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The Pharma Innovation

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Current utilisation pattern of camel hair and development of value-added articles from camel hair

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Abstract
Asia is home to the world's largest camel breeding facility, and India's only facility is in the Bikaner city of Rajasthan which is also known as "Camel Country." Camel hair comes under the category specialty fiber. Specialty Fiber, are those fiber which are obtained from specific animals' hair such as Camel, Goat, Rabbit, Yak this fiber is different from the commonly used fibers and they are valuable because of their properties such as luster, fine diameter, hand pleasing texture. Camel hair is mainly used for the purpose of high-grade overcoat fabrics and is also used in knitwear, blankets, and rugs.

To achieve objectives of the present study it was carried out in three stages. The first stage included collection of information related to present utilization pattern of camel hair and the preference for to be developed value added articles was taken, second stage was development of camel hair value added article with macramé knot and third stage was evaluation of developed value-added articles. The study was carried out in Bikaner district. Information about utilization pattern of camel hair was collected from 30 camel owners as they are using it. Preference for to be developed value added articles was taken from same 30 camel owners and 30 handicraft persons as they have wider knowledge about handicraft and present demand. By the scoring and ranking method 10 top ranked articles were selected, these were Tray, Bottle cover, Pot holder, Utility basket, Napkin holder, Coaster, Key ring, Pen stand, Curtain holder, Belt. In Second stage the ten articles were developed by researcher using macramé knot and under third stage the assessment of consumer preferences for developed value-added articles was made by 90 sample subjects. The 90 respondents were 30 camel owners, 30 handicraft persons and 30 consumers. A 5-point rating scale Performa was administered to 90 respondents for this purpose.

Finding of the study revealed that developed articles were highly appreciated by all the respondents. From all the articles the most preferred Tray with first rank followed by Bottle Cover and Utility Basket. Rest articles also got good scores.

Thus, it is concluded that developed articles, using camel hair and macramé knot found totally a unique and innovative idea by all the respondents.

Keywords: Camel hair, macramé, developed articles

1. Introduction

Rajasthan is India's largest state in terms of land size which is found in the northwest of the country. The vast arid region known as the Thar Desert, commonly referred to as the Great Indian Desert, is situated in the northwest corner of the Indian subcontinent.

Camel holds a respectable place in Rajasthan's social and cultural life. Asia is home to the world's largest camel breeding facility, and India's only facility is in the Bikaner city of Rajasthan which is also known as "Camel Country." Camel "The Ship of the Desert." served as a mode of transportation in the desert, a source of livelihood, even a status symbol, and was also use for its hide, which was used to make utilitarian goods. Camel hair comes under the category specialty fiber. Specialty Fiber, are those fiber which are obtained from specific animals' hair such as Camel, Goat, Rabbit, Yak this fiber is different from the commonly used fibers and they are valuable because of their properties such as luster, fine diameter, hand pleasing texture. Camel hair is typically found in the camel's undercoat, which is the finer, shorter hair that lies beneath the thicker outer layer. Camel hair is mainly used for the purpose of high-grade overcoat fabrics and is also used in knitwear, blankets, and rugs. The coarse fiber is used in oil industries as machine beltings and press cloths for extracting oil. It has excellent thermostatic properties.

Camel fiber is a popular natural specialty fibre because of its warmth, softness, toughness, and capacity to drain away moisture. Camel fibre has gained popularity in the home textile sector because of its distinctive qualities, particularly in the creation of carpets. In ancient time camel fiber were used to product rugs which are known as "Bhakhla" in Rajasthan.

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These rugs are renowned for being durable and resistant to wear and tear. The articles of camel hair are widely used in rural area only as its yarn is coarse and hard. And in urban market, people are enthusiast for the handicrafts and products of natural resources specially the foreigners pay more interest and ready to pay a handsome price of natural origin product. So, for the development of new value-added articles, information about present utilization pattern of camel hair was collected and assessment of article was done by consumers including camel owners and handicrafts persons for their critical analyses and their acceptability.

2. Methodology

The study is conducted in the Udasar village which is situated about 20 km away from Bikaner district was purposively selected for collection of data from the camel owners. To fulfil the requirement of the study three types of samples was be selected from the rural and the urban area. From the rural area 30 camel owners were selected randomly; and from urban area 30 handicraft persons and 30 consumers were selected based on their willingness to co-operate. Selection of consumer was done with first come first serve way at the exhibition organized by the researcher. Keeping in mind the objectives of the study, data collection was done under two sections:

Section I: a) Information about present utilization pattern of camel hair: The researcher used structured interview schedule for this purpose, having question in relation to general profile of respondents and processing, demand, marketing of camel hair and its article. This information was collected from 30 camel owners.

b) Preference for to be developed value added articles: At the same time preference rating scale was used to find out the most preferred 10 value added articles out of 20 by 30 camel owners and 30 handicraft persons, with help of scoring and ranking method.

Section II: Development of value-added articles: Most preferred 10 value added camel hair article were developed with macramé. Some accessories were also used for surface enrichment.

Section III: Assessment of consumer preference of developed value-added articles: Assessment of developed articles were done by 30 camel owners, 30 handicraft persons and 30 consumers using 5-point rating scale in respect of parameter utility of articles, suitability of design, neatness of the article, overall appearance and marketed as handicraft.

3. Results and Discussions
3.1 General profile of the respondents:
The researcher made an effort to collect the general background information of the respondents that was obtained through a structured interview schedule. Information was collected and analysed in terms of age, gender, religion, caste, and monthly income and has been organised to depict a clear

picture of sample under study and presented below.

Age
Table 1 clearly shows that 33.33 percent of respondents were of age group 31-40 years, 23.33 percent of respondents were of age group 21-30 years, 23.33 percent of respondents were of 41-50 years age group, and remaining 20 percent respondents were present under 51-60 years age group.

Gender
Table 1 clearly depicts that majority of the respondent's 70 percent were male while 30 percent were female. The village women work with wool and cotton mainly and only men were found engaged with camel hair, as working with camels is a tedious job.

Caste
It is clear from table 1 that 70 percent of the total respondents belonged to scheduled caste, i.e., *meghwal* as loading was their main earning source. The percentage of other backward caste were 26.66 percent and only 3 percent respondents belonged to general category.

Religion
Table 1 shows the percentage distribution of the respondents by religion. It was found that 86.66 percent respondents were Hindu and only 13.33 percent was Muslim.

Total monthly income (from all income sources)
It is revealed from table 1 that 36.66 percent of respondents earn in between 6100-7000 Rs.; 23.33 percent of respondent had monthly income in range of 5100-6000 Rs.; 16.66 percent respondents earn 3100-4000 Rs. while 13.33 percent earn in the range of 4100-5000 Rs. and 10 percent earns above 7000 Rs. monthly. Monthly income in this study is earned by all the sources of income.

Source of income
Table 1 depict that all the respondents had animal rearing as their income source along with that, they had many other sources like; 33.33 percent does load, 26.66 percent earn money by weaving and selling of camel hair,16.66 earns by weaving article with farming and spinning, 10 percent does weaving of articles, 10 percent had service, same percent of respondents were involved in weaving articles, but there was only 3 percent respondent who does only animal rearing.

Total number of animals
Analysis of table 1 shows that half of the respondents (50%) had animals in the range of 1-3 whereas 30 percent had 3-5 animals, 20 percent were owner of 5-7 animals. The respondents had camels, cows, buffalos, and goats in their flock.

Total number of camels
Table 1 indicates that 76.66 percent of respondents had only 1 camel, 23.33 percent had 2 camels, as camel rearing requires knowledge, experience, and careful attention to the unique needs and challenges associated with these animals.

Table 1: General profile of the respondents

N=30

S. No	Aspects	Categories	Frequency	Percentage
1.	Age (in years)	21-30	7	23.33
		31-40	10	33.33
		41-50	7	23.33
		51-60	6	20
2.	Gender	Male	21	70
		Female	7	30
3.	Caste	General	1	3
		Schedule caste	21	70
		Other backward class	8	26.66
4.	Religion	Hindu	26	86.66
		Muslim	4	13.33
5.	Total monthly income (in Rs.)	3100-4000	5	16.66
		4100-5000	4	13.33
		5100-6000	7	23.33
		6100-7000	11	36.66
		Above 7000	3	10
6.	Source of income	Animal rearing	1	3
		Animal rearing + weaving article	3	10
		Animal rearing + weaving article + selling of hair	8	26.66
		Animal rearing + weaving article + farming + spinning	5	16.66
		Animal rearing + service	3	10
		Animal rearing + loading	10	33.33
7.	Total number of animals	1-3	15	50
		3-5	9	30
		5-7	6	20
8.	Total number of camels	1	23	76.66
		2	7	23.33

3.2 Camel hair and its present utilization pattern Utilization pattern of camel hair

Table 2: Two-way frequency and percentage distribution of utilization pattern of camel hair

S. No	Article	Household utilization N=20		Commercial utilization N=28	
		Frequency	Percentage	Frequency	Percentage
1.	Cart Bag (*Chanti*)	8	40	10	35.71
2.	Carpet (*Bhakhla*)	15	75	9	32.14
3.	*Dhurrie*	8	40	13	46.42
4.	*Kambal*	11	55	12	42.85
5.	Rope	10	50	17	60.71
6.	Mat	0	-	2	7.14

Table 2 reveals that 20 respondents out of 30 respondents utilize the camel hair for household purpose and 28 respondents utilize it for commercial purpose.

Rope is the most popular item prepared by the respondents for commercial purpose and carpet (*Bhakhla)* is the most popular item as household utilization. *Kambal* and rope were the other item prepared by nearly 55 percent of the respondent for household utilisation slightly less than 60.71 percent of the respondent prepared rope for the commercial utilisation while only 2 respondents prepare mat.

3.3 Preference of to be developed article
As highly inspired from the macrame, a list of 20 value added articles were selected from which 10 articles can be developed from camel hair yarn through macrame knotting technique. Then for developing the top 10 most preferred article 30 camel owners and 30 handicraft persons were approached to rank these 20 value-added articles in order of their preferences.

Table 3: Preference of respondents regarding development of article N=60

S. No	Article	Score Obtained	Mean percent Score	Rank
1.	Curtain holder	322	53.6	6
2.	Rug	228	38.00	11
3.	Coaster	330	55.00	5
4.	Napkin holder	384	64.00	4
5.	Pot holder	385	64.16	3
6.	Pot cover	195	32.5	16
7.	Key ring chain	265	44.16	8
8.	Utility basket	230	38.33	10
9.	Tray	432	72.00	1
10.	Hanging basket	226	37.6	12

11.	Bottle cover	425	70.83	2
12.	Pen stand	245	40.83	9
13.	Wall hanging	110	18.33	19
14.	Purse	220	36.66	14
15.	Foot mat	218	36.33	15
16.	Table runner	222	37.00	13
17.	Watch	185	30.83	17
18.	Telephone mat	165	27.5	18
19.	Magazine holder	108	18.00	20
20.	Belt	280	46.6	7

The investigation of table 3 shows that preferences for articles was ranged in 1 to 10 ranks. Maximum score was achieved by Tray with a total score of 432. Second position with score of 425 was achieved by bottle cover, followed by pot holder with scores 385, and then napkin holder with score of 384. Rank of other articles was coaster (5), curtain holder (6), belt (7), key ring chain (8), pen stand (9) and utility basket (10)

3.4 Development of value-added articles
Macrame technique was used to produce the article by using Camel hair yarn. The article was developed from four different kind of basic knots i.e., Lark's head knot, half knot twist, square knot test and diagonal half hitch knot.
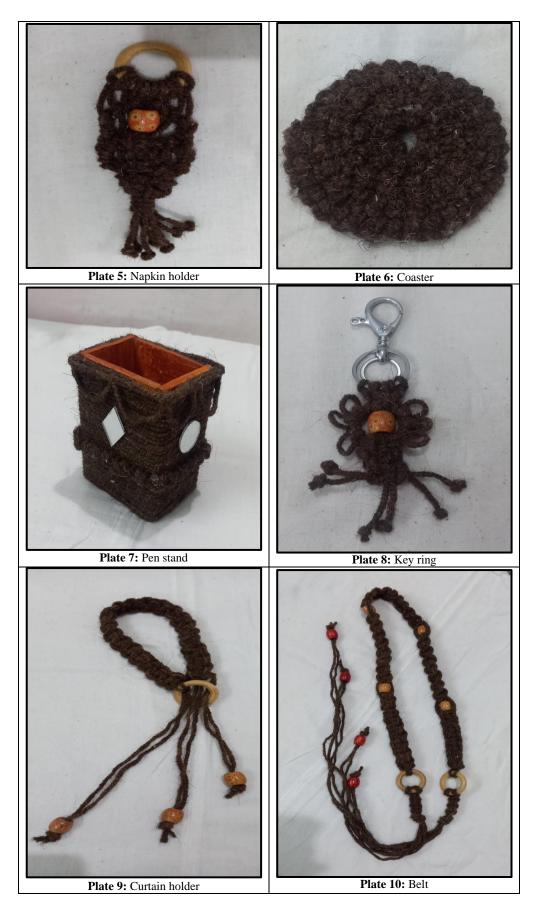
Different kinds of knot and binding techniques were used to make the article unique and attractive. For surface enrichment different accessories were used like wooden beads and wooden ring. These accessories made the articles more appealing. The article development has taken almost a month to be prepared.

Table 4: Developed value-added articles

Plate 1: Tray

Plate : Bottle cover

Plate 3: Pot holder

Plate 4: Utility basket

Plate 5: Napkin holder

Plate 6: Coaster

Plate 7: Pen stand

Plate 8: Key ring

Plate 9: Curtain holder

Plate 10: Belt

3.5 Consumer preference for developed value-added articles by respondents: After completion of article, these value-added articles were evaluated by the 90 respondents, including 30 camel owners, 30 handicraft person and 30 consumers. The responses given by respondents for each article was recorded and tabulated to calculate its percentage and give them a score.

Table 5: Preference score for different value-added articles and their relative ranking

N=90

S. No.	Criteria of evaluation /articles	Suitability of article		Utility of article		Neatness of article		Overall appearance		Marketed as handicraft		Total score (2250)	
		Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
1.	Tray	377	2	384	1	388	2	392	2	388	2	1929	1
2.	Bottle cover	359	3	378	3	376	3	376	4	411	1	1900	2
3.	Pot holder	357	5	367	5	357	6	398	1	375	3	1854	4
4.	Utility basket	396	1	364	6	405	1	385	3	349	6	1899	3
5.	Napkin holder	337	7	319	8	339	7	331	8	367	5	1693	8
6.	Coaster	332	8	326	7	373	5	360	6	311	9	1702	7
7.	Key ring	283	10	267	10	307	9	283	10	315	8	1455	10
8.	Pen stand	358	4	293	9	289	10	361	5	338	7	1639	9
9.	Curtain holder	356	6	379	2	375	4	324	9	308	10	1742	5
10.	Belt	296	9	374	4	329	8	354	7	374	4	1727	6
	Total score (4500)	3451		3451		3538		3564		3536		17540	
	Preference Index	76.68%		76.68%		78.62%		79.20%		78.57%		77.95%	

The data presented in table 24 clearly shows the score of article and relative ranking of each. It was found that tray achieve the highest total score. The Highest scores were given to tray based on suitability of design, utility of article, neatness of article, overall appearance and marketed as handicraft. Tray achieved first rank and second highest in parameter of utility of article, suitability of design, neatness of design, overall appearance and marketed as handicraft. Bottle holder occupied second rank with different position in different parameter achieve first rank in marketed as handicraft. After tray the bottle cover and utility basket and pot holder achieve third and fourth rank respectively. Under parameters of Suitability of article and neatness of article the utility basket occupied first rank while it occupied third rank in total scoring. The keyring obtains the last rank under the parameters of suitability of design utility of article and overall appearance while it holds 9th rank under the parameter of neatness of article the pen stand holds different ranks in different parameter and get a total ranking of 9 followed by keychain which got the 10th rank.

The researcher is highly appreciated by the respondents for the work done and the efforts for development of these value-added articles. They found the idea of using camel hair yarn with macrame technique very innovative. The appearance of the article is aesthetically high and can have very good saleability in the domestic market as well as for the foreign tourists.

Conclusion

Thus, it is concluded that developed value-added articles were highly preferred in terms of all parameters. Idea of utilizing camel hair with combination of macramé technique was appreciated by all 3 categories of respondents. It is a way to create an innovation from natural camel hair which was not much utilized, it will provide a bright future in field of handicraft. Camel hair with other creative technique or with other natural hair or novelty yarn can be used as an entrepreneur by using it in production of different handicraft articles for utility and decorative purpose. This study is a small attempt to provide attention and knowledge this area deserves.

References

1. Gupta D, Gurjar S. Social and economic aspects of the use of camel wool by camel herders for sustainable livelihood special reference: Sadri (Rajasthan). International journal of textiles and fashion technology. 2020;10(4):15-20.
2. Verma P, Mahajan S, Kaur D. Development of macrame dresses using textile waste. International journal of education and management. 2019;9(3):130-133.
3. Gurunathan BK, Krishnakumar M. Factors Influencing Apparel Buying Behaviour in India: A Measurement Model. Indian journal of research. 2013;2(3):218-224.
4. Roy R, Babel S. Consumer acceptability and market potential of developed diversified products from cotton rags and waste papers. Asian journal of home science. 2016;11(2):410-414.
5. Sharma A, Pant S. Properties of camel kid hair: chokla wool blended yarn and fabric. Studies on home and community science. 2017;7(3):139-143.
6. Rani B, Yadav S, Rose MN. Development of innovative knot combination designs using macrame technique. International journal of home science. 2019;3(1):193-196.