The Scientific Temper (2023) Vol. 14 (3): 747-752

E-ISSN: 2231-6396, ISSN: 0976-8653

Doi: 10.58414/SCIENTIFICTEMPER.2023.14.3.27

https://scientifictemper.com/

RESEARCH ARTICLE

Preserving heritage through Fusion: An empirical study of Chikankari and Madhubani art

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Abstract

Chikankari is a shadow work of Lucknow, the capital of India's biggest state (in terms of population), Uttar Pradesh. it is generally done on the see-through fabric in which the work done on the wrong side of the fabric is clearly visible from the right side of the fabric. On the other hand, Madhubani paintings are an art form of Mithila region of Bihar. It was the birthplace of Hindu goddess Devi Sita. It is said that when Devi Sita was getting married, her father king Janak wanted to embrace that moment in the form of paintings that's when this concept of Madhubani paintings came into reality. In this research paper the likeability and acceptability of the fusion of these two arts (Chikankari and Madhubani paintings) has been checked among consumers of Chikankari.

Keywords: Chikankari, Madhubani paintings, Fusion, Likeability, Acceptability.

Introduction

Chikankari work is one of the most famous forms of embroidery in the world, especially because it was originally done in India with traditional Chikan or paisley patterned fabrics. *Chikankari work* has been noted as being delicate, intricate, and incredibly detailed, making it one of the most beautiful embroidery forms worldwide(Manfredi, 2016). Initially, the needlework was finished using white thread, on neutral muslins identified as tanzeb. However, other fine fabrics are also being used, like cotton georgette and chiffon. Chikankari has spread its hands to other products to be engaged with such as interior decorative items, bedcovers etc. There are different stories which are related to the origin of Chikankari. The story narrates that a passenger, who was on the move through a small village in Lucknow was thirsty and requested a poor person for some water stopped and requested a poor peasant for water. After quenching the thirst, the traveller was grateful to the poor man and gratefully taught him the art of Chikankari so that the peasant would never be hungrygain (Kapur & Jain, 2016). Another justification honours Noorjahan, the queen of King Jahangir, with the foundation of the Chikankari work in India (P. M. Sharma, 2013).

Madhubani Painting is an ancient Indian art form, originated from the Mithila region of Bihar, around the village Ranti. This painting tops the list of art forms thataven't changed their styles in all these years and still has its essence of primitiveness and is a revolution for its artisans and the people of Bihar (Nigam & Ranjan, 2014). Due to its unique and beautiful structures and meaningful themes and concepts, became famous across the globe and has its enthusiasts from all around the world (Malhotra, 2007). It is not only an art form but now, is a life-changer for the women of Bihar which made them self-dependent, giving them financial freedom and support (M. S. Singh, 2000).

Fusion of different artform is a new concept in the market. According to this concept the impact of both the art forms should be visible in the final development. Different artforms which have already been done are the fusion of song and dance form, fusion of different paintings in interior designing etc. (E. Sharma *et al.,* 2014).

Methodology

The fusion of the 6 images of Madhubani paintings and the Chikankari motifs were performed in the previous work by the authors (Unnati & Fatma, 2022) by employing the Machine Learning technique of GANN with its

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How to cite this article: Unnati, Fatma, T. (2023). Preserving heritage through Fusion: An empirical study of Chikankari and Madhubani art. The Scientific Temper, **14**(3): 747-752.

Doi: 10.58414/SCIENTIFICTEMPER.2023.14.3.27

Source of support: Nil

Conflict of interest: None.

Received: 02/07/2023 **Accepted:** 09/08/2023 **Published** : 25/09/2023

implementation done in MATLAB version 2021a. Thereafter, the selected Madhubani paintings were painted on the cotton fabric and the Chikankari work was performed on the above Madhubani technique of GANN with its implementation done in MATLAB version 2021a. Thereafter, the selected Madhubani paintings were painted on the cotton fabric and the Chikankari work was performed on the above Madhubani Paintings according to the fused designs obtained through GANN (Simonyan & Zisserman, 2015). In this paper, we check the likability & acceptability of the above finished fusion designs. For attaining the above objective, the data was collected from the consumers through a questionnaire. Primary data was collected from the consumers who were using Chikankari products via google form methods. A total of 438 Google forms were filled among which 400 questionnaires were filled completely and the rest of them were not considered as they were incomplete. The above raw data obtained from the questionnaires was then incorporated into SPSS and afterwards analysed using SPSS by applying chi square tests to examine the relationship between variables discussed in hypotheses.

As the name suggests, a Chi-square (χ^2) statistic examines exactly how a prototype matches up with actual observations. Chi-square statistics are frequently used in hypotheses assessments because they can be evaluated using data from independent variables drawn from a large sample size, which should be arbitrary, raw and mutually exclusive (Y. K. Singh, 2006).

Based on the total number of variables and samples in an experiment, levels of freedom are used to determine if a specific null hypothesis can be rejected in hypotheses testing.

Statistical formula for Chi Square Test (Kothari, 2004):

$$X_c^2 = \sum \left\{ \frac{(O_i - E_i)^2}{E_i} \right\}$$

where:= *Degrees of freedom, = observed value(s) & = Expected value(s)*

Results

After chi square was applied to the variables the following results were deducted from the analysis (Tables 1-12):

Table 1 shows how many people were communicated and responded for the question in which they were their preference to gift to someone.

In table 2, the association between gender and preference to gift someone was calculated. In the above table count or technically said observed count and expected count are analysed for the question if they prefer it to gift someone for which observed count for 154 (79%) males said yes, 10 (5.1%) males said no and 31(15.9%) males were not sure about their response so they responded may be. In case of females 167 (82.3%) said yes, 5 (2.5%) females said

Table1: Case processing summary between Gender and preference to gift it to someone

	Cases					
	Valid		*Missing*		*Total*	
	N	*Percent*	*N*	*Percent*	*N*	*Percent*
Gender * Would you prefer to gift it to someone	400	100.0	0	0.0	400	100.0

Table 2: Association between Gender and preference to gift it to someone

Yes No			*Would you prefer to gift it to someone*			*Total*
			Maybe			
Gender	Male	Count	154	10	31	195
		Expected Count	157.0	7.8	30.2	195.0
		% within Gender	79.0%	5.1%	15.9%	100.0%
	Female	Count	167	5	31	203
		Expected Count	163.4	8.1	31.5	203.0
		% within Gender	82.3%	2.5%	15.3%	100.0%
	Other	Count	1	1	0	2
		Expected Count	1.6	.1	.3	2.0
		% within Gender	50.0%	50.0%	0.0%	100.0%
Total		Count	322	16	62	400
Expected count			322.0	16.0	62.0	400.0
% within gender			80.5	4.0	15.5	100.0

Table 3: Pearson chi square test for preference to gift it to someone.

	Value	*df*	*Asymp. Sig. (2-sided)*
Pearson chi-Square	13.102a	4	.011
Likelihood ratio	6.221	4	.183
Linear-by-linear association	.213	1	.645
N of valid cases	400		

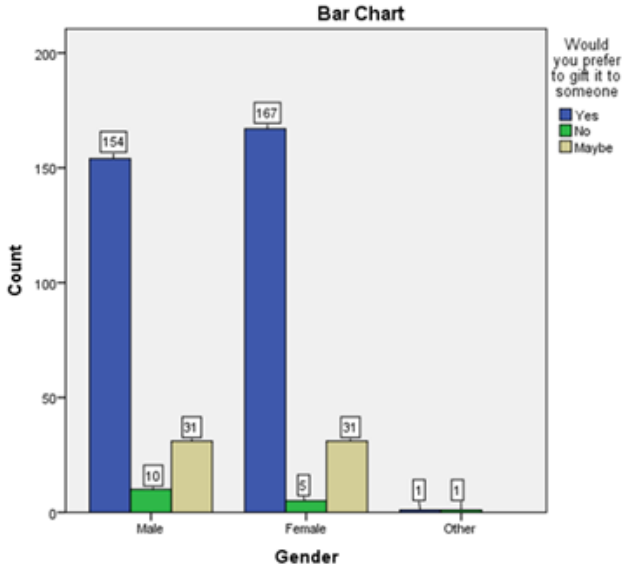

Figure 1: Bar graph to show the result for association between gender and preference to gift it to someone

Table 4: Case processing summary between Gender and preferred fabric

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender * Which fabric type would you prefer for this fusion work	400	100.0	0	0.0	400	100.0

Table 5: Association between gender and preferred fabric

silk cotton			Which fabric type would you prefer for this fusion work				Total
			muslin	georgette			
Gender	Male	Count	29	148	6	12	195
		Expected count	38.5	126.3	8.3	21.9	195.0
		% within gender	14.9	75.9	3.1	6.2	100.0
	Female	Count	50	110	11	32	203
		Expected count	40.1	131.4	8.6	22.8	203.0
		% within gender	24.6	54.2	5.4	15.8	100.0
	Other	Count	0	1	0	1	2
		Expected count	.4	1.3	.1	.2	2.0
		% within gender	0.0	50.0	0.0	50.0	100.0
Total		Count	79	259	17	45	400
		Expected Count	79.0	259.0	17.0	45.0	400.0
		% within Gender	19.8	64.8	4.2%	11.2%	100.0

no and 31 (15.3%) said may be. For the case of third gender one of them said yes and one of them said no. In this Table 4, expected value for males who said yes are 157; 7.8 was for no and 30.2 was for may be. For females expected value who said yes are163.4; 8.1 was for no and 31.5 was for may be and for the third gender expected value who said yes are 1.6; 0.1 was for no and 0.3 was for may be and the same is shown in bar chart.

Asymptotic significance of the Pearson Chi square test is 0.011, lower than significance level of 0.05. Therefore, gender of the person is related to their preference for gifting the experimented clothing (Table 3).

In the Table 5, the association between gender and fabric preference for fusion work was calculated. In the above table count or technically said observed count and expected count are analyzed for the question about preference of fabric for the fusion work for which 29 (14.9%) males were observed saying silk, 148 (75.9%) males chose cotton, 6 (3.1%) males chose muslin, and 12 (6.2%) males chose last option georgette. In case of females, 50 (24.6%) said silk, 110 (54.2%) said cotton, 11 (5.4%) said muslin and 32 (15.8%) said georgette. For the case of third gender, one of them chose cotton and the other one chose georgette for the fusion work of Chikankari and Madhubani. In this table, expected value for males who preferred silk is 38.5; for cotton it is 126.3; for muslin it is 8.3 and for georgette it is 21.9. Expected values for females who preferred silk is 40.1; for cotton it is 131.4; for muslin it is 8.6 and for georgette it is 22.8.

The asymptotic significance of the Pearson chi square test is 0.000, lower than significance level of 0.05. Thus, there is a correlation between gender and fabric preferences for making garments using fusion work (Table 6).

In the Table 8, the association between income group and preferred price range of purchase of Chikankari was calculated.

In the above table count or technically said observed count and expected count are analysed for the question that what price range do you prefer for Chikankari clothing for which observed count for people said below 1000 whose income was less than 20,000 was 82 (46.9%), 70 (40.0%) people said 1000–2000, 17(9.7%) people said 2000-3000 and 6 (3.4%) people said more than 3000.

In case of income range of 20,001-40,000, 23 (27.1%) said less than 1000, 42 (49.4%) people said 1000-2000, 17 (20.0%) said 2000–3000 and 3 (3.5%) said more than 3000. For the case of third income group that is 40,000–60,000, 9 (23.1%) said less than 1000, 14 (35.9%) people said 1000–2000, 12 (30.8%) said 2000–3000 and 4 (10.3%) people said more than 3000.

Table 6: Pearson Chi square test for preferred fabric

	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	24.716a	6	.000
Likelihood ratio	24.515	6	.000
Linear-by-linear association	2.951	1	.086
N of valid cases	400		

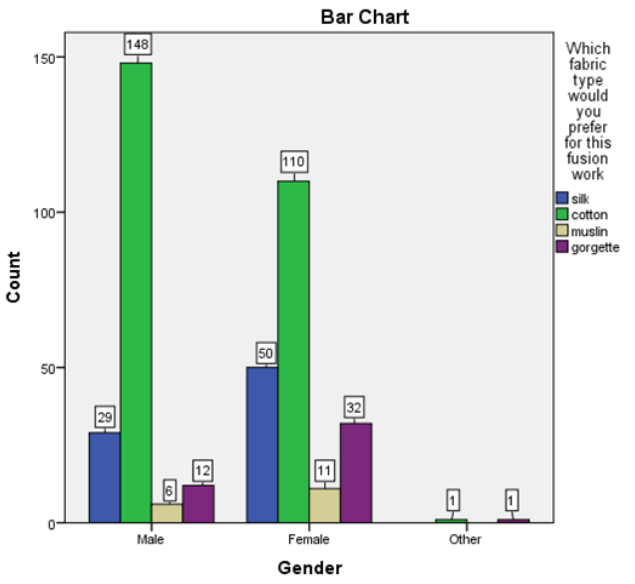

Figure 2: Bar graph to show the result for association between gender and preferred fabric

Table 7: Case processing summary between income group and preferred price range for fusion of chikankari

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Income group * What price range would you like for the is experiment	400	100.0	0	0.0	400	100.0

Table 8: Association between Income group and preferred price range for fusion of Chikankari and Madhubani painting

Below 1000 1000–2000			What price range would you like for the is experiment				Total
			2000-3000	more than 3000			
Income group	Below 20000	Count	82	70	17	6	175
		Expected count	58.2	72.6	32.8	11.4	175.0
		% within income group	46.9	40.0	9.7	3.4	100.0
	20001–40000	Count	23	42	17	3	85
		Expected count	28.3	35.3	15.9	5.5	85.0
		% within income group	27.1	49.4	20.0	3.5	100.0
	40000–60000	Count	9	14	12	4	39
		Expected Count	13.0	16.2	7.3	2.5	39.0
		% within Income group	23.1	35.9	30.8	10.3	100.0
	Above 60000	Count	19	40	29	13	101
		Expected Count	33.6	41.9	18.9	6.6	101.0
		% within Income group	18.8	39.6	28.7	12.9	100.0
Total		Count	133	166	75	26	400
		Expected count	133.0	166.0	75.0	26.0	400.0
		% within income group	33.2	41.5	18.8	6.5	100.0

For the fourth case, that is the group of people earning more than 60,000, 19 (18.8%) said less than 1000, 40 (39.6%) people said 1000–2000, 29 (28.7%) people said 2000–3000 and 13 (12.9%) people said more than 3000. In this table the expected count for earning less than 20,000 was 58.2 for less than 1000, 72.6 for 1000–2000, 32.8 for 2000–3000 and 11.4 for more than 3000.

For the income range 20,000-40,000 the expected count for less than 1000 is 28.3, for 1000-2000 it is 35.3, for 2000–3000 it was 15.9 and for more than 3000 it was 5.5. For the income range of 40,000–60,000 expected count for people saying less than 1000 is 13.0, for people saying 1000–2000 is 16.2, for 2000–3000 it is 7.3 and for more than 3000 it is 2.5 and for the fourth range that is more than 60,000 expected count for less than 1000 is 33.6, for 1000–2000 it is 41.9, for 2000–3000 it is 18.9 and for more than 3000 it is 6.6 and

Table 9: Pearson chi square test for preferred price range for fusion of Chikankari and Madhubani paintings

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	46.921a	9	.000
Likelihood Ratio	46.779	9	.000
Linear-by-Linear Association	39.542	1	.000
N of Valid Cases	400		

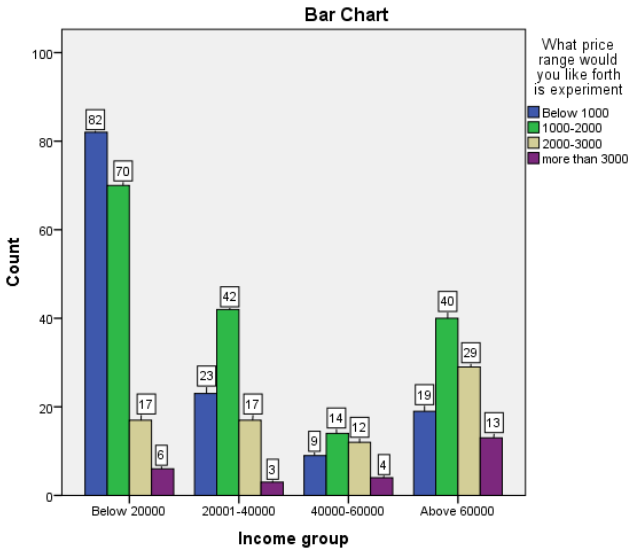

Figure 3: Bar graph to show the result for association between income group and preferred price range for fusion of chikankari

Table 10: Case processing summary between Occupation and preferred price range for fusion of Chikankari

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Occupation * What price range would you like forth is experiment	400	100.0	0	0.0	400	100.0

the same is shown in the bar chart. For the income range 20,000–40,000 the expected count for less than 1000 is 28.3, for 1000–2000 it is 35.3, for 2000–3000 it was 15.9 and for more than 3000 it was 5.5. For the income range of 40,000 –60,000 expected count.

In Table 11, the association between occupation and preferred price range for purchase of Chikankari and Madhubani painting was calculated. In the above table count or technically said observed count and expected count are analysed for the question that what price range do you prefer for fusion of Chikankari and Madhubani painting for which observed count for people said below 1000 who have service as their occupation was 29 (24.8%), 43 (36.8%) people said 1000-2000, 31 (26.5%) people said 2000–3000 and 14 (12.0%) people said more than 3000.

In case of professional occupation, 14 (28.0%) said less than 1000, 21 (42.0%) people said 1000–2000, 13 (26.0%) said 2000–3000 and 2 (4.0%) said more than 3000. For the case of business occupation, 12 (42.9%) said less than 1000,

Table 11: Association between Occupation and preferred price range for fusion of Chikankari and Madhubani painting

			What price range would you like for the is experiment				*Total*
Below 1000			*1000-2000*	*2000-3000*	*more than 3000*		
Occupation	Service	Count	29	43	31	14	117
		Expected count	38.9	48.6	21.9	7.6	117.0
		% Within occupation	24.8	36.8	26.5	12.0	100.0
	Professional	Count	14	21	13	2	50
		Expected count	16.6	20.8	9.4	3.3	50.0
		% Within occupation	28.0	42.0	26.0	4.0	100.0
	Business	Count	12	8	6	2	28
		Expected count	9.3	11.6	5.3	1.8	28.0
		% Within occupation	42.9	28.6	21.4	7.1	100.0
	Unemployed	Count	27	38	5	4	74
		Expected count	24.6	30.7	13.9	4.8	74.0
		% Within occupation	36.5	51.4	6.8	5.4	100.0
	Other	Count	51	56	20	4	131
		Expected count	43.6	54.4	24.6	8.5	131.0
		% Within occupation	38.9	42.7	15.3	3.1	100.0
Total		Count	133	166	75	26	400
Expected count			133.0	166.0	75.0	26.0	400.0
% within occupation			33.2	41.5	18.8	6.5	100.0

Table 12: Pearson chi square test for preferred price range for fusion of Chikankari and Madhubani paintings

	Value	*df*	*Asymp. Sig. (2-sided)*
Pearson chi-square	28.947a	12	.004
Likelihood ratio	30.053	12	.003
Linear-by-linear association	17.227	1	.000
N of valid cases	400		

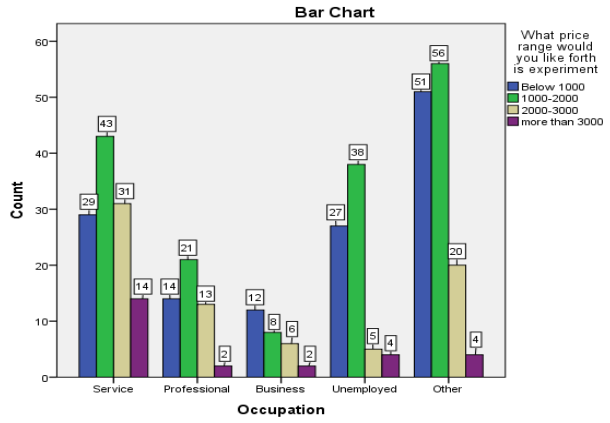

Figure 4: Bar graph to show the result for association between occupation and preferred price range for fusion of chikankari

8 (28.6%) people said 1000-2000, 6 (21.4%) said 2000–3000 and 2 (7.1%) people said more than 3000. For unemployed, 27 (36.5%) said less than 1000, 38 (39.6%) people said 1000–2000, 5 (6.8%) people said 2000–3000 and 4 (5.4%) people said more than 3000.

In this table the expected count for service occupation was 38.9 for less than 1000, 48.6 for 1000–2000, 21.9 for 2000–3000 and 7.6 for more than 3000. For the professional occupation the expected count for less than 1000 is 16.6, for 1000–2000 it is 20.8, for 2000–3000 it was 9.4 and for more than 3000 it was 3.3. For business occupation expected count for people saying less than 1000 is 9.3, for people saying 1000–2000 is 11.6, for 2000–3000 it is 5.3 and for more than 3000 it is 1.8, for unemployed expected count for less than 1000 is 24.6, for 1000–2000 it is 30.7, for 2000–3000 it is 13.9 and for more than 3000 it is 4.8. For other occupation expected count for less than 1000 is 43.6, for 1000–2000 it is 54.4, for 2000–3000 it is 24.6 and for more than 3000 it is 8.5. Same is shown in the bar chart.

Asymptotic significance of the Pearson Chi square test is 0.004, lower than significance level of 0.05. As a result of these findings, we can conclusively conclude that occupation and preferred price range for Chikankari fusion are significantly related.

Conclusion

This research paper concludes that the Gender, income group and Occupation of a person do impact the choice of their final product as in case of Gender e association was found with two questions that are if they would like to gift the fusion work based product to someone in which females were more interested in gifting these type of products for gifting purpose and other was what fabric preference would they like in which cotton was most liked by both the gender but number of females was a slight more than that of males

for the variable of Income group and occupation in the these variable one question was adamant that what will be the price range of the product. The income group who had an income of less than 20,000 have mostly opted for the price range of less than 1000 rupees and all the other income groups have opted for 1000–2000 rupees of price for the fusion work. Occupation also impacted the same question about the price range of the fusion work, in this variable most opted answer was 1000–2000 the people who were having the occupation other than the options given were the maximum quantity of people who responded for the same.

Acknowledgments

The authors are highly thankful to Dr. Tatheer Fatma, Department of Home Science, Khwaja Moinuddin Chishti Language University, Lucknow for helping and guiding in the research. This endeavor would not have been possible without her support.

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