Application of Design Thinking Techniques in Marketing of Fashion Apparel E - Commerce

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Abstract

To apply design thinking towards creation of garments with an aim of solving size and fit issues and minimizing returns of sold merchandise in fashion e-commerce business, a study was done with Flipkart, one of the leading e-commerce companies to understand the problems they were facing with apparel returns in the year 2014 and 2015. Based on the product return data collected from online customers, a questionnaire was formulated and a study was done in Bangalore with 1000 people in the age group of 18 to 30 years to understand why people shop online for apparels and the issues faced by them. The questionnaire analysis showed that 42% of fashion apparel was returned because they were not the right size or fit, 19% were returned because of fabric quality issues, and 8% were returned because of problems with colour. A study was also conducted by observation and personal interviews with 150 customers at various offline stores in Bangalore for the identification of attributes related to the issues of size and fit. The problem areas identified in women-wear were issues with waist, bicep/sleeves, and chest. To combat these problems, various design ideas were proposed, and the selected designs were constructed and tested on a population of 100 women in the age group of 18 to 30 years of different body shapes for size and fit. It was concluded from the results that if the garments be created in such a way that it can fit many people of varying body shapes, it can drive businesses to improve the overall customer experience by reducing rampant returns of apparel.

Keywords : design thinking, apparel e-commerce, garment curation, size and fit problem, sleeve-bodice combinations design, pleated front and back, apparel returns, size chart

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The digital world is growing globally, and India is no exception. The kind of lifestyle people are living today, in large urban centers, leaves very little time to go to a physical store to browse and shop. The commute in grid-locked metropolitan cities is not conducive to relaxed shopping, with stores scattered around high-density areas of the city. Further, the Tier-II cities of India do not have the infrastructure or access to physical stores that provide both value for money and contemporary designs. According to Shalini and Kamalaveni (2013), e - commerce has emerged as the boundary-less trade medium in the era of globalization. Since, the Internet has the ability to reach the customer's home, the distribution channels have started to assume new meaning for the B2C e-commerce.

With the progress of world-wide web along with good broadband connectivity, people all around India have access to e-commerce using their smart phones. People like to shop for all their necessities online by sitting at one place and ordering any time at their convenience with just a click. People can browse several web sites at the same time and can also do price comparison and generally look for offers and discounts. Convenience, product variety, shopping comfort, enjoyment, ease of delivery, huge discounts, cash payment options, and increasing penetration

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of debit and credit cards are some of the reasons for the online growth of shopping (Joshi & Achuthan, 2016).

Buying fashion apparel online is very simple and it also allows customers access to huge design choices. The first step in buying is to browse through the design, check the description, see pictures of the garment, check size chart, choose the best guess of the size, and order the garment. When the customer receives the merchandize, then they try the actual garment and many a times, they find a problem with it, mainly with the right size or the right fit. Sometimes, the problem is fit issues with waist, with chest, or with the sleeves. As no two human bodies are the same, the same size may not fit many people.

Apparel fit remains a major consumer frustration and barrier to online sales growth because of varied sizes and measurements. Unfortunately, this problem of size and fit pertaining to varied body shapes has not been addressed by brands till date. When customers shop for fashion apparel, they have a mindset that they are of a particular size. Most customers know that different brands fit differently, and different styles within a single brand will also fit differently, but that does not stop them from thinking that they are of a particular size and whether they have gained weight. This irrationality in the shopping process leads to customer frustration and dissatisfaction, which leads to a significant number of returns and various brands and retailers lose their customers (The Textile Institute, 2014).

Most of the product developers, technical designers, sourcing agents, and manufacturers equate fit with sizing and measurements. In the garment development cycle, the garment is developed and then tested for fit by putting it flat on a table and measure to see if it falls within the measurement specifications. Once the specifications are correct, it goes for live fit on a model. At that stage, they realize that the shape or balance or the depth of the garment is not right. Fit is not about size or measurements, it is all about shape. The body is three dimensional and clothing patterns also represent the three dimensional shape of real human bodies as described by Faust and Carrier (2014).

According to Faust and Carrier (2014), a large number of fashion brands and retailers basically buy what they like from vendors on the open market and then resell products. These buyers have no say or they are not even interested in sizing specifications or grading. In most of the cases, especially in fast fashion/fashion fad, fits are not the value proposition. In many online businesses, the buyers are buying from open market and reselling products. Many websites are selling products of different brands or selling through associates. In that case, it is not possible to evaluate various sizes or check size charts.

The traditional brands or established brands and retailers are working on fit problems. They understand their customers, conversion rates, customer retention, and brand loyalty. The industry is aware of diversity of sizes and shapes of real people in the consuming world, but how many body shapes can they create for a single size ?

Fit to a consumer is as simple as how the garment looks on them. The consumer does not know about fit models, specifications, grade rules, sewing tolerance, and many more. Consumers think that if the garment of a particular brand they like and try on does not flatter them, then the brand is not meant for them. Every season, customers see new styles and designs, different fabrics with more stretch, and silhouettes with varying degrees of intended shapes. They further confuse the customers with their fit choices (Faust & Carrier, 2014).

According to a study by Ui-Jeen, Hyun - Hwa, and Lynn - Damhorst (2012), online consumers have the limitation of product experience and evaluation due to the inability to directly experience the product, thereby increasing perceived risk of product performance. Marketing Week (Costa, 2010) quoted a study by GSI Commerce and reported that 69% of the respondents said that being unable to try on clothes before buying deterred them from making fashion purchases online. In 2015, $62.4 billion worth of apparel and footwear was returned due to incorrect sizing (KPMG & IAMAI, 2013).

According to Rakuten Fits Me (2013), the bricks-and-mortar sales model for fashion apparel is simple : customers try first, and then they buy. In online, the process is fundamentally the complete opposite : customers must buy first and only when the garment lands at their doorstep can they eventually try. According to them, 1 - in - 4 garments bought online are returned. According to E - consultancy (Charlton, 2012), fit is the over-riding reason that customers return garments and the returns are expensive. Addressing the 'fit problem' ought to be near the top of any e-commerce priorities list. Therefore, the present study aims at applying design thinking to propose a design solution for the existing problem of fit as stated above.

Methodology

A study was done with Flipkart, one of the leading e-commerce companies to understand the problems they were facing with product returns. The time period of this study was during December 2014 - February 2015. Next, based on the product return data collected from online customers of Flipkart, a study was done with 1000 people in the age group of 18 to 30 years, and Bangalore was the city chosen due to geographic proximity. The final data size, however, was 891 people and this analysis was conducted during 2015 - 2016. The analysis was done using *"R"* software. Various correlations were done to find the odds ratio to compare the impact of various attributes with respect to online shopping. Going further, data was also collected by observations and interviews at various offline stores to understand the sizing and fit issues; 150 respondents participated in this offline study (conducted at various apparel stores located in markets and malls) in Bangalore during 2015 - 2016. Secondary research was also done to understand the structure and dynamics of the digital commerce marketplace in India.

The data for this research was also collected via in-depth interviews conducted with numerous stakeholders of the e-commerce industry in Bengaluru including various leading companies, that is, Myntra, Flipkart, Jabong, ABOF, and Charmboard to understand the issues related with returns. According to them, the returns percentage ranged from 12% to 25%.
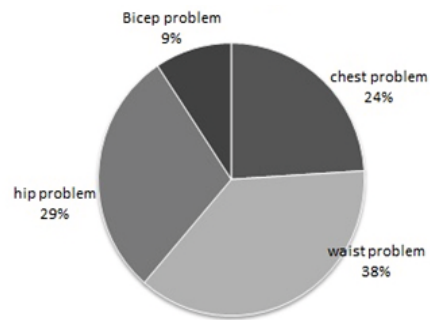
Problem Identification

(1) Identification of Attributes to the Problem of Size and Fit : A study was conducted at various offline stores in Bangalore for identification of attributes related to the problem of size and fit of the garments. The study was conducted by observation and by conducting personal interviews with 150 customers. The results for problems faced in women's top-wear category are shown in the Figure 1.

The analysis for women's wear : Kurta are shown in the Figure 2. It was observed that if a customer believed that she is size "S" and before she finalized on the size, she liked to try the apparel. She carried sizes "S," "XS," and "M" to the trial room as she was not sure of the size of a particular brand. In India, there is no standard size chart and each brand has its own size chart. The customers try the apparel and show the fit to their accompanying friends, mothers/relatives, or spouses. If a customer chooses a bigger size, the fit changes in all the other areas. With some designs, where the chest and the waist were loose, it was observed that the customers were satisfied with the fit and those designs were most preferred. It can be concluded that the problem areas in women's wear are mainly chest, waist, hip, and biceps.

Figure 1.Problem Areas in Women's Top-Wear in a Physical Store
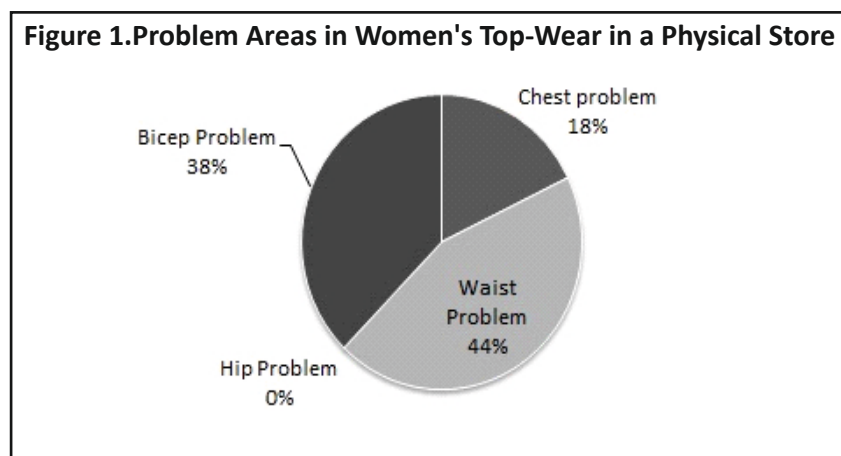
Figure 2.Problem Areas in Women's Wear : Straight Kurta in a Physical Store

Figure 3.Reasons for Return of Garments
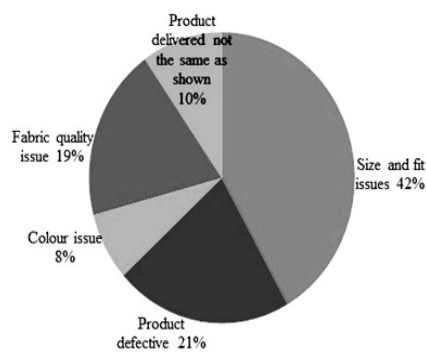
(2) Identification of Attributes for the Reasons of Returning an Apparel Product : From the analysis of the data collected through the questionnaire (from 1000 people located in the age group of 18 to 30 years in Bangalore), the following results were obtained :

The main reasons for return of garments are as follows:

(i) Size and fit problem being 42%.

(ii) Product being defective attributing to 21%.

(iii) Fabric quality accounting to 19%.

(iv) Product delivered not being the same as shown online contributing to 10%.

(v) Colour difference issues being 8%.

The analysis is shown in the Figure 3. The analysis also revealed that the least preferred categories for online shoppers were trousers and denims (39%) followed by Indian ethnic-wear such as kurtas (20%) and women dresses (15%).The main reasons behind the low preference of these categories were the problems with the size chart (54%) and less than sufficient details/description of product (25%).

In an online store, the customer first selects the design, checks the size chart, and then places an order. This process is regarded as a gamble, with traditional sizing providing no clear, easy way to find fit for their particular body shape. After receiving the merchandise, the customer tries the garment for the size and fit, and faces similar

problems of fit as they face in a physical store. The customer returns the garment because of the fit issue and asks for a different size. The trial goes on and on until she is satisfied with the fit. Looking at the scenario here, the customer is tired of trying and not getting the right fit and may decide not to buy online in future. The supplier is also tired of bearing the cost of shipping and re-shipping and the consequent inventory loss.

(3) Fit Problems Due to Unusual Body Shapes and Sizes : Fit or proper fit is not about size or body measurements; it is all about shape as described by Faust and Carrier (2014).

If a customer finds her body specifications in the size chart for a particular size say XS, S, M, and L, XL, and so on, she is considered as a fit model, otherwise her body specifications are considered as unfit model. If for a customer, the bust size is 32 inches, waist is 34 inches, and hip measurement is 44 inches in that scenario, the size combination does not exist in the size chart, therefore, the body shape comes under an unfit model. The fit of a garment is considered as an individual's choice; however, it was found that the problem of fit occurred mostly with the unfit models or say from customers with unusual body shapes.

Proposed Solutions

The following solutions are proposed based on the analysis of various studies conducted :

(i) Selling the Garment Semi Stitched : The customers can get the fit adjusted according to their fit choice. But this cannot be applicable for ready-to-wear apparels.

(ii) Making Changes in the Size Chart Created for Online Apparels : Selling fashion needs a much deeper understanding of kind of merchandise that lends itself to be sold online. The garment that can be sold online on long term sustainable basis needs to be uniquely designed and constructed than what sells offline. Having analyzed the problem of size and fit, the three major areas which decide the fit for a women-wear top-wear category are:

✧ Chest
✧ Waist
✧ Biceps

The problem can be solved by making a small change in the existing online size chart. If there is a margin/variation of one to two inches in the size chart with respect to chest, waist, and bicep, the online return problem can be resolved to a certain extent. Reflecting on two ways of impacting a garment sizing system by modifying the body sizing table and by modifying the ease amounts added at bust and hip, a solution was also proposed by Petrova and Ashdown (2012). A new scientific and standardized size-chart that all products should conform to is recommended.

The new size-chart would constitute all the elements and attributes required to understand the chosen garment well. It would include the corresponding sizes across UK, USA, and Europe for an easy comparison and explicit understanding. The size-chart would specify whether the measurements are of the actual garment or that of the human body. Existing size-charts lack this clarity, creating a paradox and hesitation between the buyer and the seller. A recommended size chart is shown in the Table 1 for women wear for sizes XS, S, M, L, XL, and XXL.

(iii) Designing the Garments Differently for Online Customers : By constructing ideas that are emotionally meaningful as well as functional so that the garments be designed differently to market for online businesses.

From the above proposed solutions, the third option was selected and design thinking was applied to create ideas to design garments in a way that the same sized garment could fit many more people of varying body shapes.

Table 1. Recommended Size Chart

Sizes	XS	S	M	L	XL	XXL
U.K.	6	8	10	12	14	16
U.S.A.	2	4	6	8	10	12
Euro	34	36	38	40	42	44
Bust	32-33.4	33.5-35.4	35.5-37.4	37.5-39.4	39.5-41.4	41.5-43.4
Waist	33"	35"	38"	41"	44"	46"
Shoulder	14"	14.5"	15"	15.5"	16"	16.5"
Hip	37"	38"	39"	40"	41"	42"
3/4th Sleeves	17"	17.5"	17.5"	18"	18"	18.5"
Full Sleeves	20"	20.5"	21"	21.5"	22"	22.5"

Note: Size chart as per body measurements

Earlier, it was also proposed by The Textile Institute (2014) that the manufacturers need to work on a better model where they can produce fewer sizes and still accommodate a majority of the population. This will yield tremendous benefits for both consumers and retailers. Since such a model satisfies both parties, the role of design thinking was applied to explore possibilities of what could be done and to create desired outcomes.

According to Naiman (n.d.), the design thinking cycle involves observation to discover unmet needs within the context and constraints of the situation, framing the opportunity and scope of innovation, generating creative ideas, testing and refining solutions. To address the problems mentioned above, the next step was to construct ideas that are emotionally meaningful as well as functional to market apparels for online businesses.

Creative Ideas

(i) The Sleeve - Bodice Combinations Design : The sleeve and top of any garment (blouse, dress, jacket, or coat) can be combined in a variety of ways categorized as follows : Kimono designs, kaftan designs, raglan designs, drop shoulder designs, or deep-cut armhole designs.

✤ **Kimono Design :** The total sleeve combines or is all-in-one with the top garment as shown in the Figure 4.

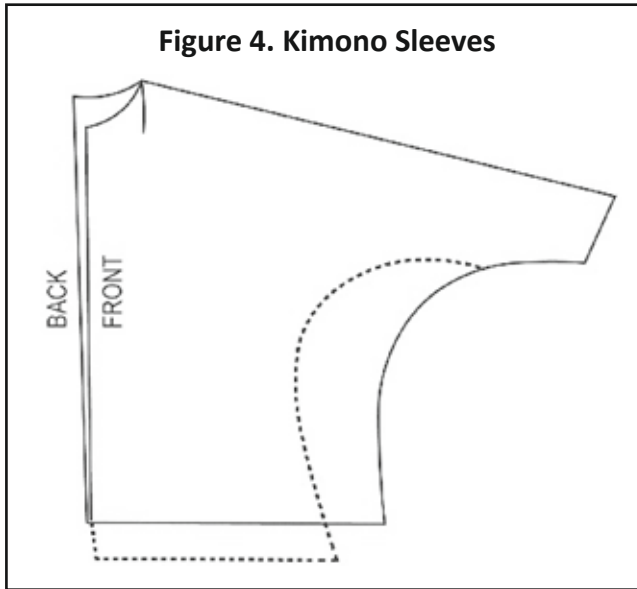✤ **Kaftan Design :** This design is a loose garment with long wide sleeves as shown in Figure 5.

✤ **Raglan Design :** The raglan sleeve pattern is developed by including part of the neckline and armhole to complete the sleeve draft (Joseph-Armstrong, 2007). The raglan can be designed for bodice, dress, blouse, jackets, coats, and other garments. The sleeve combines with part of an armhole and shoulder area of the apparel as shown in the Figure 6.

✤ **Drop - Shoulder Designs :** The drop shoulder pattern is developed by attaching a portion of the upper sleeve cap to the bodice. The dropped shoulder extends beyond the shoulder tip and covers part of the upper arm at varying lengths as shown in the Figure 7. The garment can be developed with or without the lower sleeve, or the lower sleeve can be attached to the garment. The design can be applied to dresses, blouses, jackets, coats, active wear, evening dresses, and so on (Joseph - Armstrong, 2007).
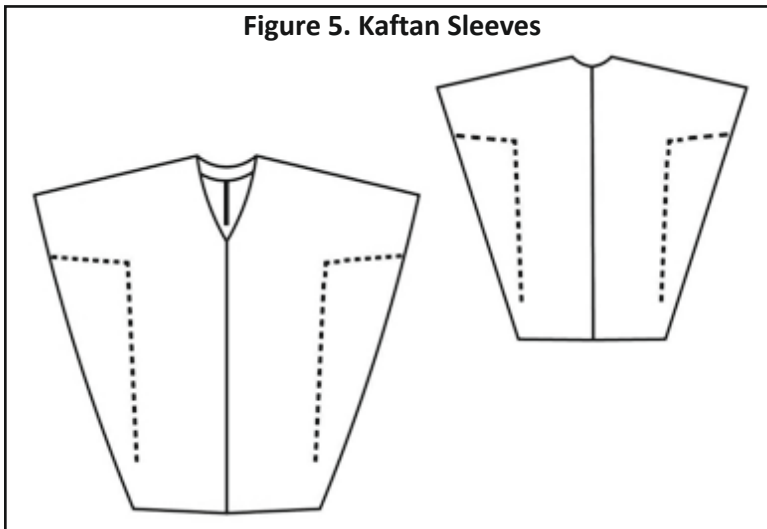
✤ **Deep - Cut Armhole Designs :** The armhole section of a bodice combines with sleeves (Joseph-Armstrong, 2007). Each of the combination patterns can be used to develop innovative design variations where there can be a lot of scope for fitting the same garment to various body types.
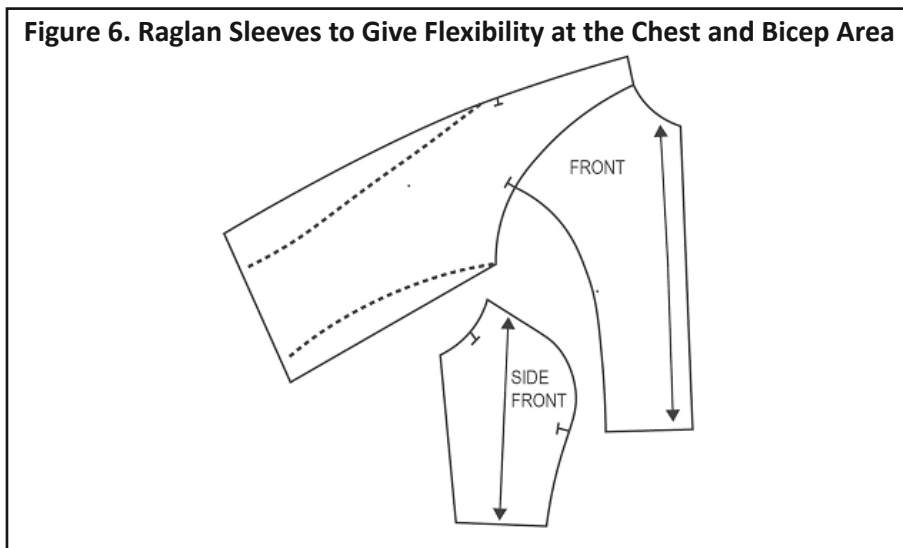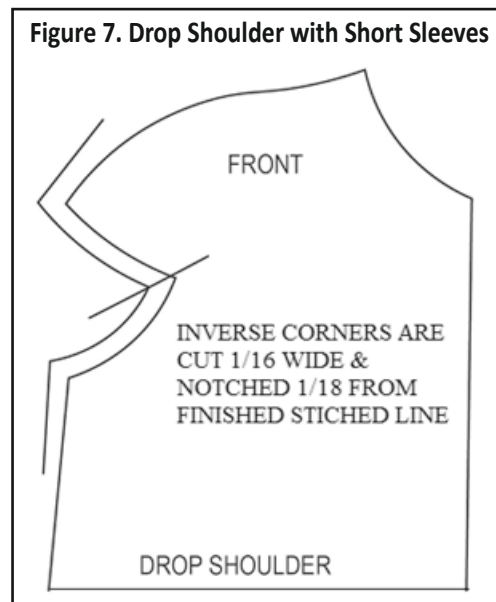
Figure 4. Kimono Sleeves

BACK FRONT

Figure 5. Kaftan Sleeves

Figure 6. Raglan Sleeves to Give Flexibility at the Chest and Bicep Area

FRONT

SIDE FRONT

Figure 7. Drop Shoulder with Short Sleeves

FRONT

INVERSE CORNERS ARE
CUT 1/16 WIDE &
NOTCHED 1/18 FROM
FINISHED STICHED LINE

DROP SHOULDER

(ii) Combining Knitted Fabric with the Woven Fabric to Give Fit Flexibility : Fit flexibility can be provided by using a combination of fabrics which have certain amount of stretch or elasticity. A few inch variations in size at chest and sleeve area can also be taken care by combining knitted fabrics.

Actual Design Solutions

(i) Converting Ideas into Action - A Few Design Solutions for the Fit Issues with Chest and the Sleeves : The top wear is created with light weight fabric and there is a provision of elastic at the waist to give fit and flexibility to various waist sizes at the same time. The kaftan sleeves can fit different body shapes. The garment will give a perfect fit and the flexibility at the waist can make many customers happy with different body shapes. The top can be worn with trousers, shorts, and tights as shown in the Figure 8.

Figure 8. Kaftan Design (A Top Created Using Kaftan Sleeves)
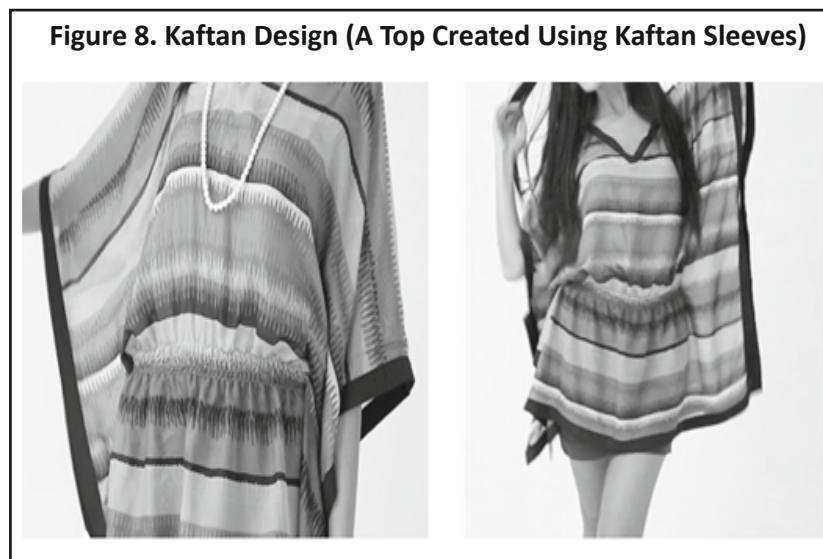
Figure 9.A Tunic Created Using Kaftan Sleeves

Figure 10. Short Top with Drop-Shoulder Design

Figure 11. Drop-Shoulder Design (Short Sleeves)

The Kaftan sleeves design can also be applied to long shirts or tunics. The long shirt designed is effortlessly cool and fits all body types. The shape is given in such a way that it can give fit and flexibility to various body shapes in the same design as shown in the Figure 9. The drop shoulder design gives flexibility at bicep and chest area. The garment is created keeping in mind to offer more flexibility at the chest area and at the same time, solving the problem of fitting at the sleeves area. The design is shown in the Figure 10. The drop shoulder design variations can be achieved with short and long sleeve lengths. The Figure 11 shows the design of a top with short sleeves.

(ii) A Few Design Solutions for the Fit Issues with Waist : It has been analyzed that the fit issues with waist is the most significant problem with Indian women (31%).

A few design solutions are as follows : Make waist flexible. This can be made possible by giving pleats around the waist area. The pleats will hide the extra weight and will also give a slim look to the wearer as shown in the Figure 12.

The formal shirt for office wear can be designed in such a way that it can give flexibility at the chest and the waist area. The gathered pleats on the front side gives the chest more flexibility which along with the box pleat on the back side also helps in giving more flexibility around waist area as shown in the Figure 13.

The flowey tops give fit flexibility and also look trendy. The top shown in the Figure 14 gives flexibility of fit at waist, chest, and the bicep area. A perfect top for online apparel businesses. Neckline is super flattering and the silhouette is cut beautifully.

Figure 12. Flexibility at Waist Area is Provided by Giving Pleats

Figure 13.Formal Shirts with Pleats on the Front and Box Pleats at the Back

Figure 14. Flowy Top with Flexibility of Fit at Chest and Waist

Figure 15. Knitted Fabric is Used at the Chest and at the Sleeves Area for More Flexibility

Flexibility in fit can be provided in the garment by combination of fabrics which have elasticity or Lycra. A few inch variations in size at chest and sleeve area can also be taken care of by combining knitted fabrics; this also helps in creating a new design look to the garment as shown in the Figure 15.

Testing the Solutions

A combination of subjective fit trials and objective fit trials were used to test the garments. In subjective fit trials, the subjects from the target population were asked to try on the test garments. The innovative garments created were tested on 100 people in Bangalore where the customers were the same size but with different body shapes. The feedback was collected and analyzed. The results are shown in the Table 2.

The analysis (Table 2) reveals that 91% of the garments created could fit people of the same size for different body shapes. Kaftan sleeves design and kimono designs could fit 95% of the target population and the apparel designs were highly appreciated by the people. Flowey top could fit 96% of the respondents followed by formal shirt (fitted 85% of the respondents). The knitted fabric used at sleeves and chest also solved the fit problem in case of 84% of the respondents.

It can be concluded from the results that if garments can be created in such a way that it could fit many people of the same size with different body shapes, then these creative solutions can help in solving the problem of fit and size.

Table 2. Results Obtained After Testing of Garments

Garment designs	Results in percentage
Kaftan sleeves design	95%
Formal Shirt design	85%
Kimono sleeves design	95%
Flowey top design	96%
Knitted fabric combination design	84%
Average	91%

Managerial Implications

The study of sizing and fit is a vast one because of the existence of a large number of body shapes and sizes. The Indian culture is highly far-reaching and the preferences of people are also different. The solution proposed allows for great customer satisfaction due to a great decrease in the number of returns for a purchase. At the same time, it saves cost for the e-commerce vendor in initiating the entire process of refund and reverse pick up. In this way, the proposed solution would be beneficial for both the buyers and the sellers.

Conclusion

There is a need for deeper understanding and thought while designing garments that are going to be primarily sold online. Fashion apparel that can be sold online on a long term sustainable basis needs to be uniquely designed and constructed than what sells offline keeping limitation of physical trial room in the online channel in mind. The garments need to be designed and constructed differently and cater for flexibility of fit, while retaining its aesthetics. This will go a long way in achieving superior customer experience and shall reduce merchandise returns due to size and fit problems.

Limitations of the Study and Scope for Further Research

This study was limited to people in Bengaluru. Future research can make efforts to cover people from various parts of India. Future research can also consider various types of garments which can be tested in different parts of India for size and fit.

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