



DESIGN AND DEVELOP A RANGE OF CLOTHING FOR INFANTS

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ABSTRACT

Infant clothing, often known as baby attire, is clothing made with a newborn in mind. Baby fashion, as a kind of social-cultural consumerism, encodes in children's clothes the portrayal of a wide range of social features, including but not limited to financial position, gender, and ethnicity. researching and creating a line of baby clothes Here, we look at the results of our survey of women who have dressed their babies in the produced line of Infant wear to gauge their thoughts on the designs and their willingness to choose Khadi for this purpose. In this stage, we have also reviewed and analyzed the outcomes of filing an application for the registration of a children's clothing brand.

Keyword: Infant, Indian Market, Design Development and Khadi

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208

INTRODUCTION

Clothing has been an integral part of man's culture from the beginning of time. Clothing's need prompted the study of fibers and the development of weaving and spinning processes. The revolution occurred when machines replaced humans in the labor-intensive processes of spinning and weaving. The power loom quickly overtook the previously dominant handloom, and its woven materials became the clear favorite among consumers. Clothes are only as good as the fabric they're produced from, and that goes whether the fabric was woven on a handloom or a power loom, with natural or synthetic fibers. (Dickens, 1944) puts it best: "Clothing serves in the main the social purpose just as food serves in the main a health purpose. "There would be no perceived necessity for clothes other than its ability to keep one warm if people weren't responding to one another in social circumstances. There would be no style or trend shifts, for sure. No one would choose one kind of clothing over another.

It is common practice in today's society to create an instantaneous impression about a person based on their level of socioeconomic and cultural sophistication based on the way they are dressed. Clothing reduces the complexity of a person's or a group's appearance. However, hand-woven KHADI is in a league of its own. In the past, KHADI was looked down upon as a cloth only the affluent could purchase. Understanding the function of "KHADI" in a futuristic civilization where climate change poses the most immediate danger is crucial. This is a really important question since it forces us to choose our underlying philosophy and how we want to live. Fabrics made with the centralized production system using sophisticated technology are undoubtedly more cost-effective than those made using the decentralized system based on labor-intensive basic machinery like the spinning wheel and the handloom in the case of KHADI (Swaroop, 2002-03). However, we ignore a very harsh reality here: the struggle of a person worked in inhumane circumstances in large enterprises on low



salaries and the drawbacks of factory-made synthetic textiles. To that end, each of us must make choices about the kind of life we want for ourselves and the habits we hope to establish.

Since clothes can shield the skin from harm, and since a newborn baby's skin is the most delicate it is imperative that modern newborns have specially designed garments to keep their delicate skin safe. The "infant" or extremely young baby has not yet developed the ability to identify familiar faces or things. His self-knowledge, especially of his physical self, makes up the bulk of his level 4 life awareness. The universe of an infant consists only of what immediately affects his senses. The capacity to feel is almost complete at birth. After a few days, pain sensitivity develops, and a response to cutaneous irritation often occurs by the end of the first week.

In today's globe, "Global Warming" is the most pressing problem. The natural world has deteriorated with each stride that Man has taken toward growth and development. Man has taken full use of nature to satisfy his demands. He has aided in an environmentally disastrous expansion. It's ironic that in this day and age, when everyone professes to be concerned about environmental destruction, no real answer is in sight. Reducing our reliance on machines is essential if we are to prevent further damage to the environment.

REVIEW OF LITERATURE

Sara Liski (2020) If you've been keeping up with Finnish media over the last few years, you know that parents have grown more interested in the attire their children wear. Similarly, writers on consumerism have taken note of the growth of the baby clothes industry. Consumption items play a vital impact in life transitions, as has been shown by several scientific studies. When taking on a new job, like as becoming a mother for the first time, it might be helpful to surround oneself with consumables that have symbolic implications. The purpose of this research was to learn more about how buying baby clothes affects new moms. The goal is to

provide coverage of the infant clothing market, which seems to be growing but is not yet well explored by the field of consumer research. Furthermore, there are not nearly as many research done in the realm of marketing and psychology as there are on parenting and consumerism from a sociocultural viewpoint. Therefore, the purpose of this research is to make a contribution to the area of socio-cultural study by investigating the symbolic purchase of infant apparel among first-time moms in Finland. The study draws on the Consumer Culture Theory as its theoretical framework, which recognizes the importance of the symbolic and interpretive components of the products we consume. Mixed methods including photo elicitation interviews and narrative inquiry are used to perform this exploratory research.

Rita, afroza. (2018). Parents are very picky about what they put on their children. Children's apparel is designed with their safety and comfort in mind. The impact of fabric and style on children's clothing's actual physical comfort. Unfortunately, certain textiles trigger allergic reactions on children's sensitive skin, making clothing less pleasant to wear. In addition, kids shouldn't be restricted in their mobility, and play should be emphasized. A child's clothing should make them feel safe and at ease. Dresses that cause discomfort might stand out as odd and irritating to others. When choosing clothes for children, it's important to keep their comfort, ability to assist themselves, attractiveness, and development in mind. There are distinct needs for each age group of children. Any firm that is serious about succeeding must make the needs and wants of its customers its top priority. When a person's wants, needs, or expectations are met, they experience satisfaction. The purpose of the research was to bring together the many needs of kids wear development with the preferences and expectations of customers when purchasing children's clothing. There were a total of 100 people who filled out the survey; 80 of them were parents or guardians, and 20 were

expecting. The parents and guardians were selected using a simple random selection process.

Shaharuddin, siti & hatef, mazi. (2020). The objective of this research was to create a prototype for sustainable, multipurpose children's apparel. In this study, the author suggests a new kind of multipurpose clothing that may be dissolved or recycled when its useful life is through. In particular, the Eco-fashion approach of creating garments was used. Four pieces of multipurpose children's apparel were created after an analysis of consumer trends and issues in children's product design. Material choice, zero-waste methods, design for disassembly, and children's health are at the forefront of multifunctional children's apparel development. Thus, in order to preserve the environment, it is possible to implement sustainability through the use of recyclable materials, the promotion of profit and human health, and the adherence to international standards for children's clothing design, all of which involve the application of zero-waste design techniques and multifunctional design guidelines. The results may be used in a variety of clothing items to reduce environmental damage and save natural materials.

Ms. Ashima arora & dr. Deepika purohit (2020) In 2018, the worldwide baby clothing industry was estimated to be worth USD 135.5 billion. According to the little research that has been done on the topic, the three most significant criteria for choosing infant-wear clothing are safety, comfort, and convenience. As part of a larger study looking at how changes in infant clothing design have affected India's export and import patterns, this investigation is continuing. Therefore, the paper's primary emphasis is on the criteria used in the development of infant apparel. Children under the age of 18 months have sensitive skin, are more mobile, and outgrow their clothing more quickly than older children. As a result, parents confront difficulties in terms of ease, cost, and the frequent need for new garments as the baby grows. Infant-wear Apparel must meet the

standards for product safety and comfort, but the needs of both parents and infants should be taken into account throughout the design process to provide the best possible end result. Five items are the primary focus of the research, and the opinions of a select group of designers have also been considered. **Rose dogbey, mercy kuma kpobee, victor dedume, joseph osei (2015)** When producing clothing for children, manufacturers put a premium on using textiles that ensure their safety and comfort. Certain textiles are less pleasant for youngsters to wear because they cause allergic reactions on their sensitive skin. This research set out to determine how different materials and cuts affect the ease of movement when wearing children's clothing. The research method was classified as descriptive. The survey included a total of 100 participants: 30 fashion designers and 70 parents or guardians. For the fashion designers, we utilized a simple random selection method, whereas for the parents and guardians, we adopted a more chance-based approach. Frequencies and percentages, two examples of descriptive statistics, were employed to examine the data. To further investigate the interplay of factors, crosstabulations were also used. According to the results, parents cared more about how their children looked than about other variables like safety and comfort. However, the vast majority favored cotton fibers when dressing their kids. Most of the designers were unaware that certain textiles might cause allergic reactions in children's skin. Fashion designers primarily thought about color, design, and function while choosing textiles for children's clothing. Most designers have taken certain precautions to ensure the safety of children's clothing. These include using linen, using lightweight zippers, and using fewer buttons. According to the findings, the NVTI and the Ghana Fashion Designers Association need to educate its members on how specific textiles affect the sensitive skin of youngsters. Improved safety precautions in clothing production may be implemented with the

help of the NVTI and the Fashion Designers Association of Ghana.

RESEARCH METHODOLOGY

A research technique is a set of procedures for efficiently addressing a research issue. Research methodology is the study of how scientific research is conducted.

Sources of Data collection

The purpose of this research is to create a Khadi infant clothing line and gauge consumer interest in it. Primary and secondary data were gathered in three stages between 2011 and 2013 to carry out the research. Research, laboratory testing, design iterations, and acceptance testing on an infant clothing line made from Khadi were all part of the process. In Phases, the same thing happened. Below, we'll break out the data gathering methods that were used at each stage.

The same group of future moms and pregnant women was used to gauge the clothes' reception. These expectant moms had already submitted details about their shopping habits. All of these ladies were monitored when they gave birth between the end of March and the beginning of April of 2013 to guarantee the reliability of the data to be obtained.

Primary Sources Surveys and the panel's decisions were the primary sources of information for the research. There were four groups of people polled for this study.

Secondary Sources Journal articles, periodicals, theses (both published and unpublished), websites, government reports (such as those from the Bureau of Indian Standards and the Chandigarh Administration), and conference proceedings were all mined for secondary data. The newspaper articles were utilized as a secondary source of information.

Sampling Design Sample designs are predetermined strategies for collecting samples. The current research was conducted in many periods, each with a unique set of participants. Retail apparel

store owners, prospective moms, and new mothers made up the study's population.

Data Analysis After the data was collected, it needed to be processed and evaluated in accordance with the strategy that had been developed.

DATA ANALYSIS

In this stage, we analyzed the information provided by the moms. Mothers who dressed their babies in the studied spectrum of baby wear provided the opinions used in the study's analysis. In this part, we examine the mothers' responses to the patterns created and the widespread adoption of Khadi as Infant wear. Comparing Khadi-based infant wear offered to mothers with infant wear manufactured in other textiles worn by moms allowed for statistical analysis of the data that tested the acceptability of Khadi. Eleven different factors were used to determine whether or not Khadi is suitable for infant clothing.

Factor analysis- Separate analyses were conducted on the data for Infant wear in Khadi and Infant wear in Other Fabrics before combining the two sets of results. Infant clothing created from Khadi and clothing manufactured from other textiles were compared and contrasted. Factor analysis was used to first choose the most essential factors out of the 11 that best described the data's variance. Before using factor analysis, we made sure there wasn't any interdependence between our variables of interest. Kaiser-Meyer-Olkin (kmo) and Bartlett's sphericity tests were utilized for this aim. We reject the Null Hypothesis H0 (the data is independent) since the KMO test showed that the data is co-related with a value of 0.877, and the Bartlett test verified this with a p value of 0.000. The entire variance was investigated when the dependency was established. Only two of the eleven components were responsible for explaining 81.76 percent of the total variance. The information is laid forth in the table below.

Table 1 Behaviour of components explaining the variation in the data in case of Infant wear in Khadi

Component	Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings			
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	7.85	71.44	71.44	7.85	71.44	71.44	7.85	71.44	71.44	
2	1.13	10.32	81.76	1.13	10.32	81.76	1.13	10.32	81.76	
3	.73	6.65	88.42							
4	.43	3.91	92.33							
5	.27	2.47	94.81							
6	.17	1.59	96.40							
7	.16	1.47	97.88							
8	.08	.74	98.63							
9	.06	.56	99.19							
10	.05	.45	99.65							
11	.03	.34	100.00							
Extraction Method: Principal Component Analysis.										

The Rotated Component Matrix was discarded when the two parts were finalized. Comfort, Fit, and Stitching (with extraction values of 0.959, 0.940, and 0.939, respectively) were selected as surrogate

variables on the basis of the rotational component Matrix because they were among the two components that described the most variance in the data. Below is a table displaying the information.

Table 2 Rotated Component Matrix^a in case of Infant wear in Khadi

Variables	Rotated Component Matrix ^a	
	Component	
	1	2
Fabric	.932	-.116
Fit	.940	.105
Colour	.847	.015
Wash ability	.888	.016
Styling	.934	.171
Stitching	.939	.024
Surface Ornamentation	.432	.737
Durability	.908	-.171
Comfort	.959	-.059
Satisfying patriotic feeling	.484	-.706
Newness	.825	.082

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
 a. Rotation converged in 3 iterations.

In factor analysis, one can either use a variety of linear combinations in which the variables within the combination are co-related but do not overlap with the other groups in terms of variation, or one can select the variables by consulting a table containing the maximum value of various variables, known as the Rotated Component Matrix. In the current investigation, we used the second strategy, with variable selection guided by the Rotated Component Matrix.

Infant wear in Other Fabrics: We started by picking the 11 factors that would be most useful in explaining the data's variance. As the result of the KMO test is 0.592 (it must be larger than 0.5 in order to utilize Factor Analysis), and as the p value of the Bartlett test is 0.00, we may conclude that the data is not independent and reject the null hypothesis H0.

Table 3 Behaviour of components explaining the variation in the data in case of Infant wear in fabrics other than Khadi

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% Variance	Cumulative %	Total	% Variance	Cumulative %	Total	% Variance	Cumulative %
1	4.302	39.109	39.109	4.302	39.109	39.109	3.517	31.977	31.977
2	1.461	13.278	52.388	1.461	13.278	52.388	1.714	15.578	47.556
3	1.219	11.083	63.471	1.219	11.083	63.471	1.507	13.704	61.259
4	1.158	10.530	74.001	1.158	10.530	74.001	1.402	12.742	74.001
5	.882	8.015	82.016						
6	.578	5.253	87.270						
7	.501	4.558	91.828						
8	.391	3.559	95.386						
9	.214	1.950	97.336						
10	.187	1.703	99.040						
11	.106	.960	100.000						

Extraction Method: Principal Component Analysis.

After the dependency was established, we looked at the overall variance. Four of the eleven components accounted for 74.0% of the overall variance.

Table 4 Mothers' Desire to Change various Attributes in Khadi-based Infant wear Fabric



Attributes of Fabric	Requires changes		No change required	
	Frequency of responses (f)	Percentage responses(%)	Frequency of responses (f)	Percentage responses(%)
Colour fastness	5	17	25	83
Softness of fabric	4	13	26	87
Shrinkage Control	5	17	25	83
Durability	5	17	25	83
Specific surface development	3	10	27	90
Skin friendliness	3	10	27	90
Comfort	1	3	29	97

According to the data in the table above, moms did not have great hopes for innovation in the fabric used in Khadi-based infant apparel. Only 10% of moms are hoping for better surface development, while 17% desire better colorfastness, durability, and

shrinking. Among moms, just 3% want adjustments made to the fabric for improved comfort. Therefore, the data analysis makes it clear that the variety of newborn apparel made using khadi is suitable and highly pleasant for the kid.

Developed Designs of LOGOS

Table 5 Assessment of samples of a LOGO by Panel of Judges

Design no.	Panel of Judges							Total 70	Rank 5
	A	B	C	D	E	F	G		
	Max Marks 10								
D1	5	5	7	8	7	7	6	45	4
D2	6	6	5	5	7	7	5	41	5
D3	8	7	6	7	8	8	3	47	3
D4	7	8	7	8	9	8	6	53	2
D5	8	10	9	9	10	8	6	60	1

Table 6 Descriptive Analysis of the data of Assessment of LOGOS by Panel of Judges

S.no.	Sample No.	Mean	Standard Error	Mode	Skewness	Kurtosis
1	D1	6.42	0.428	7	-0.23	-1.22
2	D2	5.85	0.340	5	0.35	-1.81
3	D3	6.71	0.680	8	-1.80	3.44
4	D4	7.57	0.368	8	-0.27	0.04
5	D5	8.57	0.52	8	-0.97	1.00

The panel's scores, the rankings, and the descriptive analysis all pointed to Design D5 as the clear winner, therefore it's the one that was chosen to finalize the LOGO and submit the Brand Registration Application.

Developed Designs of LABELS

Table 7 Assessment of samples of Labels by Panel of Judges



Design no.	Panel of Judges							Total 70	Rank 5
	A	B	C	D	E	F	G		
	Max Marks 10								
D1	7	8	6	8	4	4	5	42	5
D2	8	6	8	7	5	5	6	45	4
D3	8	7	7	8	7	8	7	52	3
D4	7	7	8	9	7	8	7	53	2
D5	10	9	9	10	7	10	6	61	1

Table 8 Descriptive Analysis of the data of Assessment of Labels by Panel of Judges

S.no.	Sample No.	Mean	Standard Error	Mode	Skewness	Kurtosis
1	D1	6	0.65	8	4.53	-1.97
2	D2	6.42	0.48	8	0.22	-1.71
3	D3	7.42	0.20	7	0.37	-2.8
4	D4	7.57	0.29	7	1.11	0.27
5	D5	8.71	0.60	10	-1.05	-0.38

It is clear that Design-D5 is the best based on the panel's ratings, the rankings assigned, and the analysis of the data provided, The Brand's Clothing Line's Label is Complete and Will Be Used on Future Items.

Developed designs of TAGS

Table 9 Assessment of samples of Tags by Panel of Judges

Design no.	Panel of Judges							Total 70	Rank 5
	A	B	C	D	E	F	G		
	Max Marks 10								
D1	7	7	9	7	6	7	6	49	4
D2	5	6	7	8	7	8	7	48	5
D3	8	6	8	7	7	8	7	51	3
D4	7	8	8	7	8	9	6	53	2
D5	9	9	10	8	8	10	9	63	1

Table 10 Descriptive Analysis of the data of Assessment of Tags by Panel of Judges

S.no.	Sample No.	Mean	Standard Error	Mode	Skewness	Kurtosis
1	D1	7	0.37	7	1.4	3
2	D2	6.85	0.40	7	-0.77	0.26
3	D3	7.28	0.28	8	-0.59	-0.35
4	D4	7.57	0.36	8	-0.27	0.04
5	D5	9	0.30	9	0	-1.2

Paper designs of the labels were created, and then were developed on narrow textiles, taking into account the basics of a label and the delicate skin of the newborn. The Tags were finalized and will be used on the **Trade mark Registration -Perna...an inspiration**

Clothing Range that will be designed for the Brand based on the marks provided by the panel, the rankings awarded, and descriptive analysis.



(NOT FOR LEGAL USE)
 As on Date : 09/09/2013
 Status : Online New Appl.

TM Application No.	2528565		
Class	25		
Date of Application	09/05/2013		
Appropriate Office	DELHI		
State	PUNJAB		
Country	India		
TM Applied For	PRERNA-an inspiration		
User Detail	06/05/2013		
Certificate Detail	Certificate No. Dated :		
Valid upto/ Renewed upto			
Proprietor name	(1) POONAM THAKUR[1466839] Single Firm		
Proprietor Address	M/S PRERNA AN INSPIRATION, PLOT NO. C-73, PHASE-VI, INDUSTRIAL AREA, SAS NAGAR, MOHALI		
Attorney name	SANJEEV KUMAR[6405]		
Attorney Address	AG-103, Ground floor Shalimar Bagh, Delhi-110088		
Goods & Service Details	[CLASS : 25] Clothing, Footwear, Headgear and Readymade Garments as Included in Class-25		
Uploaded Documents	Sr No.	Document description	Document Date
	1	Power of Attorney	09/05/2013 View

Figure 1 Trade Mark Registration

CONCLUSIONS

it was determined that the need-based information gathered at each stage of the study "Design Development and Acceptance of Khadi as Infant wear" served as a springboard for the following stage, resulting in systematic assessments of the needs to be incorporated into the Infant wear range. Since the p-value for the variables was less than <0.05, we may conclude that there is a statistically significant difference between the social acceptability of Infant clothing made from Khadi and Infant wear made from other textiles, and we can thus reject HO and accept HA. The superior properties of hand-spun and hand-woven cotton Khadi may explain why it is so clearly preferred to other textiles. Khadi made from a fine thread count cotton is very pleasant to wear, making it a great choice for infants and young children. This proved that the gathered data and analysis were worthwhile.

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