Systematic Literature Review in the Age of AI: New Tools, New Methods

CRIISEA Methodological Workshop, UPJV (Amiens)

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Summary of the Presentation

1. **Introduction to Systematic Literature Reviews**
2. **SLR Process & PRISMA Framework**
3. **Methodological Approaches: PRISMA vs. TCCM**
4. **AI & NLP in Literature Reviews**
5. **Tools & Applications**

1. A Definition of Systematic Literature Review

What Is a Systematic Literature Review? (Lame 2019; Petticrew and Roberts 2006)

- **Systematic**: A structured, transparent, and replicable approach to collecting, assessing, and synthesizing literature to answer a specific research question.
- **Literature Review**: A synthesis of existing research to identify:
  - Key themes
  - Research gaps
  - Future research directions

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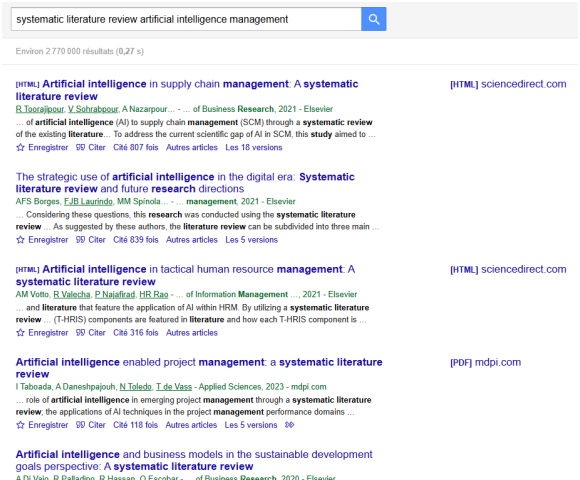
Why Conduct a Systematic Literature Review? (Petticrew and Roberts 2006)

- **Credibility and Transparency**: Reduces bias and ensures replicability.
- **Comprehensive Coverage**: Incorporates all relevant and high-quality studies.
- **Guides Future Research**: Identifies gaps and emerging areas in the field.
- **Decision-Making Support**: Provides evidence-based insights for policymakers and practitioners.

1.2 SLR: context

- **Context**: Growing interest in systematic literature reviews (SLR) in every field, including economics & management.



2. SLR Process (Lame 2019; Petticrew and Roberts 2006) + Prisma

Standard Steps in a SLR

1. **Define Research Question** (PICO, PICOC, etc., in medical or social sciences)
2. **Search Strategy** (databases, keywords, boolean operators)
3. **Screening & Eligibility** (inclusion/exclusion criteria)
4. **Quality Assessment** (methodological soundness, relevance)
5. **Data Extraction** (collect relevant information)
6. **Synthesis & Analysis** (qualitative or quantitative/meta-analysis)
7. **Reporting** (PRISMA flow diagram, structured write-up)

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7. **Reporting** (PRISMA flow diagram, structured write-up)

PRISMA Flow Diagram (see Prisma Statement)

- **Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)**:
  - Structured approach to document how many articles were found, screened, included, or excluded at each step.

PRISMA 2020 Framework – Key Items (Page et al. 2021)

Title & Abstract

- Identify as a systematic review
- Follow PRISMA Abstract checklist

Introduction

- **Rationale**: Justify the review with existing knowledge
- **Objectives**: State research question(s) clearly

Methods

- **Eligibility Criteria**: Define inclusion/exclusion criteria
- **Information Sources**: List databases, registers, other sources
- **Search Strategy**: Detail full search strategy
- **Selection Process**: Describe screening methods, reviewers involved
- **Data Collection**: Explain extraction process and tools used
- **Risk of Bias Assessment**: Specify assessment tools
- **Effect Measures**: Define effect size calculations
- **Synthesis Methods**: Describe qualitative/quantitative synthesis
- **Reporting Bias & Certainty**: Explain assessment of bias & confidence

Results

- **Study Selection**: PRISMA flow diagram
- **Study Characteristics**: List key details of included studies
- **Risk of Bias**: Present individual study assessments
- **Results of Studies & Syntheses**: Summarize findings, heterogeneity
- **Publication Bias & Certainty of Evidence**: Assess risks & confidence

Discussion

- **Interpretation**: Compare results with existing literature
- **Limitations**: Discuss constraints in evidence & methodology
- **Implications**: Suggest impact on policy, practice, future research

Other Information

- **Registration & Protocol**: Indicate registration status
- **Funding & Support**: Disclose sources of financial/non-financial aid
- **Conflicts of Interest**: Declare any competing interests
- **Data & Code Availability**: Report where materials are accessible

2.1 PRISMA SLR Research Illustration

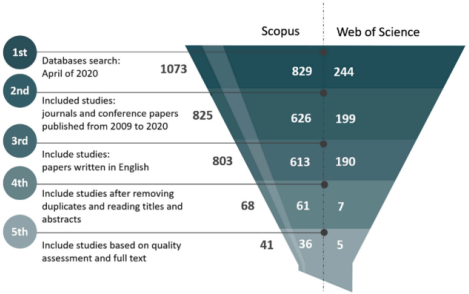

Fig. 3. Number of papers in each phase of the selection process.

Borges et al. (2021)

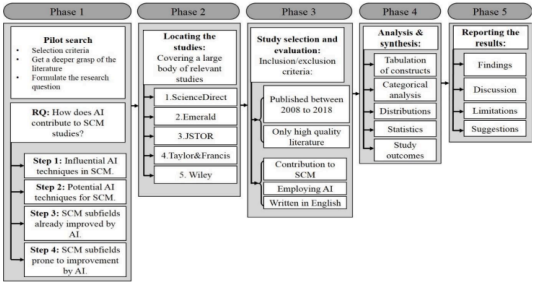

Fig. 1. Research process of systematic literature review.

Toorajipour et al. (2021)

2.2 TCCM Framework (Paul and Rosado-Serrano 2019; Rosado-Serrano, Paul, and Dikova 2018)

1. **Theory (T):** What theories have been used?
2. **Context (C):** In which settings (industries, countries, samples) has the research been conducted?
3. **Characteristics (C):** What are the key variables and relationships studied?
4. **Methodology (M):** What research methods have been used (qualitative, quantitative, mixed methods)?

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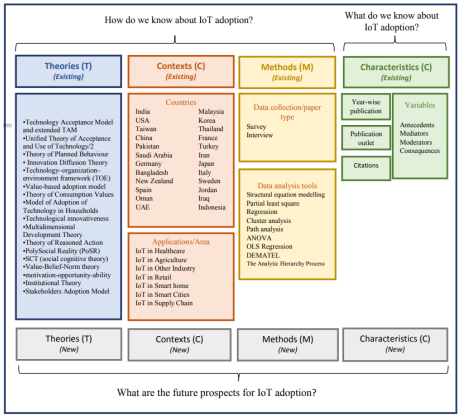

Figure 2: TCCM Framework (Paul and Rosado-serrano, 2019)

Kumar, Dhingra, and Falwadiya (2023)

2.3 Tracking Research Trends: Common Visualizations in Systematic Literature Reviews

- Such visualizations are often used in SLRs to highlight the evolution of scientific output and the popularity of research themes over time.

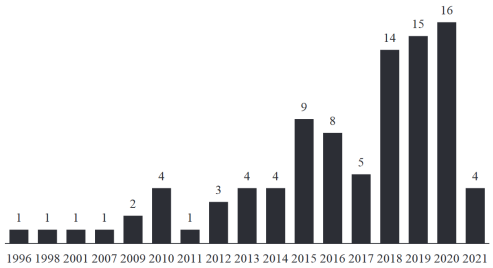

Fig. 3. Year-wise scientific production trend.

Chaudhary et al. (2021)

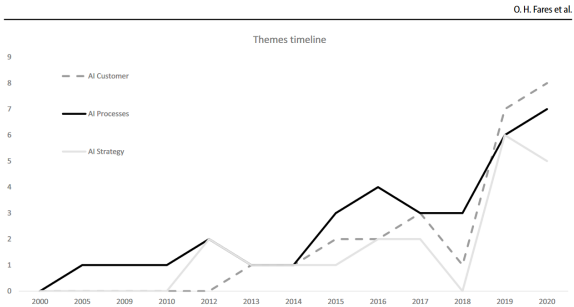

Fig. 2 Themes by timeline

Fares, Butt, and Lee (2022)

3. AI & NLP in Literature Reviews

Where Does AI/NLP Fit In?

- **Automated Text Mining**: Quickly processes large volumes of abstracts and full texts.
- **Topic Modeling** (e.g., BERTopic, LDA): Identifies thematic structures from textual data.
- **Clustering & Network Analysis**: Helps visualize relationships between authors, topics, and keywords.
- **Summarization**: AI-driven tools to extract key points, saving time on manual reading.

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Example: NLP in Marketing Research

- **Data Collection**:
  - Used Scopus API to retrieve all relevant abstracts and author information.
- **Data Processing**:
  - Used graphing libraries to visualize co-authorship networks.
  - Applied BERTopic for advanced topic modeling.
- **Insights**:
  - Identified main research clusters & key authors/references/methods/topics

4. Tools & Demonstration

Traditional vs. AI-Enhanced Tools (selection)

Traditional Tools

- **R bibliometrix**: R package for bibliometric analysis.
- **VOSviewer**: Tool for visualizing bibliometric networks.
- **R/Python** but it requires more time.

AI-Enhanced Tools

- **Artirev**: AI-powered literature review tool.
- **Connected Papers**: Visualizes connections between research papers.
- **Elicit**: Uses AI to summarize and analyze academic papers.
- **AnswerThis**: AI-assisted tool for answering research questions.
- **ResearchRabbit**: Creates dynamic citation and co-authorship maps.
- **LitMaps**: Helps visualize literature networks and track new papers.
- **NotebookLLM**: AI-powered literature review tool with summarization and analysis features.

Backup if necessary

Bibliometrix

Bibliometrix Codes.R

```
#### BIBLIOMETRIX CODES ####
# First Installation:
install.packages("bibliometrix")
library(bibliometrix)

# To Upgrade the Package with the Latest Version:
install.packages("remotes")
library(remotes)
remotes::install_github("massimoaaria/bibliometrix")

# To Run Biblioshiny
library(bibliometrix)
biblioshiny()
```

Environment | History | Connections | Tutorial

Import Dataset | 427 MiB | List

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> ?bibliometrix
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Files | Plots | Packages | Help | Viewer

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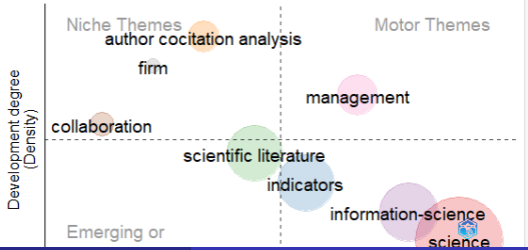

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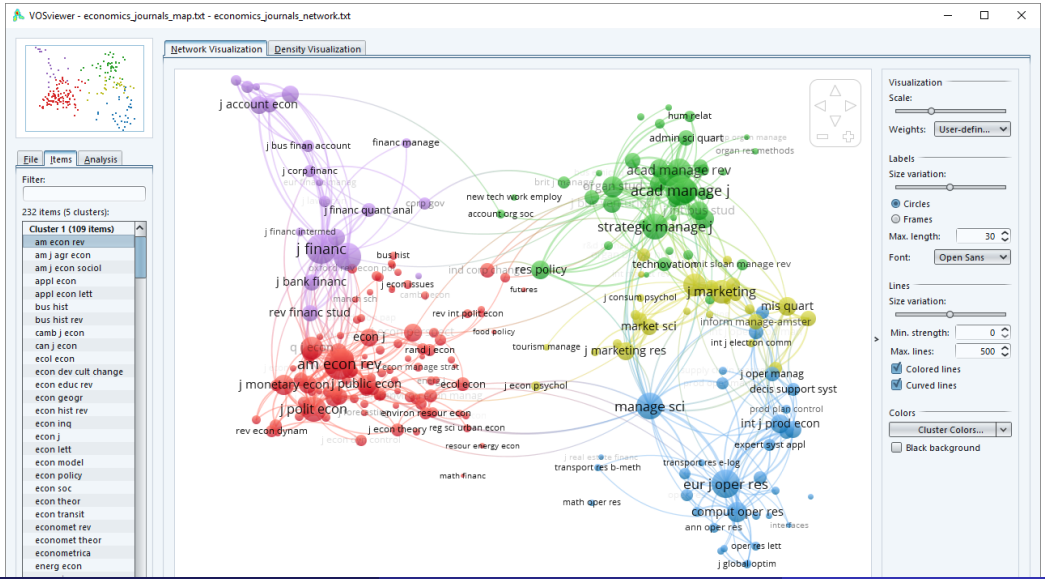
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Network Visualization
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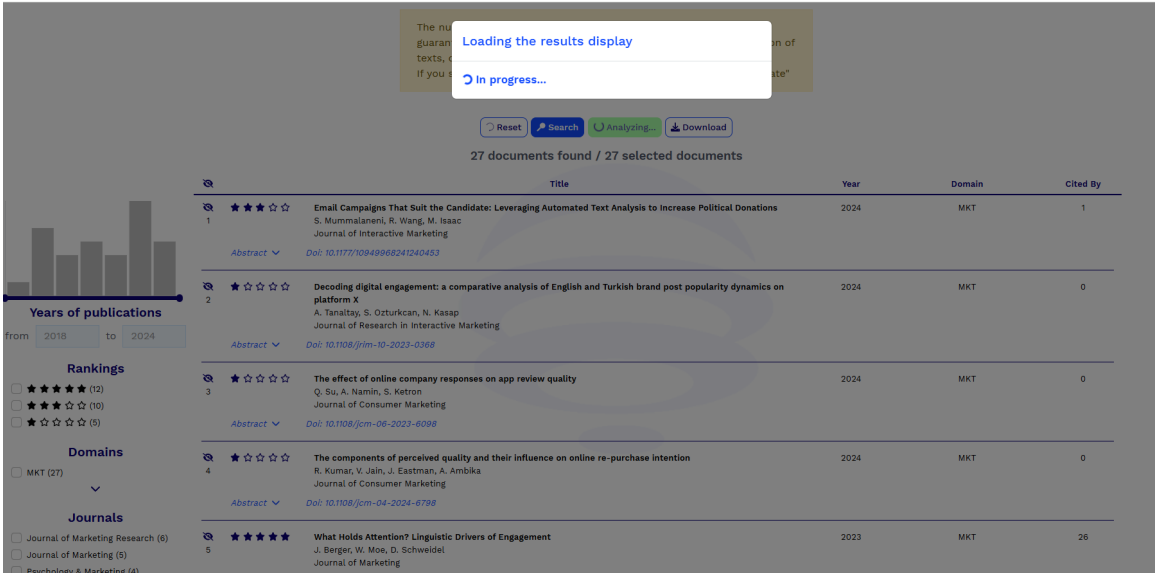
Artirev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Email Campaigns That Suit the Candidate: Leveraging Automated Text Analysis to Increase Political Donations
S. Mummalaneni, R. Wang, M. Isaac
Journal of Interactive Marketing
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Abstract
Doi: 10.1177/10949968241240453
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Decoding digital engagement: a comparative analysis of English and Turkish brand post popularity dynamics on platform X
A. Tanaltay, S. Ozturkcan, N. Kasap
Journal of Research in Interactive Marketing
2024
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Abstract
Doi: 10.1108/jrim-10-2023-0368
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The effect of online company responses on app review quality
Q. Su, A. Namin, S. Ketron
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Abstract
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The components of perceived quality and their influence on online re-purchase intention
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Abstract
Doi: 10.1108/jcm-04-2024-6798
5
What Holds Attention? Linguistic Drivers of Engagement
J. Berger, W. Moe, D. Schweidel
Journal of Marketing
2023
MKT
26
Years of publications
from 2018 to 2024
Rankings
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Journal of Marketing Research (6)
Journal of Marketing (5)
Psychology & Marketing (4)

Artirev 2

artirev web

9 remaining Socrates queries

Your query : TITLE_ABSTRACT=("natural language processing") AND DOMAIN=(MKT) AND SOURCE=(Journal of Marketing Research OR Journal of Marketing OR Psychology & Marketing OR Journal of Interactive Marketing OR European Journal of Marketing OR Journal of Research in Interactive Marketing OR Journal of Consumer Marketing OR Journal of the Academy of Marketing Science)

Modify

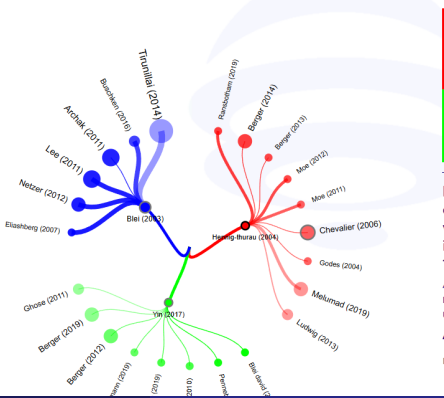
Research themes | Seminal texts

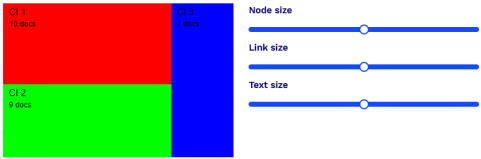
map | Network map

Download files

Download the literature review

Texts that you must know to understand the research domain





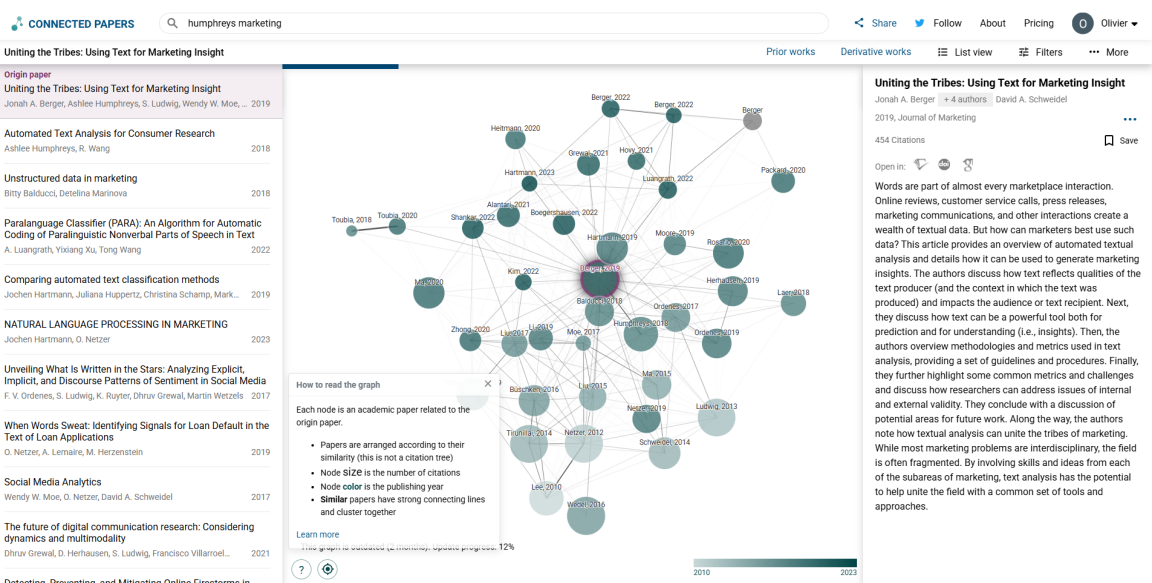
hennig-thurau t., gwinner k., walsh g., gremler d., (2004) electronic word-of-mouth via consumer-opinion platforms: what motivates consumers to articulate themselves on the internet?. journal of interactive marketing, 18(1), 38-52 doi: 10.1002/dir.10073

Authors: Hennig-Thurau (2004)
Number of citations: 3.00
URL: https://doi.org/10.1002/dir.10073

Abstract

No abstract available.

Connected Papers 1



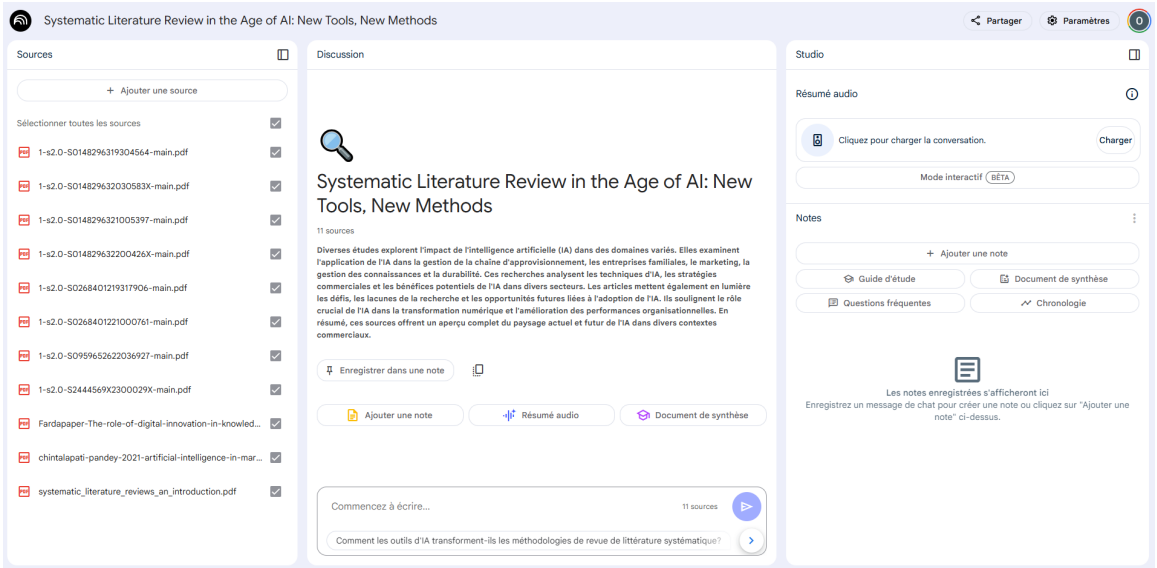
Connected Papers 2

List view

Download

Title	Authors	Year	Citations	References	Similarity to origin
Uniting the Tribes: Using Text for Marketing Insight	Jonah A. Berger, Ashlee Humphreys, S. Ludwig, Wendy W. Moe, O. Netzer, David A. Schweidel	2019	454	168	100
Automated Text Analysis for Consumer Research	Ashlee Humphreys, R. Wang	2018	425	246	32.1
Unstructured data in marketing	Bitty Balducci, Detelina Marinova	2018	199	238	22.7
Paralanguage Classifier (PARA): An Algorithm for Automatic Coding of Paralinguistic Nonverbal Parts of Speech in Text	A. Luangrath, Yixiang Xu, Tong Wang	2022	18	108	19.4
Comparing automated text classification methods	Jochen Hartmann, Juliana Huppertz, Christina Schamp, Mark Heitmann	2019	278	72	17.7
NATURAL LANGUAGE PROCESSING IN MARKETING	Jochen Hartmann, O. Netzer	2023	6	137	15.9
Unveiling What Is Written in the Stars: Analyzing Explicit, Implicit, and Discourse Patterns of Sentiment in Social Media	F. V. Ordenes, S. Ludwig, K. Ruyter, Dhruv Grewal, Martin Wetzels	2017	187	97	15.3
Social Media Analytics	Wendy W. Moe, O. Netzer, David A. Schweidel	2017	5	71	13.6
When Words Sweat: Identifying Signals for Loan Default in the Text of Loan Applications	O. Netzer, A. Lemaire, M. Herzenstein	2019	168	120	13.6
The future of digital communication research: Considering dynamics and multimodality	Dhruv Grewal, D. Herhausen, S. Ludwig, Francisco Villarroel Ordenes	2021	61	106	13.2
Detecting, Preventing, and Mitigating Online Firestorms in Brand Communities	D. Herhausen, S. Ludwig, Dhruv Grewal, Jochen Wulf, Marcus Schoegel	2019	226	79	12.2
A Poisson Factorization Topic Model for the Study of Creative Documents (and Their Summaries)	Olivier Toubia	2020	11	52	11.9

NotebookLLM



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