

CHAPTER: 1

INTRODUCTION

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1. INTRODUCTION

1.1 ORIGIN AND HISTORY OF TROUSERS (BRIEF INTRODUCTION)

ORIGIN OF CLOTHING

According to archaeologists and anthropologists, the earliest clothing consisted of fur, leather, leaves or grass which was draped, wrapped or tied about the body for protection from the external elements. Clothes were worn for safety, comfort, and modesty to reflect religious, cultural and social meaning.

Clothes are the expression of an individual; it is a form of non-verbal communication, and is a symbol of crucial social and psychological importance to the wearer. Clothing functions as an extension of bodily self. (Kulshrestha et al 2007)⁶⁷. Culture influences the way we dress and other aspects of our behavior. Dress constitutes one major example of material culture. (Eicher, et al 2000).⁴¹

TROUSERS

Trousers are worn on the lower part of the body from the waist to the ankles covering both legs separately. This item of clothing is often referred to as pants in countries such as Canada, South Africa and the United States. (Wikipedia)¹⁴⁸ In America, Pants is the general category term, and trousers referred to specifically tailored garments with waistband and belt loop and a fly front. Informal elastic waist length garments would never be called trousers in the U.S.

In Australia the terms Pants and Trousers are synonymous. In most parts of the United Kingdom, trousers are the general category term, and pant refers to underwear. In some parts of Scotland, trousers are known as trews, taken from the early Middle English trousse, its plural is developed into trousers. (Wikipedia)¹⁴⁸ In ancient China, only soldiers wore trousers.

The word pants are derived from the word Pantaloons. This was made popular in 1812 by George Bryan (Beau) Brummell who wore his pants with a foot strap in order to keep the pants tight and avoid creases.

After the French revolution men in Europe began wearing trousers.

In the nineteenth century women wore trousers to ride horses but would wear skirts on top in order to camouflage them. All trousers were pull-ons when front closures using buttons were introduced in the nineteenth century.

INDIAN TROUSERS (BRIEF HISTORY)

Earlier people gave more importance to hand stitched clothes. The Indian trouser had a narrow-fall front, button closing frog pockets, wide waistband with watch pocket, and adjustable gusset at centre back.

Later, light colored cottons; linens and wool were much in fashion. Men commonly used narrow -fall front with side pockets, watch pocket in the waistband and adjustable gusset at centre back. The trousers were made of woolens and corduroy and were worn with suspenders.

In 1835 most of the men were interested in wearing the fall front trousers. Dress trousers were very much seen in fashion in 1855. Dress trousers gained a lot of importance from 1855 to 1875. Dress trousers with button fly and side pockets were gaining importance. Dress trousers were usually crafted out of woven fabric and corduroy.

The sack suit was much in fashion in 1910 and continued till the first part of the twentieth century. The business suits comprised of a coat, waistcoat and trousers and were often cut from the same cloth. The trousers were cut with a straight leg and high waist, a plain finished hem and no pressed crease.

In 1925 the era of baggy pants dawned. They began gently flared and reached wide bell proportions by about 1975. After which they gradually reduced to straight and wide until the 1970's when they were finally narrow again.¹⁵¹

In the years between 2005-2007, the bottoms of men's trousers were like they were in the 70's. Really narrow and slim and also worn low on the waist.

2008 saw the bottom of the men's trousers becoming straight. In the past and even now in India, large population prefers to wear tailor made clothes. 20-30 percent of all clothing retailed today is still tailor made.¹⁵¹

The word "tailoring" means the art of cutting in many languages. A tailor's skill in measuring an individual's body and making a pattern from those measurements determines how well a garment fits. Whatever is a person's social or economic status, everyone was a potential customer for a tailor. (Colonial Williamsburg)¹⁴⁶

Custom tailoring refers to a special kind of tailoring performed by a skilled person in making a suit or coat for a particular individual. Specific techniques are used in making the garment attractive and also ensures it keeps shape. Custom tailoring is an individualized approach to making a garment. (Today's Custom Tailoring, 1987).¹¹⁵

The methods used by the tailors and the dressmakers to acquire body measurements for both custom made clothing as well as ready-to-wear were developed at about the same time from early tailor's methods. The method of using traditional tailor's measures to determine body measurements is both accurate and low cost. The tools used are simple and consist of a tape measure and maybe elastic to mark the waist. Landmarks and the measurements taken relate directly to the shape and dimensions of the garment to be made. Measurements generally taken along the contours of the body instead of in a straight line from point to point. (Cornell University)¹⁴⁷

By the late 80's and early 90's a number of big brands had appeared on the Indian retail scene and were instrumental in getting the consumer to look at these ready-mades Vis-a Vis tailor made, as these were factory finished and more fashionable. This change from tailor made to ready-made garments happened first in the men's wear.

Men would normally get their trousers and shirts stitched by a tailor but when these brands opened shops, gradually men began buying ready made shirts first and then gradually moved to trousers. The ready-made penetration base for

men's trousers has been much less than for shirts. The main reason, for this being the issue of fit.

Ready-made shirts were an easier category to migrate to than ready-made trousers. Shirts were not so figure hugging or body specific as trousers and hence there were less issues of the garment not fitting and hence the ease of buying them off the shelf. The volume in the men's shirts business has grown significantly in the mass segment at the low- end, a positive signal that more and more customers are now graduating to ready-to-wear.¹⁵¹

CONSUMER EXPECTATIONS (THE CONSUMER TODAY)

Since 1991, the liberalization of the Indian economy has stimulated a wave of modernization and development within the country's clothing industry. Fashion, an important component of the social fabric has not escaped the winds of change. The term fashion has many meanings to many people. But it is most definitely a social process. (Damhorst, 2005).³⁹ The most important paradigm change that has taken place in the fashion world is the shift from customer as end point of fashion to the starting point of fashion. Under the spell of the new wave of consumerism and brand consciousness the Indian consumer today is as well dressed and discerning as his counterparts elsewhere in the world.

There is an increasing urge to create a positive image of oneself given the overall environment of professionalism and competition.

According to Arvind Singhal, Chairman KSA Technopak," quality and contemporary designs have emerged as the new value drivers for consumers today." Future trends therefore indicate that value equations will incorporate aesthetic considerations alongside economic and functional considerations. In the pre -1980's price was the predominant purchase determinant, some years later quality coupled with price were most important. In the 1990's an assortment of quality, price, range and product are calling the shots.¹⁵¹

Customers are getting fashion conscious and are influenced to a great extent by the international trends and advertising.

Both International and National players are vying for a share of the Indian Clothing Market. The segment offers a high potential in terms of volume and as India has a substantial upper and middle-income consumer class.

Preference for ready-made garments is increasing. With urbanization on the rise, growth in the ready –to-wear sector is inevitable.

According to Mr.Hemchandra Jhaveri “The Indian Ready-to-wear apparel market has a large potential and is growing at about 8-10% per anum. However ready-to-wear is still a small share of overall market and offers a large opportunity to make conversions from tailor-made to ready made across categories.¹⁵¹ With a demanding consumer base, the garment Industry has to deliver products, which are superior in quality, design, and priced well.

While the conversion from tailor made to ready made is occurring the consumer would also expect the ready-to-wear sector to give products which are bespoke in terms of good fit etc but without the hassle of having to buy fabrics, give measurements, go for fittings, go back for alterations etc.,

This is perhaps the biggest challenge the industry would face. India is a large nation with a very diverse population not only in terms of the number of people but also the kind of people in terms of physical build – height, weight etc.

In developed nations where people are already used to buying ready-made garments satisfying consumer's needs in terms of fit is an ongoing problem, which is being tackled in various ways by them.

FIT

Fit of clothing is important as it not only influences other people's perception of you during social interaction or job interviews, but fit is also crucial for specialized clothing such as Sportswear or athletic wear. It may also prevent accidents for wheel chair users or those using specialized equipment on the job. (Farr,1996)⁴³.

Well-fitted garments are defined as those that are comfortable to wear, allow sufficient ease for freedom of movement, conform to present day fashion and are also free of wrinkles, sags or bulges. (Madhu, 2002)⁷⁵.

Sizing and fit are two interrelated issues costing apparel manufacturers and retailers millions of dollars. At the centre of the problem are the methods used in devising the sizing systems and size categories. (Ashdown,2003)¹⁴

Studies have shown that poor fit is one of the most frequently mentioned reasons for returning clothes. It costs money to make an extra trip to the store or to ship a package back in order to return merchandise. Merchandise that is returned also adds to business costs that are passed on to the consumer as higher prices. Sometimes clothing is never returned even if it does not fit due to time and the money it costs, as the money spent on non-fitting clothing is wasted.

(Farr, 1996).⁴³

Apparel fit ranks high on apparel consumers list as an area of intense frustration. (Newcomb et al 2004) ⁸⁶. Growing consumer dissatisfaction has been evident in surveys conducted recently. In a survey conducted by a magazine, fifty four percent of the respondents reported difficulty while shopping. Grounds for discontent being **quality, size of clothing and lack of information. So while the sizing of ready mades has been improved lack of standardization remains.** (Erwin, et al 1974)⁴²

Survey results by Kurt Salmon Associates (1999) show that 50 % of people say their clothing does not fit. Return rates on catalog clothing sales often hits 40-50% due to fit issues.

The problem of fit is however hard to measure for apparel manufacturers. Often the only way the manufacturers can measure the extent and severity of fit problems is through the analysis of the amount of returned merchandise. Sirvart Mellian an apparel program manager for the U.S. Navy has said that Quality control people at women's and children's apparel manufacturers report the highest number of returns retailers get because of size and fit. (Agnes, 1994).²

However a focus simply on returns does not give the true indication of the fit problem. It is very hard to quantify losses related to lost sales, brand

dissatisfaction, and time wasted in fitting rooms, which are all indicators of lost sales. (DesMarteau, 2000).⁴⁰

From the consumer's point of view, the '**Fit**' of the clothing is the most important attribute. The fit of a garment is how it conforms to your body structure. The desired fit in clothing changes with fashion. (Lupo, 1987)⁷⁴ Fit and comfort are the prime features a consumer looks for in clothing. Fit is a specific attribute that depends on the wearer. A garment either fits or does not fit a particular wearer (Ryan, 1966)⁹⁶.

Apparel design and production experts believe that the fit of a garment is one of the most important factors in producing garments that flatter the individual. (Simmons et al 2004)¹⁰⁴

A well fitted garment is a garment that hangs smoothly and evenly on the body, with no pulls or distortion of the fabric; straight seams, pleasing proportions, no gaping, no constriction of the body, and adequate ease for movement. Hems are parallel to the floor unless otherwise intended, and the garment armholes and crotch do not constrict the body. (Ashdown et al, 2004)¹²

Fashion means change. Awareness of change is necessary for fashion to exist. (Higgins et al 1995)⁵⁴ **Fashion also dictates different standards of fit.** When straight lines, slim silhouettes, and little curvature in clothing are important elements of fashion, the fit of clothing around the hips is crucial. When showing muscle definition is a priority, the fit of clothing around the arms and thighs is more important. Every individual has his or her own body type, needs, preferences and definition of good fit. **Some indicators of good fit are –**

- ❖ Clothes lie flat.
- ❖ Clothes have a smooth, unwrinkled appearance
- ❖ Clothes do not restrict the range of body movement.
- ❖ No diagonal folds or wrinkles are apparent.

Sometimes the garments are either too big or too small or may not be proportioned well for the wearer. (Iowa State University, 1996).

The **definition of good fit** is a complex issue confounded by the lack of agreement among the various stakeholders in the process: the designer of the clothing, the patternmaker/grader, and the customer. The designer is interested in creating a specific aesthetic look in the relationship to the body, the patternmaker must maintain the aesthetic over a range of different bodies and the consumer has his or her own personal preference as to how their clothing should fit. **As the sizing systems developed by different companies are not standardized, hence each system delivers a different fit.** The effectiveness of a sizing system is dependant on the skill of the pattern maker and the amount of effort the company puts into defining and producing the type of fit appropriate for their target market. (Ashdown, 2003)¹⁴

Analysis of the fit of clothing is a complex process in which the relationship between the human body and clothing is assessed to judge how well the clothing conforms to a set of fit requirements. These requirements or elements of fit are commonly categorized as ease, line, grain, balance and set. (Erwin et al, 1974)⁴²

- ❖ **Ease** – of a garment is the difference between the body measurement and the garment measurement at the same location. The more the difference in the measurements the more is the ease and the loser is the apparel. While drafting patterns based on body measurements, calculated ease is added at definite places in order that the wearer is comfortable on wearing the garment. If ease is not added the garment would be absolutely skin tight and unwearable. (Ashdown, 2004)¹²
- ❖ **Balance** – refers to the degree to which the garment hangs evenly from the body in every direction. (Ashdown et al, 2004)¹²
- ❖ **Set** – of a garment refers to the way it hangs from the body. (Stamper 1986)¹⁰⁸ A well-set garment will follow the shape of the shoulders or waist and hip area smoothly, with no stress folds or torque areas. (Ashdown et al, 2004)¹²

- ❖ **Line** – refers to the angle of the seams and other linear elements in the design.
- ❖ **Grain**- though not seen distinctly can be evaluated by its effect on the silhouette.

The causes and analysis of fit problems experienced by so many consumers is very important. Only by finding the cause may apparel firms start to improve their apparel fit. **Sizing standards** used by the apparel industry to create patterns are one source that could be examined to determine their adequacy at meeting the fit expectations of consumers.

Sizing standards used in the United States that identify the body measurements used in design and development of clothing were established from identified “best practices” of the apparel industry. However the Industry as a whole had not adopted a single system of clothing sizing. **Retailers and manufacturers using their own sizing systems** as a marketing tool, were convinced that, it would be a differential advantage of their product for their market. Regardless of the sizing systems used, all are based on the myth that humans have mathematically proportional bodies and that they grow in proportional ways. (Simmons et al 2004)¹⁰⁴

MANUFACTURERS VIEW POINT:

The prominent feature of all brand manufacturers is mass scale production. Most of the manufacturers have developed their own sizing systems. The clothing is then graded to larger and smaller sizes. Such sizing systems are based on decade old measurements. As a result of all these factors, some particular brands fit a consumer well, while the same size purchased from some other brand, does not fit so well. The standardizing of garments is incomplete and leaves much to be desired. Each producer of garments reserves the right to interpret the body measurements as he sees fit, **though he uses a generally accepted designation for size.** (Latzke, 1968)⁷¹

The manufacturers at large are aware of this problem. The retailers are confronted everyday with a high degree of 'merchandise-returns'. The maximum number of returns in a store was because of size and fit. (Mc, Roberts, 2005)¹³⁷ The necessity of alteration itself is a pointer to the deficiency in the manufacturing criteria and the process. At the hub of the problem is the sizing system. Sizing standards today in the apparel industry are derivatives of the ASTM or British Standards. In the Indian context, the ASTM or other European standards show wide variations with the body measures of Indian men. In addition such manufacturers evolve their own sizing system and size charts resulting in non – congruent sizing systems. (Margolis, 1964)⁷⁷ The consumer is left with no choice but to actually try on the products in the minuscule trial rooms.

This problem will persist as long as the brand manufacturers turn out their products on individual size systems, oblivious to other maker systems. Few of the manufacturers treat this a means of product differentiation. The major underline cause is the absence of standardization. No attempt is made by the manufacturers to come together and study the problem and concur on a **uniform sizing system**. Fitting is one of the most important criteria for consumers in their buying decision. For getting the best size and fit dimensions, manufacturers spend big chunks of money. Best range of sizing can be the key success factor for manufacturers. (Doshi, 2006)¹³¹

Choosing the right size avoids the frustration of wasting time, money and effort. **Accurate measurements** are the starting in determining the **correct size**. (Vogue and Buttericks 1994)¹²¹

SIZING SYSTEM is defined as a set of sizes derived by using common assumptions and methods of development, and size categories (or size classifications) within a system are defined as the various groupings of sizes as they would be presented in retail situation. Thus the sizing system most

commonly used for ready- to- wear in the United States of America makes use of a base size, fitted to a fit model and a set of sizes proportionately graded from this size. Examples of size category include misses' sizes, petite sizes, plus sizes etc. A sizing system can be as simple as one –fits –all or S, M and L or as complex as a system that provides a custom fitted garment for each individual. (Ashdown, 2003)¹⁴

The purpose of a sizing system for apparel should be to make available clothing in a range of sizes that fits as many people as possible .(Ashdown, 1998)¹³

The sizing surveys carried out in the U.K (1950) and in the U.S.A, (1940) produced a set of measurements for the statistically average women. The average figure thus represented the highest percentage of population and the others were derived from this. The data from the sizing surveys were then categorized into size charts by taking three height categories and six bust categories. These were said to represent 98% of the women. (Taylor et al, 1984)¹¹⁴

Almost every apparel company employs a different fit model and develops its own size charts. Apparel manufacturers develop sample size garments for a specific target market and size range as part of the product development process. The main point of evaluation for a sample garment is the fit session. (Bye: LaBat, 2005)²³

To evaluate the fit of a garment, apparel firms conduct fit sessions. Typically the fit session participants include designers, merchandisers, product development managers, and pattern makers. The individuals work together to evaluate the garment. Decisions made during the fit review may result in acceptance or rejection of the garment. (Bye: LaBat, 2005)²³ The garment may be viewed and evaluated on a body form then on a live body. The live body may be either an employee of the firm or a fit model that represents the firm's ideal sample size. (Farr, 1996)⁴³

Brands in India rely on foreign trouser brands to derive fits or use trousers from domestic brands that are doing well. As there is no base of measurements for the Indian population in terms of an anthropometric study available, these bought trousers form the base upon which the sizes are graded. The trousers are usually tried upon people in the office and if the fitting is good on them it is carried forward and the sizes are graded and patterns developed. Usually people in the office are identified for a particular size they wear and they are used as fit models.

FIT MODEL is a representative of the company's target customer. Compared with models seen in magazines or shows, a fit model is usually shorter, is fuller through the bust, has a defined waist, has some curvature at the hips, and has balanced proportions between the torso and the limbs. A fit model is expected to provide feedback about the garment, such as ease of movement and comfort. (Bye; LeBat, 2003)²³

POPULATION CHANGES

In the United States the sizing problems are at quite a peak as the population distribution has gone through dramatic physiological and demographic transformations since the 1940's study of O'Brien and Sheldon was undertaken. For many years the population of the United States was a mixture of ethnic origins. But over time the configuration of the mixture has changed. Minority groups have got larger and new groups of immigrants have got added to the mixture. With free trade and products becoming universal, free trade has opened a number of foreign markets to U.S. commerce. Worldwide interaction and travel have also led to interracial mixes. Body proportions also differ according to racial

origins. The racial mixture in the United States is very different to what it was in the 1940's on which most anthropometric studies were done (Simmons, 2004)¹⁰⁴ Moreover the lifestyle, dietary intake and cultural intermarriages have also changed the population mix. A larger number of people are also traveling away from their native places and moving to other countries, which is also impacting the body measurements of populations.

(Anderson et al, 1998)⁷ studied the fit preferences of female consumers and developed a system to enhance accurate sizing selection. They found that the consumers were unhappy with the fit of their garments for numerous reasons like – inability to determine the appropriate size because the measurement basis for each size varied from lack of application of sizing standards, variability of inaccurate pattern etc. Data from both the U.S and U.K indicate that the body shape for women has changed to a pear shape rather than an hourglass shape over the past four decades. Yet dated standards remain the basis for launching pattern development.

IMPORTANCE OF ANTHROPOMETRY IN APPAREL INDUSTRY

The word Anthropometry originates from the Greek word, which literally means “measurement of humans”.

In physical anthropology, it refers to the measurement of living human individuals, for the purposes of understanding human physical variation. (Wikipedia)¹⁴⁸

Today Anthropometry plays an important role in industrial design, clothing design, ergonomics and architecture, where statistical data about the distribution of body dimensions in the population are used to optimize products.

Changes in lifestyle, nutrition and ethnic composition of populations lead to changes in the distribution of body dimensions and require regular updating of anthropometric data collections.

Anthropometry deals with the methodical and precise measurement of the human body. This can be done roughly in the following ways –

- ❖ Traditional Anthropometry
- ❖ Traditional Tailor measures
- ❖ Three-dimensional body scanning.

TRADITIONAL ANTHROPOMETRY evolved from the methods and tools developed for anthropology, ergonomics, and the design of functional clothing. The tools include anthropometers (a standing tool that measures straight linear distances), calipers and calibrated measuring tapes. Linear heights are taken with anthropometers while linear depths are taken with calipers.

TRADITIONAL TAILOR MEASURES can be relatively low cost and accurate. The tools are simple and consist of a tape measure. Measurements are generally taken along the contours of the body instead of a straight line from point to point.

THREE DIMENSIONAL BODY SCANNING Involves using laser light or white light and cameras. Three-dimensional scanning can produce a complete 360-degree view of a solid object producing a full replica of the scanned object on the computer screen that is dimensionally accurate. . **The drawback is that scanners are large and expensive resulting in limited availability.**

So while ready-made garments are gaining popularity there is a need to still customize the fit for the consumer based on body shape. Levi Strauss & Co. was the first large apparel company to offer mass customization when they introduced “Personal Pair” jeans, now marketed under the name “Original Spin” in selected Levi’s Stores. Consumers could customize their jeans by choosing fabrics, styles, and inseam lengths, leg openings etc. **The salesman took individual measurements** and the consumers’ fit was determined by inputting the consumer’s measurements. Then the jeans were the individually manufactured and shipped to the consumer’s home address.

Lands' End offer custom made shirts, jeans, and chinos. The consumer takes his /her measurements guided by instructions and key them in. They also choose their option of style, fit etc.

Brooks Brothers offer mass customized suits at their New York store. They use a proprietary custom patternmaking system to create individual patterns based on body measurements. (Cornell)¹⁴⁷

In India we have a diverse population and geographically the divide is very strong. There are five regions – North, South, East, West and Central India. **Physically also the population differs in the regions.** The North Indians tend to be taller and heavier than the other regions. The West and Central appear to be medium in terms of height and the East is on the shorter side. The problem that manufacturers/ retailers face is that what fits really well in the South may not necessarily fit as well in the East.

Shirts not being a very fitted garment face lesser-fit issues. Not only is the length of the shirt easy for anyone to wear, but also the other dimensions like the shoulders and the armhole not being dependant on the body shape do not pose any problem. The only issue would be the sleeve length in case the wearer is short or tall.

In the case of trousers the main measurements would be waist, hip, inseam length and out seam length. The last two these are related directly to the height of the individual. The other measurement would be the front rise and the back rise related to the inseam length.

The girth measurements like the waist, hip etc are equally important and are individual dependant.

Most companies borrow the specs from either international or national players and then tweak the same in terms of style, and tightness/looseness etc. Most are either British specs or European. To avoid the purpose of problems on length, brands offer open-ended trouser lengths, which is usually 44" for all sizes.

Practically this length without reducing the length of the trouser should fit someone who is 6ft comfortably. Taller than that this length might also be a bit of a stretch. However Indians as a whole are not all 6ft in height. The average height of an Indian Male would be around 5ft 7" to 5ft 8". But there are a whole lot who are much shorter than that. Now brands do not cater to people based on whether they are from the North, South etc. So when a short person alters these formal trousers to suit his length, the proportions of the garment get lost. So while the thigh might have been just comfortable on someone who is relatively tall, the moment the length is shortened the thigh loses its perspective and starts looking baggy.

So while a decade ago a trouser did not have to be really well fitted and no one really paid heed to that, today, the fit is gaining a lot of importance and consumers want to wear clothes that flatter their physique rather than just something that is not complementing their looks.

So, if you just take an individuals waist say waist size 36". There would be people who are 5ft 2", 5ft 4", 5ft 6", and 5ft 8" tall. If they all were to enter a store and buy the same 36" trouser, and get it altered to suit their height requirement, the trouser would suit the 5ft 6" and 5ft 8" tall people better than the other two shorter men.

Unlike the West we do not have a single national study done on the population with specific attention to apparel. Some apparel companies have done their own study for their brands, like Allen Solly did for it's women wear prior to launch, TCNS did it for Ethnic Wear, Levi's did it for the Diva etc. But these were all done on really small scale with a small sample size and none of them were sufficient in terms of being large enough to have measured cross India and to come up with a data base which is accessible to everyone. Even if the database was large, the results are not for use by everyone.

WHY STANDARDIZATION?

Standardization or universalization of consumer goods is a symbol of civilization.

We live in an era of standardization where everything from a sachet of sugar to a cake of soap follows fixed measures. (Hegde, 2009)⁵³ Ready-made trouser market in India rates high in economy. Crores of consumers and yet always the question about the fit when they buy this product. Standardization at national level is the only means that will permanently solve this problem. The total market size for trousers stood at 314 million pieces in 2007. The trouser market shows a consistent and gradual increase in size. (Mehta, 2008)⁸² Countries like China and Japan where the body type is narrow and trim have developed their own standards. Britain, Europe and the U.S. are improving upon their own measurements. The next big step for the Indian fashion industry in its search for a global presence, is finding its own domestic standard for size. (Hegde, 2009)⁵³

It is observed that there is no one specification that is followed by trouser manufacturers for making trousers. Each brand/ trouser manufacturer develops his own size chart as per the requirement. It is observed that in general, a consumer often buys a particular brand because it appeals to him well but he is not confident that he will get his size trousers when he visits the stores

The aim of the present study was to develop **standardized measurement charts** for the Indian men, **for trousers**, by measuring a large cross section of men from all regions of India, within the age group of 25-55 years. The objective was to have a **database of body measurements** of the Indian men, and to develop from these body measurements the trouser measurement charts which would enable **brands** to give the customer a **standard size** and which would give the consumer the **perfect fit** in terms of waist, hip and length without having to alter the trousers. With this background, the main focus of the study was to produce a vast range of graded trouser sizes, which would be suitable for the Indian men with different physiques. The end result of the study is, to have standardized trouser specification measurement charts, which can be adopted by

brands/ trouser manufacturers. This will help them to cater to a larger number of Indian men by giving them a perfect fit and hence comfort in trousers, since **fit and comfort are the prime features a consumer looks for in trousers.**

1.2 OBJECTIVES OF THE STUDY

1. To collect the primary data of body measurements specific to trousers of a large cross section of Indian Men in the age group of 25 -55 years.
2. To develop height wise and waist wise class intervals from the above data of body measurements specific to trousers and to determine the mean ratios between waist and other body measurements.
3. To condense the above height wise and waist wise class interval data for each zone and metros and assign provisional identification label.
4. To develop graded range of sizes of trouser measurement chart, suitable for commercial application from the above height and waist class interval groups, for different zones and metros and assign suitable identification label.
5. To identify, analyze and compare the preference factors influencing Indian Men's choice of branded trousers.
6. To identify the significant similarities /differences in preference to fit, style and brand of trousers amongst the men from different zonal groups and metros.
7. To construct trousers using selective graded sizes and conduct wear trials to get the feedback for fit and comfort.
8. To modify the specific trouser measures (if any), on the feedback basis and incorporate these changes in the standardized trouser measurement charts.
9. To recommend the above standardized trouser measurement charts to brand manufacturers for implementation, thereby providing trouser sizes that will fit men of different waists and heights.

1.3 SIGNIFICANCE OF THE STUDY

1. This study will bring rationality of trouser sizes amongst all manufacturers in India.
2. The extensive study and the grading arrived at of body measurements will provide a perfect fit to every consumer in the selected age group (25-55 years).
3. The consumers need not worry about the fitting aspects while making a purchase from different brands, as all brands will adhere to the new standardized trouser measures.
4. Uniformity in sizes amongst different Indian Brands will boost up the credibility of Indian Trouser in the Global (world) market.
5. Abroad a lot of research and study has been done to arrive at a standardized body measures for men and women and they are still further improving upon the old studies. The standardization developed in this research is in the Indian context and will have countrywide application.
6. It is to be noted that the set standards may require up gradation every 5-8 years. This is because of changes in fashion and hence the dimensions of the trousers would keep changing.

e.g.; Normal bottom - narrow bottom – (14" tight).

Bell-bottom – back to normal bottom

1.4 LIMITATIONS OF THE STUDY

1. The study is limited to Indian Males in the age group of 25 to 55 years only.
2. The study is limited to those men who buy and wear branded trousers
3. In the regions, the respondents were limited to those people staying in Ludhiana, Coimbatore, Indore, Ahmadabad and Calcutta.
4. In the metros, the respondents were from Mumbai, Bangalore and Delhi only.
5. The study is limited only to TROUSERS.
6. The Graded Trouser Measurement Charts are limited to heights from 155 Centimeters to 185 cms only and waist measurements above 66 centimeters only.
7. The Commercial Trouser Measurement Charts are made for Flat Front Trousers, Regular Fit to be worn at Mid Waist Level only.
