Comparisons of Financial Performance Measures of Global Sourcing and "Made-in-USA" Domestic Production Strategies

Ui-Jeen Yu, Illinois State University, USA
Jihyun Kim, Kent State University, USA

Keywords: Global sourcing, made-in-USA, market uncertainty, merchandise plan errors

Many apparel brands focus on a mass market interested in fast fashion and aim to increase profits by cutting costs. In response to this need, more apparel merchandise has been sourced globally. Globally sourcing basic goods generally increases the firm's profits, while that for fashion/seasonal products tends to result in lost sales due to stockouts or high rates of markdowns on unsold inventories (Kunz, 2010). Therefore, domestic production under the supply chain management system (e.g., Quick Response) could be effective in response to customers' demands more promptly and frequently. Moreover, in China rising wages and inflation of raw material prices encourage the textile and apparel industry to reconsider domestic production as a viable option (Friedman, 2012). "Made-in-USA" domestic production strategies respond to two different facets: (1) reduce merchandise plan errors/risks by shortening the lead time and replenish smaller quantities subsequently throughout the selling period, and (2) fulfill consumers' interests in patriotism and job creation in the U.S. (Friedman, 2012). Just-In-Time (JIT) domestic production results in smaller, more frequent deliveries of goods, which leads to fewer stockouts, fewer markdowns, lower inventory investments, better turnover rates, and, in turn, increase profits (Kunz, 2010; Sirkin et al., 2011).

Based on Behavioral Theory of the Apparel Firm with a Quick Response Construct (Kunz, 2010), domestic production and sourcing are assumed to fully implement a supply chain management system. This may offer more competitive benefits to apparel manufacturers and retailers due to its faster, more responsive nature to demand uncertainty, compared with global sourcing. More apparel companies are considering expansion of their clothing lines by adopting domestically-produced garments. However, financial advantages of JIT domestic production of apparel products have not been addressed. Therefore, this study examines differences in financial productivity of global versus domestic sourcing scenarios for fashion/seasonal products, considering merchandise plan errors due to market uncertainty.

Sourcing Simulator 2.1 (King & Nuttle, 1999), merchandise planning simulation software, is used to create a series of merchandise planning simulations for global and domestic sourcing scenarios. For both sourcing scenarios, the recommended selling period was set as 20 weeks to sell 1,000 fashion/seasonal units at an individual single store. We set seasonality as mid-peak. One 25% markdown at the beginning of week 18 was implemented to remove unsold stock. No additional markup was applied. To control for the other factors, the two scenarios had the same unit costs and unit retail prices. For both scenarios, the volume per stock keeping units—2, 5, 10, and 20—was examined with a volume error from -50% to +50% by increments of 10 and an assortment error ranging from 0% style error, 0% color error, and 0% size error to 50% style error, 50% color error, and 0% size error by increments of 10. For the global sourcing

scenario, we input a store to receive 100% inventory stocking at the beginning of the selling period and no reorders, while for the domestic sourcing scenario, we set for a store to receive 50% initial stocking with 14 subsequent reorders and deliveries throughout the remainder of the selling period. Sourcing Simulator^{TM} generated a total of 530 simulations with 21 merchandising performance measures regarding inventory, service level, revenues, cost of goods and procurements, and margins. Principal component factor analysis was conducted to reduce 21 merchandising performance measures into three factors—*Profitability*, *Inventory and Costs*, and *Lost Sales*. Analysis of covariance was conducted for further data analysis to examine differences of financial productivity between these two sourcing scenarios.

Results indicate significant main effects presenting differences in *Profitability*, F (1, 527) = 4.85, $p < .05$, between global and domestic sourcing scenarios. When actual demand volume was greater than planned volume *Profitability* in both scenarios increased. However, when actual demand volumes were lower than planned volume, domestic sourcing had better *Profitability* than global sourcing. Besides, global and domestic sourcing scenarios had different financial impacts in *Profitability*, based on the interaction effects of two variables, the levels of volume, and assortment errors (F (1, 527) = 3.44, $p < .05$). When there were greater differences of style, color, and size between actual demand and planned assortments, *Profitability* in both scenarios decreased, but domestic sourcing had a lower rate of decrease in *Profitability* than global sourcing. Moreover, there were significant main effects showing differences in *Inventory and Costs (F* (1, 527) = 372.12, $p < .001$) and *Lost Sales (F* (1, 527) = 55.27, $p < .001$) between global and domestic sourcing scenarios. Domestic production and sourcing resulted in lower Inventory and Costs, and Lost Sales, compared to global production and sourcing.

The findings from this study contribute to the manufacturing and retailing industry for fashion/seasonal goods by providing an insight about financial performance measures regarding global and domestic sourcing scenarios under demand uncertainty. Although domestically-produced garments tend to have a higher price point compared to its counterparts, utilizing "Made in USA" product lines would be a strategy to respond customer demand more responsively with better financial performance outcomes. Apparel manufacturers and retailers could achieve increased advantages, by adopting the JIT domestic sourcing strategy, which resulted in reduced merchandise plan errors, minimized up-front inventory investment, and increased sales more at regular prices resulting from lower incidences of stockouts and lost sales.

References

Friedman, A. (2012, February 7). Made in USA on recovery road. *WWD.* Retrieved from http://wwd.com/business-news/business-features/made-in-usa-on-recovery-road-5618260/

King, R. E., & Nuttle, H. L. W. (1999). Sourcing Simulator version 2.1: User's guide, retrieved from http://www.sourcingsimulator.com/Documents/SSv21%20Users%20Guide.pdf.

Kunz, G. I. (2010). *Merchandising: Theory, principles and practice* (3rd ed.). New York, NY: Fairchild.

Sirkin, H. L., Zinser, M., & Hohner, D. (2011). Made in America, again: Why manufacturing will return to the US. *The Boston Consulting Group.* Retrieved from https://www.bcg.com/documents/file84471.pdf