

# **CONSUMER BEHAVIOR**

**FELIX SAITO**  
**EDITOR**

**Nova Science Publishers, Inc.**  
*New York*

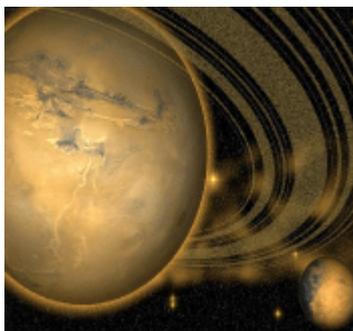
✓ uow

## CONTENTS

<b>Preface</b>		<b>vii</b>
<b>Chapter 1</b>	Relationship between Corporate and Individual Environmental Responsibility <i>Rajiv K. Kashyap, Easwar S. Iyer and Bobby 'Subhabrata' Bannerjee</i>	<b>1</b>
<b>Chapter 2</b>	Japanese Olive Oil Consumer Behaviour: A Conjoint Analysis Approach <i>Mtimet Nadhem, Kashiwagi Kenichi, Zaibet Lokman and Masakazu Nagaki</i>	<b>27</b>
<b>Chapter 3</b>	Assessing Kitchen Purchase Behaviour among Families Using Correspondence Analysis <i>Roberto Furlan, Anna Claudia Pellicelli and Roberto Corradetti</i>	<b>49</b>
<b>Chapter 4</b>	Consumer Behavior, Trust of Information, and Risk Perception of Food Safety Events <i>Sayed Saghaian and Jonathan D. Shepherd</i>	<b>63</b>
<b>Chapter 5</b>	Sustainable Food Consumption, Involvement and Knowledge: An Application of the Theory of Planned Behaviour <i>Iris Vermeir</i>	<b>87</b>
<b>Chapter 6</b>	Consumers and Purchases of Health Products over the Internet <i>Joshua Fogel</i>	<b>105</b>
<b>Chapter 7</b>	Are Chat Rooms Replacing Conventional Communities? <i>Aviv Shoham</i>	<b>117</b>
<b>Chapter 8</b>	Evolutionary Programming to Simulate Electricity Market Competition <i>Daniele Menniti, Anna Pinnarelli and Nicola Sorrentino</i>	<b>129</b>
<b>Chapter 9</b>	Consumers' Preference for Choice Strategies Examined in Two Task Domains <i>Gesine E. Ziebarth and Xiao-Tian Wang</i>	<b>151</b>

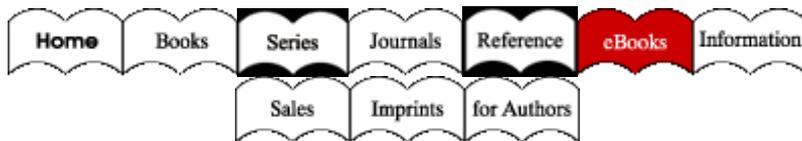
---

<b>Chapter 10</b>	Medical-Information Consumers: Comparing the Characteristics of Patients with COPD Who Recently Visited Their Physicians and Patients Who Visited a Medical-Information Website <i>Linda Casebeer, Joan Arata, Rachael Shillman and Andrew Sanchez</i>	<b>169</b>
<b>Chapter 11</b>	Materialism: An Evolutionary Perspective <i>Paul Rose and Kyle E. Conlon</i>	<b>185</b>
<b>Chapter 12</b>	Biased Consumers' Hypotheses on Price-Quality-Relationships: Influences of Numerical Anchors <i>Günter Molz, Michael Gielnik and Ekkehard Stephan</i>	<b>197</b>
<b>Short Comm A</b>	Mobile Learning: Prediction of User Behavior by Means of the Theory of Reasoned Action <i>Yu-Ru Lin, Yi-Fen Chen and Shu-Ting Chuang</i>	<b>213</b>
<b>Short Comm B</b>	Cost-Benefit-Associations: A Powerful but Understudied Construct <i>Bernadette Kamleitner</i>	<b>227</b>
<b>Short Comm C</b>	Fairness Perceptions and Utility Maximization <i>Irene Daskalopoulou</i>	<b>239</b>
<b>Short Comm D</b>	Purchasing Illegal Copies of Movies' Videos as an Unethical Consumer Behavior: An Israeli Study <i>Aviv Shoham, Ayalla Ruvio and Moshe Davidow</i>	<b>249</b>
<b>Index</b>		<b>261</b>



ACCOUNT

VIEW CART



Top » Catalog » Ebooks » Social Sciences » Economics, Trade and Globalization »

My Account | Cart Contents | Checkout

Quick Find

Special Focus Titles



Use keywords to find the product you are looking for.  
**Advanced Search**

What's New?



The Sino-Indian Border War and the Foreign Policies of China and India (1950-1965)  
\$144.00

Shopping Cart



0 items

Information

Shipping & Returns  
Privacy Notice  
Conditions of Use  
Contact Us

Bestsellers

01. Consumer Behavior
02. Essential Oils: Art, Agriculture, Science, Industry and Entrepreneurship (A Focus on the Asia-Pacific region)
03. Fuzzy Measurement of Sustainability
04. Housing, Housing Costs and Mortgages: Trends, Impact and Prediction
05. Pensions: Policies, New Reforms and Current Challenges
06. Bank Secrecy Act/Anti-Money Laundering
07. Bioethanol: Production, Benefits and Economics
08. Career Development: Global Issues and Challenges
09. Codes of good governance around the world
10. Developing Countries: Political, Economic and Social Issues

Notifications



Notify me of updates to **Consumer Behavior**

## Consumer Behavior

\$130.00

**Editors:** Felix Saito

### Book Description:

This book introduces concepts of corporate environmental responsibility and individual environmental responsibility, identify their key indicators, and offer evidence of robust relationships between them. Using correspondence analysis, kitchen purchase behavior among families is assessed. In addition, consumer behavior, when it comes to food safety events, is examined. Understanding how consumers conceptualize food safety risks is essential for effective strategic response plans. Furthermore, following the theory of planned behavior, this book attempts to account for variables which are assumed to have an impact on sustainable consumption.

Empirical research published in peer reviewed journals on the topic of consumers and health-related products on the Internet are reviewed. In addition, a new theory of evolutionary games and the concept of Near-Nash equilibrium to simulate the electricity market is suggested. In particular, an opportune genetic algorithm has been developed.

As an example of medical-information consumers, the associations between feeling informed about COPD (chronic obstructive pulmonary disease) and the control of COPD is reviewed. Furthermore, biased consumers' hypotheses on price-quality relationships is addressed. In other words, in terms of the psychology of judgment, certain results can be



Click to enlarge

01. Heart Failure: What a Non-Heart Failure Specialist Needs to Know
02. Bottle-Feeding: Perceptions, Practices, and Health Outcomes
03. Between Success and Failure: Assessment of Aspirations and Risk (CD Included)
04. Understanding Left and Right: An Illustrated Guide to the Political Divide
05. Phytoremediation: Methods, Management and Assessment
06. "Waste-to-Profit" (W-t-P): Value added Products to Generate Wealth for a Sustainable Economy. Volume 1
07. The Impact and Implications of Crisis: A Comprehensive Approach Combining Elements of Health and Society
08. When "We" Are Stressed: A Dyadic Approach to Coping with Stressful Events
09. The Man Brand: Why Public Campaigns Hide Half of Intimate Partner Violence
10. The Life of Abraham Lincoln: Drawn from Original Sources and Containing Many Speeches, Letters and Telegrams Hitherto Unpublished. Volume One
11. Life of Charles Dickens
12. The Inventions and Discoveries of the World's Most Famous Scientists

## Tell A Friend



Tell someone you know about  
this product.

attributed to an effect caused by a numeral anchor (on the price tag).

This book examines consumer acceptance of Mobile learning (M-learning) by proposing and extending the theory of reasoned action (TRA) including the variable of social influences. Literature related to the emerging concept of cost-benefit-associations are also reviewed. Cost-benefit-associations are the degree to which thoughts of costs evoke thoughts of benefits and vice versa. Finally, a model interrelating consumers' ethics, their sentiments toward marketing, and their attitudes to piracy and actual piracy itself were studied. Attitudes about piracy served as a partial mediator of the impacts of consumer sentiments, morals, and ethics on actual piracy.

### Table of Contents:

Preface

Research and Reviews

Relationship Between Corporate and Individual Environmental Responsibility;pp. 1-26

(Rajiv. K. Kashyap, Costakos College of Business, William Paterson Univ., New Jersey, USA, Easwar S. Iyer, Isenberg School of Management, Univ. of Massachusetts Amherst, USA, Bobby 'Sunhabrata' Bannerjee, Univ. of South Australia)

Japanese Olive Oil Consumer Behavior: A Conjoint Analysis Approach;pp. 27-47

(Nadhem Mtimet, Dep. of Rural Economy and Management, Ecole Superieure d'Agriculture de Mograne, Tunisia, Kenichi Kashiwagi The Alliance for Research on North Africa (ARENA), Univ. of Tsukuba, Japan, Lokman Zaibet, Dep. of Rural Economy and Management, Ecole Superieure d'Agriculture de Mograne, Tunisia, Mazakazu Nagaki, Divison of Appropriate Technology and Science for Sustainable Development,Univ. of Tsukuba, Japan)

Assessing Kitchen Behavior Among Families Using Correspondence Analysis;pp. 49-61

(Roberto Furlan, Dep. of Statistics and Applied Mathematics "Diego De Castro", Univ. of Torino, Italy, Anna Claudia Pellicelli, Dep. of Business Administration, Univ. of Torino, Italy, and Roberto Corradetti, Dep. of Statistics and Applied Mathematics "Diego De Castro", Univ. of Torino, Italy)

Consumer Behavior, Trust of Information, and Risk Perception to Food Safety Events;pp. 63-85

(Sayed Saghaian, Dep. of Agricultural Economics, Univ of

Kentucky  
and Jonathan D. Shepherd)

Sustainable Food Consumption, Involvement, and Knowledge:  
An Application of the Theory of Planned Behaviour;pp. 87-103  
(Iris Vermeir, Hogeschool Ghent, Dep. of Business  
Administration and Public Management, Ghent Univ., Dep. of  
Marketing, Belgium)

Consumers and Purchases of Health Products Over the  
Internet;pp. 105-115  
(Joshua Fogel, Brooklyn College, of the City Univ. of New York,  
Dep.

Are Chat Rooms Replacing Conventional Communities?;pp.  
117-128  
(Aviv Shoham, Graduate School of Management, Univ. of  
Haifa, Israel)

Evolutionary Programming to Simulate Electricity Market  
Competition;pp. 129-149  
(Daniele Menniti, Anna Pinnarelli, and Nicola Sorrentino, Dep.  
of Electric, Computer, and System Science, Univ. of Calabria,  
Italy)

Consumers' Preference for Choice Strategies Examined in Two  
Task Domains;pp. 151-167  
(Gesine E. Ziebarth and Xiao-Tian Wang, Univ. of South  
Dakota, Vermillion, USA)

Medical-Information Consumers: Comparing the  
Characteristics of Patients with COPD Who Recently Visited  
Their Physicians and Patients Who visited a Medical-  
Information Website;pp. 169-196  
(Linda Casebeer, Outcomes Inc., Birmingham, Alabama, Joan  
Arata, Medscape LLC, New York, Rachel Shillman, and  
Andrew Sanchez Outcomes Inc., Birmingham, Alabama)

Materialism: An Evolutionary Perspective;pp. 185-196  
(Paul Rose, Dep. of Psychology, Southern Illinois Univ.  
Edwardsville and Kyle E. Conlon, Southern Illinois Univ.  
Edwardsville)

Biased Consumers' Hypotheses on Price-Quality-  
Relationships: Influences of Numerical Anchors;pp. 197-211  
(Gunter Molz, Bergische Univ. of Wuppertal, Michael Gielnik,  
Justus-Liebig-Univ. Gießen, and Ekkehard Stephan, Univ. of  
Cologne, Germany)

#### Short Communications

(A) Mobile Learning: Prediction of User Behavior By Means of  
the Theory of Reasoned Action;pp. 213-225  
(Yu-Ru Lin, Dep. of Marketing and Logistics Management, Yu  
Da College of Business, Yi Fen Chen, Dep. of International  
Trade, Chung Yuan Christian Univ., and Shu-Ting Chuang,  
Dep. of Business Administration, The Overseas Chinese Inst. of  
Technology)

(B) Cost-Benefit-Associations: A Powerful But Understudied Construct;pp. 227-237

(Bernadette Kamleitner, Dep. of Business and Management, Queen Mary Univ., London)

(C) Fairness Perceptions and Utility Maximization;pp. 239-248

(Irene Daskalopoulou, Dep. of Economics and Management, Univ. of Peloponnese, Greece)

(D) Purchasing Illegal Copies of Movies As An Unethical Consumer Behavior: An Israeli Study;pp. 249-259

(Aviv Shoham, Ayalla Ruvio and Moshe Davidow, Univ. Graduate School of Management, Univ. of Hafia, Israel)

Index

**Binding:** ebook

**Pub. Date:** 2009

**Pages:** 277 pp.

**ISBN:** 978-1-61728-772-5

**Status:** AV

Status Code	Description
AN	Announcing
FM	Formatting
PP	Page Proofs
FP	Final Production
EP	Editorial Production
PR	At Prepress
AP	At Press
AV	Available

Available Options:

Version:



Wednesday 04 April, 2018

Nova Science Publishers  
© Copyright 2004 - 2018

## **Assessing Kitchen Purchase Behaviour among Families Using Correspondence Analysis**

Roberto Furlan, Anna Claudia Pellicelli, Roberto Corradetti

**Roberto Furlan**, Department of Statistics and Applied Mathematics “Diego De Castro”,  
University of Torino, Italy.

E-mail:                roberto.furlan@gmail.com

**Anna Claudia Pellicelli**, Department of Business Administration, University of Torino,  
Italy.

E-mail:                acpellicelli@econ.unito.it

**Roberto Corradetti**, Department of Statistics and Applied Mathematics “Diego De  
Castro”, University of Torino, Italy.

E-mail:                roberto.corradetti@unito.it

### **Address for correspondence:**

**Roberto Furlan  
18 Wigmore Road  
Carshalton, Surrey  
SM5 1RH  
UK**

**Phone number: +44-79-00026695**

**<<< PLEASE FEEL FREE TO REVIEW THE ENGLISH FOR STYLE >>>**

## **ABSTRACT**

Over the last decade, furniture manufacturers have shown a strong need for a better understanding of the decision making process that drives home furniture purchases. In this chapter, we focus on kitchen purchase behaviour and we investigate, through an ad-hoc market research survey, how close is the current kitchen present in the house to the ideal kitchen and what are the unmet characteristics. The survey is based on a stratified and quota sample of families who have recently bought a new kitchen-element system. The core of the questionnaire was formed by an extended set of pairs of opposite emotional-oriented statements intended to collect precise information about the style of both the ideal and actually purchased kitchen. After conducting a Wilcoxon matched pairs signed ranks test to evaluate the main differences in evaluations between ideal and purchased kitchen, we performed a multiple correspondence analysis to represent the relative position of the two sets of statements through a *two-dimensional strategy map*. This map enables the reader to gain precious insights into the general pattern of purchase behaviour with respect to the ideal product. The approach here presented can be profitably extended to other areas to enable furniture manufacturers to better meet consumer demand and, therefore, to be more competitive in the global market.

## **ACKNOWLEDGEMENT**

We would like to thank the market research institute *SWG*, Trieste, Italy for providing the CATI sample and for giving us the opportunity to study family purchase behaviour by a real-life case study through multiple correspondence analysis approach.

## **1. INTRODUCTION: FAMILY PURCHASE BEHAVIOUR**

The topic of how households reach their purchase decisions is one of the most challenging topics in consumer behaviour research. The whole family tends to have an important role in such household decision making, and all its members tend to take decisions about the purchase and use of these types of products and services. Almost everywhere in the world, the wife was traditionally the main purchasing agent for the family in the areas of household products, clothing, and food, but all this is slowly changing and, nowadays, roles vary widely among different countries and social classes. In general, for expensive products and services, which is the case of kitchen-element systems here considered, husbands and wives tend to make joint decisions.

Other members of the household also influence the decision making process, influence that might be different in different stages of the process (problem recognition, information search, alternative evaluation, and choice or purchase) and is associated with their respective roles.

### **1.1 Challenges to Consumer Research on the Family**

Consumer research on the family is very complex. Husband-wife involvement varies widely by product category and by stage in the buying process, and buying roles keep changing with evolving consumer lifestyles. Therefore, there are several factors that challenge consumer research on the family (Engel *et al.*, 1986; Howard and Sheth, 1969; Nicosia, 1966):

- the sheer number of decisions is so large that is almost impossible to measure

them all or to generalize about them accurately;

- family decisions are made within a private, intimate, and social group. Therefore, they are not easy to observe and might depend upon past personal histories within the family of which the researcher is unaware;
- family consumption decisions are often not independent from one another, so they are difficult to study in isolation and trade-offs among alternative products and services occur;
- family have multiple decision makers: decisions range from individual choices made by members within the home, to truly joint decisions that might involve any combination of members;
- family decision making differs by the type of product or service being studied. In addition to personalities, families differ in wealth, age, social standing, life styles, goods already owned. Some families are patriarchies, in which the father exercises influences over major consumer decisions; other families are matriarchies, in which the mother rules supreme; others are more egalitarian, where the power is equally shared.

## **1.2 Family Decision Making**

Family decision making (Kotler, 1972) can be defined as the set of processes, interactions, and roles of family members involved in making decisions as a group (Bennett, 1995). Family decision making consists of several stages: problem recognition, information search, alternative evaluation, and choice or purchase. The influence of family members

might be different: usually the wife recognizes a problem and tries to find solutions, while the husband tends to participate in alternative evaluation, choice, and purchase (Davis and Rigaux, 1974). In particular, the respective influence is associated with the respective roles of the members:

- *the initiator* is active in the problem recognition stage and might suggest the need to make a purchase and might choose a particular brand or exterior aspect;
- *the influencer* might approve or disapprove the suggestion by the initiator, guides the choice process in the stage of alternative evaluation, and might suggest another group of statements;
- *the decision maker* takes the decision to make or not to make a purchase;
- *the buyer* goes to the shop to buy the product that was selected and usually pays for the purchase;
- *the users* might be different from the people mentioned before; their preferences are usually taken into account in the decision making process.

Although the decision process described above suggests that family decision making is a well structured process, this is often not the case: many purchases are unplanned and many purchase plans are not carried out for several reasons.

### **1.3 External Influences on Family Decision Making**

Several other factors influence the decision making process. In particular, it is possible to recognize external forces, such as social classes, and internal forces, such as role orientation and family life cycle (Kotler *et al.*, 2005; Schiffman and Kanuk, 1991):

- *social class*. Middle classes take joint decisions more often than higher or lower classes. In higher classes, both partners frequently have an income, a budget, and a car, leading to more autonomous decisions. If the income is high, this reduces the pressure for optimal spending. On the opposite, in lower classes the role distribution of partners is more strict;
- *role orientation*. A strict orientation of male and female roles induces specialization, less communication, and, thus, leads to individual decisions. Role orientation might also concern the stages of the decision making process. For example, one partner might gather information, while the other might use the information in decision making;
- *family life cycle*. Just married or cohabitating couples usually arrive at a decision together, as roles distribution is still loose. Later, distribution of roles and tasks supports individual decisions. Less joint decision processes are likely to take place also in second marriages, as the partners have already experience with decision roles (Bettman, 1979);
- *perceived risk*. The risk frequently concerns all family members, inducing syncretic (i.e., joint) decision making;
- *time pressure*. Shortness of time tends to reduce the opportunity of deliberation and joint decision making;
- *the seller*. The vendor can strongly influence family decisions through careful and persuasive advices and recommendations, in particular for highly sophisticated and/or technologically advanced products that are characterized by a high degree of complexity.

### 1.4 Conflict Resolution

Because of different roles and personality of family members, and because of numerous internal and external forces influencing the decision making process, conflicts tend to arise very easily in the household. Conflict resolution is necessary to keep family members together, and it can be accomplished in different ways, by means of authority, rules, negotiation, or habit. Several factors play an important part in this process. The key factors are *income* (the main income earner frequently has the most influence), *education* (the partner with the highest education frequently has the most influence), and *labour participation* (special skills which can be used to exert power on the other partner). *Cultural tradition* might determine power differences (the traditional husband-dominant role pattern prevails in European ethnic minority households); *duration of partnership*, *involvement with the product*, orientation of *past behaviour*, and degree of harmony in the household (*cohesion*) might also influence the decision making process (Antonides and van Raaij, 1998).

When household members disagree about goals, decisions are much more difficult to reach without properly addressing the inherent conflict. Two basic ways to deal with goal conflict situations are 1) a persuasion strategy and 2) a bargaining strategy (Davis, 1976; Spiro, 1983). The basic distinction between these two related processes is that, under a persuasion strategy, a member is led to make a decision that he/ she would rather not make (e.g., shopping together in the hope that additional influence from a salesperson can sway the reluctant member into a positive purchase decision), while a bargaining strategy tries to

create conditions under which the member will want to make the decision (a broad set of approaches that involve “give and take” in such a way that family members are induced to make the decision).

Other ways of resolving conflict include: problem solving by rational arguments and seeking new information; compromising or trading issues; strategic behaviour, including threats and coalitions; persuasion or insisting.

## **2. KITCHEN PURCHASE BEHAVIOUR**

Historically, most of the surveys conducted in Italy regarding kitchen purchase behaviour were based on face-to-face interviews directly conducted in families' houses. This approach has always been considered as the most effective one because of the high complexity of this product. In fact, kitchens are characterized by features hardly recognizable by owners (e.g., even the simple distinction between kitchen with free-standing and built-in appliances seems to be a struggle for respondents). The error in the kitchen components classification can be completely removed thanks to well trained face-to-face interviewers who can observe the new kitchen and its appliances directly in the buyer's house.

However, not only is this approach very expensive, but it does not allow to draw a perfectly clear picture of this phenomenon, because the face-to-face sample is affected by a strong selection bias. In fact, some categories of families tend to be strongly under-represented in the sample, such as those with a high income or those living in isolated rural areas, which tend to have peculiar purchase behaviour. Using a less invasive and more geographically spread channel, such as the telephone one, should help in obtaining less biased and thus more realistic results for the target population. The advantages and disadvantages of

telephone interviewing with respect to face-to-face interviewing are well known, since these methodologies have been largely applied around the world since their appearance on the market (Eunen van 1995; Kormendi 1988; Lyberg and Kasprysk 1991; Nicholls and de Leeuw 1996; Scherpenzeel 2001). As for our aims we did not need to take into consideration the kitchen components classification, we could use a telephone survey without any relevant concern.

## **2.1 The Survey**

Our objective was to study kitchen purchase behaviour of Italian families and to get a clean picture of the differences between the ideal kitchen and the one present in the house. However, as we wanted to study this phenomenon with the minimum time lag between the time of purchase of the present kitchen and the ideal kitchen definition provided through the survey, we decided to include in the sample only families who bought a kitchen in the last 12 months. More precisely, the target population was denoted by all Italian families who bought a new kitchen-element system in 2003.

Unfortunately, a list of families with a new kitchen was not available. Therefore, we had to screen Italian families with an extended but short telephone survey in order to contact enough families belonging to the target population and available for the main and deep telephone interview. Our goal was to collect and analyze a sample of at least 100 Italian families. Thanks to some information gathered from a couple of suppliers of kitchen-element systems regarding the last five-year sales, we could estimate that, on average, about 3.5% of families buy a new kitchen-element system every year. Therefore, we had to

consider about 2,860 families for the screening survey. Since we wanted to be conservative with our hypothesis, we adopted a slightly larger sample. Three thousands of families were sampled according to a stratified random sample based on the 103 Italian administrative units (i.e., *province*) as strata, and controlling it by quota of demographic size of the towns sampled within the province. A list of households with geographic information and telephone contact numbers was supplied by *Consodata S.P.A.* in December 2003. Information from the *ISTAT 2001 Population Census* and following updates were considered for such sampling. Within the sampled family, the final unit to be interviewed was the person of the family mainly in charge of the house. Any sampled family that could not be contacted by the interviewer or that refused to participate to the study was replaced by a similar family according to the geographic information available. For such reasons and because of the absence of a landline telephone number in more than 10% of Italian families, the sampled population resulted to be slightly smaller than the target population. However, we believe that the bias affecting the screening survey was significantly lower than the bias that would have affected a similar face-to-face survey, for the reasons presented in the previous section.

Through the screening sample, we collected information on 114 families who bought a new kitchen-element system in 2003, with a resulting penetration rate of 3.8%. The main interview investigating the purchase behaviour was conducted right after the short screener, during the same interview session, in order to avoid annoying respondents with a second interview.

Many behaviour and socio-demographic questions were included in the main questionnaire. However, for the study presented in this chapter, we considered only two sets of questions:

the ideal kitchen set and the purchased kitchen set. Twelve pairs of opposite statements were asked for each set (see Appendix 1). We decided to adopt such a structure because we wanted to force respondents to provide an answer to each pair, as we believed that the kitchen style could be described mainly by one of the statements on each pair. However, interviewers were instructed to accept missing answers and to record them as “*don’t knows*”.

Both the screening and the main survey were run in January 2004 by the market research institute *SWG*, Trieste, Italy, through an integrated CATI (Computer Assisted Telephone Interviewing) system advanced and user friendly which provides intuitive access to a broad range of features, including questionnaire authoring and administration, sample and call management, summary statistics, data coding and editing.

## **2.2 The Analysis**

### *2.2.1 Descriptive Analysis*

Firstly, we computed the percentages associated with each statement, for both the ideal and the purchased kitchen. Table 1 reports such results, along with the  $p$ -value associated with a Wilcoxon matched pairs signed ranks test (Daniel 1978; Lehmann 1975) to evaluate the differences between the ideal and the purchased kitchen evaluations. This non-parametric test is designed to test the hypothesis that the median of the differences in the pairs is zero. It considers the data to be at an ordinal-metric level, a quite less critical assumption than the interval level assumption required for the more common paired  $t$ -test. In addition, the assumption of there being a normal distribution does not have to be met as for the  $t$ -test,

which is much too vulnerable to deviations from the normal distribution. Some statements present a large difference between the ideal and the purchased kitchen evaluations; this suggests respondents were not able to buy the desired kitchen (*soft, rounded, sinuous*, etc.), maybe because some external factor (e.g., partner, availability, budget restrictions, etc) influenced the purchase process. On the opposite, differences are not significant for other statements, either because the statements are very important, so that respondents really bought a kitchen close to the ideal one (*wood, future*) from that particular point of view, or because the statements could not be clearly interpreted by respondents (*habit, change*).

Table 1  
Statements values for the ideal and the purchased kitchen

Statement	Ideal Kitchen (%)	Purchased Kitchen (%)	<i>p</i> -value
linear	73.7	81.6	0.04
curved	21.1	13.2	0.02
soft	59.6	48.2	0.01
hard	30.7	42.1	0.01
modern	51.8	57.0	0.16
traditional	45.6	38.6	0.06
classic	51.8	45.6	0.15
innovative	45.6	50.0	0.28
geometric	52.6	58.8	0.13
roundish	43.9	36.0	0.05
metal	30.7	24.6	0.09
wood	65.8	68.4	0.52
future	60.5	61.4	0.81
past	30.7	30.7	1.00
sharp	20.2	32.5	0.00
rounded	75.4	60.5	0.00
sinuous	36.0	25.4	0.00
straight	55.3	67.5	0.00
habit	33.3	33.3	1.00
change	57.9	57.9	1.00

rigid	28.9	44.7	0.00
ductile	62.3	46.5	0.00
warm	88.6	82.5	0.09
cold	8.8	10.5	0.57

### 2.2.2 Multiple Correspondence Analysis

To improve the interpretation of the results reported in Table 1, we wanted to have a graphical representation of the statements differences. Based on our previous experience and present needs, we decided to conduct a multiple correspondence analysis.

Correspondence analysis (CA) is a method of factoring categorical variables and displaying them in a space representing their association (Benzecri 1992; Greenacre 1993; Greenacre and Blasius 1994; Hoffman and Franke 1986). Usually, the space for the representation is chosen to be two-dimensional, but in some case a different number of dimensions can be preferred. We can think that CA tries to plot a cloud of data points on a two-dimensional map to give a reasonable summary of the relationships and variation within them. This methodology is quite popular in market research, in particular to represent customer preferences for a set of product characteristics (e.g., colour, shape, size, taste, etc.) in relation to a set of brands. CA can be considered to be a particular case of canonical correlation, where one set of variables (but not simply categorical variables like in CA) is related to another set of variables to assess their relationships. In the traditional setup, CA is applied to two-way contingency tables to analyze and represent the inter-relationships of categories of row and column variables. However, this technique is generalizable to  $n$ -way tables, and hence allows studying the relationships of more than two categorical variables.

Multiple correspondence analysis (MCA) is the generalized extension of CA that allows

managing a greater number of variables. MCA requires in input a design matrix  $X$  of size ( $n \times p$ ), where  $n$  is the number of cases and  $p$  is the number of variables categories. The generic cell  $X_{jc}$  in the design matrix can assume either value '1' or '0', depending on whether the case  $j$  is or is not associated with category  $c$ .

For our study, we decided to include all pairs of statements into the MCA model and not only the ones with a significant difference between the ideal and purchased kitchen, as resulting from the results of Section 2.2.1. In fact, the overall interpretation should be easier if all statements are included as we would get a complete picture of the evaluations relationships. Firstly, we prepared the design matrix in such a way that each of the 114 respondents was described by 48 columns, as for each of the 12 pairs we had two statements associated with both the ideal and the purchased kitchen. The analysis was conducted by R, an advanced software environment for statistical computing and graphics (R Development Core Team 2005). In particular, we used the function *mca* available in the MASS library (Venables and Ripley 2002). As required by this function, value '1' was used for the statements associated with the case, value '0' otherwise (including *don't know* answers). Table 2 reports the statistics of the model for the first ten dimensions; however, for the sake of clarity, we chose to plot only the first two dimensions.

Table 2

MCA: Eigenvalues and inertia for the first ten dimensions

No. of Dims	Singular Values	Eigenvalues	Perc. of Inertia	Cumulative Percent
1	0.477	0.227	22.7	22.7
2	0.366	0.134	13.4	36.1
3	0.294	0.086	8.6	44.7

4	0.242	0.059	5.9	50.6
5	0.231	0.053	5.3	55.9
6	0.220	0.048	4.8	60.8
7	0.211	0.044	4.4	65.2
8	0.203	0.041	4.1	69.3
9	0.188	0.035	3.5	72.8
10	0.182	0.033	3.3	76.1

The singular values for the first two dimensions are 0.477 and 0.366, respectively. A singular value is the square root of an eigenvalue, which is the characteristic root of the principal components solution. For each dimension there is one eigenvalue, usually referred as *inertia* for that dimension; it reflects the relative importance of such dimension. The amount of inertia can also be interpreted as the amount of variance of a given dimension in explaining the correspondence structure table. The first dimension has the largest eigenvalue and it explains the most inertia, the second dimension has the largest eigenvalue except the previous one and it explains the most residual inertia, and so on. The first two dimensions are responsible for 36.1% of the total inertia, which is a quite good percentage given the high number of variables (48) included in the analysis. Note that the first dimension is almost twice as important as the second dimension, as it explains 62.9% of the variance explained by the first two dimensions.

### 2.2.3 The Correspondence Map

We plotted in a two-dimensional map the coordinates associated with the first two dimensions of the column vertices for category '1' of each variable. The result is shown in Figure 1, where the ideal kitchen statements are labelled in upper case, and the purchased kitchen statements are labelled in lower case. This map places associated categories close to

each other. It is evident that the first dimension ( $x$ -axis) differentiates most clearly between an innovative and a traditional kitchen. Considering the left-hand side of the plot, an innovative kitchen is closely associated with a modern, future-oriented, metallic, and cold kitchen. On the right-hand side, a traditional kitchen is closely associated with a classic, past-oriented, and wood kitchen. Since these statements reflect *tradition*, it is not surprising that they fall primarily onto a single dimension. The second dimension ( $y$ -axis) discriminates mostly on the *shape* of the kitchen. Considering the bottom side of the plot, a linear kitchen is associated with a sharp, hard, geometric, and rigid kitchen. On the top side, a curved kitchen is associated with a soft, sinuous, roundish, and rounded kitchen.

Figure 1: Two-dimensional correspondence map

===== insert FIGURE 1 about here =====

It is particularly interesting to analyze the relative position of each ideal kitchen statement with respect to the corresponding purchased kitchen statement. We expect pairs of statements with a small difference in the associated percentages (Table 1) to be close to each other in the map. However, since the map is based only on the first two dimensions, this is not necessary verified. By adding together the information from Table 1 and the information from Figure 1, we could obtain Figure 2 that clearly shows the relationship between the ideal kitchen and the actual purchased kitchen. The reader should remember that the horizontal axis is approximately twice as important as the vertical axis. In this correspondence map, the scaling is such that statements close to the origin of the axes are characterized by a high percentage, while statements far from the origin are characterized

by a low percentage. The arrows indicate the “path” from the purchased to the ideal situation. For example, if we consider the pair *soft* versus *hard*, we can see that respondents desire a softer and less hard kitchen.

Figure 2: Relative position of ideal kitchen versus purchased kitchen statements

===== insert FIGURE 2 about here =====

The map in Figure 2 clearly shows the general pattern for which respondents tend to prefer a more traditional and warmer kitchen than that purchased in the previous months. In addition, the kitchen should be characterized by a softer and more rounded shape. Based on this study alone, we are not in the position to explain the source of this gap. For instance, this gap could be due to the aesthetic value of the ideal kitchen as opposed to the practicality of the purchased kitchen, or simply due to the excessive cost of the ideal kitchen that makes it not easily affordable.

### 2.3 Interpretation of the Results

The gap between the ideal kitchen and the purchased kitchen might be explained by the different influence of family members in the stages of the decision making process, associated with their respective roles. Although the decision process earlier described suggests that family decision making is a well structured process, this is often not the case: many purchases are unplanned and many purchase plans are not carried out for several reasons. Sometimes decisions are taken autonomously, sometimes jointly, especially in the

case of important purchases, and in many occasions the seller and/ or the price play a decisive role.

Necessarily, marketing professionals must research specific patterns in their target markets because consumer research on the family is very complex. Husband-wife involvement varies widely by product category, by stage in the buying process, and buying roles change with evolving consumer lifestyles. Finally, research has found that underlying decision conflict is common in household decisions, but most households work hard to minimize its appearance and effects.

### 3. CONCLUSION

In this chapter, we focused on kitchen purchase behaviour of Italian families. We based our analysis on a telephone sample composed of over one hundred Italian families who bought a new kitchen-element system during the previous 12 months. Firstly, we conduct a Wilcoxon matched pairs signed ranks test to evaluate the differences between the ideal and the purchased kitchen evaluations; this test provided some important preliminary information regarding the gap between the ideal and the actual purchase. Also, from this preliminary analysis, we could identify some statements that could not be properly interpreted by respondents. Afterwards, we successfully performed a multiple correspondence analysis and we plotted onto a two-dimensional map the relative positions of the two sets of statements. The map obtained is very clear, as its axes have a very nice interpretation (*tradition* versus *shape*) and the gaps between the ideal and the actual kitchen are well characterized, thus they emerge to be very informative. The macro result shows how Italian families prefer a more traditional and warmer kitchen than they actually have.

In addition, the correspondence map provides some interesting details, like a desire for a more metallic but traditional kitchen, which could be used by Italian kitchen manufacturers. The main limit of this study consists in the low amount of information gathered, in particular in the modest size of the set of statements included in the questionnaire. We aim to conduct soon a further study on the style of kitchens as well as on the style of other furniture, such as dining room or bathroom. We aim to include in such studies a greater number of well-selected statements, in order of being able to provide more details which could be profitably used by manufacturers. In addition, questions regarding the family decision making process will be included in the questionnaire in order to investigate how family or external factors influence the furniture purchase behaviour. These studies will eventually explain the gap between the ideal kitchen and the purchased kitchen and suggest possible actions to reduce it. Reducing this gap means offering more appropriate products and, therefore, better meeting consumer demand, the key to be successful in the global market.

## REFERENCES

- Antonides, G., & van Raaij, F. W. (1998). *Consumer behaviour, a European perspective*. Chichester: Wiley and Sons.
- Bennett, P. D. (1995). *Dictionary of Marketing Terms*. American Marketing Association, Lincolnwood, IL: NTC Business Books.
- Benzecri, J. P. (1992). *Correspondence Analysis Handbook*. New York: Marcel Dekker.
- Bettman, J. R. (1979). *An information processing theory of customer choice*. Reading, MA: Addison Wesley.
- Daniel, W. W. (1978). *Applied Nonparametric Statistics*. Houghton Mifflin.

- Davis, H. L. (1976). Decision Making Within the Household. *Journal of Consumer Research*, 2 (40), 241-260.
- Davis, H. L., & Rigaux, B. P. (1974). Perception of Marital Roles in Decision Processes. *Journal of Consumer Research*, 1 (1), 51-62.
- Engel, J. F., Blackwell, R. D., & Miniard, P. W. (1986). *Consumer Behaviour*. New York: Holt, Rinehart and Winston.
- Eunen van, E. (1995). *Interviewing for Market Research and Opinion Poll*. Amsterdam, The Netherlands: ESOMAR.
- Greenacre, M. J. (1993). *Correspondence Analysis in Practice*. London: Academic Press.
- Greenacre, M. J., & Blasius J. (1994). *Correspondence Analysis in the Social Sciences*. London: Academic Press.
- Hoffman, D. L., & Franke, G. R. (1986). Correspondence Analysis: Graphical Representation of Categorical Data in Marketing Research. *Journal of Marketing Research*, 23 (3), 213-227.
- Howard, J. A., & Sheth, J. N. (1969). *The Theory of Buyer Behaviour*. New York: Wiley.
- Kormendi, E. (1988). The Quality of Income Information in Telephone and Face to Face Surveys. In R. M. Groves, P. P. Biemer, L. E. Lyberg, J. T. Massey, W. L. Nicholls, & J. Waksberg (Eds.), *Telephone Survey Methodology* (pp. 341-356). New York: Wiley and Sons.
- Kotler, P. (1972). What Consumerism Means for Marketers. *Harvard Business Review*, 50, 48-57.
- Kotler, P., Armstrong, G., Saunders, J., & Wong, V. (2005). *Principles of Marketing*. Prentice Hall.
- Lehmann, E. L. (1975). *Nonparametrics: Statistical Methods Based on Ranks*. Holden and Day, San Francisco.
- Lyberg, L. E., & Kasprysk, D. (1991). Data Collection Methods and Measurement Errors: an overview. In P. P. Biemer, R. M. Groves, L. E. Lyberg, N. Mathiowetz, & S. Sudman (Eds.), *Measurement Errors in Surveys* (pp. 237-258). New York: Wiley and Sons.
- Nicholls, W. L., & de Leeuw, E. D. (1996). Factors in Acceptance of Computer-Assisted Interviewing Methods: A Conceptual and Historical Review. *Proceedings of The Survey Research Methods Section, ASA*, 758-763.
- Nicosia, F. M. (1966). *Consumer Decision Processes*. Englewood Cliffs, NJ: Prentice Hall.

R Development Core Team (2005). *R: a Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing.

Scherpenzeel, A. (2001). *Mode Effects in Panel Surveys: a Comparison of CAPI and CATI*. Report, October, Switzerland: Office Fédéral de la Statistique.

Schiffman L. G., & Kanuk, L. L. (1991). *Consumer behaviour*. Englewood Cliffs, NJ: Prentice Hall.

Spiro, R. L. (1983). Persuasion in Family Decision Making. *Journal of Consumer Research*, 9 (4), 393-402.

Venables, W. N., & Ripley, B. D. (2002). *Modern Applied Statistics with S-PLUS*. New York: Springer.

Reviewed by:

Ron S. Kenett: KPA Ltd., Raanana and University of Torino, Torino, Italy

Diego Martone: Demia Consulting, Trieste, Italy and Department of Psychology, University of Trieste, Italy

## APPENDIX 1: THE QUESTIONNAIRE

*Ideal Kitchen:* Let us consider the kitchen environment. I will list some pairs of statements concerning the materials, the shape, the design, and the style of the kitchen-elements. Between the following two statements, which one is the closest to your personal taste? (read one pair at-a-time; *don't know* is allowed; randomize)

*Purchased Kitchen:* Let us consider the kitchen-elements you have bought. Between the following two statements, which one can better define them? (read one pair at-a-time; *don't know* is allowed; randomize)

### Pairs of Statements:

- linear versus curved (lineare versus curvo);
- soft versus hard (morbido versus duro);
- modern versus traditional (moderno versus tradizionale);
- classic versus innovative (classico versus innovativo);
- geometric versus roundish (geometrico versus tondeggiate);
- metal versus wood (acciaio versus legno);
- future versus past (futuro versus passato);
- sharp versus rounded (spigoloso versus arrotondato);
- sinuous versus straight (sinuoso versus diritto);
- habit versus change (consuetudine versus cambiamento);
- rigid versus ductile (rigido versus duttile);
- warm versus cold (caldo versus freddo).

**DICHIARAZIONE SOSTITUTIVA DELL'ATTO DI CERTIFICAZIONE**  
**(46 del D.P.R. n. 445 del 28/12/2000)**  
**DICHIARAZIONE SOSTITUTIVA DELL'ATTO DI NOTORIETA'**  
**(Art. 47 D.P.R. n. 445del 28.12.2000)**

Io sottoscritta Anna Claudia Pellicelli, nata a Modena il 3 giugno 1965, codice fiscale PLLNCL65H43F257X, residente a Torino, in via Monferrato 2, consapevole della responsabilità cui può andare incontro in caso di dichiarazione mendace o di esibizione di atto falso o contenente dati non più rispondenti a verità nonché delle sanzioni penali richiamate dall'articolo 76 del D.P.R. n. 445/2000, per le ipotesi di falsità in atti e dichiarazioni mendaci;

-ai sensi degli artt. 46/47 del D.P.R. n. 445 del 28.12.2000;

DICHIARO

Che seppur frutto di un lavoro congiunto sono attribuibili alla sottoscritta i paragrafi '1Introduction : family purchase behaviour.1.1Challenges to Consumer Research on the Family;1.2Family Decision Making;1.3External Influences on Family Decision Making; 1.4Conflict Resolution;2.Kitchen purchase behaviour  
Del capitolo Assessing Kitchen Purchase Behaviour among Families Using Correspondence Analysis ,pp.49-61  
In CONSUMER BEHAVIOR Felix Saito editor Nova Science Publishers ISBN978-1-61728-772-5 pub.2009

Torino, 30 marzo 2018

Il dichiarante



VALEVOLE FINO AL 03/06/2028

AY 3397083



IPZS - CIV. ROMA

REPUBBLICA ITALIANA



COMUNE DI  
TORINO

---

CARTA D'IDENTITA'

N° AY 3397083

DI

---

PELLICELLI  
ANNA CLAUDIA

---

Cognome... PELLICELLI.....

Nome... ANNA CLAUDIA.....

nato il... 03/06/1965.....

(atto n. 01601 P. 1A S. 1965.....)

a... MODENA (MO).....

Cittadinanza... ITALIANA.....

Residenza... TORINO.....

Via... VIA MONFERRATO 2 SCALA A.....

Stato civile... \*\*\*.....

Professione... DOCENTE UNIVERS.....

CONNOTATI E CONTRASSEGNI SALIENTI

Statura... 1.70.....

Capelli... CASTANI.....

Occhi... MARRONI.....

Segni particolari... \*\*\*.....



Firma del titolare... *A. Pellicelli*  
TORINO li 05/10/2017

Impronta del dito indice sinistro

IL SINDACO  
*G. Basso*



AY3397083  
CWS033464  
09:37