

Consumer acceptability and market potential of developed diversified products from cotton rags and waste papers

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■ **ABSTRACT** : Cotton fibre is a natural seed hair fibre. Discarded textiles and clothing are in strong demand from markets for reuse and recycling across the world. From these raw mixed rags, a new product can be created. Present study was carried out in three stages. The first stage included to design and develops diversified products from cotton rags and waste papers, second stage was to study the consumer acceptability and third stage was to find out market potential of developed products. The study was carried out in Udaipur City. Background information was collected from 30 house wives and 30 market personnel. Then the preference of respondents regarding diversified products from cotton rags and waste papers was taken. Total 13 products were developed, these were basket, photo frame. Flower pot, pen stand, dipak, tray, quotation holder, ash tray, bowl, tea coaster, wall hanging, paper weight and bandharwall using cotton rags and waste papers. In second stage the assessment of consumer acceptability and market potential of developed diversified products was made by 30 sample house wife and 30 sample market personnel's. A 5 point rating scale performa was administered on 60 respondents for this purpose. Finding of the study revealed that developed products were highly appreciated by all the respondents. Of the products the most preferred was flower pot with first rank followed by basket photo frame. Rest products also got good scores. Acceptance percentage of all products ranged between 62 per cent to more than 80 per cent. Cost of all products ranged between Rs. 20 to Rs. 70.

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Cotton fibre is a natural seed hair fibre, a soft, fluffy staple fibre that grows in a boll, or protective case, around the seeds of cotton plants of the genus *gossypium* family of *Malvaceae*. Cotton can

be recycled from pre-consumer (post-industrial) and post-consumer cotton waste. Pre-consumer waste comes from any excess material produced during the production of yarn, fabrics and textile products, e.g. selvage from

weaving and fabric from factory cutting rooms. Post-consumer waste comes from discarded textile products, e.g. used apparel and home textiles (Anonymous, 2015). Discarded textiles and clothing are in strong demand from markets across the world for reuse and recycling. Clothing and textiles were being recycled long before those early efforts to inform the public of the impact their actions had on the environment (Textile recycling, 2012).

The cotton is a compostable because cotton fibres and fabrics, being natural cellulose polymers are biodegradable under aerobic conditions. Pre-consumer recycling is when the materials of manufacturing do not reach a consumer and recycled. Pre-consumer textile waste consists of by-product materials from the textile, fibre and cotton industries. The Environmental Protection Agency (EPA) reports, the average person discards 70 pounds (32 kg) of clothing per year. The Agency estimates 85 per cent of these materials wind-up in landfills or incinerators, with only a scant 15 per cent entering the recycling stream. The dumping of post consumer textile waste is a huge urban waste problem and there is a common practice of collecting the discarded textiles by commercial and charity organizations. Textile waste can be classified as either pre-consumer or post-consumer. Pre-consumer textile waste consists of by-product materials from the textile, fibre and cotton industries. Pre-consumer textile waste, since most of this material is used in stuffing and padding applications while most recycled post-consumer textile waste becomes second hand clothing. Post-consumer material would not increase the total amount of material recycled, nor would the amount of material being dumped decrease (CTR, 2015).

The post-consumer textile waste that is recovered and recycled as second hand clothing, which is typically sold to third-world nations. Post-consumer textile waste as no longer clothing, but in fact a raw product, which is termed "mixed rags." Paper products can also be made from recyclable waste items due to shortage of trees or raw materials. The process of using recyclable materials will help to save trees and reduce the effect of deforestation. Paper making process for long has mainly used wood from tree stems that are cut, debarked, chipped and pulped (Lwako *et al.*, 2013). Cotton waste and paper waste are worthless and also pollutes the environment. Waste cotton rags and paper waste both

were use in developing diversified products for consumer use. The post-consumer textile waste issue is not a new problem but is growing in importance in the global fashion industry as increases in purchase frequency, availability of lower quality clothes and a real reduction in price levels has changed our relation to clothes and led to an increasing trend of throw-away fashion and growth in textile waste (Birtwistle and Moore, 2007).

■ RESEARCH METHODS

The study was conducted in the Udaipur city of Rajasthan for the development of diversified products from cotton rags and waste papers during the year 2015 – 2016. The selected areas were University campus and Hathipol market. The study is based on primary data collected through survey schedule from the women respondents and marketing personnel. The total numbers of respondents selected were 60 (30 women respondents and 30 marketing personnel). The selection of samples respondents was done on random basis. To achieve the objectives of the study, two rating scale were developed *i.e.* consumer acceptability rating scale for assessing the acceptability of developed diversified products and second rating scale to assess market potential for developed diversified products in the Udaipur city. The data obtained from survey were coded, analyzed and expressed in ranking, percentage, scoring and acceptability per cent.

Development of diversified products :

Products were made by using waste material (cotton rags and waste paper). These products can be used as decorative and functional items in day to day living. Different colours were used for decoration. For surface enrichment different accessories were used like mirrors, wool, kundan and sparkle tubes. The product development took a month's time.

Assessment of consumer acceptability of developed diversified products :

A list of 20 diversified products was made and given to 60 respondents. Only those products were listed which can be prepared using cotton rags and waste papers. Top ranked 13 diversified products were prepared. Respondents were also asked to give rank on the basis of preference for development of diversified products.

■ RESEARCH FINDINGS AND DISCUSSION

Analysis of Table 1 indicates that flower pot got highest preference (87.50%) followed by basket, photo frame, Dipak, ash tray with 85.83 per cent, 83.33 per cent, 82.50 per cent and 80.00 per cent ranked second, third, fourth and fifth. wall hangings (79.16%), pen stand (75.00%), bowl (70.83%), quotation holder (68.33%), tray (65.66%), tea coaster (61.66%), paper weight (52.50%) and bandharwall (48.33%).

Table 2 shows the total scores of products and relative ranking of each developed products. It was found that flower pot achieved the highest total score (671) among all products. Due to highest score flower pot was given to 1st rank on the basis of suitability of design of article, colour combination, utility of article, overall appearance and marketed as handicraft. Basket occupied 2nd rank with different position in different parameters. Photo frame achieved first rank in utility of articles while it occupied 3rd rank in total scores. After flower pot the basket and Dipak achieved 2nd and 3rd rank, respectively under parameter of overall appearance, where colour combination photo frame got 2nd rank. In overall appearance Dipak and bandharwall appreciated.

On analyzing the total score obtained by 5 parameter got more than 70 per cent acceptability and

ranges between 70-80 per cent. It can be concludes that all the developed diversified items effort made by researcher was appreciated by all the respondents.

Swami (2006) conducted a study on “development of value added articles from goat hair and assessment for its consumer preference. It was revealed that developed goat hair value added articles were highly preferred by the consumer.

Kakkar and Kaur (2015) “Development of accessories from reusable knitwear waste” the investigation entitled development of accessories from reusable knitwear waste was carried out in Ludhiana city. Majority of the respondents, *i.e.* 87.78 per cent were aware of jewellery developed from solid waste and 64.44 per cent were interested to reusing it whereas, 66.67 per cent of the respondents were interested in purchasing jewellery. Most of the solid waste was collected by the investigator.

Assessment of market potential of developed diversified products :

In order to assess the market potential of the diversified products, researcher estimated the cost of all products and rating scale was developed related to market potential of the products. Cost is the most

Table 1 : Preference of to be developed diversified products

Sr. No.	Article	Score	Mean per cent score	Rank
1.	Flower pot	525	87.50	1
2.	Basket	515	85.83	2
3.	Photo frame	500	83.33	3
4.	Dipak	495	82.50	4
5.	Ash tray	480	80.00	5
6.	Wall hanging	475	79.16	6
7.	Pen stand	450	75.00	7
8.	Bowl	425	70.83	8
9.	Quotation holder	410	68.33	9
10.	Tray	394	65.66	10
11.	Tea coaster	370	61.66	11
12.	Paper weight	315	52.50	12
13.	Bandharwall	290	48.33	13
14.	Napkin holder	250	41.66	14
15.	Mask	220	36.66	15
16.	Lamp lighting	195	32.5	16
17.	Telephone mat	150	25.00	17
18.	Dairy cover	135	22.50	18
19.	Magazine holder	108	18.00	19
20.	Book mark	84	14.00	20

important factors for any designed articles. The finding of Table 3 shows that the production cost of the diversified products. The market price of basket found to be highest *i.e.* 70 rupees including cost of colours,

raw materials and accessories, labour cost. Whereas Dipak, bandharwall Rs. 55 and Rs. 50 photo frame, tray, wall hanging, tea coaster Rs. 40 flower pot Rs. 35 bowl, quotation holder, pen stand Rs. 25 ash tray and paper

Table 2 : Consumers acceptability scores and their relative ranking for diversified products

Sr. No.	Article/ Evaluation criteria	Suitability design	Colour combination	Utility of article	Overall appearance	Marketed as handicraft	Total scores	
		Scores	Scores	Scores	Scores	Scores	Scores	Rank
1.	Basket	129	129	119	116	119	612	2
2.	Photo frame	122	128	121	112	116	599	3
3.	Diya	114	122	115	115	115	581	5
4.	Ash tray	117	121	115	120	114	587	4
5.	Bowl	120	112	113	107	120	572	8
6.	Tray	119	108	102	109	114	552	10
7.	Wall hanging	125	119	110	109	115	578	6
8.	Quotation holder	106	117	105	108	118	554	9
9.	Tea coaster	108	107	105	107	113	540	11
10.	Paper weight	95	102	98	109	103	507	12
11.	Flower pot	134	128	116	120	123	621	1
12.	Pen stand	117	112	118	112	118	577	7
13.	Bandharwall	123	124	110	115	115	587	4
Total scores (1950)		1529	1529	1447	1459	1503	7467	
Acceptability (%)		78.41	78.41	74.20	74.82	77.07	99.56	

Table 3 : Estimation of total cost incurred in the development of the diversified products from cotton rags and waste paper

Sr. No.	Costs (Rs.)	Basket	Photo frame	Dipak	Ash tray	Bowl	Tray	Wall hanging	Quotation holder	Tea coaster	Paper weight	Flower pot	Pen stand	Bandhanwall
1.	Cost of colours	30	10	20	5	10	20	15	10	15	5	15	10	20
2.	Cost of raw materials	10	10	20	5	-	-	-	5	10	-	5	5	10
3.	Labour charge	15	20	15	10	15	20	25	10	15	10	15	10	20
4.	Total cost	55	40	55	20	25	40	40	25	40	15	35	25	50

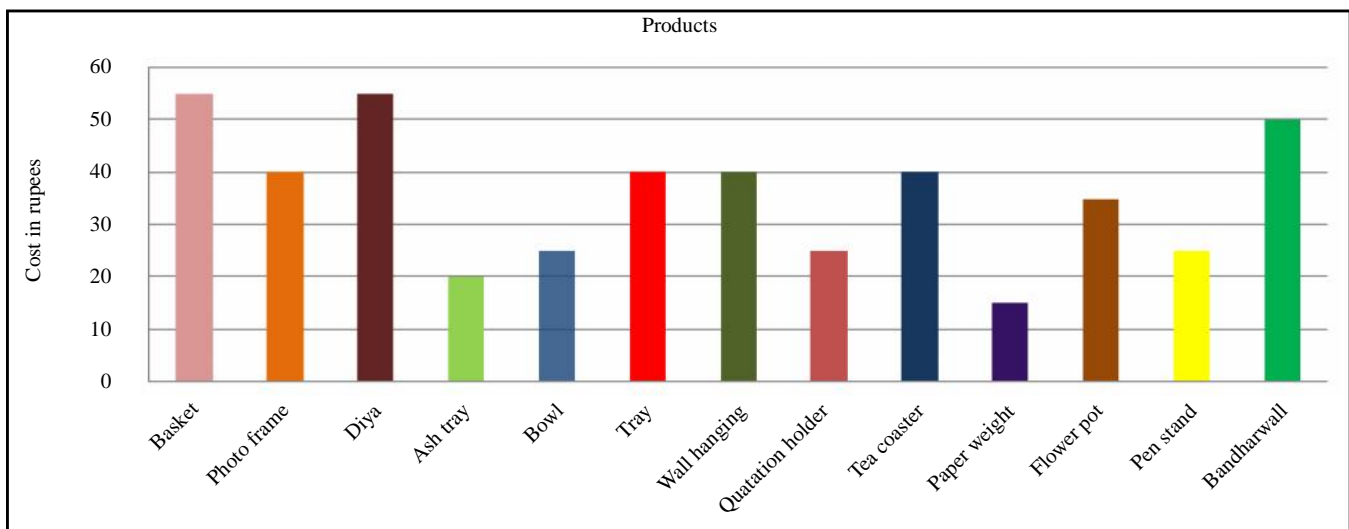


Fig. 1 : Graphical representation of cost estimation of the diversified products from cotton rags and waste paper

weight Rs. 20 and 15 rupees, respectively.

Babel and Sodha (2007) concluded in an article on market potential of value added articles made by jute fabric and Phulkari embroidery that minimum 20 per cent profit can be gained by development of value added article.

The results are in conformity with Lodha (2013) developed value added articles using niwar and assessed them for market potential, net rate was calculated and profit was added- 20 per cent, 30 per cent, 40 per cent and 55 per cent of the respondents gave preference to the 20 per cent profit and rest were agreed for 30 and 40 per cent profit. Products had high market potential and had good potential to start small scale enterprise.

Babel and Yadav (2011) conducted a study on market potential of value added Kota doria sarees. Cost of the sarees ranged between Rs. 825-925. 40 per cent respondents gave preferences to 20 per cent profit and minimum respondents *i.e.* 6 per cent gave preference to more than 40 per cent profit.

Conclusion and policy implication :

Thus, it was concluded that developed diversified products were highly acceptable in terms of all parameters. The suitability of design of articles, colour combination were highly acceptable and had enough market potential. Idea of developed diversified products from cotton rags and waste papers were appreciated by all 2 categories of respondents. It can be used as an entrepreneur by using it in production of different handicraft articles for utility and decorative purpose. From this study conclusion can be made that all these products had a bright future in field of handicraft.

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