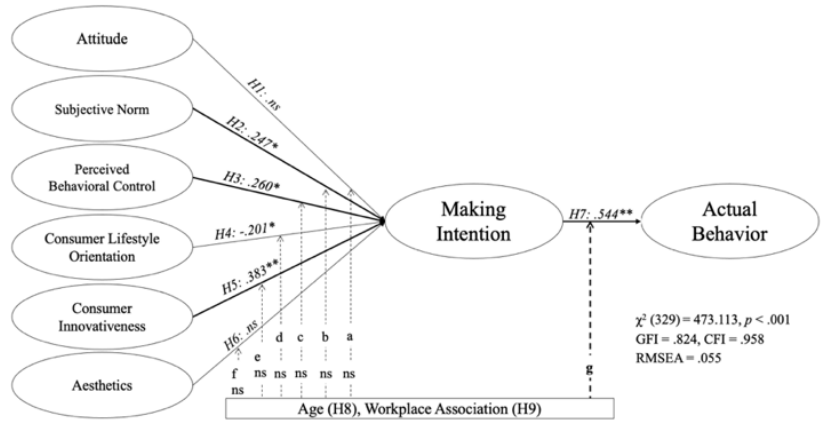
The Decision to Sew: Making Face Masks during COVID-19 Pandemic

Gwendolyn Hustvedt and Yuli Liang, Texas State University, USA

Keywords: COVID-19 Pandemic, theory of planned behavior, making intention, face masks

Background and Purpose: The COVID-19 pandemic initially brought the global supply chain to a halt and challenged consumers in a host of ways, driving a variety of adaptive behaviors as consumers were confronted by shortages, lockdowns and mask mandates. Analysis by Lang et al. (2020) identified 6 different clusters of consumer adaptation: DIY, self-servicing, customizing, collaborating, monetizing, and economizing. The making of cloth face masks, initially a response to public health advice to cover nose and mouth while not using medical grade masks to protect supply for frontline workers, drove the DIY spirit of the early pandemic. Making textile and apparel products can be attributed to a variety of motivations including personal wellbeing (Riley et al., 2013; Schofield-Tomschin & Littrell, 2001), environmental concern (Vanderploeg & Lee, 2019), and desire for personalization (Otieno et al., 2007). A qualitative study of 15 makers conducted in 2018 by Martindale and McKinney (2018) identified several criteria (time, skills, cost and availability) that were important in the decision to make versus purchase sewn goods. Additionally, how the products look, fit, perform and express identity, the Functional, Expressive and Aesthetic (FEA) dimensions of products (Lamb & Kallal, 1992) are relevant for both makers and purchasers. *The purpose of this study* was to explore the variables predicting the intention of US consumers to remake a face mask that they had previously made, allowing the inclusion of attitudes formed during the making and use of the face mask. *Conceptual Framework:* The Theory of Planned Behavior (TPB) (Fishbein & Ajzen, 1975) was used as a framework to conceptualize research constructs. The FEA dimensions (Lamb & Kallal, 1992) were used to develop behavioral belief items to measure the attitude towards the mask and the sewing decision model (Martindale & McKinney, 2018) was used to expand the items measuring perceived behavioral control, another important part of the TPB. Moreover, to be able to include a lifestyle context, consumer innovativeness (Agarwal & Prasad, 1998; Sill et al., 2008) and consumer lifestyle orientation (CLO) (Kraft & Goodell, 1993; Sparks & Shepherd, 1992) were added to the framework (Figure 1). H1-H6: The variables of Attitude, Subjective Norm, Perceived Behavioral Control,



Note: ** p < .001, * p < .05. Dash arrow lines indicate moderating effects and ns indicate non-significant.

Figure 1. Conceptual Framework and Testing Results

Consumer Lifestyle Orientation and Consumer Innovativeness will positively predict the intention to make their preferred face mask again positively. H7: Making Intention will be positively related to Actual Behavior. H8: The salience of the path would be different across Baby boomers and Generation Y. H9: The salience of the path would be different across men and women.

Method: This study was conducted nationwide in the US in late 2020. Qualtrics Panel services were used to recruit participants. After three weeks of data collecting (from the last week of November to the second week of December), a total of 144 valid responses were collected for use in the data analysis. An online self-administered questionnaire, which included measures obtained from established research and measures designed from reviewing online comments, was created using Qualtrics. The majority of respondents were women (79.2%) and most of them (61.81%) were between 26 and 65 years old, 37 participants were Generation Y (26-39 years old) and 57 participants were Baby Boomers (56-74 years old). Descriptive statistics, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), structural equation modeling (SEM), and multi-group comparison via chi square difference were used for data analysis.

Results: To ensure construct validities, EFA and CFA were first conducted. Three rounds of EFA were conducted and items with high-cross loadings or low loadings were removed. Varimax rotation resulted in seven factors (of 29 items) with 81.926% of total variances explained and item loadings ranging from .701 to .921. Cronbach's alpha results (ranged from .860 to .935) are all higher than .7. Two items from perceived behavior control were dropped due to high modification indices in CFA. The reliability and validities achieved. Path analysis with a good model fit was used to test hypothesized relationships (see Figure 1). Multi-group comparison was then conducted to examine any differences between two age groups (Baby boomers vs. Generation Y) and between participants with (vs. without) workplace associations. The results indicate that the relationship between intention to make face masks and actual making behavior is significantly different for Baby boomers ($\beta = .675$) vs Generation Y ($\beta = .568$) (with 95% confidence) and for participants with workplace associations ($\beta = .555$) vs. without workplace associations ($\beta = .648$) (with 99% confidence).

Discussion/implications: The separation during EFA/CFA of aesthetic behavioral beliefs from the functional and expressive behavioral beliefs confirms that these dimensions are distinct, however, the inability of attitudes towards mask attributes to predict intention is contrasted by the significant and positive relationship of perceived behavioral control. This suggests that making intention is supported by the time, skill and availability motivations outlined in Martindale and McKinney's (2018) model of sewing vs purchase decision rather than the attributes (e.g., fit) of the masks produced. The significant and positive impact of consumer innovativeness and social norm suggests that the support of significant other people in the making decision and the personal characteristic of innovativeness should also be included in the making decision model. The CLO items that loaded into the variable during EFA/CFA were related to health and nutrition, so while the hypothesis was rejected because the impact was negative, this is possibly due to the health-related aspects of DIY vs medical mask use.

Moreover, older people (Baby boomers) and people without workplace associations may have more time to sew face masks. Future research should look at making related to non-pandemic items to determine if the model applies to the making intention in those situations as well.

References:

Agarwal, R., & Prasad, J. (1998). A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information systems research*, *9*(2), 204-215.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Addison Wesley Publishing Company.

Kraft, F. B., & Goodell, P. W. (1993). Identifying the health conscious consumer. *Marketing Health Services*, *13*(3), 18.

Lamb, J. M., & Kallal, M. J. (1992). A conceptual framework for apparel design. *Clothing and Textiles Research Journal*, *10*(2), 42-47.

Lang, B., Dolan, R., Kemper, J., & Northey, G. (2020). Prosumers in times of crisis: Definition, archetypes and implications. *Journal of Service Management*.

Martindale, A., & McKinney, E. (2018). Sew or purchase? Home sewer consumer decision process. *Journal of Fashion Marketing and Management: An International Journal*, *22*(2), 176-188.

Otieno, R., LaBat, K., Salusso, C., & Rhee, J. (2007). Home sewers' satisfaction with fit of apparel patterns. *Journal of Fashion Marketing and Management: An International Journal*.

Riley, J., Corkhill, B., & Morris, C. (2013). The benefits of knitting for personal and social wellbeing in adulthood: Findings from an international survey. *British Journal of Occupational Therapy*, *76*(2), 50-57.

Schofield-Tomschin, S., & Littrell, M. A. (2001). Textile handcraft guild participation: A conduit to successful aging. *Clothing and Textiles Research Journal*, *19*(2), 41-51.

Sill, H. E., Fisher, S. L., & Wasserman, M. E. (2008). Consumer reactions to potential intrusiveness and benefits of RFID. *International Journal of Information Technology and Management*, *7*(1), 76-97.

Sparks, P., & Shepherd, R. (1992). Self-identity and the theory of planned behavior: Assesing the role of identification with" green consumerism". *Social psychology quarterly*, 388-399.

Vanderploeg, J., & Lee, S.-E. (2019). Factors influencing pro-environmental behaviors in craft businesses. *Clothing and Textiles Research Journal*, *37*(1), 51-65.