FIT ASSESSMENT OF SLOPERS FOR WOMEN WITH DISPROPORTIONATE FIGURES

P.E. ZWANE* and N. MAGAGULA**
***Material Science and Manufacturing, National Fibre, Textile, and Clothing Centre, P.O. Box 1124, Port Elizabeth South Africa. 6000.**
****University of Swaziland , P.O. Luyengo. Swaziland.**

INTRODUCTION

The four prevalent body types are the: hourglass / ideal body shape, triangular / pear / bottom heavy shape, inverted triangular / top heavy shape, and rectangular body shapes. An individual with an hourglass shape is regarded as having a proportionate figure, whereby the girth measurements (bust, waist and hip) conform to those on the sizing charts, have a 25cm to 31cm smaller waist than bust/hip) and varied back waist lengths (Defty, 1998, and Simmons et al., 2004). The other three figure types are regarded as disproportionate, and they rely on custom-made clothing, or alter garments after purchasing in order to achieve proper fit and satisfaction with the apparel, or still end up purchasing two different sizes of the same style for the top and skirt. Currently, basic blocks of different sizes are designed based on a proportionate figure. A disproportionate figure is any discrepancy of shape / size found on an individual's figure that does not comply with the accepted standard body measurements of an average figure (Defty, 1998). This study was conducted in Swaziland with the purpose of evaluating fit of standard and developed slopers for women with disproportionate figures. Objectives of the study were to develop slopers for bottom heavy women and to compare fit on test garments sewn from new slopers and standard slopers.

METHODOLOGY

This was a descriptive research design where body measurements were taken from a total of 30 purposively selected female students from the University of Swaziland, using a snowball technique. Sizes for the selected participants ranged from size 34 to 40. Body measurements in each size category were averaged and slopers were drafted. Test garments were made using the newly drafted slopers. A model in each size category, with a big difference between the bust and hip measurements, was used to fit the test garment sewn from developed basic blocks and from standard slopers. A panel of six qualified clothing experts evaluated the fit of the test garments made from the new slopers and standard slopers, using a six-point rating scale from worst to best. The ratings were structured in such a manner that when the acceptability level of test garment is low, it signified dissatisfaction with slopers and when it is high, it denoted satisfaction with slopers.

RESULTS

Development of Slopers for Disproportionate figure

The three critical measurements utilized and compared on the developed and standard slopers were the bust, waist and hip dimensions. There was no disparity between developed and standard slopers on the bust measurements across the selected sizes. Differences were observed in the waist and hip measurements. Developed slopers had a bigger waist and hip measurement compared to the standard slopers, as shown in Table 1. The findings clearly indicate a disparity of around 9.88 cm between the waist of standard and non standard slopers, and around 14.25 cm between the hip measurements of standard and developed slopers.

A ratio of around 1:1.2 was observed for both the waist and hip measurements of the standard to the new slopers. The larger disparity on the hips between the standard and developed slopers was indicative that the models were bottom heavy and do not conform to the existing size charts.

Table 1: Average body measurements of bust, waist and hip for standard and developed slopers.

Size	34	36	38	40	42	44	46
Std. Bust m/m (cm)	84	88	92	97	102	107	112
New Bust m/m (cm)	84	88	92	97			
Std. Waist m/m (cm)	64	68	72	77	82	87	92
New Waist m/m (cm)	75	78	82.5	87			
Std. Hip m/m (cm)	89	93	97	102	107	112	117
New Hip m/m (cm)	102	107	112	117			

Fit Evaluation of Skirt Test Garments

The skirt test garments from standard and developed slopers were evaluated for fit and acceptability. Table 2 indicates that 90% of the panellists rated the non-standard garment toile as generally acceptable or satisfactory, and 10% as unacceptable for sizes 34 and 38. Fit assessment on size 36 skirt had an overall rating of 96.6% for the new slopers indicating acceptability to the target group. Ratings on size 40 test garment made from new slopers showed an overall acceptability or satisfaction of 86.6% by the judges. Test garments made from standard slopers, for all four sizes, were rated as 100% unacceptable or dissatisfactory.

Table 2: Percentage distribution on fit attributes of developed skirt test garments for sizes 34-40.

FIT Attributes	SIZE 34B		SIZE 36B		SIZE 38B		SIZE 40B	
	Gen. Accept.	Not Gen. Accept.	Gen. Accept.	Not Gen. Accept.	Gen. Accept.	Not Gen. Accept.	Gen. Accept.	Not Gen. Accept.
Ease	100	0	100	0	67	33	67	33
Balance	**83**	**17**	**100**	**0**	**83**	**17**	**83**	**17**
Set	**100**	**0**	**100**	**0**	**100**	**0**	**83**	**17**
Line	67	33	83	17	100	0	100	17
Grain	100	0	100	0	100	0	100	0
Total Ave	**90%**	**10%**	**96.6%**	**3.4%**	**90%**	**10%**	**86.6%**	**16.8%**

B – Proposed sizing symbol for bottom heavy figured women.

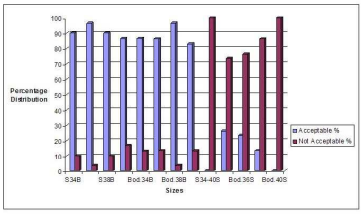
Fit Evaluation of Bodice Test Garments

Evaluations on a size 34 bodice test garment made from new slopers were rated as generally acceptable by 86.8% of the judges, and 73.6% rated the standard garment toile as generally unacceptable. See Table 3. Size 36 bodice evaluations on non-standard test garments revealed a rating of 86.4% for overall acceptability or satisfaction and 76.6% unacceptability on the one made from standard sloper. Fit ratings on size 38 were generally accepted by 96.6% of the judges for non-standard test garments compared to 86.4% who felt that the one made from standard sloper was unacceptable. For size 40 of non standard test garment, an overall rating of 83.2% was given for general acceptability / satisfaction, and 100% of the judges were dissatisfied with the test garment made from standard bodice's sloper.

Table 3: Percentage distribution on fit attributes of developed bodice test garments for sizes 34-40.

FIT Attributes	SIZE 34B		SIZE 36B		SIZE 38B		SIZE 40B	
	Gen. Accept.	Not Gen. Accept.	Gen. Accept.	Not Gen. Accept.	Gen. Accept.	Not Gen. Accept.	Gen. Accept.	Not Gen. Accept.
Ease	100	0	83	17	83	17	83	17
Balance	67	33	83	17	100	0	67	33
Set	100	0	83	17	100	0	83	17
Line	67	33	83	17	100	0	100	0
Grain	100	0	100	0	100	0	83	17
Total Ave	86.8%	13.2%	86.4%	13.6%	96.6%	3.4%	83.2%	13.4%

Figure 1 illustrates that all garment toiles made from new slopers were generally acceptable or satisfactory, and those made from standard slopers were generally unacceptable or dissatisfactory. All of the standard skirt test garments and standard bodice for size 40 were totally unacceptable.



S34B – Skirt size 34 new slopers
Bod.36B – Bodice size 36 new slopers
S34S – Skirt size 34 standard slopers
Bod.36S – Bodice size 36 standard slopers

Figure 1: Mean values of acceptability and non- acceptability of test garments

CONCLUSIONS

Body measurements of women with disproportionate figures varied considerably from measurements of standard patterns particularly on the waist and hip measurements. Test garments made from developed slopers were generally acceptable than those made from standard slopers in this case study. The findings confirmed that women with disproportionate or bottom heavy figures in this case study were dissatisfied with the standard sloper used in constructing the standard test garment. The researchers would like to propose that the issue of providing different basic patterns for other figure types be looked at with the view to modify the current sizing categories.

RECOMMENDATIONS

The study may be replicated in the future, but using a bigger sample size in order to generalise the findings. Local designers and apparel manufacturers may utilize the developed slopers to design clothes for women with disproportionate / bottom heavy figures.