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Implementation of Developed Signature Character for an Eco-Friendly Infantswear Collection

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I. INTRODUCTION

Manufacturing of infants' wear clothing requires various specially treated materials like anti-microbial finish, ergonomically fit for wear and tear since children's skin is more delicate and often prone to rashes. Most of the children are playful and thus the garments should be durable to all their activities. Development of signature cartoon character calls in for various attributes which could be applied in all forms of apparel items right from garments to packaging. Fabric choices, dyes, trims and packages to meet the sustainable goals and the application of signature character is the main focus of the journal. Organic cotton and azo free dyes are being implemented to every style of the collection. Preferences of parents are taken into consideration in the further development process.

II. LITERATURE REVIEW

In the world of fashion, every new product or style begins with an idea. Fashion designing involves a set of skills that range from market research and creativity to sketching and fabric selection. The fashion designers guide the process from inception to production. Fashion design requires professionals to constantly be in tune with the marketplace, what's trending currently and what economic indicators may influence buying decisions in the future. Market research includes following competitors as well as consumer

demands. During early 20th century clothing worn by infants all shared a common feature leading to lack of sex differentiation. They all wore same type of gown, robe or wrap around tunics with no print and colors in it.

In late 18th century the theory of swaddling-immobilizing the babies with linen wrap around has been quite popular. Though they believed that by swaddling, babies limbs could be straightened or they may grow bent. Medical theories in late 18th century suggested that swaddling led to weakening of limbs rather than making them strong. Supporting this they arrived at lightweight and garments and 'Long dress' which consisted of tight fitted bodice and long skirt below their feet. Then when they started walking they shifted to 'short clothes' pertaining to petticoats and back opening bodice. Materials used were white cotton since it was easy to bleach, wash and paired with yoke frock or fitted bodice. In late 19th century considering crawling as important aspect for child's growth people came with the idea of 'one-piece Romper suit' and full bloomer like pants called 'Creeping Aprons'. Fabrics for infant wear apparels include light weight cotton knitted fabrics, giving stain resistant, anti-shrink finishes. Linen fabric though could shrink but gives well breathability properties and does not cause any allergies to babies. Climatic conditions also influence the infants' garment selection process. Hand feel of the fabrics and garments with prints or few embellishments should be made sure that it does not affect or cause injuries to babies in any form. The designs and prints or silhouette used for infants should be gender neutral and the colours to play a major role in the selection of garments. Trims and accessories like sharp buttons or poking draw strings have to avoided which may pose a major threat to infants. Animal and character prints continue to dominate infants wear market. Gender neutral prints like stripes polka, checks, abstract prints, geometric prints are still the choices many parents according to Indian market. Mild florals and other summer prints are selected by fashion conscious parents purchasing according to season. Interactive prints and conversational prints also tops the children's wear market. Millennial parents prefer their children to dress fashionably right from their birth. The most prominent

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Style of garment for infants include onesies/ romper, pajama set and mostly with minimal or small motifs. Few parents find mass market for infants being boring to creative spirited kids and prints being less or least interactive. People show huge affinity towards interactive garment styles with kids being able to interact in order to develop creativity and attraction. With interactive message being words kids can learn how to read and express their personal styles through these garments. This will be significant for babies from 1-2 years and not for new born. Brands contribute to environment by developing sustainable practices in all types of the activities carried out. Most of kids' apparel have incorporated sustainable fashion by using organic cotton, recycled packages, chemical free prints and using no harmful dyes. Sustainability considers 'triple bottom line' which are environmental, social and economic impacts. Dyeing and fabric processing cause more damage to environment thus shift in technology like using low liquor-to-material ratio dyeing, urea and salt-free continuous dyeing. Eco friendly labels to create better awareness differentiation retail marketers from 'go green consumers'. Use of knitted fabrics to larger extent gives the scope for easy breathability for kids since the knitting loops could help in pumping air inside the body removing excess heat from the body during day time and night time. Requirements for infants' wear clothing includes nonflammable, light weight, non-irritable, easy access for changing diapers, organic fabrics. Textiles have gained a huge awareness about anti-microbial finish for enhancing the brand's quality of products. Kids wear market mainly focuses on giving antimicrobial finish to almost all of its products. Unique natural agents like Basil, turmeric, neem, Aloe Vera, orange and pomegranate have microbial properties and thus majorly used for eco-friendly finishing treatments.

III. METHODOLOGY

Methodologies used to carry out this study are-

1. *Stratified Sampling*: Here homogenous groups of parents are selected and questionnaire is sent to parents with the kids of 0-2 years. Questions related to sizing and placement of characters were included and their responses were condensed to dual-axis bar chart. Questions regarding package designs, cutout label, types of prints and wash care labels were circulated among parents and their preferences are considered for further design rectifications.
2. *Non Participant Observational Method*: Frequent visits to competitors' brands was made to understand the parents' choices for their infants. Focus group parents tend to show affinity towards organic cotton brands and more of mild character prints in them. Parents were highly aware about the package design and it plays a major role in marketing.

3. *Collection of Primary Data*: Direct interviews with the parents having kids of the age group 0-2 years was carried out to explain about the fabrics, trims and designs to be used and their suggestions were taken into account. Questionnaires was circulated to the same group of parents about their preferences of placement of characters on garments, packages, name labels and types of prints.

IV. SEQUENCE OF CHARACTER DEVELOPMENT

Developing the signature character for the brand and its application in all possible garments and trims is the main aim of the project. Initially the various cartoon characters in the market both domestic and international is studied. Character modifications based on colours or poses or the animation done to them is analyzed which could play a major role in the development of our own character. Next is the technique which was used to achieve or print these characters on to various garments and other related products like size label, packaging, etc. Majority of the characters were done screen printing over the garments or when there were lots of colors used the characters were printed digitally using reactive and discharge dyes. Few of the less complicated characters were achieved through embroidery and various other 3d techniques like glitter, pom pom, lace, puff or high density (HD) prints and stickers were used. Placement of the characters were in the middle or right side of the chest as a small coverage or in the middle of the garment over a big area and as discontinuous placement print. Based on all the gathered rough sketches of characters was made. Desired colour palette as per the requirements and uniqueness was experimented. 2D flat images with various combinations of shades was developed. From these combinations, highlights and shadows were given considering the effects to be achieved.

These characters were internally examined by group of management people and upon the common grounds final character was decided and given a name. Characters were placed upon different silhouette like onesies, sleeper, Pajama set, Bib and other trims like price label, polybag etc. Various dimensions of characters were experimented and by changing the positions according to the silhouette. Since its difficult and cost effective to achieve more number of colors in screen printing, digital is most preferred.

V. DATA ANALYSIS AND FINDINGS

a) Character Developed



b) Application of Characters

As the signature character was developed, basic product categories like onesies, polybag, wash care labels, price and hand tags has witnessed the application of this character and was being printed on various mediums.

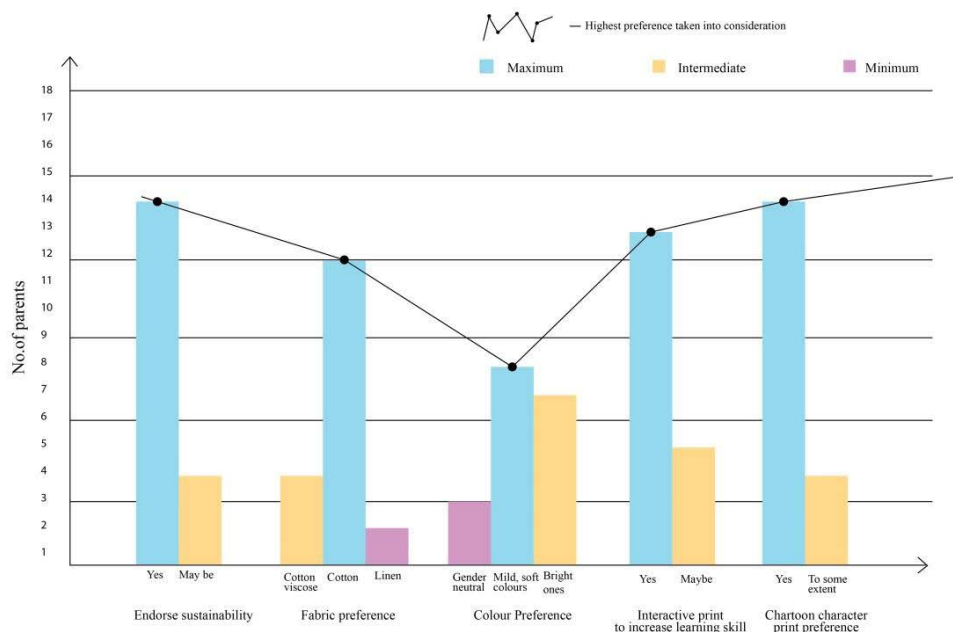
Preference of the parents which was derived from the questionnaire was combined into bar chart and their feedback was noted for further developments.

c) Results of the Questionnaire

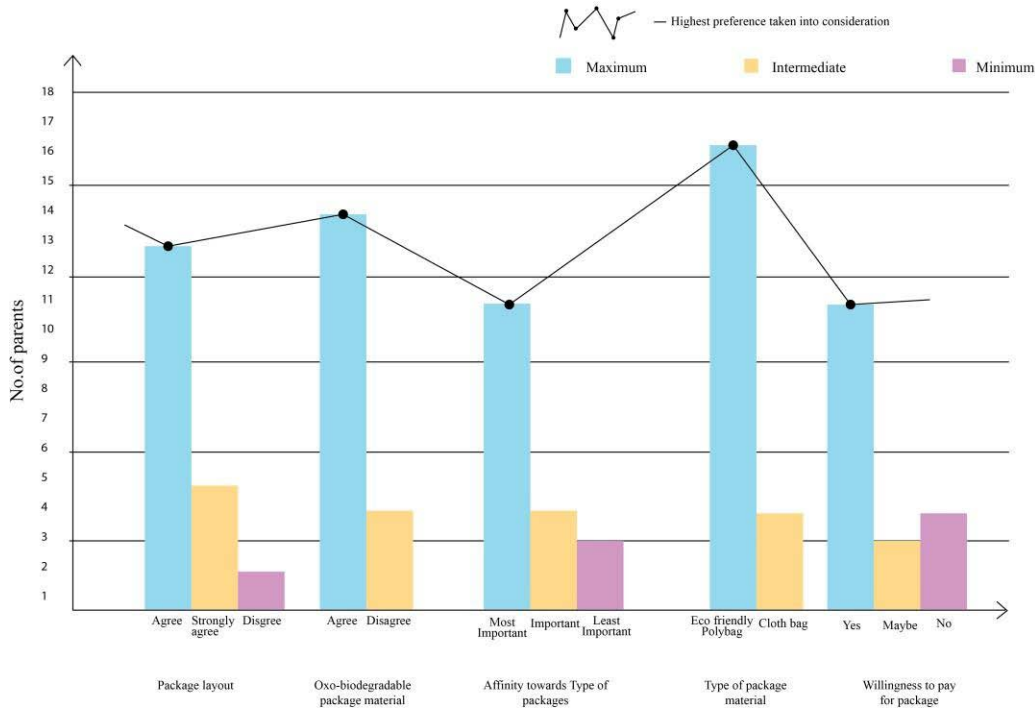
Dual-axis bar chart is used for analysis the questionnaire survey analysis. Three charts are made.

1. Garment Preference -Type of fabric, colours, prints, size of prints.
2. Package Preference -Type of material, type of package, details in package.
3. Label preference –Size of label, placement of labels.

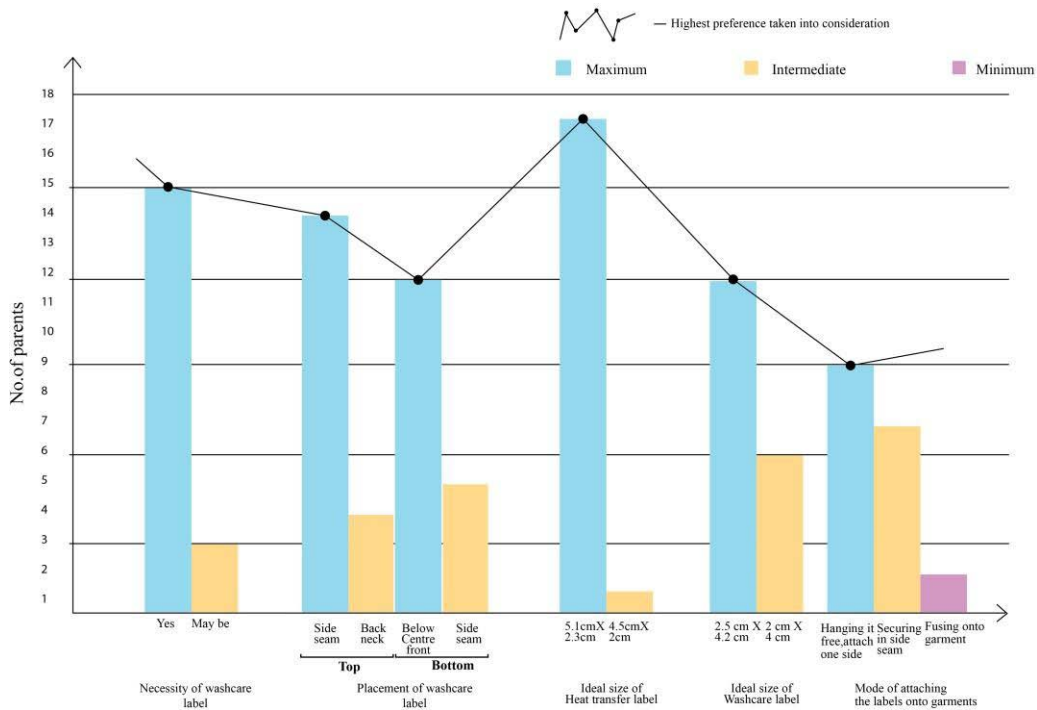
Garment Preference



Package Layout



Care label Preference



Thus it is noticed that most of the parents seemed to like the new cartoon character which was developed and their application on garment as chest print. They mostly preferred Digital printed character on garment, polybag and hand tags. Most of the parents were aware about the Oxo-biodegradable package which was to be used for sustainability and they were willing to pay for it. Organic cotton and cotton viscose

blends were their choice of fabric and azo free dyes were used in the process of printing. Also, wash care labels and size label was felt extremely necessary by the parents and the position mentioned by them is either on side seam hanging it free securing one side or fusing it onto garments. Majority of parents are attracted towards sustainable packages and were willing to pay for the same which could help the brand create a unique brand




identity. Irrespective of season the parents seemed to be more affirmative towards mild colours rather than dark ones in their infants clothing.

which is used as trademark or signature to denote the brand. As the size of the print and design involved is less it is categorized into basic category symbolizing the price point from Rs. 149-199.

VI. COST SHEET FOR EACH GARMENT

a) Basic Category




Basic collection includes three garments with placement of character and the logo in the graphics




S.No.	GARMENT	FABRICS USED	GSM	PRINT	PRICE/PIECE
1.		Organic cotton	Body fabric : 210 Rib : 180	Placement : 4 x 4.9 cm (chest print)	Rs. 149
2.		Organic cotton	Body fabric : 210 Rib : 180	Placement : 10 x 11.5 cm (Mid bodice)	Rs. 180
3.		Organic cotton	Body fabric : 210 Rib : 180 (Contrast colour)	Placement : 9.7 x 8.3 cm (Continuous front to back)	Rs. 199


b) Fashion Category

Fashion collection containing all over print according to season's theme with the logo being

incorporated into all designs. As the coverage involved is all over the printing cost incurred is comparatively increased and thus the range is from Rs. 269 – 599.

S.No.	GARMENT	FABRICS USED	GSM	PRINT	PRICE/PIECE
1.		Organic cotton	Body fabric : 210 Rib : 180	All over print	Rs. 399
2.		Organic cotton	Body fabric : 210 Rib : 180 (Contrast colour)	All over print	Rs. 399
3.		Organic cotton	Body fabric : 210 Rib : 180 (Contrast colour)	All over print	Rs. 450

S.No.	GARMENT	FABRICS USED	GSM	PRINT	PRICE/PIECE
1.		Organic cotton	Body fabric : 210 Rib : 180	All over print	Rs. 269
2.		Organic cotton	Body fabric : 210	All over print	Rs. 329
3.		Organic cotton	Body fabric : 210 Rib : 180 (Contrast colour)	All over print	Rs. 479

S.No.	GARMENT	FABRICS USED	GSM	PRINT	PRICE/PIECE
1.		Organic cotton	Body fabric : 230	All over print	Rs. 599

c) Cost Comparison for Signature Character

Comparison of Cost for Printing the Signature Character of Size Preferred by Parents is Done.

S.No	Type of Print	Dimensions	Cost Per Piece
1.	Pigment Print	4 cm X 4.9 cm	Screen 2500, Printing-Rs.7
2.	Reactive Print	4 cm X 4.9 cm	Rs.13
3.	Digital Print (Reactive Pigment)	4 cm X 4.9 cm	Rs.7
4.	Embroidery	4 cm X 4.9 cm	Rs.10

According to GSM of 230, 210 and type of print onesies price is compared for printing the signature character. GSM- 210, onesies garment, Garment price: 147

S.No	Type of Print	Price Per Kg	Print Price Per Garment
1	Pigment Print	Rs. 195	Rs. 32
2	Discharge Print	Rs. 260	Rs.47
3	Reactive Print	Rs. 325	Rs.55

GSM- 230, Onesies garment, Garment price: 169

S.No	Type of Print	Price Per Kg	Print Price Per Garment
1	Pigment Print	Rs. 195	Rs. 48
2	Discharge Print	Rs. 260	Rs.65
3	Reactive Print	Rs. 325	Rs.81

d) Package



Dimension of polybag package: Length -30 cm; Width -25 cm

e) Hand Tag

Labels attached to clothing containing brand name, significant logo, tag line and address. Designed in the form of cut out label to incorporate the signature character of the brand. White hardpaper (recycled paper) is used for the process. Dimension of the hand tag is: Length -7 cm; Width -8.25 cm

Front



Back



f) Heat Transfer Label



As per the preference of parent's heat transfer label is attached to back neck and centre back in bottom containing brand name, size and logo with trade mark.

Dimensions of heat transfer label is Length -2.3 cm; Width -5.1 cm.

g) Washcare Label



Type of washes and drying time, type of drying, type of ironing as per organic cotton is specified and is achieved onto cotton fabric using jacquard weaving. Dimensions of wash care label include Length -4.2 cm; Width-2.5 cm.



VII. CONCLUSION

Therefore, a signature character was developed for a sustainable infants' wear brand through researches of existing characters, initial sketches of various options and thus arriving at a unique one. Their application onto various mediums like packages, garments, hand tags, price labels, social media promotions, etc., was made and their significant preferences from parents were considered onto further developmental process. Samples were developed for each of the applications of which stayed within brand identities. The ultimate goal was to meet sustainability in the application process and the choice of sustainable fabric like organic cotton and azo free dyes was being imperative. Consequently, the comfortability for the babies is achieved through silhouettes used. Further in-depth study could be conducted to develop various design options based on the signature characters and their placements on to the garments. This could also expand the possibilities of the brand to stand out in the competitive market.

BIBLIOGRAPHY

- Sorger, Richard., & Udale, Jenny. (2017). 'The Fundamentals of Fashion design', Bloomsbury publishing, Plc.
- Ashelford, Jane. (2015). 'The art of dress, Clothes and society', National Trust Enterprise Ltd.
- Dogbey, Rose., Kpobee Mercy Kuma., Dedume Victor., Osei, Joseph. (2015) 'The Effect of Fabrics and Designs on the Physical Comfort of Children Clothes in the Accra Metropolis' International Institute for Science, Technology and Education.
- Rita, Afroza Akter, . (2018) . 'Specific requirement for development in children's clothing: customer's preference and satisfaction for buying', *International Journal of Business Marketing and Management (IJBMM)*. vol. 3, issue 8, pp.20-28.
- Archana, (2020) . 'Designing Kids Wear: Summary of Research & Recommendation for Kids Wear Designers'. *Global Journal of Researches in Engineering: JGeneral Engineering*. vol. 20, issue 5, pp.54-57.
- Saeli, Ashley. (2018). 'A day in park: Developing children's wear collection'. *Journal of Textile Science & Fashion Technology*. pp.15-21.
- Sanchez, David J. (2016). 'Interactive message garment'. *Technology of Joseph L. Strabala*.
- Fletcher, Kate. (2016). 'Sustainable fashion and textiles'. *Research journal of textile and apparel*.
- Nayak, Rajkishore ., Singh, Amanpreet ., Panwar, Tarun ., Padhye, Rajiv ., (2019) . 'Recent Trends in Sustainable Fashion and Textile Production', *Juniper Publishers* .'
- Reshma. A ., Brindha. V., Amutha, Priyadarshini K. (2018). 'Sustainable antimicrobial finishing of fabrics using natural bioactive agents'. *International Journal of life science and pharma research* . pp11-15 .
- Aakko M, Koskenurmi Sivonen R (2013) Designing sustainable fashion: Possibilities and challenges. *Research Journal of Textile and Apparel* 17(1): 13-22.
- Dogbey, R. et al (2015). 'The Effect of Fabrics and Designs on the Physical Comfort of Children Clothes in the Accra Metropolis'. *choice*, 30.
- Pandya, Mehal,. (2016). 'Consumer buying behavior for children apparel' *International journal of Management*, 7 (5), pp 188-199.
- <https://indiantextilejournal.com/articles/fadetails.asp?id=1741>.
- <http://www.madehow.com/Volume-4/Children-s-Clothing.html>
- <https://apparelresources.com/business-news/retail/big-bright-motifs-character-prints-kidswear-trends-aw-19/>
- <https://www.interplas.com/oxo-biodegradable-plastic>.
- <https://www.billerudkorsnas.com/managed-packaging/knowledge-center/articles/why-sustainable-packaging>.

