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# Customer preferences for customized household furniture

## Torsten Lihra<sup>a,\*</sup>, Urs Buehlmann<sup>b</sup>, Raoul Graf<sup>c</sup>

<sup>a</sup> Value Added Products, FPInnovations, Québec, Canada G1P 4R4

<sup>b</sup> Virginia Tech, Brooks Forest Products Center, Mail Code 0503, 1650 Ramble Road, Blacksburg, VA 24061, USA

<sup>c</sup> Marketing Department, Université du Québec à Montréal, Montréal, QC, Canada H3C 3P8

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## ABSTRACT

In the context of market globalization, furniture manufacturers attempt to differentiate their products to attain competitive advantages. Mass customization is one strategy enabling such differentiation. This study measured, through a choice-based conjoint analysis, the value that US American consumers assign to the availability of customization when buying furniture. Roughly 50% of consumers' product choice is driven by price, 20% by product customization, 20% by delivery time, and 10% by the time needed to customize the product. Thus, while there is a customer segment driven by price, there also is a segment, consisting mainly of females, that values product customization.

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## Introduction

Globalization has impacted North America's manufacturing industries profoundly. Driven by technology (Levitt, 1993), comparative advantages, and global trade rules (WTO, 2008), among other things, the US manufacturing sector has reached its lowest employment level since the 1950s (Forbes, 2004). The US household furniture industry is among the most affected sectors (Buehlmann and Schuler, 2009; Schuler and Buehlmann, 2003; Ince et al., 2007). From 1997 to 2007, household furniture imports to the US increased by nearly 300%. Today, imported nonupholstered wood household furni-

<sup>\*</sup> Corresponding author.

*E-mail addresses*: torsten.lihra@fpinnovations.ca (T. Lihra), buehlmann@gmail.com (U. Buehlmann), graf.raoul@uqam.ca (R. Graf).

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ture (NAICS 337122; U.S. Census Bureau, 2002) make up more than 65% of all such furniture sold in the US (Buehlmann and Schuler, 2009).

The decline of US domestic wood household furniture production has impacted the entire US forest industry considerably since furniture manufacturing was an important customer to the industry (Buehlmann and Schuler, 2009; Luppold and Bumgardner, 2008; Buehlmann et al., 2007; Grushecky et al., 2006). At the peak of US wooden household production in the 1970s, the US furniture industry consumed more than 35% of the total US hardwood lumber production volume (Luppold et al., 2011) and was the largest consumer of hardwood lumber by volume and value. By 2010, hardwood consumption by the industry had decreased to less than 5% of total US hardwood production (less than 0.35 BBF compared to more than 3 BBF in 1970s, Luppold et al., 2011), ranking furniture 4th behind industrial, construction and remodeling, and export uses. Additionally, as the US furniture industry consumes mainly better quality, higher value hardwood lumber, the impact of this decline on the US forest industry is even more severe in monetary terms.

Efforts have been undertaken to strengthen the competitive position of North American manufacturers in domestic markets. Mass customization (Pine, 1993; Davis, 1987; Toffler, 1970), where customers expect products and services to be customized to their needs and expectations, has been identified as a viable strategy to increase domestic profitability for manufacturers with a high cost structure (Huyett and Viguerie, 2005; Grant Thornton LLP, 2006; Wan and Bullard, 2008). Indeed, numerous furniture manufacturers in North America have chosen to offer a higher degree of mass customization as part of their competitive strategy (Lihra et al., 2008).

At present, manufacturing of mass customized products on an industrial scale is more expensive than the production of standardized items. The added complexity of a production system capable of mass customization is a major reason for the increased costs (Hart, 1995; Huffmann and Kahn, 1998; Krueger and Hergeth, 2006; Boucher and Barnett, 2008). Also, customizing furniture requires that the point of customer involvement (e.g., the "decoupling point") occurs earlier in the production process (Lihra et al., 2008). The decoupling point is an indicator of the degree or type of customization provided (Lee et al., 2000; Tseng and Piller, 2003; Piller et al., 2004). Typically, with an increasing level of customization price and delivery lead-time increases (Kahn, 1998; Jiao et al., 2003; Millard, 2006; Moser, 2007). Also, increasing customization requires more customer involvement as the desired product and service attributes have to be specified. If this selection process is complex or time consuming, a customization strategy may not create a competitive advantage (Duray et al., 2000; Da Silveira et al., 2001; Rautenstrauch et al., 2002; Bernhardt et al., 2005; Hunt, 2006). However, customization creates differentiated products and buying experiences, e.g., it presents a way to reduce price-based competition. While research on mass customization implementation is relatively well covered in the scientific literature, little information is available on the actual benefits of customization from a customer preference viewpoint.

## Objectives

The objective of the present study was to assess customers' preferences and possible benefits of mass customization in the context of a master bedroom furniture purchase. All aspects of a product's offering, e.g., what Levitt (1986) called the "Total Product," can be subjected to mass customization. This study looked at customizing four attributes of a product (a piece of bedroom furniture) while discarding other potential areas of customization. Thus, while this type of customization falls under the umbrella of mass customization, it is more appropriate to refer to this type of customization as "product customization." In particular, the objectives of this research were to find answers to the following three questions:

- Are customers willing to pay a premium for customized products?
- Do customers accept an increase in delivery time for customized products?
- Does customization complexity influence customer preference?

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