



ISOTILIA COSTA MELO

Étudiante de doctorat, Université de São Paulo, Brésil

Direction : Daisy Aparecida do Nascimento Rebelatto

Stagiaire à l'Université de Sherbrooke

Superviseur : Luis Antontio de Santa Eulalia



B2C FOR APPAREL AND HOME APPLIANCE IN BRAZIL AND CANADA: A COST EFFICIENCY INVESTIGATION THROUGH A DEA-OCT MODEL

Abstract: B2C (Business to Customer) e-commerce represents a disruptive innovation in the retail sector. Brazil and Canada represent, respectively, 5.3% and 3.2% of the online market in the American continent, and for both countries, home appliances and apparel are responsible for more than one-third of online sales. In Brazil, the stock price of the company Magazine Luiza – which main operations are related to home appliance retail - valued 7,608% between 2016 and 2018. The directors attributed the extraordinary valuation to the implementation of its strategic plan for innovation in e-commerce. We searched for all public companies classified as 'Consumer Durables and Apparel' or 'Retailing', according to Global Industrial Classification Standard (GICS) in Brazil and Canada. We filtered those that have operations of B2C in June 2019. We ended up with a sample of 19 Brazilian companies (naturally, including Magazine Luiza) and 19 Canadian companies. We analyzed the cost efficiency of inventory management of these companies, through a DEA-OCT model that combines Data Envelopment Analysis (DEA) with the Optimal Control Theory (OCT). This approach aims to calculate the optimized cost efficiency over time when the system has variables related to each other along a time period. The data were taken from the quarterly statements between the last quarter of 2010 and the second quarter of 2019 (retrieved from the Bloomberg database). Following a mixed sequential explanatory approach, we made a descriptive investigation of those companies (in both countries) that presented an outlier efficiency score (In Canada: Sleep Country, Canadian Tire, International Parkside, HIT Technology, and Hudson's Bay Company. In Brazil: Magazine Luiza, B2W, Teka, and Via Varejo). The results discuss companies' best practices and point out that, besides its extraordinary stock valuation, Magazine Luiza may be a reference in the management of inventory costs in Brazil, but not globally.

MARDI / TUESDAY

18 février 2020 /
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10h00

Salle / Room 5441
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