



Sinergie
SIMA
Management
Conference



Source: University of Palermo

Leveraging intersections in management theory and practice

Extended Abstracts

University of Palermo

June 10-11, 2021

Electronic Conference Proceedings of Sinergie - Sima Management Conference
Leveraging intersections in management theory and practice, Palermo, June 10-11, 2021
University of Palermo

ISBN 97888943937-9-8

The Electronic Conference Proceedings are published online on
<http://www.sijm.it>

© 2021 FONDAZIONE CUEIM
Via Interrato dell'Acqua Morta, 26
37129 Verona - Italy



Sinergie
SIMA
Management
Conference

Leveraging intersections in management theory and practice

10-11 June 2021

Electronic Conference Proceeding

Extended Abstracts

edited by

Sandro Castaldo - Arabella Mocchiari Li Destri - Lara Penco and Marta Ugolini

Conference chairs

ARABELLA MOCCIARO LI DESTRI
SANDRO CASTALDO
MARTA UGOLINI

University of Palermo
Bocconi University
University of Verona

Scientific committee

PAOLO AVERSA
CLAUDIO BACCARANI (*Founding member*)
DANIELA BAGLIERI
MARA BERGAMASCHI
STEFANO BRESCIANI
FEDERICO BRUNETTI
FRANCESCA CABIDDU
MICHELE CANO
PEGGY CHAUDRY
FRANCESCO CIAMPI
MARIA COLURCIO
GIOVANNI BATTISTA DAGNINO
DANIELE DALLI
ALFREDO DE MASSIS
STEPHANIE DECKER
VALENTINA DELLA CORTE
ELEONORA DI MARIA
ALEX DOUGLAS
MARCO FREY
PERVEZ GHAURI
ELISA GIULIANI
GAETANO MARIA GOLINELLI (*Founding member*)
CHARLES HOFACKER
MAT HUGHES
GENNARO IASEVOLI
EMANUELE INVERNIZZI
BEATRICE LUCERI
AMEDEO MAIZZA
MARCELLO MARIANI
JACQUES MARTIN
ELISA MARTINELLI
UMBERTO MARTINI
ALBERTO MATTIACCI
ULRIKE MAYRHOFFER
PATRICIA MOURA E SÁ
MARIA ROSARIA NAPOLITANO
ANTIGONI PAPADIMITRIOU
ROBERTO PARENTE
ALBERTO PASTORE
TONINO PENCARELLI
FRANCESCO PERRINI
LUCA PETRUZZELLIS
ANDREA PICCALUGA
YOSSI RAANAN
ASTA RADZEVICIENE
DAVIDE RAVASI
RICCARDO RESCINTI
FRANCESCO RIZZI
ELITA SCHILLACI
PHILIP SHAPIRA

Cass Business School, UK
University of Verona
University of Messina
University of Bergamo
University of Torino
University of Verona
University of Cagliari
University of West Scotland, UK
Villanova University, USA
University of Florence
Università Magna Grecia Catanzaro
LUMSA, Palermo
Università di Pisa
Free University of Bozen-Bolzano
University of Bristol, UK
University of Naples Federico II
University of Padova
Management University of Africa, Kenya
Sant'Anna School of Advanced Studies, Pisa
University of Birmingham, UK
University of Pisa
Sapienza University of Rome
Florida State University, USA
Loughborough University, UK
LUMSA, Rome
IULM University
University of Parma
University of Salento
University of Bologna
ESOE, France
University of Modena Reggio Emilia
University of Trento
Sapienza University of Rome
IAE Nice - Université Côte d'Azur, France
University of Coimbra, Portugal
University of Napoli Parthenope
Western Kentucky University, USA
University of Salerno
Sapienza University of Rome
University of Urbino Carlo Bo
Bocconi University
University of Bari
Sant'Anna School of Advanced Studies, Pisa
Levinsky College of Education, Israel
Vilnius Gediminas Technical University, Lithuania
UCL School of Management, UK
University of Sannio
University of Perugia
University of Catania
Alliance Manchester Business School, UK;
Georgia Institute of Technology, USA

PAOLA SIGNORI
ANNALISA TUNISINI
ALFONSO VARGAS
ROBERTO VASSOLO
GIANMARIO VERONA
TIZIANO VESCOVI
DONATA VIANELLI
ANTONELLA ZUCHELLA

University of Verona
University Cattolica del Sacro Cuore
University of Huelva, Spain
IAE Business school, Argentina
Bocconi University
Ca Foscari University of Venice
University of Trieste
University of Pavia

Organizing committee

CARLO AMENTA
MARTINA ARONICA
ANGELO BONFANTI
PAOLO DI BETTA
CRISTINA LEONE
GABRIELLA LEVANTI
JELENA MAZAJ
LARA PENCO
PASQUALE MASSIMO PICONE
CINZIA PINELLO

University of Palermo
University of Palermo
University of Verona
University of Palermo
University of Palermo
University of Palermo
University of Palermo
University of Genoa
University of Palermo
University of Palermo

Editorial staff

FABIO CASSIA
NICOLA COBELLI
LAURA CIARMELA
ADA ROSSI
ADELE FERRAGAMO

University of Verona
Sinergie Italian Journal of Management
(laura.ciarmela@sinergieweb.it)
(redazione@sinergieweb.it)
(segreteria@societamanagement.it)

Registration and invoicing

ANNALISA ANDRIOLO

(amministrazione@sinergieweb.it)

**The Conference Chairs and the Scientific Committee
are grateful to the reviewers who have actively
contributed to the peer review process**

GRAZIANO ABRATE	<i>University of Piemonte Orientale</i>
BARBARA AQUILANI	<i>University of Tuscia</i>
ROSSELLA BARATTA	<i>University of Verona</i>
VALERIA BELVEDERE	<i>University Cattolica del Sacro Cuore</i>
CLARA BENEVOLO	<i>University of Genoa</i>
ROBERTA BOCCONCELLI	<i>University of Urbino Carlo Bo</i>
ANGELO BONFANTI	<i>University of Verona</i>
GUIDO BORTOLUZZI	<i>University of Trieste</i>
ANTONIO BOTTI	<i>University of Salerno</i>
STEFANO BRESCIANI	<i>University of Torino</i>
CLEMENTINA BRUNO	<i>University of Piemonte Orientale</i>
SILVIA BRUZZI	<i>University of Genoa</i>
FEDERICA BUFFA	<i>University of Trento</i>
NICOLETTA BURATTI	<i>University of Genoa</i>
FRANCESCA CABIDDU	<i>University of Cagliari</i>
MARIO CALABRESE	<i>Sapienza University of Roma</i>
ADRIANA CALVELLI	<i>University of Napoli Parthenope</i>
ELENA CANDELO	<i>University of Torino</i>
CHIARA CANNAVALE	<i>University of Napoli Parthenope</i>
FRANCESCO CAPONE	<i>University of Firenze</i>
FRANCESCO CAPPA	<i>Luiss Guido Carli - Roma</i>
ANTONELLA CAPRIELLO	<i>University of Piemonte Orientale</i>
SILVIO CARDINALI	<i>University Politecnica delle Marche</i>
ELENA CASPRINI	<i>University of Siena</i>
FABIO CASSIA	<i>University of Verona</i>
FEDERICA CECCOTTI	<i>Sapienza University of Roma</i>
CLAUDIO CHIACCHIERINI	<i>University of Milano Bicocca</i>
MARIA CHIARVESIO	<i>University of Udine</i>
FRANCESCO CIAMPI	<i>University of Firenze</i>
MARIE THERESE CLAES	<i>Louvain School of Management</i>
NICOLA COBELLI	<i>University of Verona</i>
MARIA COLURCIO	<i>University Magna Graecia di Catanzaro</i>
FRANCESCA CONTE	<i>University of Salerno</i>
MATTEO CORCIOLANI	<i>University of Pisa</i>
NICOLA CUCARI	<i>Sapienza University of Roma</i>
GIORGIA D'ALLURA	<i>University of Catania</i>
ALFREDO D'ANGELO	<i>University Cattolica del Sacro Cuore</i>
FRANCESCA DE CANIO	<i>University of Modena and Reggio Emilia</i>
ALESSANDRA DE CHIARA	<i>University of Napoli L'orientale</i>
VALENTINA DE MARCHI	<i>University of Padova</i>
ALFREDO DE MASSIS	<i>Free University of Bozen</i>
GIACOMO DEL CHIAPPA	<i>University of Sassari</i>
MARIA DELLA LUCIA	<i>University of Trento</i>
FABRIZIO ERBETTA	<i>University of Piemonte Orientale</i>
ROSARIO FRANCESCO FARACI	<i>University of Catania</i>
MONICA FARAONI	<i>University of Firenze</i>

ALBERTO FERRARIS	<i>University of Torino</i>
FULVIO FORTEZZA	<i>University of Ferrara</i>
MARCO FREY	<i>Sant'Anna School of Advanced Studies, Pisa</i>
LUCA GASTALDI	<i>Politecnico of Milano</i>
MARINA GIGLIOTTI	<i>University of Perugia</i>
GIANLUCA GOFFI	<i>Hong Kong Polytechnic University</i>
CHARLES HOFACKER	<i>Florida State University</i>
FRANCESCO IZZO	<i>University of Campania Luigi Vanvitelli</i>
ELVIRA TIZIANA LA ROCCA	<i>University of Messina</i>
SABRINA LATUSI	<i>University of Parma</i>
BEATRICE LUCERI	<i>University of Parma</i>
AMEDEO MAIZZA	<i>University of Salento</i>
VITTORIA MARINO	<i>University of Sannio</i>
ELISA MARTINELLI	<i>University of Modena e Reggio Emilia</i>
MICHELA MATARAZZO	<i>University of Sannio</i>
DIEGO MATRICANO	<i>University of Campania Luigi Vanvitelli</i>
CLELIA MAZZONI	<i>University of Campania Luigi Vanvitelli</i>
OLIMPIA MEGLIO	<i>University of Sannio</i>
GAETANO MICELI	<i>University of Calabria</i>
LAURA MICHELINI	<i>University Lumsa of Roma</i>
MICHELE MODINA	<i>University of Molise</i>
ANDREA MORETTI	<i>University of Udine</i>
PATRICIA MOURA E SÁ	<i>University of Coimbra, Portugal</i>
GRAZIA MURTARELLI	<i>IULM University</i>
FABIO MUSSO	<i>University of Urbino Carlo Bo</i>
ANTIGONI PAPADIMITRIOU	<i>Western Kentucky University, USA</i>
ROBERTO PARENTE	<i>University of Salerno</i>
ADELE PARMENTOLA	<i>University of Napoli Parthenope</i>
ALBERTO PASTORE	<i>Sapienza University of Roma</i>
GIOVANNA PEGAN	<i>University of Trieste</i>
LUCA PELLEGRINI	<i>IULM University</i>
ANGELO PRESENZA	<i>University of Molise</i>
GIORGIA PROFUMO	<i>University of Genoa</i>
TOMMASO PUCCI	<i>University of Siena</i>
ANDREA QUINTILIANI	<i>Pegaso online University</i>
MARCO REMONDINO	<i>University of Genoa</i>
ANTONIO RENZI	<i>Sapienza University of Roma</i>
CHIARA ROSSATO	<i>University of Verona</i>
MARCELLO SANSONE	<i>University of Cassino and of Southern Lazio</i>
GABRIELE SANTORO	<i>University of Torino</i>
SAVINO SANTOVITO	<i>University of Bari</i>
FRANCESCO SCHIAVONE	<i>University of Napoli Parthenope</i>
FRANCESCA SERRAVALLE	<i>University of Torino</i>
ALFONSO SIANO	<i>University of Salerno</i>
PAOLA SIGNORI	<i>University of Verona</i>
FRANCESCA SIMEONI	<i>University of Verona</i>
RICCARDO SPINELLI	<i>University of Genoa</i>
SIMONE SPLENDIANI	<i>University of Perugia</i>
ANTONIO TENCATI	<i>University of Brescia</i>
ANNALISA TUNISINI	<i>University Cattolica del Sacro Cuore</i>
MARIA VERNUCCIO	<i>Sapienza University of Roma</i>
DONATA VIANELLI	<i>University of Trieste</i>

MILENA VIASSONE
VANIA VIGOLO
AGOSTINO VOLLERO
VINCENZO ZAMPI

University of Torino
University of Verona
University of Salerno
University of Firenze

To the reader,

this volume contains the *extended abstracts* of the Sinergie-SIMA 2021 Management Conference, hosted online by the University of Palermo on 10-11 June 2021.

The legitimacy of management scholars in society increasingly rests on their ability to create social and economic value by finding solutions and offering effective and timely guidance to decision makers in firms and institutions. This is especially true in face of the extraordinary economic, societal, health and environmental challenges that firms and governments are currently facing worldwide, also as a consequence of the COVID-19 pandemic.

The purpose of the Conference was to discuss about the enhancement of the intersections between theory and managerial practice, calling attention to the many challenges to which impactful studies about the most challenging aspects firms and managers are tackling today need to provide an answer.

These challenges encompass the bridging of different disciplines, theories, methods, levels of analysis and, in particular, the intersections between theory and practice.

The Conference call for papers gave the opportunity to submit either an *extended abstract* or a *full paper*. Overall, the editorial staff received 114 *extended abstracts* and 52 *full papers*.

For the *extended abstracts*, the evaluation of the submissions was carried out by the Conference Chairs and the Scientific Committee, on the basis of their consistency with the Conference topic and/or with management studies, according to SIMA Thematic Groups. The clarity and (even potential) relevance of the contributions were evaluated, as well.

For the *full papers*, the evaluation followed the peer review process, with a double-blind review performed by two referees - university lecturers, expert about the topic - selected among SIMA and the community of Sinergie members.

In detail, the referees applied the following criteria to evaluate the submissions:

- clarity of the research aims,
- accuracy of the methodological approach,
- consistency of the contents with the Conference topic/tracks and/or with management studies,
- contribution in terms of originality/innovativeness,
- relevance in relation to the Conference topic/tracks and/or with management studies,
- clarity of communication,
- significance of the bibliographical basis.

The *peer review* process resulted in full acceptance, acceptance with revisions or rejection of the submissions. In the case of disagreement among reviewers' evaluations, the decision was taken by the Conference Chairs. Each work was then sent back to the Authors together with the referees' reports to make the revisions suggested by the referees.

The evaluation process ended with the acceptance of 42 *full papers* and 107 *extended abstracts*, which were published in two distinct volumes.

All the *extended abstracts* published in this volume were presented and discussed during the Conference and published online on the web portal of Sinergie journal (www.sijm.it).

While thanking all the Authors, Chairs and participants, we hope that this volume will contribute to advance knowledge about the enhancement of the intersections between theory and managerial practice.

The Conference Chair and Scientific Coordination

Sandro Castaldo, Arabella Mocciano Li Destri, Marta Ugolini, Lara Penco

SUMMARY

<i>The spotty progress of neuroscience in the management fields: evidence from bibliometrics and topic modeling techniques</i> MARIA CRISTINA CINICI, DANIELA BAGLIERI, ALBA MARINO, LUCA PARESCHI	PAG. 1
<i>Balancing theory and practice: a review of the state of PLS-SEM research by the community of Italian management scholars</i> FRANCESCA MAGNO, FABIO CASSIA	“ 7
<i>Co-creation of value in Open Innovation: does coopetition matter?</i> BARBARA AQUILANI, CORRADO GATTI, IRENE FULCO	“ 13
<i>Forming an Ecosystem through an Incumbent’s Strategic Transformation</i> VALENTINA GARBIN, ALBERTO NUCCIARELLI, ERICA SANTINI	“ 19
<i>Ethnic diversity, recombinant capabilities and the generation of green technologies</i> ALBA MARINO, FRANCESCO QUATRARO	“ 23
<i>Exploring the innovation paths of SMEs to face the COVID-19 crisis: A cluster analysis applied to the Italian context</i> MARCO BETTIOL, MAURO CAPESTRO, ELEONORA DI MARIA, STEFANO MICELLI	“ 29
<i>Recognizing opportunities during the crisis: a longitudinal analysis of Italian SMEs during Covid-19 crisis</i> VALENTINA CUCINO, GIULIO FERRIGNO, ANDREA PICCALUGA	“ 37
<i>The role of Big Data in the business challenge of Covid-19: a systematic literature review in managerial studies</i> MICHELA PICCAROZZI, BARBARA AQUILANI	“ 43
<i>Exploring digital transition strategies for the “Made in Italy” : the case of digital craftsmanship at design italian shoes</i> CHIARA GROSSO, CARLO AMENTA	“ 51
<i>Industry 5.0 and Business model innovation in SMEs: an explorative study on the Role of Competence Centers in Italy</i> BEATRICE IETTO, CHIARA ANCILLAI, ANDREA SABATINI, GIAN LUCA GREGORI, ELIAS CARAYANNIS	“ 59
<i>Hackathon-platform as enablers of a sustainable approach to develop innovative solutions</i> ANGELO PRESENZA, STEFANO FRANCO, ANTONIO MESSINI PETRUZZELLI	“ 65
<i>The drivers of Industry 4.0 embeddedness in an innovation ecosystem</i> VALENTINA FORRER, ALESSANDRO ROSSI, ERICA SANTINI	“ 69
<i>Exploring The Linkage Between Open Innovation And Organizational Learning: Insights From Exemplary Alliance Case Studies</i> GIULIO FERRIGNO, NICOLA DEL SARTO, VALENTINA CUCINO, ANDREA PICCALUGA	“ 73
<i>Defining Living Labs. The Modena Automotive Smart Area Case</i> SILVIA DELLA SANTA, GIULIA TAGLIAZUCCHI, GIANLUCA MARCHI	“ 79
<i>Investigating determinants of blockchain adoption</i> MAURO SCIARELLI, MARIO TANI, FRANCESCO CAPUTO, ANNA PRISCO, VALERIO MUTO	“ 85
<i>Digital-health system and patient engagement: a literature review</i> STEFANIA MELE, FILOMENA IZZO	“ 91

<i>Does industry change affect strategic, governance, and financial configurations of private hospital providers? A survey of Italian private healthcare organizations</i> ALESSANDRA BELFIORE, MASSIMO ARIA, CORRADO CUCCURULLO	PAG. 93
<i>How do employees support a new technology initiative? The role of anthropomorphism and legitimacy 4.0</i> ANNA MARRUCCI, CRISTIANO CIAPPEI, LAMBERTO ZOLLO, RICCARDO RIALTI	“ 103
<i>Are you talking to me? Exploring customer’s use of artificially intelligent virtual assistants</i> ALESSANDRO BIGI, MICHELLE BONERA, THERESA ERIKSSON	“ 109
<i>Towards the platformization of education: an explorative analysis</i> SILVIA COSIMATO, SERGIO BARILE, LUCA CARRUBBO, ROBERTO VONA	“ 113
<i>Perceived technological usability in Higher Education organizations: a pre-test study for a post Covid agenda</i> MARIA VINCENZA CIASULLO, NICOLA CAPOLUPO, EMILIA ROMEO	“ 117
<i>Entrepreneurial university and entrepreneurship labs: insights from a European experience</i> NADIA DI PAOLA, OLIMPIA MEGLIO, ROBERTO VONA	“ 123
<i>Intersection between public engagement management and social sustainability: the “soft” and “hard” approaches to widening engagement in sustainable Higher Education</i> LETIZIA LO PRESTI, GIULIO MAGGIORE, VITTORIA MARINO, RICCARDO RESCINITI, VERONICA CAPONE	“ 133
<i>University technology transfer: exploring the role of academic entrepreneur and emerging skills in university spin-offs</i> MAURO SCIARELLI, GIOVANNI CATELLO LANDI, LORENZO TURRIZIANI	“ 139
<i>Analyzing the signals of academic spin-offs: some insights from Italy</i> CIRO TROISE, ELENA CANDELO, DIEGO MATRICANO, MARIO SORRENTINO	“ 145
<i>Students’ entrepreneurial intentions in the Covid era: balancing leadership and innovation aptitudes for sustainable entrepreneurship</i> ROSSELLA BARATTA, PIERMATTEO ARDOLINO, DIEGO BELLINI, SERENA CUBICO, FRANCESCA SIMEONI	“ 151
<i>Entrepreneurial intention among students: a bibliometric review and an empirical analysis</i> MARIACARMELA PASSARELLI, VALENTINA CUCINO, GIUSEPPE BONGIORNO, ALFIO CARIOLA, ANDREA PICCALUGA	“ 157
<i>A new capacity building model for entrepreneurs: “Win-Win UNESCO experience”</i> MONICA BASILE	“ 165
<i>The (ecologically) biased entrepreneurial decision process: a review</i> MATTEO CRISTOFARO, FEDERICO GIANNETTI	“ 173
<i>Do what you can, with what you have: entrepreneurial orientation and bricolage within artistic-artisan firms</i> MICHELA C. MASON, ANTONELLA GAROFANO, ANGELO RIVIEZZO, GIOELE ZAMPARO, MARIA ROSARIA NAPOLITANO	“ 177
<i>Entrepreneurship during the Covid-19. The Saudi Arabia Narrative</i> NADIR ALIANE, CHIARA CANNAVALE, HASSANE GHARBI, IMAN ZOHOORIAN NADALI	“ 183
<i>Understanding the role of risk capital providers in entrepreneurial ecosystems</i> MARCO FERRETTI, FRANCESCO CALZA, EVA PANETTI, ANNAMARIA SABETTA	“ 189
<i>Does culture matter for social innovation? Investigating the role of national culture for the generation of social innovation</i> CHIARA CANNAVALE, LORENZA CLAUDIO, MICHELE SIMONI	“ 195
<i>Purpose-driven Companies for Common Good: Managerial Characteristics and Dynamics</i> GIANLUCA GIONFRIDDO, VALENTINA CUCINO, ANDREA PICCALUGA	“ 201

<i>Is social entrepreneurship the vaccine against exogenous shocks for non-profit organisations?</i> ALBERTO NUCCIARELLI, ERICA SANTINI	PAG. 207
<i>Social inclusion in museums and visual disabilities: the state tactile museum omero of Ancona</i> MARTINA PELLACANI, MARIA DELLA LUCIA	“ 211
<i>“Stakeholder engagement and social innovation. An analysis of the network created by “GAL Terra è Vita”</i> MARIO TANI, GIANPAOLO BASILE, MARIA ANTONELLA FERRI, ANDREA MAZZITELLI	“ 217
<i>Humanistic education: an analysis of students' attitudes towards sustainable ski tourism</i> ANNA IRIMIAS, SERENA VOLO	“ 223
<i>Humanistic Tourism: a new disciplinary perspective on tourism management</i> MARIA DELLA LUCIA, ERNESTINA GIUDICI, FRÉDÉRIC DIMANCHE	“ 227
<i>Reshoring for sustainability: do Industry 4.0 technologies matters?</i> ROBERTO VONA, SILVIA COSIMATO	“ 233
<i>How to turn circular economy into an asset? On the role of stakeholders' partnerships</i> CHIARA DE BERNARDI, MARCO FREY	“ 237
<i>Sustainability practices in the footwear and clothing sector: an analysis on Italian companies</i> FABIO MUSSO, FEDERICA MURMURA, LAURA BRAVI	“ 245
<i>The evolution of food recovery: a bibliometric analysis</i> ALBERGO MORGANTE	“ 249
<i>Hang in there, biosimilars! Leveraging awareness for a sustainable European market</i> MARIA CRISTINA CINICI, ALBA MARINO, DANIELA BAGLIERI	“ 257
<i>Five shades of plastic in food: which circular packaging are Italian consumers more sensitive to</i> FRANCESCO TESTA, VINICIO DI IORIO, JACOPO CERRI E GAIA PRETNER	“ 263
<i>Tobin's Q and ESG Score in the banking industry: are there differences among banks?</i> SEBASTIAN PUSCEDDU, CORRADO GATTI	“ 277
<i>Boards of directors in family firms: a review of the literature</i> ANDREA SANGERMANO, CRISTINA BETTINELLI, ANGELO MIGLIETTA	“ 285
<i>Family firms brand importance: the role of family identification with the firm</i> PAOLA ROVELLI, CARLOTTA BENEDETTI, ANDREA FRONZETTI COLLADON, ALFREDO DE MASSIS	“ 293
<i>Risks in family firms: a review of the literature</i> MARCO MISMETTI, ANDREA SANGERMANO, CRISTINA BETTINELLI	“ 297
<i>Family ownership concentration and FDI location choice: a bifurcation bias approach</i> FABIO QUARATO, CLAUDIA PONGELLI, ANDREA CALABRO', DONATELLA DEPPERU, GUIDO CORBETTA	“ 303
<i>Family firm branding: A bibliometric analysis and research agenda</i> SONIA M. STRANO, VINCENZO PISANO, MARCO GALVAGNO	“ 307
<i>Firms, families, and local economy: how luxury yacht firms are surviving Covid-19</i> SHAHAB ZARE, ALESSIA PATUELLI, NICOLA LATTANZI	“ 315
<i>The role of influencer marketing during the lockdown: An analysis of Italian influencers</i> ROSSELLA SAGLIOCCO, SABRINA CELESTINO	“ 321
<i>From brand control to brand co-creation: paradigm shift and emerging new brand perspectives</i> ALFONSO SIANO, AGOSTINO VOLLERO, ALESSANDRA BERTOLINI	“ 327
<i>The impact of salesperson's ambidexterity and career stage: a quantitative study</i> MARTA GIOVANNETTI, ELENA CEDROLA	“ 333

<i>Covid-19 and distribution channels management: the new challenges for small wineries</i> ANDREA SABATINI, PIER FRANCO LUIGI FRABONI, VALERIO TEMPERINI	PAG. 339
<i>The visitors experience in historical urban centers: city tourism and the influence of the environment on the shopping experience</i> FABIO CERRONI, FABIOLA SFODERA, ALESSIO DI LEO	“ 345
<i>How store atmosphere affects the purchasing intention of design products: the case of furniture</i> MARICA BARBARITANO, ELISABETTA SAVELLI	“ 351
<i>Turning challenges into opportunities during the covid-19 pandemic: fieldnotes from “people in retail”</i> FRANCESCO MASSARA, GIOELE ZAMPARO, MICHELA CESARINA MASON	“ 357
<i>Understanding the shopper journey for improving customer experience: an empirical study in grocery retail</i> SANDRO CASTALDO, MONICA GROSSO	“ 363
<i>Exploring social media engagement in cross-cultural perspective: a systematic literature review</i> MARIAPINA TRUNFIO, SIMONA ROSSI	“ 369
<i>Digital ethnography and text mining: an intersectorial quali-quantitative method to leverage marketing and management studies</i> MONICA FARAONI, SILVIA RANFAGNI	“ 377
<i>Effective modular solutions in the goods and services continuum</i> ERICA SANTINI, ENRICO ZANINOTTO	“ 383
<i>Redefining risk management practices: functional and holistic approaches</i> VILMA NASTECKIENĖ	“ 387
<i>Scattered Images Problem and Employees’ Well-Being: The Moderator Role of Organizational Identification</i> ELENA TALAVERA ESCRIBANO, DANIEL DAUBER	“ 393
<i>On the methods of historical institutionalism: “time of work”, collective action and cultural labour market (in France)</i> FRANCESCO CRISCI	“ 399
<i>A literature review on tourism resilience</i> VALENTINA DELLA CORTE, GIOVANNA DEL GAUDIO, SIMONE LUONGO	“ 405
<i>The role of innovation in tourism industry in times of crisis</i> VALENTINA DELLA CORTE, GIULIANA NEVOLA, ENRICO DI TARANTO	“ 410
<i>Cruising intention during the COVID-19 pandemic</i> SANDRO CASTALDO, GIORGIA PROFUMO, LARA PENCO	“ 417
<i>Determinants of job pursuit intention and organisational attractiveness in a disaster recovery framework: evidence from the hospitality industry</i> FRANCESCO RIZZI, MARINA GIGLIOTTI	“ 423
<i>ICTs tools combining smart experiences and digital engagement to enhance sustainability: A practice-led insight into tourism destinations</i> FRANCESCO CALZA, MARIAPINA TRUNFIO, CECILIA PASQUINELLI, ANNARITA SORRENTINO, SALVATORE CAMPANA, SIMONA ROSSI	“ 431
<i>Minority languages and tourism: the example of the Cimbrian community of Luserna / Lusérn (Trento, Italy)</i> SERENA LONARDI	“ 439
<i>Music tourism in Italy: audiences and destinations’ strategies</i> MARTHA FRIEL, GIOVANNA SEGRE	“ 445

<i>Market opportunities for cruise lines in the outbound distribution channels: assessing the predictors of new bookings</i>	PAG. 451
GIOVANNI SATTA, LUCA PERSICO, GIORGIA MORCHIO, CATERINA TROPEA	
<i>Archetipi della strategia digitale d'impresa: una tassonomia di riferimento</i>	“ 457
ANNA MINÀ, ALBERTO COSTA, GIOVANNI, BATTISTA DAGNINO	
<i>Strategic management e ruolo dei Big Data: revisione sistematica della letteratura manageriale</i>	“ 481
SIMONE VONA, DANIELA DI BERARDINO	
<i>Il bias della hubris nei processi di uscita imprenditoriale: verso la formulazione di un framework teorico-interpretativo</i>	“ 487
NADIA DI PAOLA, PASQUALE MASSIMO PICONE, GIOVANNI BATTISTA DAGNINO	
<i>Il ciclo di vita dei settori in convergenza: l'ascesa e il declino del settore dei tablet</i>	“ 493
PAOLO CALVOSA	
<i>Esperienza digitale del board e cambiamento strategico delle imprese: l'integrazione tra Dynamic Managerial Capabilities e Resource Dependence Theory</i>	“ 499
CHIARA ACCIARINI, PAOLO BOCCARDELLI	
<i>Piattaforme di food sharing e impatto sociale: il ruolo delle collaborazioni intersettoriali</i>	“ 503
LAURA MICHELINI, NIKOLAY DENTCHEV, GENNARO IASEVOLI, COSTANZA NOSI	
<i>Citizen Science e Big Data: opportunità e sfide del coinvolgimento dei cittadini nei progetti di ricerca</i>	“ 509
FRANCESCO CAPPÀ, STEFANO FRANCO, FERNANDO BORELLI	
<i>L'ecosistema di innovazione delle città intelligenti attraverso la prospettiva dei sistemi dinamici</i>	“ 515
ANDREA CAPORUSCIO, DANIELE LEONE, MARIA CRISTINA PIETRONUDO, FRANCESCO SCHIAVONE	
<i>Il ruolo delle strategie di marketing internazionale nello sviluppo delle smart cities: analisi tematica e indicazioni per gli sviluppi futuri</i>	“ 523
FILIPPO MARCHESANI, LEA IAIA, FRANCESCA MASCIARELLI, MICHAEL CHRISTOFI	
<i>Contesto istituzionale, donne e imprese familiari: una verifica empirica sull'Italia</i>	“ 529
MARIASOLE BANNÒ, GIORGIA MARIA D'ALLURA	
<i>Il Sustainable Supply Chain Management in letteratura: un approccio settoriale</i>	“ 535
GUIDO CRISTINI, CRISTINA ZERBINI, GIADA SALVIETTI	
<i>L'impatto del "Green Manufacturing" sulla performance economica</i>	“ 541
VIVIANA D'ANGELO, FRANCESCO CAPPÀ, ENZO PERUFFO	
<i>Riutilizzo efficace di rifiuti casalinghi: sinergie per rinnovare edifici in contesti sociali svantaggiati</i>	“ 545
MARCO TRAVERSI, MARIASOLE BANNÒ, ERIKA MANCUSO	
<i>Innovazione nel mondo del caffè monoporzionato</i>	“ 549
GABRIELLA CERCHIARA, GIAMPIETRO FUDA	
<i>Il territorio di origine come elemento differenziante la qualità del prodotto biologico: il caso Fileni</i>	“ 557
GIULIA BORIONI	
<i>La gestione dei punti vendita di street food: nel periodo COVID-19: un'analisi comparata</i>	“ 563
MARCELLO RISITANO, GIUSEPPE LA RAGIONE, MICHELE QUINTANO	
<i>L'impatto dei Social Media nella formazione dell'intenzione imprenditoriale degli studenti</i>	“ 569
ROSANGELA FEOLA, CHIARA CRUDELE, ANTONELLA MONDA, RICKY CELENTA, MASSIMILIANO VESCI, ROBERTO PARENTE	
<i>Turismo sostenibile e humane entrepreneurship: il caso dell'albergo diffuso</i>	“ 575
ROSANGELA FEOLA, ANTONELLA MONDA, CHIARA CRUDELE, RICKY CELENTA, ANTONIO BOTTI, ROBERTO PARENTE	

<i>Non chiamatele solo agenzie digitali! Un'analisi empirica sui "nuovi attori" della comunicazione</i> FEDERICA CECCOTTI, MARIA VERNUCCIO	PAG. 579
<i>Benefici e rischi nell'interazione con gli assistenti vocali. Un'indagine esplorativa in Italia</i> MICHELA PATRIZI, MARIA VERNUCCIO, ALBERTO PASTORE	“ 585
<i>Sanità Privata: CSR, D&I & Trust</i> MARIANNA CAVAZZA, LAURA GIUDICE, ERIKA MALLARINI, LUIGI PRETI, VALERIA RAPPINI	“ 591
<i>Arte popolare come eredità culturale di una marca in cerca di autenticità: il caso Dolce & Gabbana</i> ELENA CEDROLA, STEFANIA MASÈ, SARA PISTOLESI	“ 597
<i>L'effetto della Country-Of-Origin image sulla brand equity nel settore della birra</i> MARCO CIOPPI, ILARIA CURINA, BARBARA FRANCONI, TONINO PENCARELLI	“ 601
<i>La comunicazione al servizio del benessere collettivo: l'efficacia delle pubblicità sociali rivolte ai bambini</i> VALENTINA NICOLINI, FABIO CASSIA	“ 607
<i>Rivoluzione digitale, nuove professioni e distant workers: vincoli e opportunità per lo sviluppo turistico sostenibile dei borghi</i> UMBERTO MARTINI, FEDERICA BUFFA, GIACOMO ANDREANI, ALESSIA ZOPPELLETTO	“ 613
<i>BPM e BPR nei servizi turistici: un'applicazione al caso del terminal crociere</i> GIOVANNI SATTA, FRANCESCO VITELLARO, BIANCA VOTTERO	“ 619

The spotty progress of neuroscience in the management fields: evidence from bibliometrics and topic modeling techniques

MARIA CRISTINA CINICI* DANIELA BAGLIERI* ALBA MARINO[▲] LUCA PARESCHI**

Objectives. *Neuroscience has become an increasingly popular lens for studying questions of interest for management (Becker and Cropanzano, 2010; Camerer et al., 2005; Senior et al., 2011). On the ground of the consideration that management would be more impactful if it takes into account the complexity and multifaceted nature of the humans (Hitt et al., 2007), scholars and researchers have found in neuroscience the ‘tools’ to understand the roots of human decision-making and the basis of differences that naturally exist among individuals (Dimoka, 2012; Massaro and Pecchia, 2019; Plassmann et al., 2012; Shane et al., 2020). Additionally, since neuroscience investigates biochemical processes that directly reflect mental activity before conscious interpretation (Lindebaum and Zundel, 2013), management has derived that individuals who make decisions in social and economic contexts do not behave as ‘simple’ rational beings, and unconscious processes partially (or totally) hidden to self-conscious have much greater relevance than previously thought.*

Thanks to these novel perspectives and means, management scholars have acquired the ability to understand the processes that guide decisions (Hannah et al., 2013), as well as those that determine moral judgment (Reimann et al., 2012), respect for ethical norms or ability to control (or not to control) automatic impulses (Lieberman, 2007). At the same time, some scholars have highlighted that neuroscience reductionism, which makes ontological claims about the constitutive relationship between brain processes and human decision-making, can be problematic because “the properties and processes that makeup one level of analysis do not strictly correspond to properties and processes operating at another level” (Lindebaum and Zundel, 2013: 871). Concerns about the real possibility to infer decision-making processes from neural data (Healey and Hodgkinson, 2014) or the lack of reliability due to the considerably smaller sample sizes than those used in traditional management research studies have risen as well (Niven and Boorman, 2016; Ward et al., 2015).

Beyond extreme mania or skepticism toward adopting neuroscience by management, neuroscience has experienced spotty progress in management. What is becoming clear is that neuroscience may help us unveil some of the mysteries surrounding the human brain and, thus, the decision-making processes of managers, entrepreneurs, and consumers. At the same time, much remains to be done as neuroscience over time has narrowed on specific approaches to management research areas and topics as well as on particular neuroscience tools, especially functional magnetic resonance imaging (fMRI).

Actually, little retrospective work on the evolution of neuroscience in management fields has been made so far. Accordingly, in this paper, we address the following questions: “What are the factors that have constrained the diffusion of neuroscience in management fields? What kind of approach should management adopt to use neuroscience in a more impactful way?”

Methodology. *To identify the factors that have limited the progress of neuroscience in several management fields and suggest a new approach that can overcome those limits, we will combine two methods: bibliometrics (Zupic and Čater, 2015) and topic modeling (Hannigan et al., 2019). The use of mixed methods can provide a better understanding of research phenomena and complex events than either approach alone (Edmondson and Mcmanus, 2007; Molina-Azorin, 2015; Turner et al., 2017). We apply both of them with dual intent. From one side, we aim at elaborating the results of one method with the findings from the other method; from the other side, we apply different approaches to different inquiry components. In more detail, we use bibliometrics to map the spotty evolution of neuroscience literature in management. We apply topic modeling to uncover the different neuroscience topics and how the interest in those topics has evolved along the way.*

We started our research by selecting the documents representing the neuroscience literature in the management fields. We searched the areas of business, management, and economics studies from 2000 to 2020 for English articles

* Assistant Professor of Management - University of Messina
e-mail: mariacristina.cinici@unime.it

• Full Professor of Management - University of Messina
e-mail: daniela.baglieri@unime.it

▲ Assistant Professor of Management - University of Messina
e-mail: alba.marino@unime.it

** Assistant Professor of Organization - University of Rome Tor Vergata
e-mail: luca.pareschi@uniroma2.it

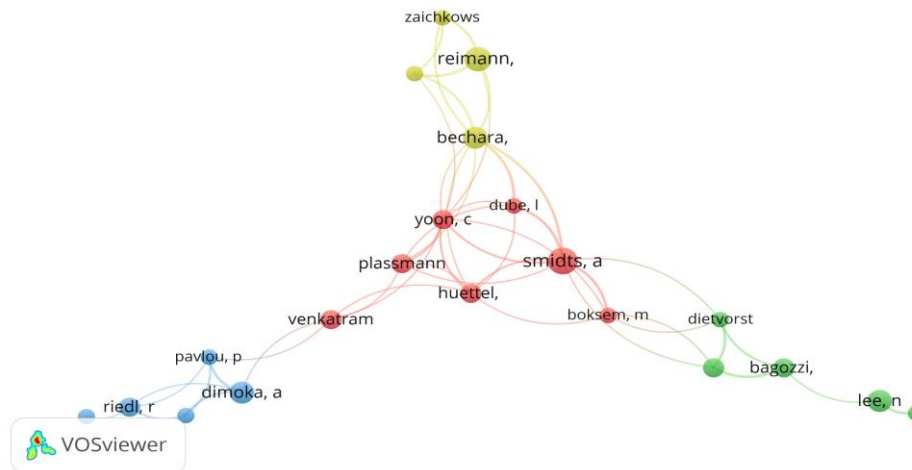
and book chapters containing the keywords “neuroscien*”. We took articles and chapters from the Science Citation Index (SCI) and Social Science Citation Index (SSCI) databases from the Web of Science Core Collection on November 11, 2020. The search strategy has produced 151 papers that represent our final sample.

Findings. We used bibliometrics to filter the pool of documents found in step 1 to more influential authors and publications. To do so, we used a software package. We decided on VOSviewer, which is based on Van Eck and Waltman (2006) VOS algorithm. The visualization of similarities (VOS) algorithm pictures connections between objects (i.e., co-occurrence and citations). VOS’s objective is to provide a low-dimensional visualization in which items are located so that the distance between any pair of objects reflects their similarity as accurately as possible (van Eck & Waltman, 2010).

Co-authorship. We sifted through the authors to identify the most impactful of them by setting a threshold of a given number of published documents and citations per author. Given that we sought both rigor and richness in the results, we set a cut-off value at 3 for published manuscripts and 30 for local citations as meaningful trade-offs for the author visualization. Of the 379 authors belonging to our sample, 28 meet the thresholds. Figure 1 shows graphically the networks of relationships for authors as produced by VOSviewer. The map consists of four clusters of co-authors.

Cluster 1 (i.e., red-colored one) is composed of 7 authors. Smidts A. shows the highest total link strength (7 documents and 8 links). He is followed, respectively, by Yoon C. (4 documents and 9 links), Huettel S.A. (4 documents and 7 links), Plassmann H. (4 documents and 6 links), Booksem M.A.S. (3 documents and 5 links), Dube L. (3 documents and 5 links) and Venkatraman V. (4 documents and 5 links). The themes upon which these scholars collaborate relate to the marketing area and are specifically concerning consumer decision making and individual preferences. Cluster 2 (i.e., the green-colored one) is composed by 5 authors. Verbeke WJMI shows the highest total link strength (4 documents and 4 links). He is followed, respectively, by Dietvorst R.C. (3 documents and 4 links), Bagozzi R.P. (3 documents and 4 links), Lee N. (5 documents and 2 links) and Senior C. (3 documents and 1 links). Within this cluster, scholars position their works at the intersection between marketing and management area. Actually, the focus is on customer orientation and theory of mind. Cluster 3 (i.e., the blue-colored one) is composed by 5 authors. The most impactful author of the group is Dimoka A. with 5 documents and 4 links. She is followed by Pavlou P.A. (3 documents and 4 links), Davis F.D. (3 documents and 3 links), Riedl R. (4 documents and 4 links) and Kenning P. (3 documents and 1 link). Scholars focus on information systems research area and their research pertain with functional neuroimaging tools, such as FMRI or EEG. Cluster 4 (i.e., the yellow-colored one) is composed by 4 authors. Bechara A shows the highest total link strength (5 documents and 8 links). He is followed, respectively, by Reimann M (6 documents and 4 links), Castano R (3 documents and 4 links) and Zaichkowsky J (3 documents and 3 links). Also in this cluster, the themes upon which these scholars collaborate are related to marketing area. Their specific focus is on how customers relate to brands.

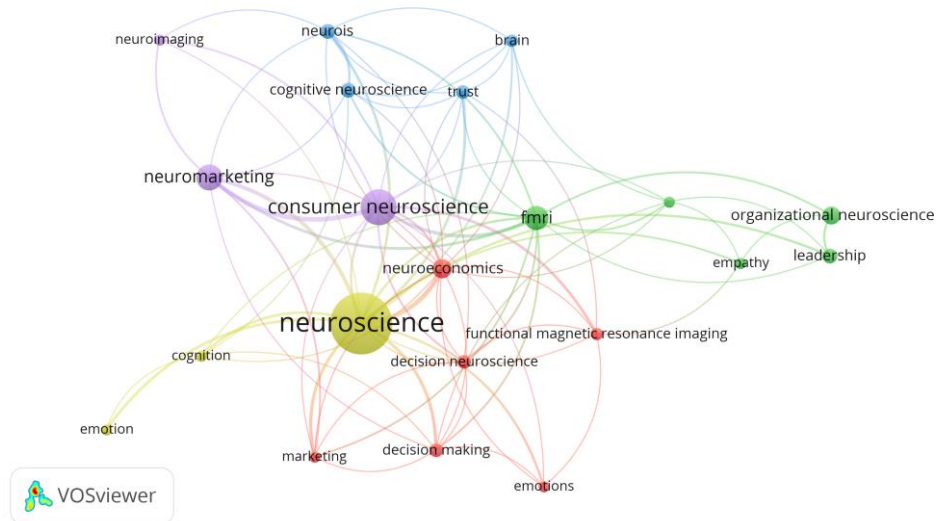
Fig. 1: Visualization of author networks



Keywords co-occurrence

A pool of 493 authors keywords was drawn from 151 publications. A threshold of 5 was chosen as the minimum number of occurrences of a keyword. Of the 493 authors’ keywords, 21 meet this condition. Figure 3 visualizes the co-occurrence network of authors’ keywords. VOSviewer has grouped the keywords into five clusters. The clusters’ size ranged from 6 items in Cluster 1 (i.e., the red-colored one) to 3 items in Cluster 5 (i.e., the yellow-colored one). The most occurred word is “neuroscience” (75) which is mainly used with the words “cognition” (5) and “emotions” (5). It is followed by “consumer neuroscience” (32) that is used in association with neuromarketing (19) and neuroimaging (5). Attention is also given to neuroscience tools, especially in terms of “fmri” (17) - which is used in association with “organizational neuroscience” (11), “leadership” (8), “empathy” (5) and “social neuroscience” (5) - and “functional magnetic resonance” - which is used in connection with “neuroeconomics” (12), “decision making” (7), “decision neuroscience” (7), “emptions” (5) and “marketing” (5).

Fig. 2: Visualization of the keywords co-occurrence



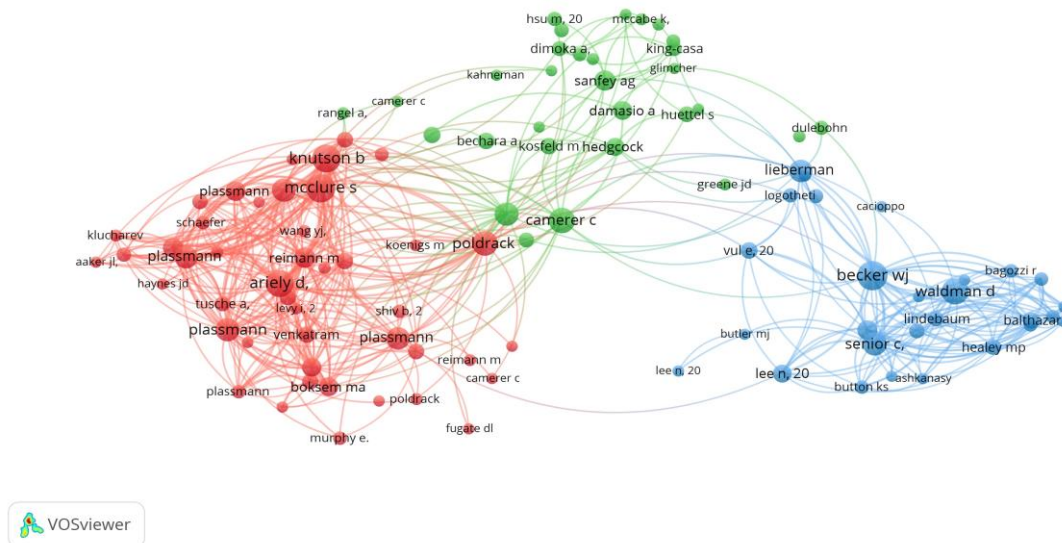
Co-citation analysis

We also applied the VOSviewer algorithm to the publications' network. It is broadly recognized that co-citation analysis provides a picture of the structure of a specific research field (Boyack and Klavans, 2010). We set the threshold at 8 local citations per publication to qualify for inclusion into a specific cluster. Of the 9,468 cited references, 76 meet the threshold. The analysis resulted in the creation of three major clusters, as depicted in Figure 3. Cluster 1 (i.e., the red-colored one) is the largest one. It is located at the left of the picture and composed of 35 documents published between 2002 and 2015. The most connected publications are Knutson, Rick, Wimmer, Prelec, and Loewenstein, 2007 (total link strength 368), Ariely and Berns, 2010 (total link strength 337) and Poldrack, 2006 (total link strength 327). This cluster's main themes relate to the marketing research area, and particularly, scholars mainly focus on consumer behavior, neuroimaging, and brand.

Cluster 2 (i.e., the green-colored one) is located at the middle of the picture and composed of 22 documents published between 1979 and 2010. The most connected ones are Lee, Broderick and Chamberlain, 2007 (total link strength 263), Camerer, Loewenstein and Prelec, 2005 (total link strength 247) and Hedgcock and Rao, 2009 (total link strength 172). This cluster's main themes relate to economics and information systems research area and particularly, scholars focus on rationality and human brain.

Cluster 3 (i.e., the blue-colored one) is the least dense cluster in terms of the number of publications and connections. It is located at the right of the picture and composed of 19 items. The most connected ones are Becker, Cropanzano and Sanfey, 2011 (total link strength 269), Senior, Lee and Butler, 2011 (total link strength 210), and Lieberman, 2007 (total link strength 204). This cluster's main themes concern organization and management theories and specifically relate to cognition, emotions, and leadership.

Fig. 3: The co-citation analysis by publication titles



Topic Modeling. Eventually, we delved into the documents' content by adopting topic modeling techniques. Topic modeling analysed publications and automatically identified words that co-occur in the same document more often than

it would happen by chance. Our sample consisted of 616,417 words. The longest paper was made of 10,719 words. To identify the main topics of neuroscience literature, we relied on MITAO (Heibi et al., 2019), a Python based user friendly interface developed at the University of Bologna, that relies on the NLTK and Gensim libraries, which are regularly used to perform topic modeling (Hannigan et al., 2019).

Topic 1 - Neuroscience contribution to management fields. This is the most diffused topic in the sample documents and refers to the general added-value of neuroscience research methods, theories and paradigms within management scholarship. Accordingly, the most used words shaping the meaning of this topic are “brain”, “research” and “neuroscience” and documents that focused on it address themes related to marketing (e.g., Lee et al., 2007), economics (e.g., Martins, 2011; Pykett, 2013), and organization (e.g., Guyard and Kaun, 2018).

Topic 2 - Decision-making. This is the topic explicitly concerned with the decision-making process. As this regards, neuroscience lens is used to (a) uncover the hemispheres of the brain that are involved in the cognitive processes (et al., 2015); (b) to introduce eye tracking as an insightful experimental tool for digging deeper in the process of acquiring and treating information (Zuschke, 2020); and (c) to examine how achievement priming influences individual cognition leading to changes in individual behavior (Minas et al., 2018). Again “brain” is one of the most used words used in this topic and it is associated with words that explicitly concern decision making such as “data”, “information” and “decision”.

Topic 3 - Brand. The third topic relates to issues such as communication and brand. Specifically, the studies that are mainly composed of this topic focus on (a) single-neuron approach to effectively communicate with consumers (Cerf et al., 2015); (b) the psychological and neurophysiological mechanisms of how consumers relate to their beloved brands (Chen et al., 2015; Plassmann et al., 2012); and (c) neural measurements to predict future choices of consumer products (Telpaz et al., 2015). The words that mostly contribute to shaping this topic are “brand”, “study”, “neural”, “consumer”, “choice” and “responses”.

Topic 4 - Organizations. In the documents mainly constituted by the topic concerning organizational neuroscience, the authors pose two different kinds of questions: (1) To what extent does neuroscience inform organizational research? (Lindebaum, 2016; Waldman et al., 2019); (2) Does brain activity examination allow to uncover what causes and constitutes ‘good’ leadership? (Lindebaum and Zundel, 2013; Waldman et al., 2011). In answering those questions, authors use words such as “brain”, “research”, “neuroscience”, “organizational”, “leadership”, “study”, “participants”, “human”, “activity” and “behavior”. Interestingly, “gender” appears as the last word depicting this topic, thus delineating an emerging interest toward this research area.

Topic 5 - Consumer neuroscience. Topic number 5 deals with customer neuroscience. Specifically, documents that are mainly composed of this topic look at: (a) the effect of curiosity on indulgent consumption (Wiggin et al., 2019); (b) the neural processes that underlie group creativity (Paulus et al., 2010); and (c) how cognitive neuroscience contributes physiologically to adult learning (Hagen and Park, 2016). Accordingly, the most used words are “research”, “brain”, “cognitive”, “neuroscience”, “social”, “data”, “tools”, “curiosity”, “studies” and “information”.

Topic 6 - fMRI. Topic 6 focuses on functional Magnetic Resonance Imaging (fMRI) that is the most frequently employed procedure in neuroscience studies. Documents mostly composed by this topic: (a) outline the set of guidelines for conducting functional Magnetic Resonance Imaging (fMRI) studies in social science (Dimoka, 2012) and (b) represent tool applications (Dimoka, 2010; Shane et al., 2020). The most used words to represent the topic are “trust”, “distrust”, “data”, “studies”, “subjects”, “processes” and “intelligence” but also words more connected to brain science such as “cognitive”, “mental” and “cortex”.

Topic 7 - Leadership. Topic 7 concentrates on culture and leadership. Works built upon this topic relate such as to leaders’ complexity and adaptability (Hannah et al., 2013), inspirational leaders (Molenberghs et al., 2017) and transformational and adaptive leadership (M. Juhro and Farid Aulia, 2018). Most used words are “brain”, “research”, “leadership”, “neuroscience”, “study”, “neural”, “group”, “leader”, “cultural” and “culture”.

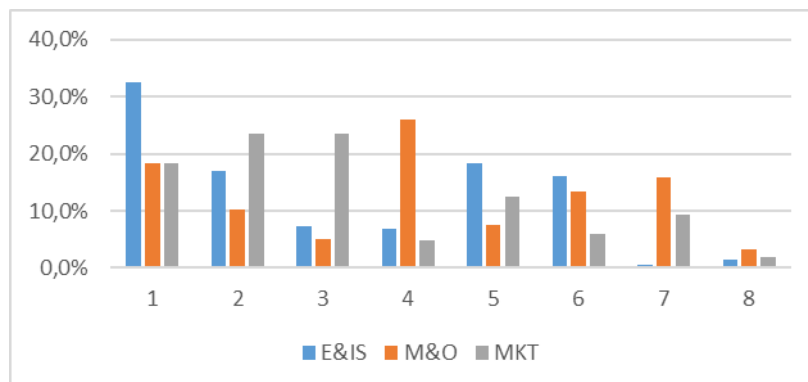
Topic 8 - Emotional Intelligence. This is the least diffused topic among sampled documents. Researchers grounding their work on this topic concentrate on emotional intelligence and, specifically, on the need of leaders for emotional intelligence (Antonakis et al., 2009) and the role of emotions in decision-making (Hedgcock and Rao, 2009; Rampl et al., 2016). Accordingly, the most used words are “emotional”, “activation”, “emotion”, “leadership”, “intelligence” and “choice”.

We went further and analyzed to what extent the eight selected topics developed over the different management fields. On the ground of the bibliometrics results, which depicted in the previous section essentially uncover the three different research areas around which neuroscience literature has developed, we attributed the documents to one of the following categories: (a) marketing; (b) economics & information system; and (c) management & organization. We conducted this phase drawing from the 2018 Academic Journal Guide of the Chartered Association of Business Schools. For journals that were not listed in the guide, we consider the description declared on the websites. For journals not clearly classifiable because oriented to general management thematic or simply sectorial thematic, we deemed the articles’ content itself.

We thus obtained that in our sample (a) 60 documents are related to management and organization area (M&O) (total counts of citation are equal to 1,387; average citations per document is equal to 23,11); (b) 57 documents are related to marketing area (MKT) (total counts of citations are equal to 1,785; average citations per document is equal to 31,875); (c) 27 documents are related to economics and information systems (E&IS) (total counts of citations are equal to 848; average citations per document is equal to 31,4).

As regards the average use topics by each research area, Figure 4 reveals that research on E&IS mostly concentrates on topic 1, namely neuroscience contribution to management fields. Whereas M & M&O emphasized topic 4, namely organizations, MKT primarily focused on topic 2, namely, decision-making, and topic 3, namely brand. Additionally, it is worth noting that E&IS is completely absent in topic 7, that is, leadership.

Fig. 7: The average use of topics by research area



Research limits. Besides making important contributions to the extant research, the present study has some limitations derived from the methodological choice we made. The sample selection was based on keyword searches, which may have reduced the search scope. However, although increasing the number of keywords could have improved the sample's content, there is a flip side to the coin. It would have also added noise and made the sample progressively difficult to manage and analyze. Additionally, more investigation and reflections should be devoted to the proposed integrated approach between management and neuroscience so as to replace the reductionist one.

Originality of the study. This research makes a theoretical contribution to neuroscience literature in two directions. Eventually, our review finds that despite come calls to change course, the strict adherence to established neuroscience approaches has left the branch of neuroscience literature unable to impact management. This outcome is then useful to scholars who want to recognize potential new topics and gaps that may help formulate new research questions and position their work in the literature. It is also useful as it drives us to suggest a new integrative approach to adopting neuroscience in management research. Furthermore, the present research makes a methodological contribution as it suggests the combination of different methods to each paper's goal. In so doing, our paper adds to existing reviews on neuroscience, such as by the recently published *Management Research Review* (Chattopadhyay, 2020), in terms of the number of sampled documents and methods used to analyze them.

Key words: neuroscience; management; bibliometrics; co-citation analysis; topic modeling.

References

- ANTONAKIS J., ASHKANASY N.M., DASBOROUGH M.T. (2009), "Does leadership need emotional intelligence?" *Leadership Quarterly*, vol. 20, n. 2, pp. 247-261.
- BECKER W.J., CROPANZANO R. (2010), "Organizational neuroscience: The promise and prospects of an emerging discipline", *Journal of Organizational Behavior*, vol. 31, n. 7, pp. 1055-1059.
- BOYACK K.W., KLAVANS, R. 2010. Co-Citation Analysis, Bibliographic Coupling, and Direct. *Journal of the American Society for Information Science and Technology*, 61(12): 2389-2404.
- CAMERER C., LOEWENSTEIN G., PRELEC D. (2005), "Neuroeconomics: How neuroscience can inform economics", *Journal of Economic Literature*, vol. 43, n. 1, pp. 9-64.
- CERF M., GREENLEAF E., MEYVIS T., MORWITZ V.G. (2015), "Using single-neuron recording in marketing: Opportunities, challenges, and an application to fear enhancement in communications", *Journal of Marketing Research*, vol. 52, n. 4, pp. 530-545.
- CHATTOPADHYAY R. (2020), "Journey of neuroscience: marketing management to organizational behavior", *Management Research Review*, vol. 43, n. 9, pp. 1063-1079.
- CHEN Y.P., NELSON L.D., HSU M. (2015), "From "Where" to "What": Distributed representations of brand associations in the human brain", *Journal of Marketing Research*, vol. 52, n. 4, pp. 453-466.
- DIMOKA A. (2010), "What does the brain tell us about trust and distrust? evidence from a functional neuroimaging study", *MIS Quarterly: Management Information Systems*, vol. 34, n. 2, pp. 373-396.
- DIMOKA A. (2012), "How to conduct a functional magnetic resonance (fMRI) study in social science research", *MIS Quarterly: Management Information Systems*, vol. 36, n. 3, pp. 811-840.
- EDMONDSON A.C., MCMANUS S.E. (2007), "Methodological fit in management field research", *Academy of Management Review*, vol. 32, n. 4, pp. 1155-1179.
- GUYARD C., KAUN A. (2018), "Workfulness: governing the disobedient brain" *Journal of Cultural Economy*, vol. 11, n. 6, pp. 535-548.

- HAGEN M., PARK S. (2016), "We knew it all along! Using cognitive science to explain how andragogy works", *European Journal of Training and Development*, vol. 40, n. 3, pp. 171-190.
- HANNAH S.T., BALTHAZARD P.A., WALDMAN D.A., JENNINGS P.L., THATCHER R.W. (2013), "The psychological and neurological bases of leader self-complexity and effects on adaptive decision-making", *Journal of Applied Psychology*, vol. 98, n. 3, pp. 393-411.
- HANNIGAN T. R., HAAN R.F.J., VAKILI K., TCHALIAN H., GLASER V.L. (2019), "Topic modeling in management research: Rendering new theory from textual data", *Academy of Management Annals*, vol. 13, n. 2, pp. 586-632.
- HEALEY M.P., HODGKINSON G.P. (2014), "Rethinking the philosophical and theoretical foundations of organizational neuroscience: A critical realist alternative", *Human Relations*, vol. 67, n. 7, pp. 765-792.
- HEDGCOCK W., RAO A.R. (2009), "Trade-off aversion as an explanation for the attraction effect: A functional magnetic resonance imaging study", *Journal of Marketing Research*, 46(1): 1-13.
- HEIBI I., PERONI S., FERRI P., PARESCHI L. (2019), *Catarsi/mitao: MITAO first release (Version v1.1-beta)*. Zenodo.
- HITT M.A., BEAMISH P.W., JACKSON S.E., MATHIEU J.E. (2007), "Building theoretical and empirical bridges across levels: Multilevel research in management", *Academy of Management Journal*, vol. 50, n. 6, pp. 1385-1399.
- HU Q., WEST R., SMARANDESCU L. (2015), "The role of self-control in information security violations: Insights from a cognitive neuroscience perspective", *Journal of Management Information Systems*, vol. 31, n. 4, pp. 6-48.
- LEE N., BRODERICK A.J., CHAMBERLAIN L. (2007), "What is "neuromarketing"? A discussion and agenda for future research", *International Journal of Psychophysiology*, vol. 63, n. 2, pp. 199-204.
- LIEBERMAN M.D. (2007), "Social cognitive neuroscience: A review of core processes", *Annual Review of Psychology*, vol. 58, n. 1, pp. 259-289.
- LINDEBAUM D. (2016), "Critical essay: Building new management theories on sound data? The case of neuroscience", *Human Relations*, vol. 69, n. 3, pp. 537-550.
- LINDEBAUM D., ZUNDEL M. (2013), "Not quite a revolution: Scrutinizing organizational neuroscience in leadership studies", *Human Relations*, vol. 66, n. 6, pp. 857-877.
- JUHRO S.M., AULIA F.A. (2018), "Transformational Leadership through Applied Neuroscience: Transmission Mechanism of the Thinking Process", *International Journal of Organizational Leadership*, vol. 7, pp. 211-229.
- MARTINS N. (2011) "Can neuroscience inform economics? Rationality, emotions and preference formation", *Cambridge Journal of Economics*, vol. 35, n. 2, pp. 251-267.
- MASSARO S., PECCHIA L. (2019), "Heart Rate Variability (HRV) analysis: A methodology for organizational neuroscience", *Organizational Research Methods*, vol. 22, n. 1, pp. 354-393.
- MINAS R.K., DENNIS A.R., POTTER R.F., KAMHAWI R. (2018), "Triggering insight: using neuroscience to understand how priming changes individual cognition during electronic brainstorming", *Decision Sciences*, vol. 49., n. 5, pp. 788-826.
- MOLENBERGHS P., PROCHILO G., STEFFENS N.K., ZACHER H., HASLAM S.A. (2017), "The neuroscience of inspirational leadership: The importance of collective-oriented language and shared group membership", *Journal of Management*, 43(7): 2168-2194.
- MOLINA-AZORIN J.F. (2015), "Designing and performing a mixed methods research in strategic management", in Dagnino G.B., Cinici M.C. *Research Methods for Strategic Management*, Routledge.
- NIVEN K., BOORMAN L. (2016), "Assumptions beyond the science: encouraging cautious conclusions about functional magnetic resonance imaging research on organizational behavior" *Journal of Organizational Behavior*, vol. 37, n. 8, pp. 1150-1177.
- PAULUS P.B., LEVINE D.S., BROWN V., MINAI A.A., DOBOLI S. (2010), "Modeling ideational creativity in groups: Connecting cognitive, neural, and computational approaches", *Small Group Research*, vol. 41, n. 6, pp. 688-724.
- PLASSMANN H., RAMSØY T.Z., MILOSAVLJEVIC M. (2012), "Branding the brain: A critical review and outlook", *Journal of Consumer Psychology*, vol. 22, n. 1, pp. 18-36.
- PYKETT J. (2013), "Neurocapitalism and the new neuros: Using neuroeconomics, behavioural economics and picoeconomics for public policy", *Journal of Economic Geography*, vol. 13, n. 5, pp. 845-869.
- RAMPL L.V., OPITZ C., WELPE I.M., KENNING P. (2016), "The role of emotions in decision-making on employer brands: insights from functional magnetic resonance imaging (fMRI)", *Marketing Letters*, vol. 27, n. 2, pp. 361-374.
- REIMANN M., FEYE W., MALTER A.J., ACKERMAN J.M., CASTAÑO R. (2012). "Embodiment in judgment and choice", *Journal of Neuroscience, Psychology, and Economics*, vol. 5, n. 2, pp. 104-123.
- SENIOR C., LEE N., BUTLER M. (2011). Organizational cognitive neuroscience. *Organization Science*, vol. 22, n. 3, pp. 804-815.
- SHANE S., DROVER W., CLINGINGSMITH D., CERF M. (2020), "Founder passion, neural engagement and informal investor interest in startup pitches: An fMRI study", *Journal of Business Venturing*, vol. 35, n. 4, 105949.
- TELPAZ A., WEBB R., LEVY D.J. (2015), "Using EEG to predict consumers' future choices", *Journal of Marketing Research*, vol. 52, n. 4, pp. 511-529.
- TURNER S.F., CARDINAL L.B., BURTON R.M. (2017), "Research design for mixed methods: A triangulation-based framework and roadmap", *Organizational Research Methods*, vol. 20, n. 2, pp. 243-267.
- VAN ECK N.J., WALTMAN L. (2010), "Software survey: VOSviewer, a computer program for bibliometric mapping", *Scientometrics*, vol. 84, n. 2, pp. 523-538.
- WALDMAN D.A., BALTHAZARD P.A., PETERSON S.J. (2011), "Leadership and neuroscience: can we revolutionize the way that inspirational leaders are identified and developed?", *Academy of Management Perspectives*, vol. 25, n. 1, pp. 60-74.
- WALDMAN D.A., WANG D., FENTERS V. (2019), "The added value of neuroscience methods in organizational research", *Organizational Research Methods*, vol. 22, n. 1, pp. 223-249.
- WARD M.K., VOLK S., BECKER W.J. (2015), "An overview of organizational neuroscience", *Monographs in Leadership and Management*, vol. 7, n. 4, pp. 17-50.
- WIGGIN K.L., REIMANN M., JAIN S.P. (2019), "Curiosity Tempts Indulgence", *Journal of Consumer Research*, vol. 45, n. 6, pp. 1194-1212.
- ZUPIC I., ČATER T. (2015), "Bibliometric Methods in Management and Organization", *Organizational Research Methods*, vol. 18, n. 3, pp. 429-472.
- ZUSCHKE N. (2020), "An analysis of process-tracing research on consumer decision-making", *Journal of Business Research*, vol. 111, pp. 305-320.