Women's Alpha Size Charts Comparison Among 120 Clothing Brands

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Introduction: The Industrial Revolution spurred mass production and ready-to-wear fashion, leading to size labels based on age, body proportions, and figure types (Chun-Yoon & Jasper, 1994), though often without a clear understanding of anthropometry. Today, clothing companies utilize both numerical and alpha sizing systems; the former offers precise fit options through body measurements, while the latter caters to knit and casual styles with a broader size range (Nikolic, 2019; Omotoso, 2019). The Federal Trade Commission mandates that size labels be present on garments for consumer protection but does not dictate the measurements behind those sizes, leaving brands to independently determine their sizing systems (Federal Trade Commission, 2016). Notwithstanding the existence of broadly recognized standards such as ISO/TC-133 and various national standards, the onus remains on individual brands to devise their own measurements for size labeling (Hackett & Rall, 2018).

Given the challenges that both clothing brands and consumers encounter in defining sizes, the absence of a universally regulated standard for sizing labels persists. In practice, sizing charts encompass a range of categories, such as junior, vanity, ready-to-wear, petite, tall, missy, and plus-size, typically employing numerical designations for garments where fit is critical (Chun-Yoon & Jasper, 1994). This inconsistency in size labels not only engenders consumer frustration but also complicates the sustainable production of clothing for manufacturers. Compounding these issues is the rise of fashion e-commerce, which diminishes opportunities for consumers to assess fit before purchase. This has resulted in a significant return rate of 26% for clothing items, leading to challenges in inventory management (Statista, 2023). Notably, poor fit accounts for 70% of these returns (McKinsey & Company, 2021), underscoring the need for the fashion industry to embed inclusivity and diversity within its sizing paradigms (Ashdown, 2007). The present study intends to dissect the nuances of alpha sizing charts and scrutinize the variations in chest, waist, and hip measurements across diverse brands.

Methods: This research investigated the women's alpha size charts from 120 fashion brands. Due to the limited measurements shared by some brands, 84 alpha-size charts, including XXS-2XL, were collected and analyzed in MS Excel. All measurements were recorded in millimeters. For size charts, both the minimum and maximum values, as well as measurement ranges, were included. Each brand was tagged with a market segment label, which included primary/luxury, contemporary, lifestyle, fast fashion, casual, and outdoor/sport. Although some brands included multiple body measurements, only chest, waist, and hip were collected to compare the deviation under each size label. Calculations were conducted to determine the minimum, maximum, mean, and standard deviations (SD). Additionally, the distribution curves were analyzed.

Results: In Figure 1, waist size in XXS indicated the smallest SD among all sizes (M=608, SD=24.53). In comparison, waist size in 1XL showed the largest dispersion (M=1014, SD=100.43). Smaller sizes, including XXS, XS, S, and M, presented smaller SDs, which suggested that brands tended to have similar chest, waist, and hip measurements towards smaller sizing labels. Whereas the larger sizes, including L, XL, 1XL, and 2XL, had a large range of
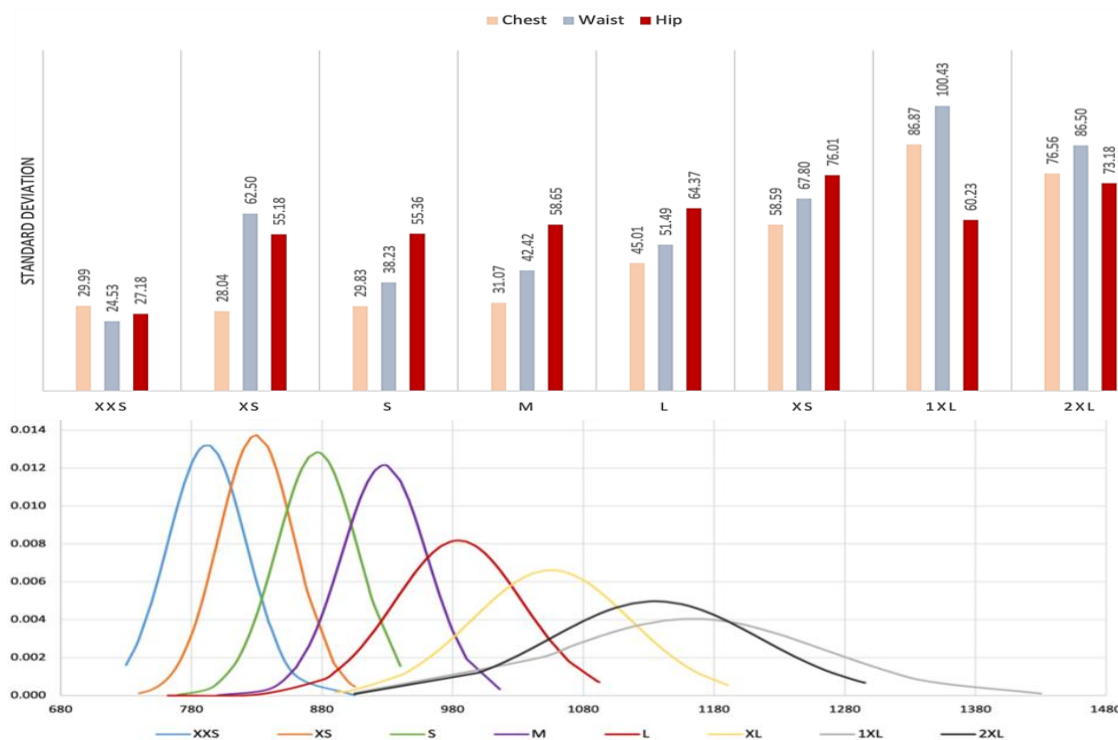

Figure 1. Chest /Waist/Hip standard deviation comparison (above) and Chest circumferences measurement distribution (below)

measurements, which could cause complications in identifying the accurate sizing labels for consumers. The SD for the chest measurements ranged from 28.04 to 86.87, while the SD for waist measurements ranged from 24.53 to 100.43. In contrast, the SD for hip measurements ranged from 27.18 to 76.01, except for the 2XL size category, which has a higher SD of 73.18. This indicates that the chest and waist measurements have relatively lower variation than the hip measurements, which could affect how garments fit and their sizing.

The analysis of 120 fashion brands revealed that while fast fashion and lifestyle brands typically provide basic chest, waist, and hip measurements, outdoor, sport, and primary brands offer more comprehensive sizing details, including arm lengths, neck circumferences, and shoulder widths. Notably, 23 luxury brands forgo size charts, potentially indicating bespoke services or a narrow body type focus, whereas only seven brands offer plus-size guides. Among the 84 brands with size charts, the chest measurement for size 2XL varied widely from 1,000mm

to 1,310mm, reflecting a lack of standardization that predominantly affects larger sizes. Smaller sizes displayed less variability in measurements across brands, suggesting greater uniformity (Figure 1). Furthermore, only 19 brands used measurement ranges for alpha sizing, compared to 65 brands that used single measurements, highlighting inconsistencies that challenge consumers in finding well-fitting garments and underscoring the need for more inclusive and standardized sizing in the fashion industry.

Discussions: In conclusion, the research findings demonstrated a consistent sizing range for smaller labels among the investigated brands, proving that consumers requiring larger sizes may encounter increased difficulty in identifying appropriate labels and achieving an optimal fit. The lack of standardization in these sizes indicates a potential oversight and an opportunity for brands to better serve a diverse consumer base. To enhance the understanding of how measurements, sizing labels, and consumer targets interact, it is paramount to conduct further research. This should involve defining body proportions and shapes more precisely to enable cross-referencing with the market segments that brands aim to reach.

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