Contemporary advanced statistical methods for the science of marketing: Principal Components Analysis vs Analysee Factorielle des Correspondances

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Introduction: There is substantial growth and employment of patterning methods in statistics, although a direct comparison of multivariate methods in group/cluster identification in the field of Consumer Behavior in relation to Perceived Risk of e-Services Adoption Intentions has not yet been undertaken.

Objective: This study analyses two different statistical techniques: i.e Principal Components Analysis (PCA) and Analysee Factorielle des Correspondances (AFC). The main objective is to compare patterns derived from Principal Components Analysis (PCA) and Analysee Factorielle des Correspondances (AFC) procedures with respect to the Perceived Risk relating to the e-Services Adoption Intentions.

Design: A survey was carried out using a structured questionnaire for a sample of 335 adults, customers of 125 Greek e-shops. These were conventionally approached by the Marketing Laboratory of a major public University in Northern Greece. Information Seeking, Information Sharing and Responsible Behavior subscales are related to the Perceived Risk of e-Services Adoption Intentions. These subscales were measured by 25 items, rated on a seven-point Likert scale.

Methods: The study focuses on the presentation of the two main types of clustering methods, Principal Components Analysis (PCA) and Analysee Factorielle des Correspondances (AFC).

Results: PCA’s results verified the construct validity of Perceived Risk of e-Services Adoption Intentions multidimensional and hierarchical scale (Featherman & Pavlou, 2003). It demonstrated the existence of seven Components, amongst which are the Financial Risk, Performance Risk, Privacy Risk, Psychological Risk, Social Risk, Time Risk and Overall Risk.

Analysee Factorielle des Correspondances (AFC) revealed the first factorial axis which expresses a negative attitude with respect to Privacy Risk, Performance Risk, Overall Risk and Financial Risk on its left side and a positive attitude with respect to Privacy Risk, Performance Risk and part of Overall Risk on its right side. Analysee Factorielle des Correspondances (AFC) revealed the second factorial axis a neutral attitude to a part of the conceptual construct Overall Risk, a neutral attitude to part of the conceptual construct Financial Risk, to part of conceptual construct Performance Risk and to conceptual construct named Privacy Risk. In addition, the second factorial axis detects those respondents who did not have a crystal clear view as to whether they get Overall Service Quality also with respect to their Purchase Intentions. The first factorial axis juxtaposes the extreme cases while the second one, those in-between of the extreme ones.

On the first factorial level, at the first quadrant the group of respondents may be distinguished by their positive attitude with respect to Privacy Risk, Performance Risk and part of Overall Risk.  

On the first factorial level, at the second quadrant the group of respondents may be distinguished by their negative attitude with respect to Privacy Risk, Performance Risk, Overall Risk and Financial Risk.
Finally, on the fourth factorial level and at the second quadrant the group of respondents may be distinguished by their neutral attitude with respect to a part of the conceptual construct *Overall Risk*, to a part of conceptual construct *Financial Risk*, to a part of conceptual construct *Performance Risk* and to conceptual constructs *Privacy Risk, Overall Service Quality* and their *Purchase Intentions*.

*Psychological Risk and Social Risk* seemed to be unimportant factors - their role in determination of customers’ behavior is insignificant.

AFC’s results related to the customers psychological aspects regarding the specific scale dimensions that determined their behavior.

**Key words**: Principal Components Analysis, Analysee Factorielle des Correspondances, Perceived Risk, e-Services Adoption Intention
AGENDA

1st International Conference on Marketing and Entrepreneurship – ICME 2018

7, 8 December 2018. Neapolis University, Pafos

Coordinator: Dr. Andreas Masouras

Meeting called by ICME 2018
Attendees: open
Please read: Instructions
Rooms: Seminar room & G5

Friday, 7th December 2018

10.30 – 11.00 Keynote speakers Seminar Room
Prof. Pantelis Sklias | Rector, Neapolis University

Prof. Constantinos Athanasopoulos, Neapolis University | Η Προώθηση Δημοσιότητας των Στελεχών Επιχειρήσεων: Ουτοπία ή αναγκαιότητα;

Prof. Angelos Tsaklagkanos, Neapolis University | Η Τεχνολογική Διάσταση της Καινοτομίας

11.00 – 12.00 Session 1 Seminar Room
Mr. Kokou George, Industry Liaison Office, Cyprus
University of Technology | Innovation as a
powerful tool for Problem Solving: The key role of Universities

**Mr. Harry Ph. Sophocleous**, Strategico Consulting Group | Voting Consuming Behaviour, Political communication campaigns and Ideological Clarity - a parallel review of academic/empirical evidence

**Prof. Anastasia Reppa**, Neapolis University | Επιχειρηματική Εκπαίδευση στα Σχολεία

**Prof. Polimenis Vassilis**, Aristotle University of Thessaloniki / Neapolis University | StartUps financing

12.00 – 12.30 **Coffee break**

12.30 – 13.15 **Session 2**

**Dr. Sotiroula Liasidou**, Cyprus University of Technology | Promoting the European member states online: A critical discourse analysis (CDA) of the official tourism websites

**Prof. Sofia Anastasiadou**, University of Western Macedonia & **Ms. Zafeiria E. Papadaki**, International Hellenic University | Consumers’ perceptions toward E-Service Quality, Perceived Value, Purchase and Loyalty Intentions
Dr. Thomas Fotiadis & Prof. Sofia Anastasiadou,
University of Western Macedonia | Contemporary advanced statistical methods for the science of marketing: Implicative Statistical Analysis vs Principal Components Analysis

Dr. Thomas Fotiadis & Prof. Sofia Anastasiadou,
University of Western Macedonia | Contemporary advanced statistical methods for the science of marketing: Principal Components Analysis vs Analysee Factorielle des Correspondances

13.15 – 14.15 Lunch

14.15 – 15.15 Session 3
Dr. Artemis Savvidou, Neapolis University | Παγκοσμοποίηση και Ανταγωνισμός. Ρυθμίσεις υπερεθνικού και εθνικού επιπέδου και ιδίως ποινικής υφής

Mr. Anastasiadis Lazaros, University of Crete & Mr. Christoforidis Christos, Neapolis University | Evaluating citizens’ actual perceptions and expectations and assessing e-Service Quality Gap in Public Sector related to e-Government Services

Dr. Giossi Styliani, University of Macedonia, Prof. Sofia Anastasiadou, University of Western Macedonia, Mr. Gamanis Achilleas and Mr. Gamanis G. George | Tracing the concept of
entrepreneurship and the role of an entrepreneur:
A critical review

Dr. Christos Papademetriou & Ms. Charalampous Constantia, Neapolis University
Entrepreneurship and Innovation in Education:
The model of the Inclusive Leader

Saturday, 8th December 2018

Session 4

11.00 – 12.00, Room: G5

Mr. Ioannis Komodromos, Neapolis University | New Generation of Consumers in the Tourism Industry: secondary research

Mr. Petros Philippou, Brand Strategist | Marketing Redefined

Workshop / Discussion / Συζήτηση.