## Abstract

A pleasant mental satisfaction of a wearer is the first criteria for evaluating clothing to be worn. Inherently or due to processing, cotton cloths have different psychological comfort behavior. Lack of aesthetic value, fashionably and physical appearance contributes to psychological discomfort to the users. For this reason, manufacturers need to produce fabrics with optimum psychological comfort parameters. The objective of this research work was to study the effect of cotton yarn parameters on psychological comfort properties of woven fabrics. Four woven fabrics were produced from cotton yarns of different parameters. Psychological comfort parameters like wrinkle, drape, crease, bending modules and flexural rigidity were measured and analyzed scientifically. A model was established to predict comfort properties of clothing in relation to the yarn parameters. Statistical analysis showed that wrinkle and drapeability of fabrics were highly affected by yarn twist, count, tenacity and elongation of yarns. However, statistical analysis showed that yarn twist, count, tenacity and elongation had insignificant effect at F-value of 3.546 and P-value of 0.069, respectively. Stiffness of fabrics like Flexural rigidity and bending modules also showed insignificant difference between samples at F=38487.969, Sig=0.057 and F=25.506, Sig=0.055 respectively. Multiple regression analysis proof that the relation between yarn parameters (factors) and response was a positive correlation. It was Adj. $R^2$ = 0.0998, Adj. $R^2$ = 0.975 and Adj. $R^2$ = 1 for crease recovery, wrinkle recovery and drape coefficient, respectively. The model developed is helpful to fabric manufacturers in sourcing yarns with specific parameters to produce the desired comfort level in a fabric.