

## Women's Reaction to Whole 3D Body Scanning and its Influence on Body Satisfaction

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Full three-dimensional (3D) body scanning as an innovative technology has significant applications in the apparel industry. Three-dimensional body scanners capture an individual's measurements in seconds and create a true-to-scale image of the body enabling one to view their body from all possible angles (Locker, Ashdown & Carnrite, 2008). Data obtained from 3D body scanning can be used for virtual try. Virtual try on permits the consumer to view his or her body in a particular garment and assess its look and fit without the garment being physically donned. This can save the customer time while shopping, and promises to increase online clothing sales (Dayik, Colak & Yuksel, 2016). As women purchase more apparel and report more fitting issues with clothing than men for virtual try-on to be successful it will need acceptance from female shoppers (Euse, 2016). Crucial to the acceptance of virtual try-on is consumer acceptance of the 3D body scanning process and the viewing of her body in true to scale digital format.

Body satisfaction is defined as: "the degree of satisfaction or dissatisfaction with various parts or processes of the body", which may also be considered as positive and negative feelings about one's physical characteristics (Secord & Jourarad, 1953, p. 343). Limited research has been conducted on 3D body scanning and the effect on a female's self-esteem when viewing her image. Both positive and negative responses have been reported (Locker, Cowie, Ashdown, & Lewis, 2004; Grogan et al., 2013; Grogan, Gill, Brownbridge, Warnock, & Armitage, 2016). However none of these studies measured the individuals' body satisfaction before the body scan to compare if the scan resulted in a change in body satisfaction.

Objectification theory can be used to explain the self-esteem issues with body appearance in women. The objectification theory proposed by Fredrickson and Roberts (1997) explains the psychological consequences of concerns and surveillance of women. The theory suggests that women objectify their bodies and repeated experience of objectifications leads to ignore their self-image of their body and take on others perspectives. This internalization of outsiders' views of their bodies or "self-objectification", leads to treat their bodies as objects of an outsiders' evaluation. Other, consequences of self-objectification resulted in poor cognitive task and psychological health, disordered eating, and unhealthy dieting.

This study used Objectification theory as a structure to examine females' reactions to the body scanning process and measure their body satisfaction directly before and after having a body scan. A convergent parallel mixed method design was used to enable the researchers to gain an understanding of the short-term reactions of women to whole 3D body scanning. Thirty-five females aged 18-35 participated in this study. Participants completed a pre body scanning self-esteem assessment survey consisting of 4 items derived from Rosenberg self-esteem scale (Rosenberg, 1965) and three demographic questions. The participant then had a 3D body scan. The participant and researcher viewed her scan the resulting 3D avatar. The participant then

completed a post-test survey consisting of 6 items and engaged in an in-depth interview with the researcher.

Survey data were analyzed by SPSS, frequencies were generated for demographic data and paired t-tests were used to analyze pre and post survey items. Interviews were transcribed and coded using the thematic process (Spriggle, 1994). Results of statistical analysis and participants quotes are reported. Analysis of both qualitative and quantitative data revealed the body scanning process did not negatively affect the women's overall self-esteem. However, comparison of pre and posttest survey revealed participants became more aware of how certain body parts look from an outsider's viewpoint. Resulting in some participants being more satisfied and others less satisfied with particular body parts with some participants reporting they looked "slimmer" and more "in proportion" than what they had visualized. Participants reported that viewing their image in the mirror was different from viewing their 3D avatar likening the viewing of their avatar to seeing their image from an outsiders' perspective, which supports the self-objectification theory. It can be concluded that for participants in this study viewing the realistic image changed their perspective of how their body looks to outsiders.

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