




# A qualitative analysis of the marketing analytics literature: where would ethical issues and legality rank?

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## Abstract

In response to the concerns of global data-driven disruption in marketing, this qualitative study explores the issues and challenges, which could unlock the potential of marketing analytics. This might pave the way, not only for academia–practitioner gap mitigation but also for a better human-centric understanding of utilising the technologically disruptive marketing trends, rather making them a foe. The plethora of marketing issues and challenges were distilled into 45 segments, and a detailed tabulation of the significant ones has been depicted for analysis and discussion. Furthermore, the conceptually thick five literary containers were developed, by coupling the constructs as per similarity in their categorical nature and connections. The ‘ethical issues and legality’ was identified as on the top, which provided literary comprehension and managerial implication for marketing analytics conceptualisation in the fourth industrial revolution era.

**Keywords** Issues and challenges · Ecosystem · Marketing analytics · Sticky culture · Ethical issues & legality · Customer engagement

## Introduction

The three dominant approaches (institutional, functional, commodity) used in past decades for dealing with overall marketing science concepts seem to be losing their viability with speed (Shepherd 1955), parallel to the availability of digital business avenues and diversity in sources of data (Hauser 2007; Dasan 2013; Wedel and Kannan 2016).

Therefore, the analytics approach, with a problem-solving thinking frame, though had been discussed in the 1950s, is being observably adapted, and outcomes in terms of causation are continuously being gauged. Thoughtfully, academia has been left behind in this case, where now curriculum innovation (Wilson et al. 2018) and a shift of practices to gain academic coherence is being reportedly welcomed (Davenport and Harris 2017).

As per the field of Marketing, the mapping and quantification of causality are becoming the core of Marketing science, which is mastered by Marketing Analytics with a focus on action ability and informed decisions that have strategic value while not overlooking hard-data evidence (Grigsby 2015, pp. 15–16; Rackley 2015, pp. 1–30). Informed decisions, for the survival of any organisation, must get into action to create readiness for change (reaction) as per the evolution in the outer environment. The same is true for the biologically continued existence of organisms and for simple things as driving a car without a dashboard (Rackley 2015, pp. 1–6). Even during the coronavirus pandemic situation, the thorniest question for board rooms today is the usage of disruptive technologies to sustain marketing efforts that could bear fruit (Balis 2020; Shah and Shah 2020; Waldron and Wetherbe 2020).

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In terms of defining the concept of marketing analytics, there are many notable research endeavours, from the start of the new millennium, each having its analytical grounds (Davenport and Harris 2017). The researchers confined themselves to the sense that could glue the understanding blocks of academia and practitioners. So, marketing analytics has been sensed as exposing oneself to the descriptive, diagnostic, predictive, and prescriptive stages for insightful data reservoirs, for functional intimacy of marketing science in the contemporary world to sustain the competition and get better results through smarter decisions (Davenport and Harris 2017; Davenport et al. 2010; Davenport 2006; Farris et al. 2010).

Talking about issues and challenges, marketing analytics is research heaven for academia but a trap for the practitioners, as it has emerged from the process of convergence and divergence of multifaceted business areas (Mahidhar and Davenport 2018; Davenport and Kim 2013; Davenport and Harris 2007). Moreover, it is a continuous struggle to know about the customers before they know about themselves, and it could be done by marketing analytics (Davenport and Harris 2017; Farris et al. 2010). This can pave the way for a culture that would be conducive for marketing analytics in the corporate world. Marketing analytics is shifting from being merely a buzzword to full-fledge research area that is termed to be multidimensionally nascent, which is apparent by various systematic literature reviews on the subject concerned in connection to data-rich environments (Wedel and Kannan 2016), web analytics and key performance indicators (Saura et al. 2017), social media metrics (Misirlis and Vlachopoulou 2018), defining the field and convergence status (Krishen and Petrescu 2018), data mining (Dam et al. 2019), links to other fields and methods (France and Ghose 2019), research and practice environments (Iacobucci et al. 2019), and prescriptive analytics (Lepenioti et al. 2020).

Presently, senior marketing professionals are worried about their ability to measure these factors (Mahidhar and Davenport 2018). The data reservoirs are available, but the aligned mechanism for converting the data into actionable insights is observed to be a big missing link (Farris et al. 2010), which could result in analytically strategic misfit from consumer and marketing perspective (Zhang et al. 2010). Therefore, marketing analytics could be a threat to almost all the business models for pre-data backed economy, held globally. This may be termed as sustainable disruption, which means a continuous rigorous change (Davenport and Kim 2013, pp 105–110). Moreover, it is evident that the improvement in technology has been phenomenal in the past century; still, the remarks of Peter Drucker are relevant in terms of computer and man, so the study of the issues and challenges would be necessary to mitigate any risks of failure (Guercini 2020). Therefore, despite the plethora of books and articles on the problem area concerned, a lack of

research is apparent in terms of exhaustively studying the marketing analytics issues and challenges.

## Procedural genesis for systematic literature review (SLR)

As pointed out by connection between decades of research that the view about systematic literature review (SLR) has been evolving and enriching itself (Webster and Watson 2002). Therefore, confining to a step-by-step approach and sticking to a set pattern defined by past research, which have been cited by the majority of the researches, were followed by the researchers for a line of action that could result in a significant research outcome (Levy and Ellis 2006; Okoli and Schabram 2010). The steps were grouped into three levels as input planning, process execution, and outcome reporting, by following the steps as reflected in Fig. 1.

## PRISMA statement

PRISMA, “Preferred Reporting Items for Systematic reviews and Meta-Analyses”, is one of the most endorsed ways for diagrammatically reporting the quality and rigour of systematic literature reviews. Therefore, the researchers applied the guidelines by Moher et al. (2009), with 62,621 citations, known as the “PRISMA Statement”.

Apart from reporting the systematic review, AMSTAR “measurement tool for assessment of systematic reviews” was studied (Shea et al. 2009), cited 1506 times, to enhance the quality of this study in terms of methodological validity and reliability. Additionally, the structure of “PICOS”, “participants, interventions, comparators, outcomes, and study design” was followed to clarify the scope of this study in terms of the multiple interventions and criteria (Smith et al. 2011; Van den Bosch and Sang 2017). Therefore, the quality assessment and enhancement of reporting, methodological aspects, and scope were exhausted through applying PRISMA, learning from the AMSTAR tool and following PICOS. The researchers did their best in not compromising on any level and dimension for developing a valuable and comprehensive systematic literature review study.

## SLR process step by step

The PRISMA statement has four dimensions: (i) Identification, (ii) Screening, (iii) Eligibility, and (iv) Included, as reflected in Fig. 1. These dimensions are further bifurcated into five steps. First, *research questions* were developed based on the current basic understanding of the problem from the call for papers and impactful recent research



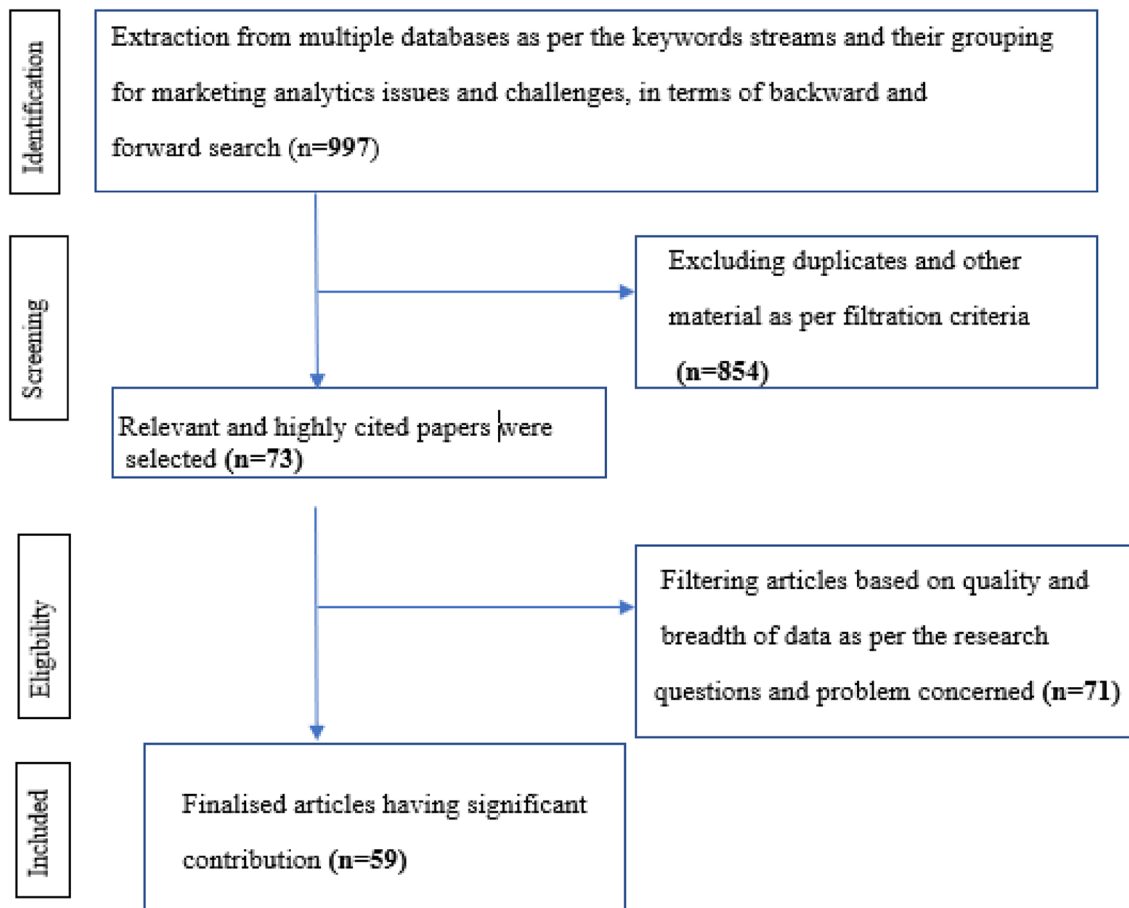


Fig. 1 PRISMA statement

reservoir available from various databases and high-quality journals. The *backward search* in terms of the references, authors, and keywords was done to see through the results for any missing piece of research work, based on which the present work has been carried out (Webster and Watson 2002). Additionally, the *forward search* was done to review the further contribution of authors and its relevance to the problem. Moreover, the forward reference search was exercised to check the selected being cited by other researchers. This exercise of backward and forward search equipped the researchers with a basic picture of the theoretical contributions in terms of the problem at hand (Fig. 2).

The second step to identify the related studies by applying multiple metrics (Harzing 2007). Third, the search metrics were accompanied by time frame and other restrictions, along with key search terms for exploring the digitally available research reservoirs. The fourth step has been inclusion and exclusion process application on the filtered body of quality research work. At this stage, the spearhead inspection of the literary reservoir is executed in terms of problem and research questions relevancy. The fifth step is to synthesise the finalised

stream of research work, having a significant contribution in the problem area.

## Research questions

This research study is aimed to address the proceeding research questions:

**RQ1** What sort of issues and challenges related to marketing analytics implementation were identified by the past research?

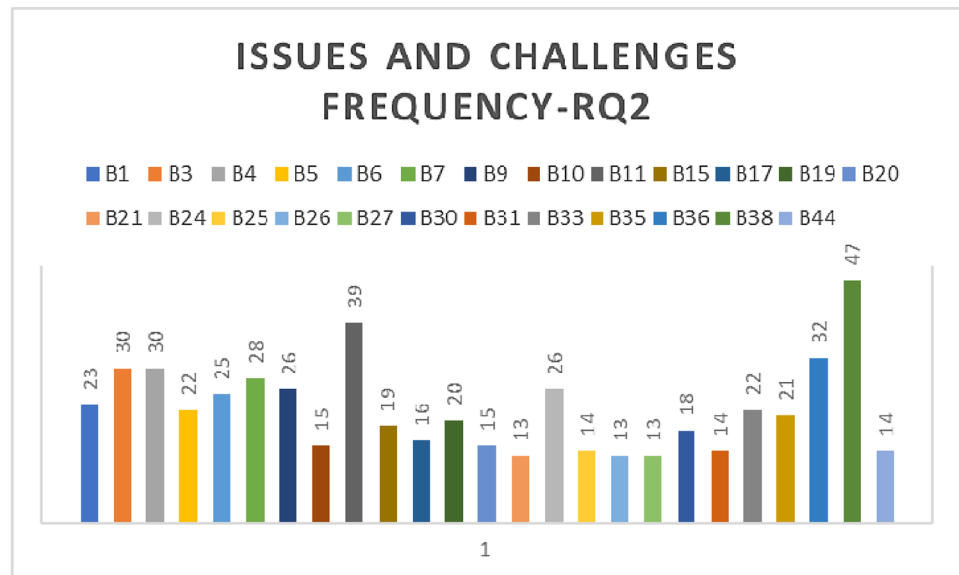
**RQ2** What are the most critical/highly ranked issues and challenges of marketing analytics (2000 to 2020)?

## Criterion based exhaustive literature exploration

The level of exhaustiveness is measured by observation of search outcomes through “Publish or Perish 7” (PoP7) software sourced from Harzing (2007), accompanied with



**Fig. 2** Explored marketing analytics issues and challenges (MAICs)



\*B=MAICs

backward and forward searches, through different keywords relating to various dimensions of the research questions being considered. Once the output gets repeatedly and notably similar to previous search exercises, then the reliable maturity level could be achieved. For this purpose, a wide variety of carefully selected keywords, based on topic/area, marketing analytics, in this case, are used in a variety of combination through applying Boolean operators like OR/NOT/AND to enhance the “search reach” and enrich “search depth” (Webster and Watson 2002; Hedges and Cooper 2009; Baker 2016). The relevancy of the keywords was adapted by first searching for the highly cited articles discussing “marketing analytics” and fetching keywords for issues and challenges from them. Afterwards, those keywords, such as “marketing analytics” AND “barrier” OR “challenge”, “strategy”, “issue”, “failure”, “success”, “implementation”, “performance”, “measurement”, “understanding”, “problem”, “application”, “operation”, “process”, “execution”, “acceptance”, “critical success factors”, “marketing analytics implementation challenges”, and “marketing analytics implementation issues and challenges”. Total papers (deleting all duplications, excluding other material) extracted were 854 from which only 73 highly cited articles were selected. Notably, even after searching through coupling the issues and challenges keywords with “marketing analytics”, the filters of the rigorous study were plugged in to go beyond search metrics.

## Databases and digitalised reservoirs

For furthering the research process, decision making for the selection of databases has been projected by backward and forward search, which presented the journals and publishers having the most relevant and impactful number of articles. Therefore, the question of “where” and “how” has been addressed for the readiness of review (Levy and Ellis 2006). The databases below are the filtered reservoirs, as per citations and relevancy of the articles related to the issues and challenges, and availability at the university library or beyond it:

- Springer
- Elsevier
- Harvard Business Press
- Sage
- Taylor & Francis
- Wiley Online Library
- Journals of American Marketing Association (AMA)
- Emerald
- INFORMS PubsOnline
- Ingenta Connect

## Filtration and extraction of research articles

The amalgamation of the research articles through strict numerous restrictions has been ground into final filtration by exploring the content in them in terms of the problem area, marketing analytics issues, and challenges, as per the past research available. The articles that notably and chiefly discussed the issues and challenges were extracted



after review, and the remaining studies were abandoned (Levy and Ellis 2006; Hedges and Cooper 2009). The numbers of the selected papers for review were narrowed by exerting the following metrics:

- (i) As reflected in the step three of PRISMA statement, the papers having relevant and quality research (peer-reviewed, impact factor journals and high citations) were selected
- (ii) The research papers or conference papers that are not peer reviewed, duplicates, and nonrelevant papers were discarded
- (iii) Articles written in English language, published within the time frame of 2000–2020, discussing the issues and challenges of marketing analytics in a reasonable manner were included (Levy and Ellis 2006; Okoli and Schabram 2010).

The researcher for point (i) first checked the relevancy of the research paper or conference paper and whether they are peer reviewed or not. This does not mean that the researchers filtered the relevant research papers or conference papers that were peer reviewed and were not impact factor or highly cited. Actually, the fifth stage of “PRISMA Statement” steered the researchers to finalise and extract the articles having significant contribution, which resulted in terms of impact factor journal articles mostly that were eventually highly cited as well. It can be tracked from the results reflected in “Table 6—ScientoMetrics-Quartile Analytics” that 92% of the finalised papers are categorised within Q1 to Q3, whereas 80% are from Q1.

This extensive exercise paved the way for finalised selection of 59 papers (only a handful) from 73 highly cited, based on the original result of 997 that were selected, as detailed in Tables 1 and 2 (Table 3).

## Synthesise and evaluation

The papers discussing marketing analytics issue and challenges identified in Table 2 pave the way for detailed synthesis as per research question 1. Table 4 projects the issues and challenges of marketing analytics for the previous two decades. The papers have been organised in terms of their publication year and details about the specific qualitative and quantitative method that is provided as well.

The exhaustive search for the marketing issues and challenges from the relevant, impactful, and having significant contribution reflected, along with the overall literature synthesis, reflected the list of 45 marketing analytics issues and challenges, captioned as Marketing Analytics Issues and Challenges (MAICs 1–45), in Table 5. From these MAICs, the non-significant ones have been dropped, which can be traced from the numbering of the issues and challenges accordingly, in Table 4. The citations and journal information about the finalised 59 research papers are tabulated in Appendix. Moreover, Table 6 (ScientoMetrics-Quartile Analytics) shows the impact of the journals in which the papers have been published, ranging from Q1 to Q3.

## Analysis and discussion

The exhaustive study of the finalised articles in terms of the issues and challenges reflected that the *ethical issues and legality* dimension are at the top in terms of frequency-based ranking. The ethical issues and legality involve the legal implementation of consumer rights protection in terms of privacy and usage of customer personal data. Moreover, the impact of organisational operations on consumers has to be made transparent enough so that user consent would be sought. Other issues and concerns related to implementation are concerned with the marketing analytics ecosystem.

**Table 1** Sum of holistic search by research databases

Springer	Elsevier	HBS	Sage	Taylor & Francis	Wiley Online Library	AMA	Emerald	INFORMS	PubsOnline	Ingenta Connect	Total
150	68	1	17	28	23	2	35	19		67	<b>410</b>

The bold values signify the numeric result in terms of frequency for the research papers observed as per the captioned criteria

**Table 2** Research articles filtered/finalised by research databases

Springer	Elsevier	HBS	Sage	Taylor & Francis	Wiley Online Library	AMA	Emerald	INFORMS	PubsOnline	Ingenta Connect	Total
7	18	0	3	3	4	0	4	11		1	<b>51</b>

The bold values signify the numeric result in terms of frequency for the research papers observed as per the captioned criteria



**Table 3** Theoretical mapping of marketing analytics (2000–2020)

Theory	Major constructs	Theory utilisation	Notable research examples
RBT/RBV	<ul style="list-style-type: none"> <li>• Top management team support</li> <li>• Supportive analytics culture</li> <li>• Information technology support</li> <li>• Analytics skills</li> <li>• Collection of resources</li> <li>• IT management</li> </ul>	Organisations build their capability by accumulating the technological, human, and cultural resources for gaining market value	Bradlow et al. (2017), Germann et al. (2013), Wang and Hajji (2017)
Upper Echelons theory	<ul style="list-style-type: none"> <li>• Top management team diversity</li> <li>• Strategic innovation</li> <li>• Orientation</li> <li>• Strategic decision making</li> <li>• Innovation outcomes</li> <li>• Firm performance</li> </ul>	It projects about the strategic performance indicators and deployment considerations, for marketing analytics efforts, to be converted into business value	Germann et al. (2013), Talke et al. (2011)
Organisational Learning THEORY	<ul style="list-style-type: none"> <li>• Customer learning</li> <li>• Customer information systems</li> <li>• Marketing</li> <li>• Communications</li> <li>• Customer relationship management (CRM)</li> </ul>	Organisations learn to assess customer based performance by providing personalisation and customisation through increase in intellectual capital, which results in firm performance and attainment of market-oriented dynamic capabilities	Hsu and Wang (2012), Zabary and Griffin (2004)
Dynamic capability theory/DCV	<ul style="list-style-type: none"> <li>• Organisational agility</li> <li>• Big Data analytics value</li> <li>• Knowledge assets</li> <li>• Dynamic and turbulent environments</li> <li>• Dynamic datasets</li> <li>• R&amp;D</li> <li>• Intellectual capital</li> </ul>	The acquittance of organisational dynamic capabilities provide agility and valuable intangibles that pave the way for sustainable competitive advantage	Córtés-Real et al. (2017), Hsu and Wang (2012), Mikalef et al. (2018)
Institutional theory	<ul style="list-style-type: none"> <li>• Market ecosystems</li> <li>• Service dominant logic</li> <li>• Institutional innovation</li> <li>• Institutional practices</li> <li>• Structural models</li> <li>• Marketing mix modelling</li> <li>• Market emergence</li> <li>• Market plasticity</li> <li>• Network perspective</li> </ul>	Institutional design is embedded in the market value system and builds the institutionalised ecosystem that is composed of network perspective and structural modelling	Koskela-Huotari et al. (2016), Vargo and Lusch (2017), Vargo et al. (2015)
Other theories	<ul style="list-style-type: none"> <li>• Strategic alignment</li> <li>• Three levels of information governance practices</li> </ul>	Configuration theory-Purchasing strategy alignment with IT Theory of information governance-value-based impact of practices regarding information governance	Mikalef et al. (2015) Tallon et al. (2013)



Table 4 Marketing analytics issues and challenges (2000–2020)

Author (year)	Industry	Qt	QI	B1	B3	B4	B5	B6	B7	B9	B10	B11	B15	B17	B19	B20	B21	B24	B25	B26	B27	B30	B31	B33	B35	B36	B38	B44	
Mikalaf et al. (2018)	IT	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Amado et al (2018)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vargo and Lusch (2017)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Kannan (2017)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wang and Hajli (2017)	Health	CS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bradlow et al (2017)	Retail	M	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Martin and Murphy (2017)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Côrte-Real et al (2017)	IT	S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sheng et al (2017)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lemon and Verhoef (2016)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wedel and Kannan (2016)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hanssens and Pauwels (2016)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Xu et al (2016)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Järvinen and Taiminen (2016)	Tech	CS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
George et al (2016)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rutter et al (2016)	HEI	S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hofacker et al (2016)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sanders (2016)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Frizzo-Barker et al (2016)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ransbotham et al (2016)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Schoenherr and Speier-Pero (2015)	HEI	S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Järvinen and Karjaluoto (2015)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dwivedi, Kapoor and Chen (2015)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Baltes (2015)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Breugelmans et al (2015)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Duan and Xiong (2015)	ML	LR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mu (2015)	ML	S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓



Table 4 (continued)

Author (year)	QI	Qt	Industry	B1	B3	B4	B5	B6	B7	B9	B10	B11	B15	B17	B19	B20	B21	B24	B25	B26	B27	B30	B31	B33	B35	B36	B38	B44
Leeftang et al (2014)	QES		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Chang et al (2014)	LR		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ghose and Han (2014)	M		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Holsapple et al (2014)	LR		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rust and Huang (2014)	LR		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Knittel and Stango (2014)	M		Stock	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Chan et al (2014)	S		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Simpao et al (2014)	LR		Health	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Germann et al (2013)	S		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Barger and Labrecque (2013)	LR		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Banerjee et al (2013)	LR		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tirunillai and Tellis (2012)	M		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Chen et al (2012)	LR		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ghose et al (2012)	M		Hotel	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hsu and Wang (2012)	S		Tech	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tene and Polenetsky (2012)	LR		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Archak et al (2011)	M		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Goldfarb and Tucker (2011a)	S		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Goldfarb and Tucker (2011b)	S		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Yao and Mela (2011)	M		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Talke et al (2011)	S		Manuf	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lilien (2011)	LR		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Harris and Rae (2011)	LR		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Harrigan and Hulbert (2011)	DI		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Montalvo (2011)	LR		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pefanis Schlee and Harich (2010)	LR		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ghose and Yang (2009)	M		Retail	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Neslin and Shankar (2009)	LR		ML	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓





Table 4 (continued)

Author (year)	QI	Qt	Industry	B1	B3	B4	B5	B6	B7	B9	B10	B11	B15	B17	B19	B20	B21	B24	B25	B26	B27	B30	B31	B33	B35	B36	B38	B44			
Harris and Rae (2009)	LR		ML	✓	✓	✓								✓			✓														
Morgan and Rego (2006)		M	ML	✓				✓					✓				✓														
Zahay and Griffin (2004)		S	Services	✓	✓	✓	✓						✓																		
Payne and Holt (2001)	LR		ML	✓	✓				✓	✓	✓	✓																			

\*QI = Qualitative [LR = Literature Review, CS = Case Study, DI = Qualitative In-Depth Interviews, QES = Qualitative Executive Survey], Qt = Quantitative [M = Mathematical, S = Survey], B1 = MAICI, ML = Multiple Industries, HEI = Higher Educational Institutes, Stock = Stock Market, Yr = Publication year

By following the mapping and classification style of previous studies (Adams et al. 2016; Bembom and Schwens 2018; Bocconcelli et al. 2018; Ceipek et al. 2019; Klang et al. 2014; Nguyen et al. 2018; Popay et al. 2006; Tranfield et al. 2003; Zahoor et al. 2020), the theoretical categorisation depicts that the five literary grounds titled as RBT/RBV, Upper Echelons Theory, Organisational Learning theory, Dynamic Capability Theory/DCV, and Institutional Theory are the most influential ones in terms of constructs projected and notable research studies. This projects that the marketing analytics can be better explained by utilisation of the theoretical paradigm provided by the above, which could pave the way for further deeper studies.

Apart from the above-tabulated theories, many other theories have been employed, which include Complexity Theory (Xu et al. 2016; Vargo and Lusch 2017), Knowledge-Based View (Côte-Real et al. 2017), SERVQUAL Model (Lemon and Verhoef 2016), Relationship Marketing Theory (Lemon and Verhoef 2016), Motivation-Hygiene Theory (Rutter et al. 2016), Supply Chain Management Theory (Schoenherr and Speier-Pero 2015), Marketing Performance Measurement Theory (Järvinen and Karjaluoto 2015), Marketing Capability Theory (Mu 2015), Knowledge Management Theory (Holsapple et al. 2014), and Reciprocal Action Theory as well as Social Identity Theory (Chan et al. 2014).

Table 6 depicts that 92% of the total articles (54 articles) are part of Q1–Q3 journals, where 47 studies are from Q1 journals, which means that 80% of the detail in Table 4 is composed of the best available past studies based on the latest scientometrics.

For RQ2, the researchers classified the issues and challenges into the five themes depicting the core learning from this study that would pave the way for further studies:

**Customer-centric strategic structures & customer engagement**

The element of co-creation is apparent where organisations have to behave proactively to know what the customers want before they do, and to make them partners in seeking a competitive advantage. Consumer-based structures are being observed as the way forward for structural capitalisation that could support the information value chain (Mikalef et al. 2018; Sheng et al. 2017).

Integrated marketing communication (IMC) channels are the gateway for developing an ecosystem of customer relationship management so that targeted consumer engagement could be done for mental programming for description, diagnosis, prediction, and personalised prescription of customer lifetime experience management (Lemon and Verhoef 2016; Mikalef et al. 2018). Furthermore, for the sake of quant, the process of metrics alignment for not falling into the vicious trap of GIGO (garbage in, garbage out) marketing performance measures



**Table 5** List of the marketing analytics issues & challenges (MAICs)

MAIC1-marketing strategy	MAIC24-consumer engagement
MAIC2-social issues	MAIC25-customer relation management
MAIC3-analytics culture	MAIC26-customer experience management
MAIC4-consumer-based structure	MAIC27-customer privacy and security
MAIC5-geo-location-based sense	MAIC28-disruptive technologies
MAIC6-data mining/cleansing and collection	MAIC29-EWOM & ROI
MAIC7-management practices	MAIC30-skill requirement & training
MAIC8-marketing core objectives	MAIC31-descriptive stage
MAIC9-marketing performance measures	MAIC32-diagnostic stage
MAIC10-marketing programs deployment and operations	MAIC33-predictive stage
MAIC11-insightful data utilisation	MAIC34-prescriptive stage
MAIC12-IT resource management	MAIC35-NPD & NPS
MAIC13-organisational agility	MAIC36-content management
MAIC14-knowledge management & IS	MAIC37-integrated marketing communication
MAIC15-Big Data issues	MAIC38-ethical issues & legality
MAIC16-knowledge sharing	MAIC39-social media management
MAIC17-metrics alignment	MAIC40-ecosystem
MAIC18-information value chain	MAIC41-dynamic capabilities
MAIC19-change readiness	MAIC42-user-generated content
MAIC20-top management & senior managers support	MAIC43-structural capital
MAIC21-mobile analytics	MAIC44-personal brand
MAIC22-analytics techniques and technological issues	MAIC45-academia–practitioner gap
MAIC23-learning behaviour	

could be done when academia joins hands with practitioners and the foggy gap between two is cleared (Sheng et al. 2017). Furthermore, customer engagement in this age of personalisation is to go beyond purchase and build a platform through value exchange from and to marketer versus consumer, while assessing the psychological state of the customer in terms of participating in different initiatives of the marketer (Lemon and Verhoef 2016). Therefore, paving the way forward for the co-production of values through engagement platforms that are a mix of brick-n-mortar. This cycle of knowledge creation needs a mechanism of data insight extraction for actionable decision making (Xu et al. 2016).

For this purpose, the pre-analytics age conventional marketing strategies may not be that relevant for online brand communities, social networking sites, and consumer-based business structuring, where beyond text communication tools could be used and customers could be rewarded on their category of user (Chan et al. 2014). For the same reason, the concept of sharing economy and alignment of co-creation metrics to it have been considered as the key to unlocking future research and field opportunities (Kannan 2017).

### Marketing analytics sticky culture & management practices

The system propelled culture accompanied by resource-based view (RBV) has been depicted to possess the

operational grip for conversion into organisational capability. The management practices revolving around RBV categorise each factor into the classification of resources that involve data reservoirs, infrastructural foundation, and information systems installations. Process-oriented benchmarking is rehearsed, and metrics are prioritised accordingly (Mikalef et al. 2018). The marketing analytics sticky culture is sourced from the data-driven organisational culture where people, irrespective of their authority and hierarchical managerial positions, do indulge in decision-making practices that are backed by the informational projections extracted from data. Moreover, the data-driven management practices do mitigate silos decisions and propagate interdependency of actions (Wang and Hajli 2017).

In this jigsaw of data-driven marketing analytics, sticky analytics culture, and management practices, the issue of ethical consideration for usage of customer data and mix of customer consent versus reward is a nascent one that calls for further research (Martin and Murphy 2017).

Shifting the paradigm from RBV to knowledge-based view (KBV), Côte-Real et al. (2017) are of the view that data analytics reservoirs are a network of knowledge-steered value chains that are not restricted to organisational boundaries and customer–marketer exchange mediums. These external value chains of knowledge that could promise operational agility and widening the business canvas are the next big thing to explore for competitive sustainability.



**Table 6** ScientoMetrics-quartile analytics

Journal	Total findings	Quartile	Category
Academy of Management Journal	1	Q3	Business
British Journal of management	2	Q1	Business
Bulletin of the Transilvania University of Brasov. Economic Sciences	1	Q3	Business
California Management Review	1	Q1	Business
Decision Sciences	1	Q1	IT
Decision Support Systems	2	Q1	IT
European management journal	1	Q1	Business
European Research on Management and Business Economics	1	Q2	Business
Industrial Marketing Management	3	Q1	Business
Information Systems and e-Business Management	1	Q2	Business
International Journal of Information Management	1	Q1	IT
International Journal of Production Economics	1	Q1	Business
International journal of production research	1	Q1	Business
International Journal of Research in Marketing	3	Q1	Business
Journal of Business Logistics	1	Q1	Business
Journal of Business Research	4	Q1	Business
Journal of business strategy	2	Q2	Business
Journal of Consumer Marketing	1	Q1	Business
Journal of interactive marketing	1	Q1	Business
Journal of marketing	3	Q1	Business
Journal of Marketing Education	2	Q1	Business
Journal of medical systems	1	Q2	Medical
Journal of Product Innovation Management	1	Q1	Business
Journal of Retailing	1	Q1	Business
Journal of the Academy of Marketing Science	1	Q1	Business
Management science	5	Q1	Business
Marketing Letters	1	Q1	Business
Marketing Science	6	Q1	Business
MIS Quarterly	1	Q1	IT
MIT Sloan Management Review	1	Q1	Business

The ecosystem of marketing analytics is a whirl of RBV and KBV paradigms of industrialisation 4.0 where each function of marketing has its own set of analytical measurements for performance management. Therefore, further spearhead mapping of marketing-mix investment portfolios in high-tech or IT conducive environments is imperative (Lemon and Verhoef 2016; Wedel and Kannan 2016; Sheng et al. 2017).

As a crux, the aggressive proactive management practices for crafting system-oriented analytics sticky culture are necessary, which could integrate relevant management practices with overall business objectives (Mikalef et al. 2018; Chen et al. 2012). This would make insightful data utilisation that a management strategic priority would reflect the organisational agility phase. Moreover, an inclusively developed reservoir of management learning behaviours to re-adjust, re-align, and re-do practices could develop an indigenous culture. This could help the

organisation to have capabilities that are hard to copy (Kannan 2017; Sheng et al. 2017).

### **Geo-location-based sense, data mining, and content management**

The geo-location-based sense through social media management while taking care of the ethical issues and legality issues is vital to utilise the value from social mediums. Data-backed sense of social issues is a plus in this arena. The market strategies are to be ground in marketing core objectives, where knowledge sharing and change readiness are top of the line for the fifth revolution, marked by personalisation. The IT resource management for this shift is a major barrier that creates big data issues. This connects to the dearth of need analysis in terms of skill requirement and training/curriculum correspondents to analytics techniques and technological issues that disturb



the customer experience management agenda (Wang and Hajli 2017; Bradlow et al. 2017; Martin and Murphy 2017; Sheng et al. 2017).

Surprisingly, Mobile analytics, as being the portable platform, has raised the bar for platform-free content management, where user-generated content is much valued for better acceptability. The disruption is caused in terms of customer privacy and security issues, where the race for EWOM & ROI has eroded societal sense. Therefore, counter disruptive technologies are imperative for governance, to develop dynamic capabilities for future marketing analytics (Mikalef et al. 2018; Sheng et al. 2017; Wedel and Kannan 2016; Chen et al. 2012).

### Insightful data utilisation & performance measures

The need analysis of the business competition in terms of dynamic market capabilities and disruptive technological change sets the stage for alignment of the data management and valuation strategies (Mikalef et al. 2018). These strategies reflect the operations for data utilisation for the actionable insights as per the impact metrics defined for the communication channels where consumers exercise their consumer power. The digital orientation of marketing mix is exercised for mapping of the gaps in talent requirement, organisational agility, actionable metrics, and sharing the profits from marketing analytics with customers (Leefflang et al. 2014; Bradlow et al. 2017).

For this purpose, rigorous extraction and utilisation of data insights have been done through a deeper study of marketing data analytics for tracking the business process transformations that may indicate the untapped value reservoirs of “blue ocean” customer profits (Wang and Hajli 2017). Martin and Murphy (2017) stressed forwarding of profitability share to the customer through reward mechanism in this situation for a long-term relationship and value creation in marketing analytics age (Sheng et al. 2017). Wedel and Kannan (2016) presented the novel research methods for marketing analytics and depicted the connection between privacy and data security, marketing mix, and personalisation. Moreover, the future buying patterns of customers and exploration of developing service instruments in accordance calls for the usage of smart data snatching tools that could seamlessly apply metrics for customer tracking (Bradlow et al. 2017). The performance measures attached to this exercise may involve the issues of customer privacy and data security that needs to be vigilantly handled. The area of customer data security and privacy embedded with legal issues is a nascent marketing analytics arena that calls for further empirical research.

Besides, the marketing analytics heterogeneity enrichment is being in limelight through work on content marketing, web analytics, automation of marketing processes, and development of marketing analytics curriculum based on empiricism, as per pressing demand for unfathomable insight of related performance measures (Järvinen and Taiminen 2016; Schoenherr and Speier-Pero 2015).

### Ethical issues & legality

The most unique challenge for marketing analytics is composed of dimensions of business ethics and legality. The ethical issues involve intentional or unintentional customer privacy invasion through digitalised seamless data extraction and scanning mechanisms that could lead the company into a troublesome situation in terms of customer data privacy and security (Mikalef et al. 2018; Sheng et al. 2017).

With a balance between the customer privacy dynamics and organisational need, a reward system is a key to refrain from any conflicting situation. For this purpose, metrics must be aligned with the ethical consideration and legality issues. Moreover, the area of ethical issues and legality is complex as well as nascent in terms of research work. Therefore, demand for further research in terms of legal applications ranging from operations of web analytics to mobile analytics as privacy and protection of data is empirically evident (Sheng et al. 2017).

There are a variety of opinions and views floated by researchers in this regard. The performance benchmarks should be aligned with organisational dynamic capabilities (Mikalef et al. 2018) and the ecosystem for modulation of the customer-centric sharing economy (Kannan 2017) may be devised for customer profitability enhancement (Wang and Hajli 2017). Bradlow et al (2017) talked about customer tracking and ethical considerations. Martin and Murphy (2017) portrayed the ethical and legal dimensions of analytics in terms of data privacy, level of usage and sharing, and access nature. Côte-Real et al. (2017) depicted the KBV perspective of analytics and data dynamics that broaden the scope of legal operations as the external channels of knowledge require legal scrutiny. Sheng et al. (2017) discussed convergence and divergence of various fields in connection in this regard. Lemon and Verhoef (2016) along with Wedel and Kannan (2016) talked about customer purchase behaviour tracking, personalisation, and ethical issues and legality mix in terms of marketing analytics. Schoenherr and Speier-Pero (2015) depicted the curriculum development, empiricism, and legality depth. Mu (2015) researched marketing capability,



product innovation, and novel legal complexities. Leeftang et al. (2014) studied the ethically and legality-wise proactive practices of professional marketers in the digitalised era. Furthermore, Chen et al. (2012) mobile analytics and technical areas connected with ethics and legality for preparing for the back-end processes.

## Conclusion

The literacy thick encapsulation of 45 marketing analytics issues and challenges has been done based on theoretical significance and empirical sense into five construct-bonded layers that are customer-centric strategic structures and customer engagement, marketing analytics sticky culture, and management practices geo-location-based sense and data mining as well as content management, insightful data utilisation and performance measures, and ethical issues and legality. Together, they reflect the patterns in the high-quality literature spanning around two decades.

Moreover, all the marketing issues and challenges have been further classified into the process, people, outcome, and strategy as per the nature of the constructs explored from the literature. This further comprehends that the plethora of issues and challenges are triggered by these channels. Therefore, further research in terms of process-driven, people perspective, outcome-oriented, strategy-specified avenues of marketing analytics may support enrichment to this field brought by the fourth industrial revolution.

## Limitations

The search metrics and selection process of the quality papers between the periods 2000 and 2020 have limitations as the canvas is not so wide to cater for the concept of marketing analytics issues and challenges from inception to conception, as in the case of meta-analysis. The trend of papers does reflect that the research problem is new and much of the research has been done in between the two decades, yet the systematic literature review has its limited grounds in terms of other research methodologies. So, widening the canvas of research in terms of the research period, research design, and other factors would provide deeper insight for the academic and practitioner community.

## Core implications

Ethical and legal issues have been the most prominent ones, which depict that the legal acumen capability is the steering point for any company to save itself from any business-related challenges. The intangibles are the “new tangibles” for dealing with marketing analytics issues and challenges as companies have to work on their dynamic as well as inclusive capabilities of breeding co-creation culture through customer-centric strategic structures and customer engagement. This is marked by the alignment of performance measures with rigorous utilisation of actionable data insights.

## Further research considerations

Marketing analytics demands a shift in the operational capabilities of the companies in terms of people, process, strategy, and outcomes. These dimensions call for further research in terms of each of the significant issues and challenges in heterogeneous industries, while setting the research canvas to regional alliances and international ones as well. This will provide a fruitful mapping reservoir for regional and international comparative analysis across various industries. Moreover, the SLRs in the area projected that areas and the learning from this study project that

- The convergence of stages of analytics (Descriptive, Diagnostic, Predictive, Prescriptive) and marketing science is a high call to check the issues and challenges at each stage.
- The reasons for significant issues and challenges, along with their remedies and territorial best practices, are composed of the broad range of research work yet to be done
- Mix methodology research has to be adapted for looking at the phenomena and defining its constructs; afterwards, those constructs should be converted into variables by scale development. Furthermore, the development of indigenous scales for each of the issues and challenges in terms of countries will provide better inclusive measurement yardsticks, which is the need of the fourth industrial revolution.
- The domains of people, process, and strategy reflected in Table 6 suggest that further research on what aligns the factors of the three is an essential part of the research puzzle being discussed (Table 7).
- A systematic literature review for issues and challenges in terms of marketing metrics has been depicted by the present study.
- The common issues and challenges of marketing intelligence and marketing analytics are a vital area that would pave the way for 4.0 readiness by the developing economies.



**Table 7** Domain classification of issues and challenges

Domain	Issues and challenges
Process	Geo-location-based sense
	Data mining/cleansing and collection
	Big data issues
	Metrics alignment
	Analytics techniques and technological issues
	Consumer engagement
	Customer relation management
	Customer experience management
	Descriptive stage
	Diagnostic stage
	Predictive stage
	Prescriptive stage
	Ethical issues & legality
	People
Analytics culture	
Knowledge sharing	
Information value chain	
Change readiness	
Top management & senior managers support	
Learning behaviour	
Outcomes	Customer privacy and security
	Skill requirement & training
	User-generated content
	Personal brand
	Marketing performance measures
	Insightful data utilisation
Strategy	EWOM & ROI
	NPD & NPS
	Ecosystem
	Structural capital
	Marketing strategy
	Consumer-based structure
	Management practices
	Marketing core objectives
	Marketing programs deployment and operations
	IT resource management
	Organisational agility
	Knowledge management & IS
Mobile analytics	
Disruptive technologies	
Content management	
Integrated marketing communication	
Social media management	
Dynamic capabilities	
Academia-practitioner gap	

## Appendix

Articles covering most of the MAICs (1–45)	Top ranked MAICs coverage
Mikalef et al. (2018)	3, 6, 7, 9, 11, 36, 38
Kannan (2017)	1, 4, 7, 9, 11, 24, 38
Wang and Hajli (2017)	3, 5, 7, 9, 11, 36, 38
Bradlow et al. (2017)	4, 5, 6, 7, 9, 11, 36, 38
Martin and Murphy (2017)	1, 3, 4, 5, 7, 9, 11, 24, 36, 38
Côrte-Real et al. (2017)	3, 6, 7, 9, 11
Sheng et al. (2017)	1, 3, 5, 6, 7, 9, 11, 24, 36, 38
Lemon and Verhoef (2016)	1, 3, 4, 5, 7, 9, 11, 24, 38
Wedel and Kannan (2016)	1, 3, 4, 5, 6, 7, 9, 11, 36, 38
Järvinen and Taiminen (2016)	1, 3, 9, 11, 24, 36, 38
Schoenherr and Speier-Pero (2015)	1, 5, 7, 9, 11, 36, 38
Mu (2015)	4, 11, 24, 36, 38
Leefflang et al. (2014)	4, 5, 6, 11, 36, 38
Chen et al. (2012)	3, 5, 6, 11, 24, 36, 38

Year	Title	Journal	Citations
2018	Big data analytics capabilities: a systematic literature review and research agenda	Information Systems and e-Business Management	138
2018	Research trends on Big Data in Marketing: A text mining and topic modeling based literature analysis	European Research on Management and Business Economics	95
2017	Service-dominant logic 2025	International Journal of Research in Marketing	459
2017	Digital marketing: A framework, review and research agenda	International Journal of Research in Marketing	406
2017	Big data analytics for physical internet-based intelligent manufacturing shop floors	International journal of production research	181
2017	Exploring the path to big data analytics success in healthcare	Journal of Business Research	158
2017	The role of big data and predictive analytics in retailing	Journal of Retailing	154
2017	The role of data privacy in marketing	Journal of the Academy of Marketing Science	148



Year	Title	Journal	Citations	Year	Title	Journal	Citations
2017	Assessing business value of Big Data Analytics in European firms	Journal of Business Research	143	2016	Beyond the hype: the hard work behind analytics success	MIT Sloan Management Review	97
2017	A multidisciplinary perspective of big data in management research	International Journal of Production Economics	96	2015	Data science, predictive analytics, and big data in supply chain management: Current state and future potential	Journal of Business Logistics	266
2016	Understanding customer experience throughout the customer journey	Journal of Marketing	1392	2015	The use of Web analytics for digital marketing performance measurement	Industrial Marketing Management	166
2016	Marketing analytics for data-rich environments	Journal of Marketing	283	2015	Social media marketing and advertising	The Marketing Review	164
2016	Demonstrating the value of marketing	Journal of Marketing	110	2015	Content marketing-the fundamental tool of digital marketing	Bulletin of the Transilvania University of Brasov. Economic Sciences	147
2016	Effects of big data analytics and traditional marketing analytics on new product success: A knowledge fusion perspective	Journal of Business Research	203	2015	Advancing research on loyalty programs: a future research agenda	Marketing Letters	99
2016	Harnessing marketing automation for B2B content marketing	Industrial Marketing Management	197	2015	Big data analytics and business analytics	Journal of Management Analytics	95
2016	Big data and data science methods for management research	Academy of Management Journal	162	2015	Marketing capability, organizational adaptation and new product development performance	Industrial Marketing Management	94
2016	Social media interaction, the university brand and recruitment performance	Journal of Business Research	126	2014	Challenges and solutions for marketing in a digital era	European management journal	577
2016	Big data and consumer behavior: Imminent opportunities	Journal of Consumer Marketing	117	2014	Understanding the paradigm shift to computational social science in the presence of big data	Decision Support Systems	302
2016	How to use big data to drive your supply chain	California Management Review	114	2014	Estimating demand for mobile applications in the new economy	Management Science	273
2016	An empirical study of the rise of big data in business scholarship	International Journal of Information Management	112	2014	A unified foundation for business analytics	Decision Support Systems	258



Year	Title	Journal	Citations	Year	Title	Journal	Citations
2014	The service revolution and the transformation of marketing science	Marketing Science	256	2012	Clarifying the effect of intellectual capital on performance: the mediating role of dynamic capability	British Journal of Management	333
2014	Celebrity endorsements, firm value, and reputation risk: Evidence from the Tiger Woods scandal	Management science	161	2012	To track or do not track: advancing transparency and individual control in online behavioral advertising	Minn. J.L. Sci. & Tech	140
2014	Antecedents and consequences of customer engagement in online brand communities	Journal of Marketing Analytics	115	2011	Deriving the pricing power of product features by mining consumer reviews	Management science	734
2014	A review of analytics and clinical informatics in health care	Journal of medical systems	106	2011	Online display advertising: Targeting and obtrusiveness	Marketing Science	633
2013	Performance implications of deploying marketing analytics	International Journal of Research in Marketing	151	2011	Privacy regulation and online advertising	Management science	453
2013	An integrated marketing communications perspective on social media metrics	International Journal of Integrated Marketing Communications	113	2011	A dynamic model of sponsored search advertising	Marketing Science	249
2013	Data analytics: Hyped up aspirations or true potential?	Vikalpa	106	2011	Top management team diversity and strategic innovation orientation: The relationship and consequences for innovativeness and performance	Journal of Product Innovation Management	239
2012	Does chatter really matter? Dynamics of user-generated content and stock performance	Marketing Science	477	2011	Bridging the academic-practitioner divide in marketing decision models	Journal of Marketing	141
2012	Business intelligence and analytics: From big data to big impact	MIS quarterly	4863	2011	Building a personal brand through social networking	Journal of Business Strategy	142
2012	Designing ranking systems for hotels on travel search engines by mining user-generated and crowdsourced content	Marketing Science	502	2011	How can marketing academics serve marketing practice? The new marketing DNA as a model for marketing education	Journal of marketing education,	114





Year	Title	Journal	Citations
2011	Social media management	International Journal of Management & Information Systems (IJMIS),	96
2010	Knowledge and skill requirements for marketing jobs in the twenty-first century	Journal of Marketing Education,	151
2009	An empirical analysis of search engine advertising: Sponsored search in electronic markets	Management science	650
2009	Key issues in multichannel customer management: current knowledge and future directions	Journal of interactive marketing	632
2009	Social networks: the future of marketing for small business	Journal of business strategy	375
2006	The value of different customer satisfaction and loyalty metrics in predicting business performance	Marketing science	555
2004	Customer learning processes, strategy selection, and performance in business-to-business service firms	Decision Sciences	174
2001	Diagnosing customer value: integrating the value process and relationship marketing	British Journal of management	915

## Declarations

**Conflict of interest** On behalf of all authors, the corresponding author states that there is no conflict of interest.

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