

CURSO: Graduação em Economia – 2º semestre de 2019

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:

## 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 analyses 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 process.

<b>Datas</b>	<b>Tópico</b>	<b>Atividades</b>
August 5	Introduction: marketing strategy and consumer behavior. Microeconomics approach to marketing strategy: the Dorfman-Steiner theorem	Berndt, chapter 8
August 7	Introduction to Stata programming – part 1	Tutorial on Stata basics
August 12	Introduction to Stata programming – part 2	Tutorial on Stata basics
August 14	Marketing expenditures and sales performance 1: simultaneity. Empirical application: assessing the impact of publicity in the orange sales marketing	Exercise 1 (Berndt, chapter 8)
August 19	Marketing expenditures and sales performance 1: simultaneity (cont.)	Exercise 1 (Berndt, chapter 8)
August 21	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)
August 26	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)
August 28	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)

September 2	Regulatory marketing policies and their impact on sales. Application: evaluation of anti-tabagist policy measures	Exercise 4
September 4	Regulatory marketing policies and their impact on sales. Application: evaluation of anti-tabagist policy measures (cont.)	Exercise 4
September 9	Test #1	Evaluation
September 11	Marketing expenditures and sales performance 3: market share models. Empirical application: market for cigarettes	Exercise 5 (Berndt chapter 8)
September 16	Marketing expenditures and sales performance 4: causality. Empirical application: marketing expenditures and their impact on aggregated demand	Exercise 6 (Berndt, chapter 8)
September 18	Review class (test #1 grades and discussion)	Review
September 23	Exams week (A1)	
September 25	Exams week (A1)	
September 30	Consumer behavior and discrete choice models: binomial models. Application #1: choice between two brands	Exercise 7 (Franses, chapter 3)
October 2	Consumer behavior and discrete choice models: binomial models. Application #2: evaluation of credit card approval policy	Exercise 8 (Wooldridge)
October 7	Consumer behavior and discrete choice models: binomial models. Application #3: forecasts for FIFA World Cup 2022	Exercise 9
October 9	Consumer behavior and discrete choice models: multinomial models. Application #1: choice between multiple brands	Exercise 10
October 14	Consumer behavior and discrete choice models: multinomial models. Application #2: commuting mode choice	Exercise 11
October 16	Consumer behavior and discrete choice models: ordered models. Application #1: risk classification of clients in a financial services firm	Exercise 12
October 21	Consumer behavior and discrete choice models: ordered models. Application #2: determinants of happiness	Exercise 13
October 23	Test # 2	Evaluation
October 28	Censored data models. Application #1: consumer willingness to pay for organic products	Exercise 14 (Wooldridge)

October 30	Censored data models. Application #2: charitable donations	Exercise 15
November 4	Test #2 – grades and discussion	
November 6	Introduction to panel data models	Stata tutorial
November 11	Panel data analysis. Application: online piracy	Exercise 16
November 13	Review class	Review
November 18	Exams week (A2)	
November 20	Holiday	
November 25	Exams week (A2)	
November 27	Exams week (A2)	

## 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.

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>