

CURSO: Graduação em Economia – 2º semestre de 2020

DISCIPLINA: Quantitative Methods in Marketing

PROFESSOR: José Féres

CARGA HORÁRIA: 60 hours

PREREQUISITE: Basic Econometrics (**not mandatory but strongly recommended**)

OFFICE HOURS: Wednesdays, 9:30 a.m.to 11:30 a.m, room 1020A.

SALA: online course

## PLANO DE ENSINO

### 1. Syllabus

Introduction: marketing strategy and consumer behavior. Microeconomics approach to marketing strategy: the Dorfman-Steiner theorem. Impact evaluation of marketing expenditures on firms' sales, econometric issues: simultaneity, market share models, dynamic effects, causality. Determinants of consumer behavior in markets with differentiated products. Discrete choice models: probit/logit, multinomial logit, ordered probit. Censored data: tobit estimation model. Panel data analysis applied to consumer behavior.

### 2. Objectives

This course aims at presenting an overview of the econometric tools that have been applied to quantitative marketing analysis. In particular, we will focus on the following applications: (i) impact assessment of marketing strategies and marketing regulatory policies on firms' performance; (ii) determinants of consumer behaviour.

### 3. Capacitation objectives

We adopt a hand-on approach. By the end of the course, students will be able to apply econometric methods in order to evaluate the impact of marketing expenditures on firms' sales. They will also be able to develop econometric models to analyze the determinants of consumer behavior in different market structures.

#### 4. Relationship with the current debate

Economic analysis applied to marketing issues have gained momentum in recent years. Quantitative methods have been gradually incorporated in the daily routine of the marketing departments of firms. Microeconomic models are currently applied to impact evaluation assessment of marketing strategies. These methods have also been successfully applied to understand the determinants of consumer behavior, to assess consumer satisfaction and to classify consumers risk profile regarding financial products, among many other applications. The course will offer students the opportunity to understand how econometrics and economic theory may contribute to evaluate and enhance the impact of marketing strategies.

#### 5. Methodology

We adopt a hands-on approach, with intensive use of the software Stata. All classes will take place in the laboratory of informatics, with a strong emphasis on practical issues.

#### 6. Tentative course outline

Note that the following outline is tentative and therefore subject to change during the course.

Date	Tópico	Activities
<b>August 3</b>	Introduction: marketing strategy and consumer behavior. Microeconomics approach to marketing strategy: the Dorfman-Steiner theorem.	Berndt, chapter 8
<b>August 5</b>	Introduction to Stata programming – part 1	Tutorial on Stata basics
<b>August 10</b>	Introduction to Stata programming – part 2	Tutorial on Stata basics
<b>August 12</b>	Marketing expenditures and sales performance 1: simultaneity. Empirical application: assessing the impact of publicity on orange sales.	Exercise 1 (Berndt, chapter 8)
<b>August 17</b>	Marketing expenditures and sales performance 1: simultaneity. Empirical application: assessing the impact of publicity on orange sales. (cont.)	Exercise 1 (Berndt, chapter 8)
<b>August 19</b>	Marketing expenditures and sales performance 2: dynamics effects. Empirical application: persistence of the effects of marketing efforts in a pharmaceutical company	Exercise 2 (Berndt, chapter 8)

<b>August 24</b>	Marketing expenditures and sales performance 2: dynamics effects. Empirical application: persistence of the effects of marketing efforts in a pharmaceutical company. (cont.)	Exercise 2 (Berndt, chapter 8)
<b>August 26</b>	Marketing expenditures and sales performance 2: dynamics effects. Empirical application: persistence of the effects of marketing efforts in a pharmaceutical company (cont.)	Exercise 3 (Berndt, chapter 8)
<b>August 31</b>	Regulatory marketing policies and their Impact on sales. Application: evaluation of anti-tabagist policy measures	Exercise 4
<b>Sept 2</b>	Regulatory marketing policies and their impact ntitaba. Application: evaluation of ntitabagista policy measures (cont.)	Exercise 4
<b>Sept 7</b>	Holiday (Independency Day)	
<b>Sept 9</b>	Test #1	
<b>Sept 14</b>	Marketing expenditures and sales performance 3: market share models. Empirical application: market for cigarettes	Exercise 5 (Berndt, chapter 8)
<b>Sept 16</b>	Marketing expenditures and sales performance 4: causality. Empirical application: marketing expenditures and their mpact o n aggregated demand	Exercise 6 (Berndt, chapter 8)
<b>Sept 19 - 26</b>	Exam 1 week	
<b>Sept 28</b>	Consumer behavior and discrete choice models: binomial models. Application #1: choice between two brands	Exercise 7 (Franses, chapter 3)
<b>Sept 30</b>	Consumer behavior and discrete choice models: binomial models. Application #1: choice between two brands (cont.)	Exercise 7 (Franses, chapter 3)
<b>Oct 5</b>	Consumer behavior and discrete choice models: binomial models. Application #2: evaluation of credit card approval policy	Exercise 8 (Wooldridge)
<b>Oct 7</b>	Consumer behavior and discrete choice models: binomial models. Application #3: forecasts for FIFA World Cup 2022	Exercise 9
<b>Oct 12</b>	Holiday	
<b>Oct 14</b>	Consumer behavior and discrete choice models: multinomial models. Application #1: choice between multiple brands	Exercise 10
<b>Oct 19</b>	Consumer behavior and discrete choice models: multinomial models. Application #2:	Exercise 11

	commuting mode choice	
<b>Oct 21</b>	Consumer behavior and discrete choice models: ordered models. Application #1: risk classification of clients in a financial services firm	Exercise 12
<b>Oct 26</b>	Consumer behavior and discrete choice models: ordered models. Application #2: determinants of happiness	Exercise 13
<b>Oct 28</b>	Test #2	
<b>Nov 2</b>	Holiday	
<b>Nov 4</b>	Censored data models. Application #1: consumer illingness to pay for organic products	Exercise 14 (Wooldridge)
<b>Nov 9</b>	Censored data models. Application #2: charitable donations	Exercise 15
<b>Nov 11</b>	Introduction to panel data models	Stata tutorial
<b>Nov 16</b>	Panel data analysis. Application: online piracy	Exercise 16
<b>Nov 18</b>	Review class	
<b>Nov 23 - 30</b>	Exam 2 week	

## 7. Evaluation

Tests: 20%  
Exams: 80%

## 8. Bibliography

Berndt, Ernst. *The Practice of Econometrics – Classic and Contemporary*. Addison-Wesley Publishing Company. Capítulo 8.

Franses, P. H. & R. Paap. *Quantitative Methods in Marketing Research*. Cambridge: Cambridge University Press.

Wooldridge, Jeffrey. *Introdução à Econometria: uma Abordagem Moderna*. São Paulo: Editora Thomson-Pioneira.

## 9. Bibliography (complementary)

Ater, I. & O. Rigbi (2007). “Price Advertising in Franchised Chains: The Case of McDonald’s Dollar Menu”. Stanford University, mimeo.

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Kalnins, A. & F. Lafontaine (2004). “Multi-Unit Ownership in Franchising: Evidence from the Fast-Food Industry in Texas”. *The RAND Journal of Economics*, vol.35(4), p.747-761.

Thomadsen, R. (2007). “Product Positioning and Competition: The Role of Location in the Fast Food Industry”. *Marketing Science*, vol.26(6), p.792-804.

## 10. Minibio

José Féres holds a degree in Economics from the Pontifical Catholic University of Rio de Janeiro (PUC-Rio), a MsC in Mathematical Economics and a PhD in Economics from Toulouse School of Economics. He is a researcher at the Applied Economic Research Institute (IPEA), where he currently holds the position of Deputy Director of Infrastructure Studies. He is also an Assistant Professor at the Graduate School of Economics of Fundação Getúlio Vargas (EPGE / FGV). His research agenda is mainly focused on environmental economics issues, with a particular interest in the following topics: climate change, biofuels and application of economic instruments to environmental management.

## 11. Link for Currículo Lattes

<http://lattes.cnpq.br/0860160432390224>