Application for “Economics of Digitization”

**Kwon, Jun Bum**

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**Major: Marketing (4th year PhD student)**

**Class**

* Microeconomic Theory I and II
* Econometrics
* Industrial Organization I and II
* Empirical Applications of Economic Theory
* Marketing Theory I: Consumer Behavior
* Marketing Theory II: Strategy
* Econometric Methods in Marketing
* Current Topics in Marketing Strategy
* Experimental Economics

**Dissertation**

* Supervisor: Avi Goldfarb / Committee: Andrew Ching, Ron Borkovsky
* Expected graduation date: 2017 May (Job market: 2016 July)
* **Essay 1: Does comparative advertising reposition rival brands closer together or further apart in market-structure maps?**

We test whether comparative advertising repositions rival brands to be closer together or further apart in both brand and product space maps. Using Google Trends’ aggregate consumer search data, we analyze Samsung’s U.S. television comparative advertising campaign against Apple iPhone. To draw a market structure map from consumer search data, we count co-occurrence of searches for brand pairs and their brand-product attributes (e.g. Samsung screen), to respectively map brand and product space.

Our research shows that comparative advertising increases co-search for advertised brands (i.e. an advertising and a target brand), while co-search between a target brand and non-advertised brands increases slightly. As a result, the relative distance between both rival brands in advertising decreases compared to the distance between non-advertised brands and a target brand when mapped in brand space. We also find that advertised rival brands become closer in product space, as a result of the increases in co-searching between the advertiser and its advertised attributes (i.e., videos, movies, and screen) that locate near to the target brand. Furthermore, our research shows that advertising expenditure per capita positively correlates with advertising effectiveness across big cities and states.

Overall, these results suggest that brands with a lower market share would benefit from comparative advertising, by aligning the advertising brand with a market leader in the consideration stage of a consumer purchase journey.

* **Essay 2: Detecting potentially competing or complementary products using topological data analysis**

We introduce a method for identifying potential competing or complementary products using topological data analysis (TDA). TDA’s strength is capturing a loopy segment and segment connection. From both simulated and real consumer purchase data, we show that TDA can connect regionally separated local products through national products, while standard clustering methods such as hierarchical clustering can’t. We also find that TDA is good at detecting currently or potentially complementary products between a salty snack and a beer category.