E-B
Environment - Behaviour Proceedings Journal

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Indexed in Clarivate Analytics WoS, and ScienceOPEN

e-IPH
e-International Publishing House Ltd., United Kingdom

ICWEP2022

https://icwep.uitm.edu.my/index.php
International Conference on Wood and Eco-Products 2022
Best Western Hotel iCity, Shah Alam, Selangor, Malaysia 15-16 Nov 2022
Organiser: Faculty of Applied Sciences, Universiti Teknologi MARA (UiTM), Shah Alam Malaysia & Research Nexus UiTM,, Office of Deputy Vice-Chancellor (Research & Innovation)

A Conceptual Review of Uniform Wear Attributes Identification for Size Fit

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Abstract
With the accessibility of fast fashion, consumers have opportunities to purchase fashion clothes that are current trends, besides providing them options to choose the right garment at any time and place. However, dissatisfaction with garment fit has always been a challenge. Size fit provides a good fit, emphasizing comfort, ease of wearing, and shape. This research has conceptualized several attributes that could enhance the excellent fit of uniform wear that are divided into functional, aesthetic, and emotional. Employing dimensional attributes would enhance the performance of workwear besides pleasing the wearers due to comfort and making them look attractive.

Keywords: Uniform; Attributes; Size fit; Females; Organization

DOI: https://doi.org/10.21834/e-bpj.v8iSI17.5972

1.0 Introduction

Currently, Malaysia's clothing does not emphasize the importance of functional fit based on the Malaysian population's actual body dimensions (anthropometric data) for garments' construction (Yu & Kim, 2020; Norsaadah Zakaria, 2007). The current scenario will lead to poor fit and comfort of garments. This somehow will affect the quality of garments. Furthermore, this situation will be more crucial if the garment is used for functional purposes like uniforms worn specifically as workwear, where the fit is critical for optimum wear. The fit of clothing is a significant factor affecting the wearer's physical and psychological comfort (Kim & Damhorst, 2010).

The functional uniform that critically needs a good fit is the Malaysian armed forces, such as the army, navy, air forces, police force, and many more. Regardless of how attractive an attire is, how easy the garment is to care for, or what value the clothing has, it is of no benefit if the garment does not fit the wearer (Chen, 2007). Norsaadah Zakaria (2007) found that factors affecting clothing fit include garment size, size and shape, and correct size. This study is aimed to identify and evaluate uniform wear attributes for size fit. Several studies have assessed the attributes of casual clothing for size fit (Karmegam et al., & Hanapi, 2011), but attributes needed for uniform wear size fit are still lacking and not highly discussed.

Hence, this study is intended to explore dimensional attributes that are crucial to enhancing the fitting of the garment, which would eventually uplift the professionalism of the wearers. A good size fit uniform not only helps to portray a professional image among workers but also enables them to perform their tasks effectively.

1.1 Problem Statement

Currently, the Malaysian clothing industry has yet to have a standard sizing that is based on anthropometric data. This situation has resulted in poor fitting and non-comfortable garments. Eventually, the quality of garments is affected. Furthermore, this situation will be

more crucial if the garments are made for functional ready-to-wear, where the sizing is based on range sizes. The fit for the garments needs to be based on the groups that have the same size since ready-to-wear garments depend on the accuracy of body shapes and sizes. Therefore, every country and every region within a country must establish its sizing system based on the target population. Numerous studies have attempted to explain how the lack of appropriate sizes can result in major frustrations for consumers attempting to find a good fit (Otieno,2005; Ariduarai, 2009; Petrova,2007; Varte et al., 2017; Bezerra et al., 2019). A well-fitted garment has the correct size for that specific person's shape. Thus, a well-fitting garment needs to be created based on the anthropometric data of the target population (Chen,2007; Wu et al., 2018).

A successful corporate worker is determined by suitable clothing that fits well and appealing, reflecting the company's image and market (Yin & Annett-Hitchcock, 2019). In satisfying the consumers' market today, several attributes need to be examined and explored to ensure the clothes meet the consumers' preferences. Because there are limitations in the suitability of free-size garments with the actual wearer, the concept of good fit in garment engineering contradicts the concept of free-size garments in textile markets. This could be attributed to the concept of size, fit, and proportion because while everybody wears the same sizes, no one has the same shape, fit, and proportion, which distinguishes an individual's features (Hackett & Rall, 2018). The functional and aesthetical behavior of garments that analyze comfortability, suitability, and beauty will contribute to customer satisfaction (Nelson & Bowen, 2000).

1.2 Research Objectives

The study's objectives are as follows: 1) To identify the appropriate uniform attributes that represent the size fit of uniform wear, and 2) To understand the characteristics of appropriate uniform design that fulfills the performance and quality attributes of functional uniforms. This study is expected to answer the following research questions: 1) What are the appropriate uniform attributes that represent the size fit of uniform wear? 2) How do the characteristics of appropriate uniform design fulfill the performance and quality attributes of functional uniforms?

1.3 Research Significance

This research is fundamental as findings from the study will assist in enriching the current fit of uniform wear. Uniform plays an integral part as it not only represents a company or an organization's image and reputation but also offers comfort and ease of movement to wearers with a proper fit uniform. A good-fitting uniform will enhance the work quality of the personnel, and they could even become more productive as they are positively motivated by the surrounding work culture. This research also will contribute towards identifying elements required for designing good-fitting uniform wear. A study on uniform wear is quite limited and has yet to become a highlight topic compared to streetwear fashion. Uniform wear is a functional garment that mainly focuses on professional appearance and functionality. However, attributes such as good fit in uniform are essential to explore as this will enhance the wearability and functionality of the garment.

2.0 Literature Review

2.1 Understanding body size, shape, and proportions

Body measurements are an important subject that is applied in many fields related to science and design applications. Anthropometric studies are conducted worldwide to comprehend the diversity of body types and shapes that resulted in creating a standardized size system in one country (Petrak & Mahnič Naglic, 2017; Zakaria et al., 2008). The sizes, dimensions, and proportions of the forms that make up the human body vary according to a person's diet, way of life, culture, and geographic location. Anthropometric research compares the sample to the appropriate size and form by measuring various aspects of the human body. Manufacturers cannot create clothing that fits their population well without knowledge of the national anthropometric data (Ashdown & Loker, 2010; Hackett & Rall, 2018). Body size and shape are critical attributes in the apparel industry since they are directly related to the wearer's physical comfort and how the clothing appears on others after it has been worn. This will impact the wearer's body image and self-confidence (Kim & Damhorst, 2010). A corporate uniform is a basic work requirement that staff or workers at a specific company must wear. Corporate employees must wear the garment at one time, whether at work or on duty outside of the workplace. A corporate uniform's purpose is to represent the uniformity of a company while also reflecting the wearer's intelligence. Thus, the corporate uniform design aims to make people wear garments that are comfortable for their body size. The foundation of the garment should be body size and shape detailing that will satisfy the wearer (Yu & Kim, 2020).

2.2 Fit evaluation

Physical try-on applications on actual living beings are strongly advised to provide unbiased feedback based on the wear trial (Tama et al., n.d.; Tama & Öndoğan, 2014). The fit analysis will be based on two parameters: body shape and pattern development. To be properly fitted, clothes must be large or small enough to accommodate the wearer's shape and size (Liu et al., 2022). It can also be used to create clothing that fits three-dimensional human body figures. For the enjoyment of the human body, a well-fitting garment is crucial. When a garment lacks security, is poorly constructed, has poor dressing and cutting techniques, and wastage of resources due to negligent design and bad construction (Scheer, 2017). In order to accommodate the typical human body while walking, sitting, riding, and even breathing, a garment needs to have enough ease beyond the wearer's actual size (Lin & Wang, 2016; Liu et al., 2022; Shin & Lorenz, 2016). Fitting ease is the term used to describe easiness in this context. The additional flair, such as fullness added to the fitting

ease, is known as design ease. All the clothing has an easy fitting, although the ease of design is not required because it is added solely for aesthetics and to give the clothing its style (Scott & Sayem,2018).

2.3 Clothing attributes for size fit

2.3.1 Size

To produce a garment, manufacturers should have a set of necessary body measurements (Norsaadah Zakaria, 2017). For this purpose, size charts that contain the required body measurements are developed. These size charts are produced based on average measurements of human bodies, and they can be used to make the basic block pattern to construct a garment (Ariadurai, 2009). A specific size measurement could target garments to fit specific consumer segments (Faust & Carrier, 2009). Women's shapes and silhouettes vary from one to another, and manufacturers produce their garments according to one or specific shape and Silhouette.

2.3.2 Fabric

Fabric is another important component in clothing design. Fabric is a material made from either natural or synthetic fiber used in apparel manufacturing. Fabric is also one of the factors that will influence the comfort of a garment on wearers; using the wrong type of fabric on a certain clothing category will make wearers feel discomfort and restless. Specifically for uniform wear, this attribute is crucial since uniform attire requires people to wear it most of the time despite location, weather, and functions.

2.3.3 Silhouette

Silhouette refers to a garment's contour that makes forms easily recognizable (Fiore, 2010). The Silhouette reflects changes in fashion as it may change according to the trend and season (Fiore, 2010). A garment silhouette is divided into several shapes: tubular, A-line, hourglass, wedge, and bell (Fiore, 2010).

2.3.4 Design

Design refers to organizing design elements that are coordinated creatively to achieve an aesthetic look (Keiser & Garner, 2003). Design elements are blocks of design that comprise lines, colors, textures, patterns, Silhouettes, and shapes (Keiser & Garner, 2003). These are considered the intrinsic elements that serve as critical attributes for apparel design. Design is one of the elements that will influence the comfort, style, and image of the wearer. If a garment is properly designed, this will affect the look and give a good impression to the wearer.

2.3.5 Details and Trims

Details included component parts, decorative effects, and trims (Keiser & Garner, 2003). Parts are elements of a garment that are not part of the basic structure but add aesthetics and functions, such as collars, cuffs, pockets, and belts (Keiser & Garner, 2003). Meanwhile, decorative effects, referred to as embellishments, are added to the fabric to enhance the texture and overall presentation (Keiser & Garner, 2003). This involved smocking, tucking, embroidery, pleating, and slashing. Trims are details added to the garment, such as fasteners, braids, or lace (Keiser & Garner, 2003).

2.3.6 Assembly

Garment specifications list every operation used to make a garment in sequential order (Keiser & Garner, 2003). Each operation is divided into several tasks based on a garment's production flow. This is important to ensure the overall quality and consistency of the product manufactured. Assembly is referred to as the steps undertaken to make a garment. This involved procedures and techniques that were utilized to assemble garment pieces. For example, for fit purposes, it must be evaluated and approved before production, hems must be parallel to the floor, and garments must be free of wrinkles and not part of the design.

3.0 Methodology

A conceptual approach to size fit was utilized to identify elements that contributed to size fit. A review of twenty (20) related articles on size and fit published from 2000 onwards was utilized to identify apparel attributes required for fit preferences. Though the terms found in those articles varied, such as the use of the words fit and fitting, these terminologies clearly defined the fit and fall of a garment on a human body/figure that entailed elements listed in Table 1. Hence, these articles were gathered, compiled, and categorized according to the common terms reflecting the fit of a garment. The literature search was conducted using the following keywords: evaluative criteria, evaluation, attributes, apparel fit, clothing fit and size, evaluative cues, and apparel, clothing, and product. Articles were obtained from several databases, such as Google Scholar, Journal Seek, Emerald Publishing, and Science Direct. The common terms were identified and grouped into three (3) divisions: physical comfort, psychological comfort, and aesthetic appearance. Each attribute reflected the meaning of each division discussed in referred articles. These divisions were grouped based on each definition of the attributes found in the reviewed articles. The most comprehensive and frequently cited sources found on the subject are summarized in Table 1. Each item was marked / if it is found discussed in the referred article and allocated accordingly to each attribute. The limitation of this approach was on the clothing category, in which most of the reviewed articles used the term clothing and apparel, and the focus of the study was on uniform wear. However, the term apparel refers to any form of clothes or attire worn by people, except that a uniform is a set of clothes worn to signify an individual’s position or to represent a workplace.

Table 1: Articles Review from 2000-2022

Articles Review	Silhouette	Fabric	Design	Assembly	Details	Details	Comfort	Aesthetic
Nelson, K., & Bowen, J. (2000)		/	/	/			/	/
Hsu, H.J., & Burns, L.D. (2002)	/	/	/	/	/		/	
Klerk, H.M.D., Lubbe, S. (2004).	/	/	/	/			/	/
Bye, E., & LaBat, K. (2005)	/	/	/	/	/	/	/	
Hein, D., & Reffeltrath, P. (2007)	/	/	/	/			/	
Howarton, R., & Lee, B. (2010)	/	/	/	/	/			
Ashdown, S., & Loker, S. (2010).	/	/	/	/		/		
Shan, Y., Huang, G., & Qian, X. (2012)	/	/	/	/	/			
Kim, H., & Damhorst, M.L. (2013)	/	/	/	/	/		/	/
Venue, G., Leon, T., Alemany, S., & Ayala, G. (2014)	/	/	/	/		/		
Yang, J.H., Kincade, D. H., & Chen-Yu, J.H. (2015)	/	/	/	/	/			/
Cassidy, T. (2017)	/	/	/	/				
Shin, E., Damhorst, M.L. (2018)	/	/	/	/	/			/
Rahman, O., Fung, B.C.M., Chen, Z., Chang, WL., & Gao, X. (2018)		/	/				/	/
Yasim, A., & Mohd.Tajuddin, R. (2020)	/	/	/	/	/	/	/	
McAndrews, L., & Brooks, E. (2020)		/	/	/			/	
Ghalachyan. A., & Karpova, E. (2021).	/	/	/	/	/			
Kempen, E., Kasambala, J., Tobias-Mamina, R. (2022)	/	/	/	/		/	/	
Jalil, M.H., & Shanat, M. (2022).	/	/					/	
Gill, S., Januszkiwiczm M., & Ahmed, M. (2022)	/	/	/	/	/			

(Source: Author, 2022)

4.0 Results and Discussion

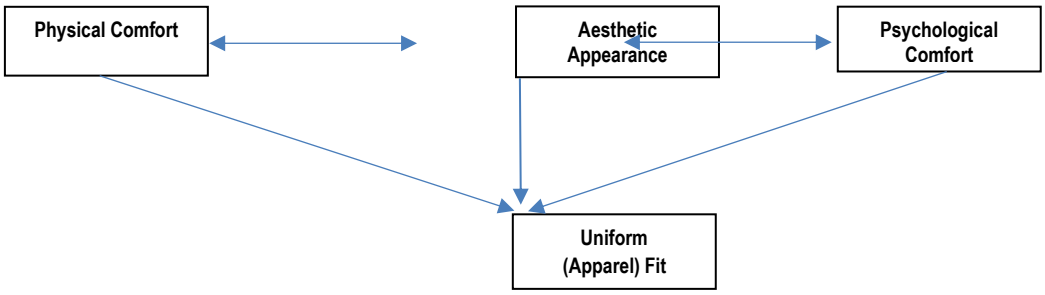

Fig. 1: Summary of Attributes for Uniform Fit
(Source: Author, 2022)

The development of ready-to-wear (RTW) uniforms involved estimating the body measurements of the target population to provide patterns based on basic size, sizing charts, and grading parameters. However, most apparel manufacturers create and adjust their size charts, resulting in returns and alterations, especially from uniform wear. Hence, this study found that to provide consumers with better-fit uniform wear, it is essential to explore various elements that not only emphasize extrinsic and intrinsic attributes but also investigate

the psychological needs that all these attributes will nurture their satisfaction with the garment. This paper adopts three categories from previous studies (Shin & Damhorst, 2018; Shan et al., 2012) (Refer to Figure 2).

Physical comfort relates to ease of wear, fabrication, design, finishing, and garment assembly. According to Ghalachyan and Karpova (2021), physical comfort is also linked closely with the functional properties that involve the ease of wearing a garment. Psychological comfort refers to a feeling of satisfaction or dissatisfaction towards the garment, and this is usually related to factors that affect the body and size (Ghalachyan & Karpova, 2021; Shin & Damhorst, 2018; Frost, 1988). Concerning psychological comfort, this deals with dissatisfaction with factors such as design, fabric, finishing, and detailing that somehow would affect discomfort in certain body areas. A positive self-image is essential for mental and emotional well-being, and wearing a garment that fits well and compliments the wearer would enhance their positive feelings (Siti et al., 2021).

Meanwhile, the aesthetic dimension is associated with looking attractive or the garment looks good. The aesthetic elements involved design, fabric, details, and Assembly that influenced the wearer's physical appearance. According to Shim and Damhorst (2018), some garments portray the body negatively, implying bad-fit clothing. For example, uniform wear that was badly created due to the use of the wrong size chart and an unsuitable type of fabric would make the wearer look either bigger, shorter, or goofy than actual. In addition, a good-fit uniform would make the wearer look attractive as the garment fits correctly on the body.

Generally, a garment that fits well means that the garment looks pleasing and will give a good impression to others. Across all three clothing categories, Silhouette, fabric, and design strongly associated with the fit, categorized under physical attribute, were the most important evaluative criteria, statistically equally important. They differed significantly from the proportions of other evaluative criteria for the size-fit garment. A study conducted by Kempen, Kasambala, and Tobias-Mamina (2022) on African women found that body shape was an important criterion when choosing a blouse/top, while the dress was significantly associated between fit/sizing and women with an hourglass body shape comfort and the triangle body shape, and color/patterns and the rectangular body shape. The results showed that variations in body shapes are crucial when it comes to apparel fit and need to be improved for certain prominent body shapes. Based on Kempen, Kasambala, and Tobias-Mamina (2022) showed that body shape has a strong association with comfort and fitness. Most garments had fit problems since pattern measurements were adjusted based on the Silhouette (Jalil & Shanat, 2022). Accurate information is needed when constructing patterns to ensure that the garment can meet both body and silhouette shapes, and this would provide fit and satisfaction.

5.0 Conclusions and Recommendations

Uniform plays an integral part in status, image presentation, and identity concerns. Hence, an advanced method incorporating sophisticated technology is crucial to ensure that the uniform is manufactured according to the body size and fits well. Many companies are using new technologies to engage better and produce garments that meet today's consumers' fit, size, and shape. Additionally, three (3) categories of fit preferences, including physical comfort, aesthetic, and psychological comfort, were identified as the measurable elements to produce good-fit uniform wear. Uniform wear manufacturers need to explore these attributes to ensure that manufactured uniforms meet the quality standard by engaging the physical (functional) properties with the aesthetic and overall appearance. Clothing experts also need to consider using the multiple dimensions of fit to ensure the garment meets the exact concept of fit that scholarly researchers use. In terms of uniform quality, the clothes should fit the functional and aesthetic behavior that consists of intrinsic and extrinsic factors, commonly the type of fabric, styling, the process of tailoring, and size. Hence, Malaysian manufacturers and designers must investigate the differences in body shapes amongst Malaysian people that are unique due to the multiracial background that will lead to different body shapes, heights, and sizes. Future research needs to investigate the technical considerations of good-fitting uniform wear. Even though this research provided some valuable information that would aid uniform manufacturers, there were some limitations found in relation to the literature on size fit on uniform wear, especially from the Malaysian scenario. This somehow affected the generalizability of this study as most reviewed articles were based on the Western setting. However, the universality of size and fit of apparel attributes minimized this error in which the identified attributes can be applied to any form of attire that includes a uniform as well.

Acknowledgments

The authors would like to express their gratitude to the Research Nexus UiTM (ReNeU), UiTM Shah Alam on the incentive provided through the PYPB fund and to the College of Creative Arts, UiTM, Shah Alam, Selangor, for their assistance in facilitating the writing and publication of this research. This research is also derived from future research discussed in the FRGS (2019) research grant.

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