

Consumer Barriers to the Acceptance of Apparel Mass Customization

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Abstract

Mass Customization (MC) is growing in importance for the apparel industry, where fast-paced fashions are introduced weekly and fade last months. MC allows the apparel industry to tailor their products to consumer preferences and create increased customer satisfaction. This is proven by the considerable amount of research that has been done to show that MC can benefit companies to increase profits. With this said, MC's adoption in the apparel industry seems considerably slow in relation to some other industries such as automobile and electronics. Further, there is diminutive research that explores the limits of apparel MC and the barriers that prevent consumers from purchasing mass customized apparel. The purpose of this study was to explore the limitations of apparel MC and identify consumer barriers. The objectives of this study consisted of (a) investigating consumer barriers to the acceptance of apparel MC, (b) ranking the barriers, (c) finding additional barriers and (d) examining correlations between the validated barriers and consumer demographics. Ten initial consumer barriers were identified through literature review and were tested in the form of an online survey. Results from the survey indicated Fit, Feel, Price, and Brand as significant barriers to apparel MC. Based on this study, an understanding of the consumer barriers to the acceptance of MC is important to the apparel industry because continued advancements in technology and production systems can help achieve this concept; whereby companies can improve its efficiency in resource utilization and waste management leading to a more sustainable industry.

Rationale

MC is growing in importance for apparel, in which "just-in-time delivery, lean production techniques, early manufacturing involvement, time-based competition, cross-functional teams" and other technological flexibilities have helped drive variety and customization without coupled excessive costs (Pine, 1993). A considerable amount of research has been done to show that MC can benefit companies to improve profits and create efficiency. The many benefits of adopting mass customization into the apparel industry include increased market share, consumer satisfaction, decrease in reverse logistics, and a more sustainable method of producing apparel without having to sacrifice cost of labor, materials and transporting of unsold products. MC also improves company brand recognition with product differentiation and personalization. The aspects of MC that allow for the creation of variety and configurations with segment-based marketing are used to enhance the overall consumer shopping experience, all of which leads to repeat purchases and the goal of brand loyalty. Overall, an understanding of the barriers to the acceptance of mass customized apparel is very important to this vibrant industry.

Objectives

The objectives of this study were to (a) Investigate consumer barriers to the acceptance of apparel mass customization, (b) Rank the barriers, (c) Find additional barriers, and (d) Examine correlations between the significant barriers and consumer demographics with cross tabulations. In meeting the objectives, there is a better understanding of the consumers' perspectives on apparel MC and its importance in the industry. By assessing the limitations of apparel MC and verifying consumer barriers to its acceptance, manufacturers can better meet the needs and wants of consumer preferences to enhance customer service.

Purpose

The purpose of this study was to explore the limitations of apparel mass customization by identifying consumer barriers in an attempt to figure out why adaptation of MC in the apparel industry is slow.

Hypotheses

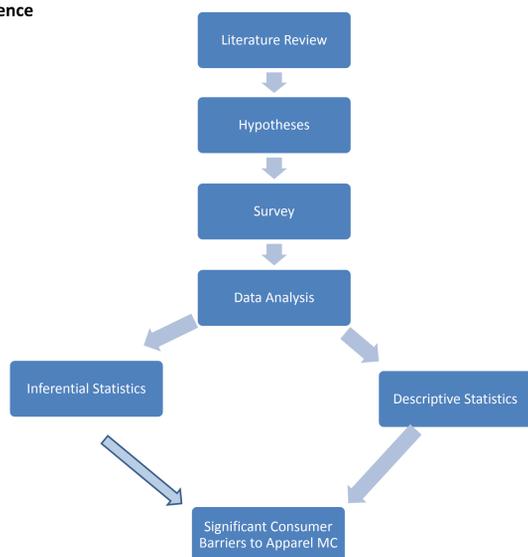
With the use of literature review, ten consumer barriers were formulated:

- H1: Feel
- H2: Privacy
- H3: Time
- H4: Fit
- H5: Technology
- H6: Knowledge
- H7: Variety
- H8: Price
- H9: Consumer Category
- H10: Brand Recognition

Methodology

As shown in Model 1, the objectives of this study were to ultimately find the consumer barriers to the acceptance of apparel MC. To meet this ultimate goal, a series of steps had to be taken in order to come up with results to conclude from. The first step of this study was to use literature review to help formulate and hypothesize hypotheses. The hypotheses were tested in the form of a survey and data was collected for analysis. Once the data was analyzed, conclusions were made to ultimately find consumer barriers to apparel MC and meet the other objectives.

Model 1. Methodology Sequence



Instrument

An online consumer survey was developed to assess the consumer barriers to apparel MC and was uploaded onto SurveyMonkey.com.

Results and Discussion

Description of the Sample

A total 127 participants completed the survey and of the sample size roughly 64% of the participants were between the ages of 18 and 24. All the respondents ranged in age from 18 to 65. Additionally, the sample size consisted primarily of female (76.5%) and 72.7% made less than \$25,000 income annually. In terms of level of education, roughly 47% of participants in this study had at least some college education (see Appendix for Table 2 which gives a table about the sample).

Result of Hypothesized Barriers

There were a total of eighteen questions on the survey which focused on verifying the ten hypothesized barriers. As shown in Table 3 the statements that participants were indicating their level of agreement are located on the left and the barrier that the question is testing is enclosed in the brackets. Results of the frequency chart shows that Privacy, Technology, Price, and Consumer Category are low frequency variables; this means that in terms of these variables being a barrier are relatively low. However, as shown in the chart, it is apparent that Feel, Fit, Price, and Brand have a higher average rating; this means that these four variables are more likely to be a barrier (See Table 3 in appendix for responses).

Ranking of Barriers

The second objective of this study was to rank the barriers according to their level of significance. In order to find the degree of importance of each hypothesized barrier, each barrier was ranked by its mean response and arranged in descending order to show its level of significance. Based on the survey, Fit, Feel, Price and Brand all have above a 3.5 level of agreement as a barrier on a 5-point Likert scale (1=Strongly Disagree to 5=Strongly Agree) which makes them significant barriers to the acceptance of apparel mass customization.

New Barriers

The third objective of this study was to find new barriers that were not found based on literature review. To find new barriers that were not identified in this study, there was one open-ended question on the survey that asked consumers if there were any other barriers that would prevent them from making a mass customized apparel purchase. There were a total of 11 responses that were made and varied from, "Shipping cost too high if sent to home address" to "The process should have guidance, not just billions of choices. An awkward web experience is a show stopper". The open-ended responses also helped support barriers that were validated in the study and open doors for research into other barriers as well.

Correlations between the Barriers and Consumer Demographics

The last objective of this study was to find relationships between the verified barriers and consumer demographics to see if there were any significant relationships. Figure 1 (see Appendix) shows the cross tabulations that were conducted to see if a relationship exist between the verified barriers and consumer demographics. A total of 16 cross tabulations were made and analyzed for relationship assessment.

Table 4 shows the p-values of each cross tabulation and the highlighted boxes represent significant relationships to further analyze. Across the top are the demographic variables that were cross tabulated with the significant barriers and the Pearson Chi-Square is calculated. The p-values are used to determine significance between the relationships and a p-value of less than .05 signifies a significant relationship.

Implications

Based on the demographics of the sample size (female n=101, age 18-24 years n=83, income less than \$25,000 n=96) companies who manufacture junior and misses apparel will benefit from this study who currently use MC or are deciding to implement it into their business structure. Because majority of the sample size for this study were college students and female, the results of this study would only apply to a company who targeted consumers with similar demographic characteristics.

Limitations

In terms of limitations to the study, it is relevant to state that although there were at least 127 completed surveys, this was not enough data to make statistical correlations and the data has to be recoded to find significant relationships. The other only limitation would be the sample population in which only 23% were male and were college students (62%) who made less than \$25,000 annually (73%). The last constraint to this study was time which was limited to six months due to the Ronald E. McNair Scholars Program.

Recommendations

Enhancements and improvements to the study would include having more concise questions on the survey, having a larger data set and having longer data collection duration. Another recommendation would be to include interviews to help validate the significant barriers that were found and to test the survey again to compare it to the initial findings. The last recommendation would be to test the new barriers that were found in this study and see if they have any significance.

References

- Babin, B. J., Darden, W. R., and Griffin M. (1994). Work and/or Fun: Measuring Hedonic and Utilitarian Shopping Value. *Journal of Consumer Research*, Vol. 20, No. 4, pp. 644-656.
- Bendapudi, N. and Leone, R. (2003). Psychological Implications of Customer Participation in Co-production," *Journal of Marketing*, Vol. 67, No. 1, pp. 14-28.
- Davis, S. (1996). *Future Perfect*. Reading, MA: Addison Wesley.
- Fiore, A., Lee, S., & Kunz, G. (2004). Individual differences, motivations, and willingness to use a mass customization option for fashion products. *European Journal of Marketing*, 38(7), 15. Retrieved January 29, 2010 from <http://www.emeraldinsight.com/Insight/ViewContentServlet?Filename=Published/EmeraldFullTextArticle/Articles/070380705.html>.
- Forsythe, S. (1991). Effect of private, designer, and national brand names on shopper's perception of apparel quality and price. *Clothing and Textiles Research Journal*, 9(1), 1-6.
- Franke, N. and Piller, F., "Toolkits for User Innovation and Design: An Exploration of User Interaction and Value Creation," *Journal of Product Innovation Management*, Vol. 21, No. 6, pp. 401-415 (2004).
- Hansen, T., Scheer, C. & Loos, P. (n.d.). Scenario-driven configuration systems-Examining the influence of product types and mind states on customer satisfaction in product configuration processes. Retrieved February 16, 2010, from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.85.2581&rep=rep1&type=pdf>.
- Huffman, C. & Kahn, B. (2000). Variety for sale: Mass customization or mass confusion? *Journal of Retailing*, 74(4), 23. Retrieved January 29, 2010 from http://www.sciencedirect.com/science?_ob=MIimg&_imagekey=B6W5D-3YCDK3S-2-&_cdi=6568&_user=521810&_pii=S0022435999801055&_orig=search&_coverDate=12%2F31%2F1998&_sk=999259995&view=c&wchp=dGLbVzz-zSkWz&md5=f789d1bfb8ceb393fee01006028cc274&ie=/sdarticle.pdf.
- Jacobs, Bertha & Klerk, Helena. (2007). Understanding female consumers' risk perception for apparel purchasing on the Internet. *Journal of Family Ecology and Consumer Sciences*, 35, 47-58.
- Kamali, N. and Loker, S., "Mass Customization: On-line Consumer Involvement in Product Design," *Journal of Computer-Mediated Communication*, Vol. 7, No. 4 (2002) (July).
- Kotha, S. (2007). Mass customization: Implementing the emerging paradigm for competitive advantage. *Strategic Management Journal*, 16(1), 21-42.
- Lee, S. & Chen, J. (1999). Mass-customization Methodology for an Apparel Industry with a Future. *Journal of Industrial Technology*, 16(1), 8. Retrieved March 12, 2010 from <http://atmae.org/jit/Articles/lee1222.pdf>.
- Lee, S-E, Kunz, G.I., Fiore, A. M., & Campbell, J.R. (2002). Acceptance of mass customization of apparel: Merchandising issues associated with preference for product, process, and place. *Clothing and Textiles Research Journal*, 20(3), 138-146. Nike.org. Retrieved August 24, 2010 from http://www.nike.com/nikeos/p/nike/en_US/?sitesrc=USiD&ref=.
- Oleson, J. (1998). *Pathways to agility: Mass Customization in Action*. New York: John Wiley & Sons, Inc.
- Park, J. & Kim, J. (2007). The importance of perceived consumption delay in Internet shopping: Time-related information, time risk, attitude, and purchase intention. *Clothing and Textiles Research Journal*, 25(1), 24-41. Retrieved August 22, 2010 from <http://ctr.sagepub.com/content/25/1/24.full.pdf+html>.
- Park, S. (2004). The relationship between fashion leadership and co-design options in apparel mass customization. M.S. dissertation, University of Missouri - Columbia, United States -- Missouri. Retrieved March 14, 2010, from Dissertations & Theses: The Humanities and Social Sciences Collection. (Publication No. AAT 1422948).
- Piller, F., M'oslein, K., and Stotko, C., Does Mass Customization Pay? An Economic Approach to Evaluate Customer Integration," *Production Planning and Control*, Vol. 15, No. 4, pp. 435-444 (2004).
- Pine, J. (1993). *Mass Customization: The New Frontier in Business Competition*. Boston, Massachusetts: Harvard Business School Press.
- Sarode, R. (2010). A footlong mass customization experience. Retrieved August 25, 2010 from, <http://rohansarode.blogspot.com/2010/06/footlong-mass-customization-experience.html>.
- Senanayake, S. & Little, T. (2010). Mass customization: points and extent of apparel customization. *Journal of Fashion Marketing and Management*, 14(2), 282-299.
- Silveira, G., Borenstein, D. & Fogliatto, F. (2001). *International Journal of Production Economics*, 72(1), 14. Retrieved January 29, 2010, from <http://www.sciencedirect.com/science/article/B6VF8-438BSHK-1/2/80a684600652342fa3646e9a6c6da81b>.
- Simon, H. A. (1976). *Administrative Behavior: A Study of Decision Making Processes in Administrative Organizations*, Free Press, New York.
- Stump, R. and Athaide, G., and Joshi, A.W. (2002). Managing Seller-Buyer NewProduct Development Relationships for Customized Products: A Contingency Model based on Transaction Cost Analysis and Empirical Test. *Journal of Product Innovation Management*, Vol. 19, No. 6, pp. 439-454.
- Wind, Y. and Rangaswamy, A. (2001). Customerization: The Next Revolution in Mass Customization. *Journal of Interactive Marketing*, Vol. 15, No. 1, pp. 13-32.