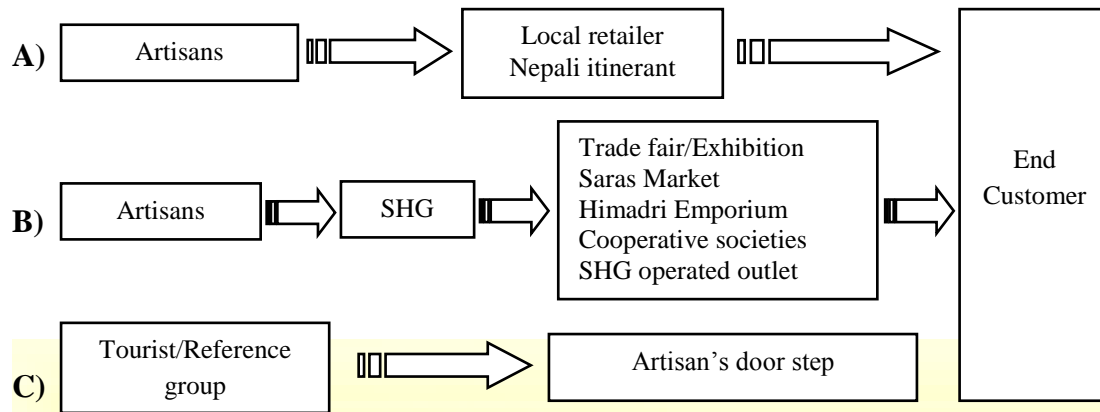


Figure 2: Woolen Handicrafts: Existing distribution network in Uttarakhand

Channel A: This type of distribution channel is commonly found in remote areas where involvement of SHGs or NGOs was not observed during research. In fact, the local retailer and Nepali itinerant sellers are actively involved in distribution here. These Nepali itinerant sellers practice door-to-door marketing in the neighboring districts. These agents make handsome profit margins vis-à-vis artisans. However, the mobility of these agents is geographically limited only to neighboring districts.

Channel B: This kind of distribution channel is found in most of the small towns of border areas of Uttarakhand. Artisans have created SHGs and Co-operative societies with the guidance of Government agencies and NGOs. These SHGs and Co-operatives then market the handicraft items weaved by these artisans in different trade fairs and exhibitions that are regularly held in various districts of Uttarakhand and Delhi. Besides, some SHGs also sell these items through Saras Market and Himadri Emporium. Saras Market and Himadri Emporium are platforms, which provides a common platform to the artisans/weavers for distribution of their produce. Government of Uttarakhand and UHHDC promotes these emporiums.

Channel C: In this channel, tourists who happen to tour the area, buy these items directly from weavers by visiting their looms. Since the Mana village (Near Badrinath) of Chamoli and Dharchula and Munsiyari of Pithoragarh are well known for woolen handicrafts area, tourists more often than not, buy different hand crafted items for their own use or as gifts or souvenirs as they return. Since, all these sales transactions are executed right at the doorstep of the artisan; his return are excellent with this channel as it involves virtually no selling effort and resources.

Gaps in different stages of supply chain:

Gaps in Backward Linkages (Procurement of raw material): The ever-increasing cost of raw material is a major concern among the artisans. Declining rate of local sheep rearing is responsible for this increase. At present, artisans outsource major portion of their wool requirement as processed wool from local merchants, which puts an extra burden on them. Since these artisans are small purchasers, they are not able to negotiate prices as large firms can do.

Gaps in Processing (Production/weaving): Most artisans are from economically deprived sections and lack resources required to meet working capital and other requirements. Therefore, they are forced to procure low grade of raw materials, which hampers the quality of their produce. As a result, they obtain uncertain returns. The earnings of artisans are meager as compared to the investment of time and labor put in by them. Artisans still follow age-old traditional designs; whereas the market increasingly needs modern and contemporary designs. Lack of consumer research, market research and training and skill development programs have forced artisans to continue weaving the traditional designs.

Further the lack of availability of requisite quality of raw materials force artisans to take whatever is available, of whatever quality. This negatively affects their production, quality and costs. The result is low productivity, poor quality of products and high costs.

Gaps in forward linkages (Marketing and distribution): Distribution network of woolen handicraft industry of Uttarakhand is limited to neighboring areas. The major portion of artisans depend on direct marketing, local SHG outlets, trade fairs and exhibitions, Saras market and Nepali itinerant sellers.

Saras Market provides a platform to artisans and SHGs to sell woolen handicrafts. However, due to its limited reach it doesn't work as an efficient distribution channel. Nepali itinerant merchants directly sell door to door. Since carpets are bulky and voluminous products, the merchants can cover only a limited area per day. Besides, wear and tear of carpets is another major challenge as these merchants roam door to door repeatedly showcasing their stuff.

To strengthen the distribution of woolen handloom and handicrafts, Government of Uttarakhand has opened various retail shops by the name of 'Himadri Emporium' in various tourist destinations across Uttarakhand. These emporiums are located at places like Badrinath, Haridwar, Nainital, Ranikhet, Uttarkashi, Srinagar and Dharchula. During the research, it was

found that only limited woolen crafts were exhibited in the emporium. Carpets, which are woven universally by all the weavers, do not find a place in the display as they occupy large shelf space.

It was also found that the most preferred channel is direct marketing followed by fairs & exhibitions as shown in table 3. Most of the artisans use these two channels to sell their produce in the vicinity. Share of middlemen and agent constitute a small portion, which shows “do-it-yourself” approach. The only middlemen are Nepali itinerant sellers. Besides, it was also found that procurement by government is very limited in the region.

Table 3: Ranking of marketing channels used

Distribution channel used	Frequency	Percentage of	Ranking
Direct marketing	100	100%	1
Fair/exhibition	65	65%	2
Agent/middleman	18	18%	3
Govt. institutions	2	2%	4

Source: Field Survey

During the retailer survey, which covered two cities in Uttarakhand namely Dehradun, and Haldwani (Nainital), Retailers were asked about woolen handicraft and handloom of Uttarakhand and their responses were negative about the quality, cost and availability of products. One retailer named ‘Internationals’ in Haldwani stated that some customer demands for hand woven shawl but we could not provide them the same due to lack of intermediaries i.e. agent we cannot get handmade shawl from Uttarakhand hills. In case of handmade carpets it was found that as carpet needed high maintenance, is costlier, are not in attractive colours and attractive looks as compared to machine made, therefore, customer prefer machine made.

As far as margins are concerned, it was found that machine made products offer good margins as compare to handmade. Simultaneously both retailers accepted that handmade carpet industry is facing lot of challenges like slow process of new design development, high cost, lack of awareness, promotion and marketing.

Mapping a value chain for woolen handicraft business in Uttarakhand: The *value chain* depicts all the activities a firm engages in while doing business. Therefore, a framework has been identified which suggested different strategies for different activities involve in the woolen handicraft business. Though, the scale of operation is limited for a weaver therefore as an individual it is impossible to follow this framework, hence the value chain framework needs active participation of government and the apex body UHHDC in each stages of the framework.

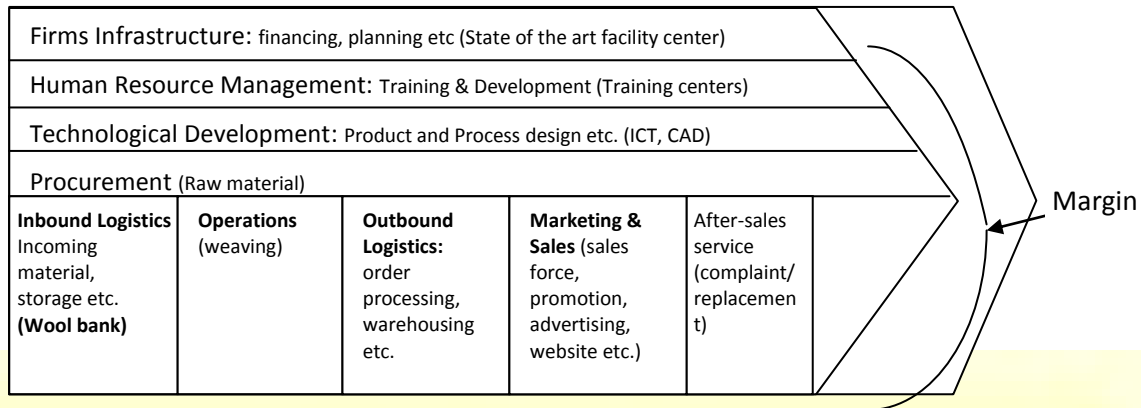


Figure 3: Value chain framework for woolen handicraft industry of Uttarakhand

Inbound logistics: Inbound logistic is an integral element of business operations, which involve the processes of receiving, storing and distributing raw materials for use in production. It is the first stage in value chain, however Michael Porter outlined in his 1985 book "Competitive Advantage." Small business manufacturers may not manage as much inventory, but should still optimize inbound logistics processes. Therefore with the introduction of wool banks in different clusters this process can be optimized which results easy access and availability of requisite quality of wool at cheaper rates.

Operations i.e. weaving activities: In operations stage value can be added through following activities.

a) Use of Technology: It is extremely important for carpet weavers to adopt new technologies for better results. Therefore, design development initiatives such as integration of computer applications like CAD and upgraded tools such as loom etc. should be adopted for simplification of design and process. For technological support, tie up with various design development institutions such as NID (National Institute of Design), NIFT (National Institute of Fashion Technology), IICT (Indian Institute of Carpet Technology) etc. for enhancing capabilities of weavers should be considered.

b) Use of Traditional design: As far as the traditional designs are concerned, this creates distinctiveness that is hard to copy by machine made due to heritage designs involved in it. Therefore, these designs should be focused to the heritage and classy people who cares for art, history and heritage. Apart from this, fusion of traditional and modern designs can make business more profitable.

c) **Consumer survey:** To know the changing taste and preferences of consumer, time to time survey should be considered, which gives an idea of most accepted or prevalent design preference in the market place.

d) **Stringent quality control:** Focus should be on assured quality through testing and inspection of raw material, process and finished product, so that quality of carpet will become easily acceptable in the market place. Apart from this quality management standards like ISO and internationally accepted certifications like Rugmark (GoodWeave) should also be adopted.

Apart from this, woolen handicraft industry of Uttarakhand has ethnic and traditional value and true hand based crafts in nature as compared to other machine made carpets. Therefore, these carpets should be positioned as traditional and heritage brand to ensure a robust domestic market. In addition, the carpet should be differentiated on the basis of original Tibetan designs, which is probably a unique design of the handmade industry of Uttarakhand

Outbound Logistics: It was observed that all the weavers are solely depend on themselves for distributing their final produce i.e. handcrafted items whether it would be nearby outlets of Saras, Himadri or fairs/exhibitions. Therefore, there is an urgent need to avail the outbound services so that they can focus on their production process.

In case of fair/exhibition, all the handicraft material from different places can be transported through pooled van/truck to the exhibition place. While online orders can be executed through the collaboration of Indian postal services. As Indian postal service has a vast network all over India, it can be used as a tool for market expansion.

Marketing and Sales: Due to the low education level and decentralization of woolen handicraft weavers of Uttarakhand, they often lack direct access to markets and market information, resulting in a mismatch between production and market demand. Therefore, following strategies are recommended.

a) **Expansion of market coverage:** To bridge the gap between artisans and customers, both in terms of distance as well as perception, coverage of market should be expanded beyond the existing market i.e. nearby location. For that matter organizing fairs and exhibition in various cities as well as setting up website to bring artisan and customers together on a common platform can be a good initiative.

b) Selection of distribution channel: The artisans depend mostly upon direct marketing and fairs and exhibitions for disposal of their finished products i.e. woolen handicrafts. Some artisans sell directly to the consumers, whereas some sell through Nepali itinerant sellers, and local fairs and exhibitions. Therefore the distribution channels should be expanded through sales emporia, which directly contact the galaxy of consumers through its various outlets located at various important towns in India. As far as Co-operative societies are concerned, there are limited numbers of co-operative societies serving in the study area; therefore, to strengthen the distribution more co-operatives should be formed for better distribution and profitability.

c) Relevant promotional strategies: The following promotional strategies are suggested for better promotional support.

i) Effective advertising: Weavers and SHGs are not in a position to do individual advertising because of their limited resources and heavy investment associated with it. Therefore, the apex body UHHDC (Uttarakhand Handloom and Handicraft Development Corporation) should undertake print as well as media advertisements for the better awareness among customers. For that matter, the allotment of funds and expenditure for advertising should be increased by UHHDC. The advertisement programs should be focused on heritage, cultural and sustainability aspect. In the customer centric era, social media is a primary channel for customer engagement and it also incurs a very low cost as compare to others. Therefore, social network advertising should also be considered.

ii) Effective sales promotion: The industry is totally dependent on Government bodies for sales promotions. The only tool they have is point of purchase (P-O-P) displays and demonstrations in trade fairs and exhibitions. However, the results from these fairs/exhibitions are very poor due to lack of awareness among people. Therefore, to strengthen the sales promotion following strategies should be considered.

1. Time to time fair and exhibitions should be organized in various locations by different government bodies, like KVIB (Khadi & Village Industrial Board), UHHDC etc.
2. Awareness among customers related to fairs and exhibitions should be created through advertising campaign.
3. Proper display and demonstration support in fairs/exhibitions should be provided to weavers.

d) Branding of handicraft items: Developing a strong brand that differentiates handloom of Uttarakhand in a competitive global market is very important. Therefore, a well-designed

strategy is needed which repeatedly reminds potential and current customers why they should purchase carpets of Uttarakhand over others. Therefore, the use of a Geographical Indication as a brand identity should be adopted, which act as a certification that the product possesses certain qualities, is made according to traditional methods, or enjoys a certain reputation, due to its geographical origin.

Human Resource Development through extension services: While analyzing the adaptation of new designs and technology use, it was found that adaptation of technologies gets severely handicapped because of knowledge related constraints' viz. lack of awareness of modern designs, improved technological up gradation, etc. this is where the role of extension services become very important.

The primary aim of the extension strategy should be revitalization of the traditional techniques of carpet making as a source of income for the weavers and their families. The main priorities should be on development of jobs for indigenous communities through training programs, the creation and marketing of products with new designs applications, the undertaking of cultural outreach programs through the development of collaborative exhibitions and publications, and the care of natural resources for producing handmade carpets.

NGOs, co-operatives and other organizations working in the field of rural development and sustainable development should be included for the successful distribution.

Technological Development: As witnessed by the profitability in the working of other sectors by the application of Information and Communication Technology (ICT), similar initiatives should be taken by the group of woolen handicraft producer to implement the ICT in the process of export as well as domestic marketing.

With the help of ICT, marketer can produce as many designs which can be customized as per the buyers' requirements, thereby getting an order without any initial investment, a method presently adopted by the Chinese in the handicraft business. Also information related to the sample like sample designs, revised sample designs, etc can be abruptly exchanged through the technology.

Firms Infrastructure: The industry needs a state-of-the-art facility centers at block level where weavers can have access to all the facilities such as processing of wool, training related to design development through computer etc. Besides, Wool banks should be setup for better quality of input availability all the time so that delays in processing can be minimized. Apart from this, for

requirement of upgraded loom and tools credit should be provided by financial institutions at a lower rate of interest.

Procurement (Wool): The ever increasing cost of raw material is a major concern among the artisans. At present, artisans outsource major portion of their wool requirement, which puts an extra burden on them. Moreover, the raw material used by them is not available at a low cost. Therefore, initiatives such as opening of wool bank should be taken by government so that wool can be avail at a low cost.

Recommended supply chain model for woolen handicraft business in Uttarakhand:

i) Backward Linkages: This model starts with the formation of state-of-the-art facility center at Block level (development unit of district) where unprocessed raw wool reared from local sheep will be processed. These facility centers act like a mini wool bank in the blocks and weavers can get low cost quality raw material easily from these centers. However, the local sheep rearing is very limited now and excess demand of raw material will be fulfilled by main wool bank which will be located at district level. These facility centers will also act like training and skill development centers. These centers will be backed by trained staff from reputed institutions like Indian institute of carpet technology (IICT), National institute of fashion technology (NIFT) and other design development institutions. The work of these institution will be focused on modernization of the craftwork according to the need of the ultimate consumer like standardization i.e. value creation, process re-engineering for cost reduction and quality production, assistance through computer aided design (CAD) and other technical assistance like up gradation of age old tools.

ii) Forward Linkages: On the other end the final handcrafted produce will be marketed by the state handloom & handicraft development council (UHHDC) and government of Uttarakhand. UHHDC will assist weavers in promotional and distribution activities like trade fairs, exhibitions etc, capacity building program that includes human capital development through extension network support and R&D, certification of the produce like Rugmark, ISO etc, financial support i.e. easy accessible credit facility, assistance in market development through tie up with some retail chain for the better market linkage, effective promotion and distribution support and last but not least modern buying facility i.e. E-commerce platform (Figure 4).

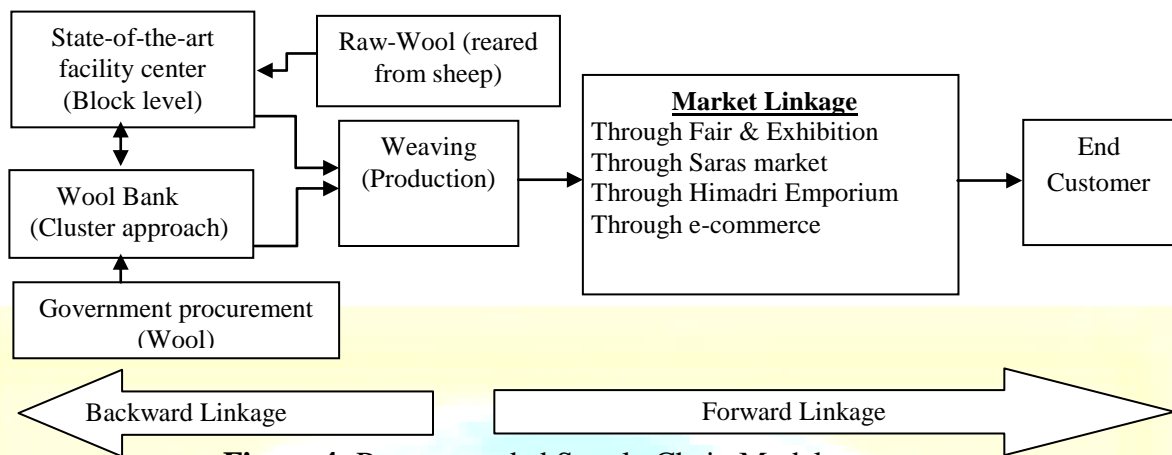


Figure 4: Recommended Supply Chain Model

Conclusion: Woolen handicraft industry of Uttarakhand represents a rich cultural heritage of India. As an economic activity and in terms of employment generation, it is estimated that around 11 thousand weavers are employed in woolen handicraft and handloom sector of Uttarakhand (Planning commission 2006). This sector however is confronted with various supply chain issues such as, low productivity, inadequate working capital, increasing cost of raw material, inadequate distribution channel and poor promotional activities, absence of market intelligence etc.

From the discussion of the data analysis, it is concluded that artisans as individuals are not in position to address various supply chain related issues such as technology up gradation, productivity and quality, marketing, credit and product innovation on its own. Therefore, a holistic strategy and approach aimed at these issues should be considered for overall cluster development.

Woolen Handicraft items are in high demand in the developed nations and upper segment of consumers, who are environment and health conscious. Therefore, there is a need to understand the potential of export market and domestic market trends. As the woolen handicraft industry of Uttarakhand is wool based industry, special emphasis should be given on improving availability of requisite quality and quantity of raw material, wool processing, grading, design improvement, strengthening of marketing arrangements and mobilizing institutional finance for growth of this sector.

In addition, in the era of automation, the artisans of Uttarakhand are dependent on age old tools for the production of carpets, to cope up with this issue; there is an urgent need to bring new technologies to empower the weavers.

As far as distribution and promotion is concerned, due to growing purchasing power of consumers, increasing double income families, foray of new retail formats like supermarket, hypermarket and shopping mall and growing social and environmental consciousness among consumers in domestic as well as international market, new doors have been open for the woolen handicraft industry of Uttarakhand. Therefore, it is an immediate need to develop new markets apart from the limited local market. Action should be taken up to develop new distribution channel to provide increased access to markets outside the state.

Apart from this, it is concluded that production of woolen handicrafts does not alone serve the customer's purpose; therefore there is an immediate need to understand 'who is the customer', 'where he wants the product', in what form at what price. Hence, to sustain in the fierce competitive business environment, the industry needs proper market survey periodically to understand these aspects and practices in reality.

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