Expert Journal of Marketing, Volume 10, Issue 2, pp.124-142, 2022
 ISSN 2344-6773
http://Marketing.ExpertJournals.com

Data Governance Issues in Digital Marketing: A Marketer's Perspective

Matthias SCHMUCK*

Alexandru Ioan Cuza University of Iaşi, Romania

To perform under the conditions of digitalization, marketers need understandable, accurate, complete, trustworthy, secure, and discoverable data. In this respect, data governance is a solution approach to greater data literacy, data intelligence and data management. This research aims to explore the current academic state-of-art of data governance in the marketing field. Selected items were evaluated using a descriptive statistical approach to identify investigation trends on this topic. The research found that Marketing can benefit from Data Governance focusing data standard settings, data sources coordination and data management, data quality and data security. This requires a strategy, coordinated processes and their meaningful support by people and information technology. The originality of this research is that the approach is unique at this point, and the assimilation of data governance is a clear sign of manifestation for marketing under conditions of increasing digitalization.

Keywords: *digital marketing, data governance, systematic review*

JEL Classification: *M31*

1. Introduction

Today's social and economic environment is subject to permanent and increasingly rapid change. Numerous factors - including the digital revolution of recent years, advancing globalisation, but also a constant change in social values - make it necessary for companies and organisations today to flexibly adapt their business processes to new framework conditions.

One of these core processes is Marketing. As the end interface between the company and its environment, it is usually the first to be affected by new developments, because they deal with customers more than other business functions (Kotler et al., 2020). In business research, the term "Marketing" is ambiguous or not exact, which due to its historical development. It ranges from the set of terms "advertising/sales/distribution" to the "concept for market-oriented corporate management" (Meffert, 2000; Olbricht, 2022). In the context of this article, Marketing is understood as an information-processing corporate func-tion at the interface with corporate's environment, which first and foremost has the task of "... researching the - both latent and manifest - needs of potential demanders and, if necessary, influencing them in the sense of corporate goals." (Olbrich, 2022, p. 10). Marketing must ensure the provision of the information necessary for planning and systematically proceeding with supply activities, in order to plan, implement and control the

*Corresponding Author:
Matthias Schmuck, Faculty of Economics and Business Administration, Alexandru Ioan Cuza University of Iaşi, Iaşi, Romania

Article History:
Received 5 November 2022 | Accepted 6 December 2022 | Available Online 27 December 2022

Cite Reference:
Schmuck, M., 2022. Data Governance Issues in Digital Marketing: A Marketer's Perspective. *Expert Journal of Marketing,* 10(2), pp.124-142.

use of the market policy means necessary for achieving cooperatives objectives (Meffert, 2000). Put simply, the actions of Marketing are based on information (and thus data).

But what are relevant data according to Marketing? Marketers are interested in customer, financial, and operational data (Kotler et al., 2017; Kotler et al., 2020). These data help the business to understand what and when costumer are buying, what steps the customer take in the sales process and among others. Typically obtained from different (public and/or private) sources and stored in different locations such data helps marketers to understand their target audience by identifying ideal customers, crafting compelling con-tent and building more effective campaigns or promotions (Meffert, 2000).

Under the conditions of increasing digitalization and automation using information and communication technologies (ICT) - also through the increased use of Artificial Intelligence (AI) - Marketing is becoming more and more digital (Kumar et al., 2013; Salesforce, 2021; Deloitte Insights, 2021; Bünte, 2021): as the customers go digital, Marketing steps up and data is becoming a central asset. "Digital Marketing", also known as "Online Marketing" or "Internet Marketing" and first coined in the 1990s (Prajapati, 2020), re-lates to marketing of any products and services in digital form using digital devices, e.g., smartphones, tablets and others, and electronically interactive technology like mails, forums, newsgroups and others (Kotler and Armstrong, 2009; Wirtz et al., 2014). The major advantage of Digital Marketing is that a business can sell his products and/or services 24 hours and 365 days, or in other words "around the clock" (Kotler, 2000). In this manner, Marketing and ICT become an important partnership in a proper combination as a socio-technical system for decades (Graesch et al., 2020). Integrated ICT supports all Marketing operations of a company and diversifies the marketing process (Bayraktutan et al., 2009), showing effects such as providing opportunities for advertising anywhere and at any time and increasing the overall potential of advertising (Hamidi and Safabakhsh, 2011).

In this context a holistic approach to manage data as an asset becomes a topic for Marketing. Data Governance with over 15 years of attendance in research (Jagels et al., 2021) is one of such approaches that within the practitioners' community and among information systems (IS) researchers is attracting growing attention. Software vendors (e.g. Kramer and Wilson, 2020), consulting companies (e.g. Petzold et al., 2020) and analysts (e.g. Bitterer and Newman, 2007; Newman and Logan, 2006; Mohan and Maguire, 2019) have emerged and give recommendations on how to establish Data Governance in business organizations. They have proposed frameworks for Data Governance (Newman and Logan, 2006; Khatari and Brown, 2010; Otto et al., 2007; Gartner, 2008; Sridharan, 2022; IBM 2007; Oracle 2011; Microsoft, 2020) and have analysed influencing factors (Weber et al., 2009) as well as the current status of implementation (Blanton et al., 1992; Otto, 2011b). Designing clear cross-functional processes and Governance are one of the most important challenges for Marketing in the digital age (Leeflang et al., 2014).

Such as the "Marketing" term "Data Governance" is also ambiguous or not exact in the scientific field. At the beginning of the research, Data Governance was seen as a further development of IT-Governance (Weill, 2004; Weill and Ross, 2004; IT Governance Institute, 2007), which in turn evolved from Corporate Governance (Correia and Água, 2021). Topics, such as data quality, data management, business intelligence and analytics, big data, cloud computing, data protection, trust and security, expanded the research field of Data Governance, but also led to a lack of differentiation from other research disciplines. So, Data Governance is currently defined in a different and heterogeneous manner. The business or management-oriented research group focused on handling data assets on the base of decision rights, e.g. by Otto (Otto, 2011a; Otto, 2011b; Otto, 2012; Otto, 2013) or Weber (Weber et al., 2009; Weber, 2009). The technical oriented group (e.g. Lee et al., 2018; Lee et al., 2019) focuses on technical implementation using commercially available software and there are researchers that addresses both camps (e.g. Al-Ruithe et al., 2016; Al-Ruithe and Benkhelifa, 2017; Ruithe and Benkhelifa, 2018).

Our work follows the interpretation of both camps and adapted Data Governance as an enterprise-wide framework with the key components (in other words: layer) of strategy, processes and resources (people and machines) ensures that enterprise data, especially for Marketing, is reliable and consistent, so that it can be used with confidence for operational (Marketing) processes and (Marketing) decisions now and in the future (Figure 1).

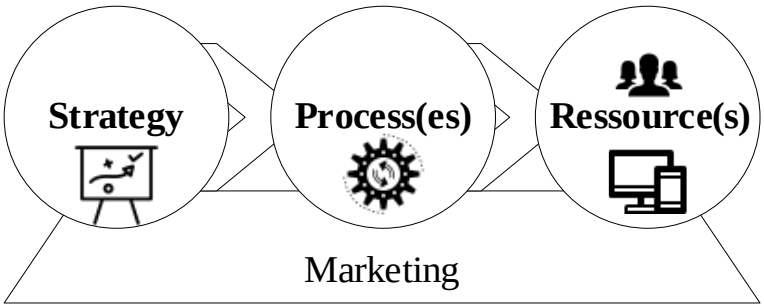

Figure 1. Key components of Data Governance
Source: Processing by the author

Within the strategy layer, Data Governance providing a framework that connects people to process and technology, and create standards, processes and documentations structures for how a company will collect, use and manage their (Marketing) data. Within the process layer, Data Governance establishes, implements and evaluates policies and procedures, and monitors effort and results using KPIs and state-of-art reporting. Within the resource layer, Data Governance implement structural and process organisation (people) in cooperation with ICT-tools and infrastructure as a socio-technical system.

To be more operable Data Governance can be divided into fields of action. These fields are not conclusively defined in the literature. Examples are data quality, data scope, data protection, security and compliance, data management, data catalogue, data lineage, data stewardship, data ownership, data ethics and others (Gluchowski, 2020; Weber and Klingenberg, 2021).

The growing evidence of Data Governance as a research field and the lack of review papers concerning the topic are the motivation for this study. The main objective of the review is to identify, assess and summarize the existing evidence of Data Governance in context of the business function Marketing in a brief overview. In the line of these goal this research intends to address the following research questions:

- RQ1: Where does the research field of Data Governance in Marketing currently stand?
- RQ2: Which action fields of Data Governance are specifically addressed?
- RQ3: What are content and trending topics of Data Governance in Marketing and how can the field mature and progress?

The research questions are designed to ensure that the collection of data is based on content analysis.

2. Research Methodology

In this section, the research methodology used to achieve the scientific goal and the search algorithm with full details are discussed. The main motivation of this section is to ensure the reproducibility of the results for the SLR.

2.1 Design

This paper follows IMRaD structure as a common document format in scientific writing (Sollaci and Pereira, 2004). Stage 1 being the Introduction clause (see paper section 1), stage 2 describing research Method and Materials (see paper section 2), stage 3 describing the Results (key findings) using an established procedure (see paper section 3) and stage 4 concludes the study with a Discussion (see section 4).

The study uses systematic review of academic literature (SLR). The term "systematic review" is multi-faceted: in the context of this paper adapted as a comparative analysis of different papers by identifying, assessing, evaluating and interpreting all results. The result is a kind of review paper that answers one or more research questions on the chosen topic (Kitchenham, 2004). The reader is provided with an in-formative summary of the findings of other studies that are closely related to the study at hand. Reviews have proven to be an effective research method (Wahono, 2015; Creswell and Creswell, 2018; Boote and Beile, 2005; Cooper and Hedges, 1994).

The SLR in this paper based on a systematic review procedure established by Fettke (2006), as we see in Fig. 2.

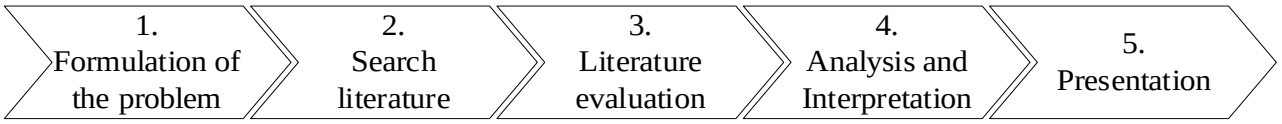

Figure 2. SLR Flowchart
Source: Fettke, 2006

After the need for the review is determined (see above, section 1), a review protocol is created with aim and objectives, followed by research questions and search process.

2.2 Selection process

The analysis was limited to the most popular and reliable database, namely Scopus digital library (www.scopus.com). The search date was the last part of October, 2022. Within Scopus the following search string are used and set on the following search expressions: Article Title, Abstract, Keywords:

("Marketing" OR "Digital Marketing")

AND ("Data Governance" OR "Information Governance")

The search term "Information Governance" was included, because it is often used synonymously to the term "Data Governance". As part of boolean logic, "AND" and "OR" were used to narrow and broaden the scan accordingly.

After getting core hits in Scopus - in total 29 papers - the results are refined to the used language. Papers are not written in English are excluded, since English is the international language in academic. Further limitations, e.g. source type or document type or access type, were not made.

After identifying 29 documents that met the search strings and the refine criteria, the content was reviewed using titles and abstracts to apply criteria of quality (1st screening as quality assessment). The scientific and/or empirical quality of the selected studies should be strongly assessed to eliminate potential bias and optimize the power of the results. The following reason (R) checklist was used:

1. Where the authors, abstract or keywords explicitly provided (R1)?
2. Are the aims or objectives of the study clear (R2)?
3. Is the research method of the study explained (R3)?
4. Is there a (direct or indirect) link to the Marketing field in the study (R4)?
5. Are the topic and/or action fields of Data Governance clearly addressed (R5)?

Eight items do not meet the specified quality characteristics (R1 = 1; R2 = 0; R3 = 1; R4/R5 = 6). Finally, 21 documents were included in the analysis (2nd screening: full text).

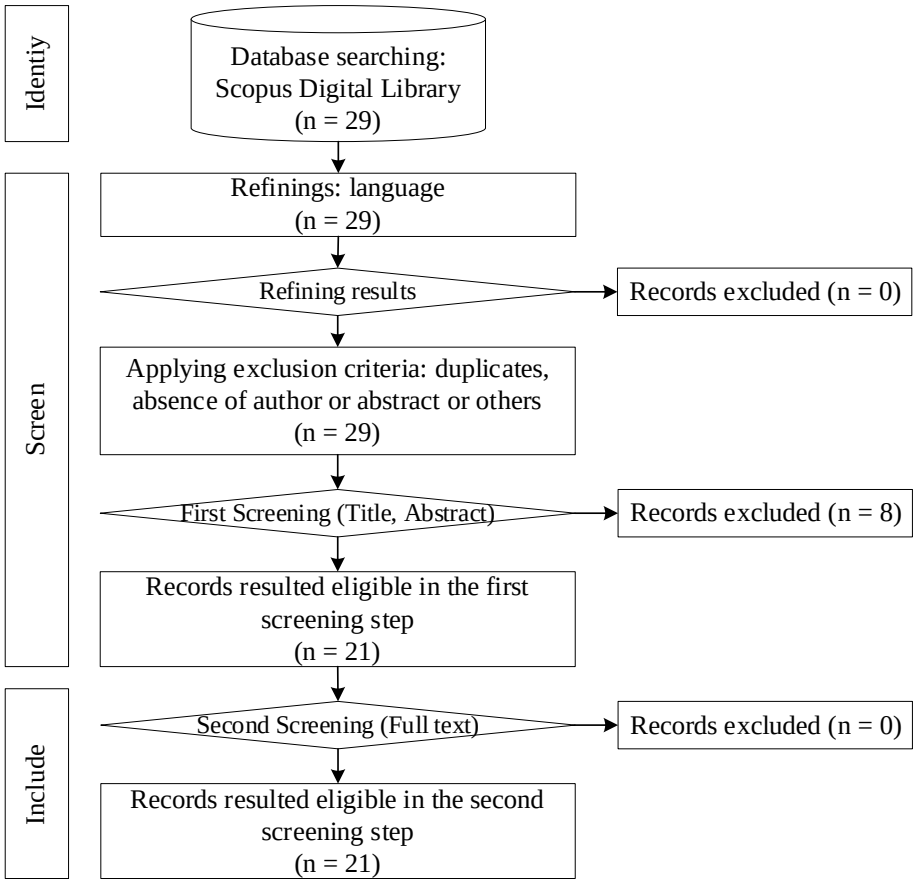

Figure 3. Selection process flowchart
Source: Processing by the author

2.3 Results found

After applying the exclusion and inclusion criteria to 29 papers found, 21 primary articles were identified and could be read and categorized. They show a variety of Data Governance content in the (digital) Marketing field (Table 1).

Table 1. Included Paper and their characteristics

Ref.	Objective(s)	Method(s)	Fundings/Results
Akter *et al.* (2022)	The authors examine the impact of market turbulence by considering the changes in technology, competitor and customers and modelling their overall effects using review. They offer significant insights that can transform marketing thoughts and practices across B2B cloud sharing platforms. The study is one of the first empirical attempts to identify marketing analytics capabilities of cloud sharing platforms focusing on pattern identification, real-time solutions and Data Governance.	Survey	(1) Marketing analytics capabilities (i.e., Data Governance, pattern recognition and real-time solutions) in sharing platforms bring buyers and sellers together to engage customers, reduce churn and deliver personalised communication campaigns. (2) The effectiveness of Marketing using analytics largely depends on how agile a company is in meeting customer needs. Customer segmentation and targeting programmes, tailored offers, unique content and relevant marketing metrics determine marketing effectiveness. (3) Managers need to build robust marketing agility to manage market turbulence.
Blomster and Koivumäki (2022)	The authors examined the organizational resources, competencies, and capabilities required for the successful implementation of	Content Analysis, Case Study	(1) The ability of Marketing organisations to understand and refine data by also considering the impact of the Marketing environment is the most

Ref.	Objective(s)	Method(s)	Fundings/Results
	AI projects for digital marketing activities in Marketing organizations.		important competence for the success of development projects in the AI environment. Marketing organisations therefore need to develop key analytical skills (including understanding of data). (2) Marketing organisations need to develop rigorous business processes and management procedures to support data management in order to provide appropriate data for AI.
Pugliese *et al.* (2021)	The authors conducted an overview on geo worldwide trends (based on data of China, the USA, Israel, Italy, the UK, and the Middle East) of AI approaches, particularly Machine Learning (ML) algorithms, for intelligent data analysis and applications in different areas (medical, financial, cybersecurity, nanotechnology, agriculture) from a technical, ethical and regulatory point of view.	Descriptive Study using secondary sources like journals, articles	(1) The complexity of AI applications in terms of their characteristics of "opacity" (an external observer may not be able to detect the potentially harmful features of ML and AI) and "unpredictability" (AI learn from "their experiences" and consequently their "behaviour" is potentially unpredictable) make it particularly difficult to establish effective (legal) rules. (2) Liability issues related to AI applications are also complex, because it is (often) difficult to determine who should be responsible for the damage caused by ML or AI tools due to the above-mentioned characteristics.
Shah *et al.* (2021)	The authors' goal was to define the factors involved in participants' thinking about their expectations for data flow and managing secondary use of health data in relation to contextual cues using focus group design: (a) understanding the factors that influence public perceptions and acceptance of health data sharing when contextual integrity and values associated with trade-offs are violated; (b) characterizing participants' experiences with sharing their health-related data in different contexts; and (c) identifying health data flow governance preferences in different contexts.	Focus groups	(1) The lack of information, transparency and control with regard to data collection, management and use are barriers to trust in organisations to use data in ways they deem appropriate. (2) The use of data by third parties requires greater transparency and accountability than is currently the case.
Abrantes and Ostergaard (2022)	Focusing the Danish market, the authors examined digital footprint awareness to understand the sentiment (perception) and behaviour (action) of data owners and data traders in the context of data surveillance of personal lives.	(Descriptive-explorative) multi-method study	(1) There is a general inability to minimise the risks of data misuse. (2) There is a willingness to pay for security services to protect privacy. (3) If personal information is disclosed, there is anger among those affected, but little willingness to fight back.
Mahmoudian (2021)	In this paper, the author explains what ethical challenges exist in the aspects of data collection, data security, and data protection in connection with the use of AI applications (e.g., Big Data analyses, machine learning) and what approaches are suitable for effectively meeting these challenges.	Descriptive study	(1) As a result of increased use of data, ethical challenges in data collection, data security and data protection need to be considered. (2) Implementing a Data Governance framework and standardising the data lifecycle can help analytics-based marketing departments work more effectively and proactively address the concerns associated with their operations.
Zhang and Wang (2021)	This study is focused upon the form of sustainable value cocreation of smart transportation systems (STS). They	Literature review;	(1) The development of a sustainable STS relies on data integration generated in different places, i.e. the sustainable

Ref.	Objective(s)	Method(s)	Fundings/Results
	identify a number of key factors (e.g. Data Governance) that lead to successful STS design and implementation. They decodes how a Big Data-driven STS ecosystem works in a situation where different stakeholders play a special role and interact closely with each other.	Longitudinal case study	development of data infrastructure and management information. (2) This data infrastructure requires Data Governance that bundles standardised data and databases in a complicated socio-technical structure. (3) Companies actively participate in the formulation of standards, but the government initiates nationwide standardisation.
Gamoura and Malhotra (2020)	Focusing the French hypermarket the authors provides first a review of Master Data Management (MDM) research maturity in the interconnected Supply Chain systems and then to depict the landscape and gaps of the current researches in the Big Data era. Secondly, the paper offers a new architecture to support a collaborative and compliant system for the Supply Chains partners from the industrial view.	Literature review, Case study	(1) An MDM solution can overcome heterogeneity in master data and increase customer satisfaction in the long term. (2) However, the introduction and operation of an MDM solution causes high maintenance costs and organisational constraints compared to the status quo of a heterogeneous master data landscape. (3) The use of commercially available software solutions depends heavily on the type and size of the company.
Jamieson *et al.* (2019)	In this article, the authors focus on inform consent to the processing of data as an active action by users of information systems (IS), whether digital or not. To this end, they present a model derived from action research, the information communication (IC) paradigm, that presents inform consent in the context of digital platforms and electronic commerce and their representation in IS as a socio-technical construct.	Descriptive study	(1) Despite the introduction of the General Data Protection Regulation (GDPR) in 2018 as a means of protection in relation to data processing, there is a lack of transparency in data processing and consequently secondary data use, especially in the active involvement of third parties in the form of consent/assent to data processing. (2) Consent is not only the simple transfer of information objects (content), but also under which perspective (roles, norms, origins and intentions of the subjects) this has taken place (context).
Earley (2019)	The author examines a number of issues related to the more recently emerging role of the Chief Data Officer (CDO) in the enterprise using interviews. These include (a) the definition of the CDO role, (b) its scope of responsibility as distinguished from other functions (like the chief information officer or chief digital officer), (c) questions about how the company's data maturity relates to the use of the CDO, (d) how the chief marketing officer (CMO) has used this new role to date, (e) the challenges associated with such collaboration, and (f) how different companies view the marketing data challenge. The paper also describes the implications of the GDPR as a catalyst for data quality initiatives and models for collaboration between the CMO and CDO.	Interview(s)	(1) The CDO is responsible for managing the company's data, marketing managers (CMOs) use data to generate business. Therefore, they need to partner with the CDO. (2) Marketing needs data from across the business, so marketers need a comprehensive understanding of that data. (3) Lack of sufficient funding and authority further fragments data, hindering digital transformation. (4) Instead of focusing on the data and its management per se, it is important to focus on the insights that need to be gained (from it). (5) The GDPR should not be seen as a hurdle. It improved data quality and customer interaction. (6) The size of the company, the type of data generated and consumed, the processes supported, the type of industry and the technological infrastructure determines the organisation of the interface between CMOs and CDOs.
Tapsell *et al.* (2018)	The main objectives of this work can be summed up as below: (a) Challenges of data ownership and control, and how it can be transferred to individual users to own/manage their	Content analysis of secondary sources like	(1) Offering data transparency to users is a possible option for gaining a competitive advantage. (2) In addition, the CODCA can be a key factor in monetising data: it gives individuals the

Ref.	Objective(s)	Method(s)	Fundings/Results
	data. (b) A framework that brings together the three main stakeholders (users, organisations, governments) to build a Consumer Oriented Data Control and Auditability framework (CODCA). (c) Building blocks of CODCA: Consumer Data Control and Data Auditability.	books, journals	opportunity to retain control over their personal data, and when they share the data, they benefit both in terms of service and financially.
Vojvodic and Hitz (2018)	In the study, the authors investigate whether expenditures (compliance costs) for data protection compliance (GDPR) can also generate additional value, in the specific case related to customer data processing. The study examines the impact of Customer Data Compliance Capability on Customer Data Utility Capability through the mediating role of Customer-Centric Cross-Functional Integration.	Descriptive study	(1) Customer-Centric-Cross-Functional Integration has a mediating and thus positive effect on Customer Data Utility Capability and Customer Data Compliance Capability. (2) There is a leverage effect of existing knowledge from customer data that resides within functions and the ability to assess cross-functional impacts of decisions related to customer data. (3) If cross-functional coordination and integration of customer data occurs, customer-facing business units can benefit equally.
Kamioka *et al.* (2016)	The authors analysed survey data from Japan to examine whether accountability in Data Governance-including role definition, management oversight of data roles, and the effectiveness of those roles-helps improve perceived Marketing performance.	Survey	(1) Accountabilities in Data Governance are positively related to the data utilization level, which, in turn, also contributes to perceived performance in marketing by the increased number of sales and customer spending. (2) Accountability in data governance is linked to perceived marketing performance. (3) The organizational mode is influenced by company size.
De Freitas *et al.* (2013)	In this paper, the authors present activities to plan the data quality measures required for the analytical environment. In addition to presenting a list of issues identified in the customer registration form, the impact of these issues on financial institutions in management reporting, customer relations and marketing campaigns, product offerings, and others is presented.	Descriptive paper	(1) Awareness of data quality as a cyclical activity must be created within a Business Intelligence organization. (2) The source systems must be monitored with regard to their data quality, any data anomalies identified there and also corrected there. (3) Legal aspects must be taken into account when defining rules and measures for data correction.
Brayshaw (2013)	In this Trade Journal article, the authors introduce the concept of Location Intelligence (LI) as one of three main pillars (along with mobile and social media) to support the future of marketing strategies. They embody the combination of media, data and channels with which consumers will act in the future through location-based and cloud-based services.	Expert article	(1) Standardize the way data is collected, stored and maintained, bringing all disparate systems into a central platform. (2) Involve all employees to consolidate the way of handling data.
Soares (2012)	In this Trade Journal article, the author present a framework for Big Data Governance as part of a broader Information Governance programme that formulates policies for Big Data optimisation, privacy and monetisation.	Expert article	(1) Organizations will be successful in governing their big data if they adopt a framework that covers the appropriate types of big data, the information governance disciplines, and the specific use cases for their industry and function. (2) Big Data Governance is meaningless without an understanding of the underlying data types.

Ref.	Objective(s)	Method(s)	Fundings/Results
Gregory and Bentall (2012)	In this paper (as part of a series of three) the authors explore (a) on how organizations of any size can significantly reduce their risks and exposure when using third parties to process their data and (b) on identifying third-party touch points and putting simple but effective risk management controls in place.	Descriptive paper	(1) Corporate information officers have little sympathy when companies hand over their responsibilities to unreliable and unaudited third parties. (2) Establishing sound internal processes governing who can send data to external organisations and what data can be sent, standard contractual clauses and strict SLAs for third parties all contribute to the solution. (3) Relationships with third parties shall be actively managed and continuously reviewed, in particular whether defined standards are met.
Gregory and Hunter (2011)	In this paper (as part of a series of three) the authors explore (a) on the difference between data, information, knowledge and wisdom; (b) on the impact of inadequate data quality in terms of direct costs, brand damage and missed opportunity, as well as why data quality is important to your organization; (c) on fully understand your organizations' current capability to deliver high data quality.	Descriptive paper	(1) Find a high-level sponsor within the company, ideally in top management, who cares about data quality. (2) Promote within the company that information quality issues are being looked for and ask employees to participate in the improvement process. (3) Evaluate the maturity of data quality. (4) To achieve long-term success, organizations need a vision, a visualization of the vision, and a roadmap to get there. (5) Quantify the cost of poor data quality.
Jenson (2008)	In this Trade Journal article the author presents his views on implementing Data Governance best practices to protect private information and maintain the accuracy of financial information.	Descriptive study	(1) Data governance has become a quality control discipline for assessing, managing, using, improving, monitoring, maintaining and protecting corporate data. (2) Data governance assists in overcoming various challenges in complying with data protection and data security regulations. (3) Proactive data protection strategies prevent data security breaches, while reactive strategies detect security breaches that have already occurred.
Sleep and Harrison (2022)	This study investigates the impact of Information Governance on the quality of information available, especially how companies managing information to provide high quality information and how do collaboration do impact the role of information use on information quality and firm performance.	Survey	(1) A good structure, strategy and process of Information Governance positively impact information quality which has a positive effect on business results. (2) Differences in functional power and in knowledge of Marketing and IT at the executive level can negatively affect collaboration between these two functions.
Nahm (2012)	The author reports evaluative data describing a potentially more scalable process for the knowledge acquisition, synthesis and definitional aspects of data element standardization and characterizes the semantic and syntactic variability component of information quality in data from pivotal clinical trials in schizophrenia.	Empirical Observation	(1) Semantic and syntactic variability in clinical research data is a key information quality issue in the secondary use of these data. (2) Such characterisation serves as a basis for data standardisation efforts and provides metrics to support data governance efforts.

Source: The author elaboration

3. Key Findings

In this part we show the characteristics of the selected studies and give an overview of the interest in the chosen topic over the years and the distribution of publications in different journals.

3.1 Overview

For a first overview, this study summarized the relevant papers (n=21) by source and document type, territory, source title, subject area, year of publication, key components (layer) and fields of action of Data Governance. Most of the papers published in (classical scientific and trade) journals, followed by conference proceedings and reviews. Books are source type "underdogs" (Table 2).

Table 2. Source and Document Type

Source Type	**Document Type**					**Reference(s)**
	A	**CP**	**R**	**BC**	**N**	
Journal	7		2		1	Akter *et al.* (2022); Blomster and Koivumäki (2022); Pugliese *et al.* (2021); Shah *et al.* (2021); Abrantes and Ostergaard (2022); Mahmoudian (2021); Zhang and Wang (2021); Earley (2019); Gregory and Bentall (2012); Gregory and Hunter (2011)
Conference Proceedings		6				Jamieson *et al.* (2019); Tapsell *et al.* (2018); Vojvodic and Hitz (2018); Kamioka *et al.* (2016); De Freitas *et al.* (2013); Nahm (2012)
Trade Journal	3					Brayshaw (2013); Soares (2012); Jenson (2008)
Book; Book Series				2		Gamoura and Malhotra (2020); Sleep and Harrison (2022)

Abbreviation(s): A = Article; CP = Conference Paper; R = Review; BC = Book Chapter; N = Note; Limitation(s): no multiple assignments

Source: The author elaboration

In terms of the territorial distribution of articles, the global camp is very dispersed (Table 3). The leading regions are Europe (e.g., UK, Finland, Sweden, France, Czech Republic) and North America (US), followed by Asia (e.g. India), Australia and South America (e.g. Brazil). All research papers provide a good insight into the topic. The African region is not covered, which certainly has potential for future research. Of critical importance is that collaboration between the regions as a whole is strengthened.

Table 3. Territory

Territory	**Qty**	**Reference(s)**
Europe	12	Akter *et al.* (2022); Blomster and Koivumäki (2022); Pugliese *et al.* (2021); Shah *et al.* (2021); Abrantes and Ostergaard (2022); Zhang and Wang (2021); Gamoura and Malhotra (2020); Jamieson *et al.* (2019); Tapsell *et al.* (2018); Vojvodic and Hitz (2018); Kamioka *et al.* (2016); Gregory and Hunter (2011)
North America	5	Mahmoudian (2021); Earley (2019); Brayshaw (2013); Sleep and Harrison (2022); Nahm (2012)
Asia	3	Akter *et al.* (2022); Gamoura and Malhotra (2020); Kamioka *et al.* (2016)
Not defined	3	Soares (2012); Gregory and Bentall (2012); Jenson (2008)
Australia	2	Akter *et al.* (2022); Shah *et al.* (2021)
South America	1	De Freitas *et al.* (2013)

Abbreviation(s): Qty = Quantity; Limitation(s): multiple assignments

Source: Processing by the author

Regarding the sources (Table 4), the articles can be found in various journals, which mostly address topics of Marketing, e-Business and Business Intelligence and Analytics. The conferences are predominantly conferences with focus on "Information Systems".

Table 4. Source Title

Source	Type	CS*	Qty	Reference(s)
Applied Marketing Analytics	J	0,4	2	Mahmoudian (2021); Earley (2019)
Data Science and Management	J	n/a	1	Pugliese *et al.* (2021)
DB2 Magazine	TJ	0,101	1	Jenson (2008)
Developments in Marketing Science: Proceedings of the Academy of Marketing Science	B	n/a	1	Sleep and Harrison (2022)
GEO: connexion	TJ	0,0	1	Brayshaw (2013)
IBM Data Management Magazine	TJ	0,0	1	Soares (2012)
Impacts and Challenges of Cloud Business Intelligence	B	n/a	1	Gamoura and Malhotra (2020)
Industrial Marketing Management	J	10,4	1	Akter *et al.* (2022)
Information Systems and e-Business Management	J	5,3	1	Blomster and Koivumäki (2022)
Information Systems Frontiers	J	10,3	1	Zhang and Wang (2021)
International Journal of Medical Informatics	J	8,0	1	Shah *et al.* (2021)
Journal of Direct, Data and Digital Marketing Practice	J	1,0	2	Gregory and Bentall (2012); Gregory and Hunter (2011)
Journal of Marketing Analytics	J	3,4	1	Abrantes and Ostergaard (2022)
Proceedings - Pacific Asia Conference on Information Systems, PACIS 2016	CP		1	Kamioka *et al.* (2016)
Proceedings - 16th IEEE International Conference on Computational Science and Engineering, CSE 2013	CP		1	De Freitas *et al.* (2013)
Proceedings - 17th IEEE International Conference on Trust, Security and Privacy in Computing and Communications and 12th IEEE International Conference on Big Data Science and Engineering, Trustcom/BigDataSE 2018	CP		1	Tapsell *et al.* (2018)
Proceedings of the 31st International Business Information Management Association Conference, IBIMA 2018: Innovation Management and Education Excellence through Vision 2020	CP		1	Vojvodic and Hitz (2018)
Proceedings of the International Conference on Electronic Business (ICEB)	CP		1	Jamieson *et al.* (2019)
Proceedings of ICIQ 2012: 17th International Conference on Information Quality	CP		1	Nahm (2012)

Abbreviation(s): J = Journal | TJ = Trade Journal | CP = Conference Proceedings | CS = CiteScore at Scopus for 2021 | Qty = Quantity; Limitation(s): no multiple assignments

Source: The author elaboration

The Scopus CiteScore 2021 counts the citations received in 2018-2021 to articles, reviews, conference papers, book chapters and data papers published in 2018-2021, and divides this by the number of publications published in 2018-2021 (Scopus, 2022). The distribution of articles within the scientific disciplines (Table 5) is balanced between "Science, Technology, Engineering, and Mathematics (STEM)" and "Business Administration" (which includes Economics, Finance and Accounting). This reflects the integrated view in terms of Business-IT-Alignment in the Marketing field.

Table 5. Subject Area

Subject Area	Qty	Reference(s)
Business, Management, and Accounting	11	Akter et al. (2022); Pugliese et al. (2021); Abrantes and Ostergaard (2022); Mahmoudian (2021); Jamieson et al. (2019); Earley (2019); Vojvodic and Hitz (2018); Soares (2012); Gregory and Bentall (2012); Gregory and Hunter (2011); Sleep and Harrison (2022)
Computer Science	10	Blomster and Koivumäki (2022); Pugliese et al. (2021); Zhang and Wang (2021); Gamoura and Malhotra (2020); Jamieson et al.

Subject Area	Qty	Reference(s)
		(2019); Tapsell et al. (2018); Kamioka et al. (2016); De Freitas et al. (2013); Jenson (2008); Nahm (2012)
Decision Science	7	Pugliese et al. (2021); Abrantes and Ostergaard (2022); Mahmoudian (2021); Earley (2019); Tapsell et al. (2018); Vojvodic and Hitz (2018); Jenson (2008)
Engineering	3	Tapsell et al. (2018); Soares (2012); Nahm (2012)
Material Sciences	1	Soares (2012)
Earth and Planetary Sciences	1	Brayshaw (2013)
Economics, Econometrics and Finance	1	Abrantes and Ostergaard (2022)
Mathematics	1	Zhang and Wang (2021)
Medicine	2	Shah et al. (2021)

Abbreviation(s): Qty = Quantity; Limitation(s): multiple assignments

Source: Processing by the author

Looking at the years in which the above-mentioned articles were published, there is an increasing trend, although in the years themselves the numbers sometimes vary considerably (Table 6, Figure 4).

Table 6. Year of Publishing

Year	Qty	Reference(s)
2008	1	Jenson (2008)
2011	1	Gregory and Hunter (2011)
2012	3	Soares (2012); Gregory and Bentall (2012); Nahm (2012)
2013	2	De Freitas et al. (2013); Brayshaw (2013)
2016	1	Kamioka et al. (2016);
2018	2	Tapsell et al. (2018); Vojvodic and Hitz (2018)
2019	2	Jamieson et al. (2019); Earley (2019)
2020	1	Gamoura and Malhotra (2020)
2021	4	Pugliese et al. (2021); Shah et al. (2021); Mahmoudian (2021); Zhang and Wang (2021)
2022	4	Akter et al. (2022); Blomster and Koivumäki (2022); Abrantes and Ostergaard (2022); Sleep and Harrison (2022)

Abbreviation(s): Qty = Quantity; Limitation(s): multiple assignments

Source: Processing by the author

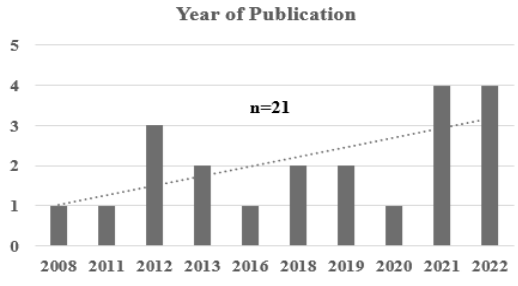

Figure 4: Year of Publishing

This also correlates with Jagels et al. (2021), saying that publications concerning DG actually started in 2005 and has increased ever since. Nevertheless, the topic enjoys a constant attention in the academic world. The upward trend should continue in the future as a result of an increasingly data-driven world. According the defined term of Data Governance described above, the studies focus on all Data Governance key components (layer), primarily on processes and resources, but crossover aspects, like ethical considerations (known as data ethics), are applied (Table 7).

Table 7. Focused Data Governance Layer

Data Governance Layer	Qty	Reference(s)
Strategy	5	Blomster and Koivumäki (2022); Gamoura and Malhotra (2020); Gregory and Hunter (2011); Sleep and Harrison (2022); Nahm (2012)
Process(es)	20	Akter *et al.* (2022); Blomster and Koivumäki (2022); Pugliese *et al.* (2021); Shah *et al.* (2021); Abrantes and Ostergaard (2022); Mahmoudian (2021); Zhang and Wang (2021); Gamoura and Malhotra (2020); Jamieson *et al.* (2019); Earley (2019); Tapsell *et al.* (2018); Kamioka *et al.* (2016); De Freitas *et al.* (2013); Brayshaw (2013); Soares (2012); Gregory and Bentall (2012); Gregory and Hunter (2011); Jenson (2008); Sleep and Harrison (2022); Nahm (2012)
Resource(s)	11	Akter *et al.* (2022); Blomster and Koivumäki (2022); Pugliese *et al.* (2021); Shah *et al.* (2021); Abrantes and Ostergaard (2022); Zhang and Wang (2021); Gamoura and Malhotra (2020); Earley (2019); Brayshaw (2013); Soares (2012); Gregory and Hunter (2011)
Cross-over Aspects	4	Shah *et al.* (2021); Mahmoudian (2021); Jamieson *et al.* (2019); Earley (2019)

Abbreviation(s): Qty = Quantity; Limitation(s): multiple assignments

Source: Processing by the author

In terms of fields of action of Data Governance (Table 8), the studies focus primarily on Data Protection, Security and Compliance (from the author's point of view as a consequence of the introduction of the GDPR in May 2018 and their implementation), Data Management (because of getting customer insights for decision-making) and Data Quality (because Marketing needs accurate and timely information to manage Marketing service effectiveness and to prioritize and ensure the best use of resources). Because of missing other action fields, like Data Scope, Data Catalogue or Data Lineage, research potential is given.

Table 8. Focused Action field of Data Governance

Fields of Action in Data Governance	Qty	Ref.
Data Quality	7	Earley (2019); De Freitas *et al.* (2013); Brayshaw (2013); Gregory and Hunter (2011); Jenson (2008); Sleep and Harrison (2022); Nahm (2012)
Data Management	16	Akter *et al.* (2022); Blomster and Koivumäki (2022); Pugliese *et al.* (2021); Mahmoudian (2021); Zhang and Wang (2021); Gamoura and Malhotra (2020); Earley (2019); Tapsell *et al.* (2018); Vojvodic and Hitz (2018); Kamioka *et al.* (2016); Brayshaw (2013); Soares (2012); Gregory and Bentall (2012); Gregory and Hunter (2011); Sleep and Harrison (2022); Nahm (2012)
Data protection, Security and Compliance	10	Pugliese *et al.* (2021); Shah *et al.* (2021); Abrantes and Ostergaard (2022); Mahmoudian (2021); Jamieson *et al.* (2019); Earley (2019); Tapsell *et al.* (2018); Vojvodic and Hitz (2018); Gregory and Bentall (2012); Jenson (2008)

Abbreviation(s): Qty = Quantity; Limitation(s): multiple assignments

Source: Processing by the author

3.2 Content and Trending Topics

This chapter analyses the results of the review according to the theoretical introductions presented at the beginning of the systematic review. Recall that Data Governance is an enterprise-wide concept encompasses the strategy, processes and resources (people, ICT) needed to manage, protect and enhance an organisation's data capital (e.g. Marketing) in order to guarantee universally understandable, accurate, complete, trustworthy, secure and discoverable data. For this we systemized the results on the three levels - the key components of Data Governance, also on cross-over aspects and trending topics.

Strategy: Establishing Data Governance in Marketing requires direction to bring it into a "lived Framework" of an Organisation. This direction is provided by the Data Governance Strategy (Vision) with the goal of actively shaping and empowering the Marketing organisation to make the best use of its data capital as well as to manage the increasingly complex compliance requirements in a low-risk manner (Blomster and Koivumäki, 2022; Zhang and Wang, 2021; Gregory and Hunter, 2011). This includes active responsibility at top management level, e.g. by a Board Member/Executive Director (Gregory and Hunter, 2011), as well as

taking into account the peculiarities of the industry and operational organisation. Furthermore, this must be aligned with the corporate strategy.

Process(es): Furthermore, the results of the studies underline that Data Governance processes must be established, documented and lived in order to (a) minimise data silos, inconsistent data and incorrect classifications through establishing rules to reduce semantic and syntactic variability in data (Nahm, 2012) and data management (e.g. Akter *et al.*, 2022; Pugliese *et al.*, 2021; Gamoura and Malhotra, 2020), (b) permanently increase data quality by checking and measuring it - at least on a legal and regular basis (e.g. De Freitas *et al.*, 2013; Brayshaw, 2013; Soares, 2012; Jenson, 2008; Sleep and Harrison, 2022) and (c) restrict access to critical and sensitive data in order to meet data protection, data security and compliance requirements (e.g. Tapsell *et al.*, 2018; Vojvodic and Hitz, 2018; Gregory and Bentall, 2012; Abrantes and Ostergaard, 2022; Jamieson *et al.*, 2019). In particular, compliance with regulatory requirements, such as the GDPR, are crucial for the acceptance of Data Governance (e.g. Shah *et al.*, 2021; Mahmoudian, 2021; Earley, 2019). Such regulations are important because they can be helpful in clarifying grey areas. For example, the GDPR attempted to clarify what constitutes a high-risk use case and what is expected in these use cases (confirmatory test assessments, audits and the like). This kind of clarification increases process understanding and reduces risks. Company size also influences the process organizational form of data governance in a balance of automation and non-automation (Kamioka *et al.*, 2016).

Resource(s): The competence of (Marketing) staff to understand the possibilities of data and the use of technology, as well as the understanding of software and computer skills are important skills for digital marketing organisations (Blomster and Koivumäki, 2022; Gregory and Hunter, 2011). In many companies, the role of "Chief Data Officer (CDO)" has been established to reflect the increasing importance of data (Earley, 2019). Its tasks and responsibilities must not collide with those of the "Chief Marketing Officer (CMO)", but a partnership of both is required: the CDO focuses on providing fully integrated information sources of sufficient quality, the CMO focuses on brand, communication and business strategy, as well as analytics, data, customer segmentation and social media. According data quality this activity is not an IT activity alone (Gregory and Hunter, 2011). It should by start in the IT, but it must be follow in business involving all business areas that create, utilize or report on business information. And all activities should be supported by the right ICT (Gregory and Hunter, 2011).

Cross-Over Aspects: Throughout all phases of Data Governance, ethical considerations must be integrated into the aspects of data collection, data security and data protection (Mahmoudian, 2021; Earley, 2019; Shah *et al.*, 2021). In this respect, Data ethics is not primarily a privacy and security compliance exercise. It is also not about bias or fairness, but about the whole managing process: if, for example, rules for handling and protecting critical or sensitive data are not implemented or not implemented correctly, this can have an impact on people (Mahmoudian, 2021). This also applies to consent to the processing of data (e.g. in the context of a marketing campaign, as an active act by users of information systems (IS), whether digital or not (Shah *et al.*, 2021; Jamieson *et al.*, 2019). Users of IS must be able to determine with what content (that is, the information generated and exchanged within the IS) and under what perspective and what purposes the consent was given.

Trending topics: One of the emerging trends in Marketing is the introduction of AI methods (Bünte, 2021). Data and its management are the most important resource for the successful implementation of an AI development project in Digital Marketing (Blomster and Koivumäki, 2022). However, not only the data itself, but also the performance of the learning algorithms influence the success and acceptance of AI in the marketing field (Pugliese *et al.*, 2021; Mahmoudian, 2021).

3.3 Future Research and Limitations

The selected studies give a good first impression of Data Governance research in the Marketing field. Nevertheless, recommendations for further research are given here and limitations are pointed out.

Future research recommendations: The starting point of a Data Governance initiative is to measure the maturity of the Marketing organization , the ability or maturity level with respect to the asset data. Due this fact a specifically Data Governance Maturity Model for Marketing should be developed. This model helps the Marketing organization pass in its quest to achieve a fully developed data management program.

Further investigation on other fields of action of Data Governance should be done. This concerns (a) data catalogues providing a central view on meta data of Marketing data, (b) data lineage providing the

information about the use, processing, quality and performance of Marketing data throughout its lifecycle, from original creation to deletion, (c) data ownership having legal rights and complete control over all Marketing data elements and (d) data scope establishing principles and procedures for the evaluation and prioritisation of high-value and high-risk Marketing data.

The Marketing organization and its changing role - in more and more digitalized companies as the customer journey becomes more complex - are another research object. At its core, it is about hiring and developing analytical skills while maintaining a culture of creativity, collaboration in hybrid work environments, and increasing competition for talent.

Another research aspect of particular importance is the question of sponsorship at management level or the organizational integration of the topic of Data Governance into corporate organization. The focus is on differentiating the Marketing function, especially the Chief Marketing Officer, from earlier established roles, e.g., the Chief Information Officer or Chief Technology Officer, and roles that have emerged more recently, e.g., the Chief Data Officer and Chief Digital Officer.

And last but not least, it is also a question of differentiating Data Governance from other Governance areas (e.g., knowledge governance and information governance), taking industry and company peculiarities into account.

Limitations of the study: With regard to the review conducted, some limitations should be noted. Firstly, the scope of the studies was not as large as the author had expected due to the current hype around the topic of Data Governance. Further studies using other types of research methods may provide additional information. Secondly, only one database (Scopus) was retrieved. Extending the search to other common libraries may also provide additional information. In addition, only articles written in English were considered. Furthermore, only the information contained in the selected studies was assessed and merged; therefore, some publication error cannot be completely excluded.

4. Conclusion

This paper presents the topic of Data Governance in the Marketing environment. From the analysis of the study results, the author concludes that Data Governance has a great potential to develop a systematic and integrative view of (relevant) data in Marketing. For this approach theoretical aspects and practical implications are marked out.

4.1 Theoretical Aspects

The aim of this work was to promote a better understanding of the extent to which Data Governance in the Marketing environment can support the targeted maximization of the value of Marketing data. This study makes an important contribution to the Marketing literature by presenting current studies from the fields of action of Data Governance and summarizing their results. It thus presents an overview of the current state of assimilation of Data Governance in the Marketing field.

The research addresses all three levels of Data Governance for the marketing division - strategy, processes, resources. This is a clear reflection of the fact that Data Governance is seen as an integrative approach. A well-designed strategy supports uniform, standard processes as well as responsibilities and shows which data - from the point of view of data security and data protection - require careful control and how support (human, IT) can be provided in a way that makes sense in terms of resources. Customer-oriented business units can benefit from a homogeneous data infrastructure if it bundles standardized data and databases in a socio-technical structure. This applies in particular to standardization of the way master data is collected, stored and maintained, the quality of which increases customer satisfaction.

Data governance helps in overcoming various challenges in complying with data protection and data security regulations. Providing transparency in data processing can be a competitive advantage for customer-facing businesses. In more and more digitalized and thus data-driven companies, the topic needs to be anchored organizationally at the highest management level. It is advantageous to have a high-level sponsor within the company.

4.2 Practical Implications

In addition to the theoretical insights, this study also offers a number of implications for marketing practitioners. First and foremost, practitioners must recognize that Data Governance does not exist "out-of-the-box." It has to be developed individually for the respective company. Since the know-how for handling data is usually already available in the company, it is not necessary to reinvent everything.

This study has confirmed that Data Governance must have a clear strategy from which concrete goals can be derived, which in turn are concretized in a concrete governance plan. Such a plan includes not only the procedure for how decisions are made when processing data, but also the documentation of data protection and data security principles, ownership and responsibilities. It should be noted that the organization of decisions as well as the principles of data protection and data security are not the same for all data and it is therefore advisable to group data semantically, i.e., with the same requirements. This facilitates the definition of rules.

From this point, Data Governance processes need to be defined, described and established. When designing and implementing Data Governance, the specifics of the operational organization and the respective industry must be taken into account. This has an influence on the concrete organizational structure and process organization and the use of people and machines in a sensible combination as a socio-technical system.

Furthermore, Data Governance must be understood as a continuous (improvement) process. The results achieved must be continuously compared with the defined goals in order to correct the measures and, if necessary, the goals. For this purpose, metrics that are as measurable as possible are already defined in the data governance strategy. Suitable tools for collecting values for the defined metrics are interviews or anonymous surveys.

Funding: This research received no external funding.

Conflicts of Interest: The author declare no conflicts of interest.

References

Abrantes, B.F. and Ostergaard, K.G., 2022. Digital footprint wrangling: are analytics used for better or worse? A concurrent mixed methods research on the commercial (ab)use of dataveillance. *Journal of Marketing Analytics* 10(3), pp. 187-206. https://doi.org/10.1057/s41270-021-00144-5

Akter S., Hani U., Dwivedi Y.K. and Sharma A., 2022. The future of marketing analytics in the sharing economy. *Industrial Marketing Management* 104, pp. 85-100. https://doi.org/10.1016/j.indmarman.2022.04.008

Al-Ruithe, M. and Benkhelifa, E., 2017. A conceptual framework for cloud data governance-driven decision making. In: *Proceedings of 2017 International Conference on the Frontiers and Advances in Data Science, FADS 2017*, pp. 1–16. https://doi.org/10.1109/FADS.2017.8253182

Al-Ruithe, M. and Benkhelifa, E., 2017. Cloud data governance in-light of the Saudi vision 2030 for digital transformation. *2017 IEEE/ACS 14th International Conference on Computer Systems and Applications (AICCSA)*. https://doi.org/10.1109/AICCSA.2017.217

Al-Ruithe, M.; Mthunzi, S. and Benkhelifa, E., 2016. Data governance for security in IoT & cloud converged environments. *Proceedings of IEEE/ACS International Conference on Computer Systems and Applications, AICCSA*. 2016. https://doi.org/10.1109/AICCSA.2016.7945737

Bayraktutan, Y., Arslan, İ., Kaygisiz, E.G. and DRUICĂ, E., 2008. The effects of information technologies in marketing. *Journal, Winter, 10*, p.27.

Bitterer, A. and Newman, D., 2007. *Organizing for Data Quality.* Stamford, CT: Gartner, Inc., G00148815.

Blanton, J.E., Watson, H.J. and Moody, J., 1992. Toward a Better Understanding of Information Technology Organization: A Comparative Case Study, *MIS Quarterly*, 16(4), pp. 531–555. https://doi.org/10.2307/249735

Blomster, M. and Koivumäki, T., 2022. Exploring the resources, competencies, and capabilities needed for successful machine learning projects in digital marketing. *Information Systems and e-Business Management* 20(1), pp. 123-169. https://doi.org/10.1007/s10257-021-00547-y

Boote, D. N. and Beile, P., 2005. Scholars before Researchers: On the Centrality of the Dissertation Literature Review in Research Preparation. *Educational Researcher*, 34, pp.3-15. https://doi.org/10.3102/0013189X034006003

Brayshaw, J., 2013. A world of data. *GEO: connexion*, 12(9), pp. 18-20.

Bünte, C., 2021. Studie: Künstliche Intelligenz - die Zukunft des Marketings. *Studienwelle 3*. Retrieved from: https://www.srh-berlin.de/fileadmin/Hochschule_Berlin/B.A._IBWL_Marketing/Studie_KI_-_die_Zukunft_des_Marketings_2021_2-2.pdf. [Accessed on 15.09.2022].

Hedges, L.V. and Cooper, H., 1994. *Research synthesis as a scientific enterprise. The handbook of research synthesis*, pp.285-299.

Correia, A. and Água, P. B., 2021. A corporate governance perspective on IT governance. In: Hundal, S., Kostyuk, A., Govorun, D. (Eds.), *Corporate governance: A search for emerging trends in the pandemic times* (pp. 107–114). https://doi.org/10.22495/cgsetpt19

Creswell, J. W. and Creswell, J. D., 2018. *Research Design: Qualitative, Quantitative, and Mixed Methods.* Sage Publications, Inc; 5. Edition.

De Freitas, P. A., Dos Reis, E. A., Michel, W. S., Gronovicz M. E. and Rodrigues M. A. D. M., 2013. Aspects of data quality that cause impact on business intelligence systems. *Proceedings - 16th IEEE International Conference on Computational Science and Engineering*, CSE 6755199, pp. 76-80. https://doi.org/10.1109/CSE.2013.21

Deloitte Insights, 2022. *Global Marketing Trends 2022. Thriving through customer centricity*. [online] Available at: https://www2.deloitte.com/de/de/pages/technology/articles/global-marketing-trends-2022.html [Accessed on 15.09.2022].

Earley, S., 2019. Communication and collaboration between chief data officers and chief marketing officers. *Applied Marketing Analytics*, 4(4), pp. 290-299.

Fettke, P., 2006. State-of-the-Art des State-of-the-Art. Eine Untersuchung der Forschungsmethode „Review" innerhalb der Wirtschaftsinformatik. *WIRTSCHAFTSINFORMATIK*, 48(4), pp.257–266.

Gamouram S.C. and Malhotra, M., 2020. Master data-supply chain management, the key lever for collaborative and compliant partnerships in big data era: Marketing/sales case study. *Impacts and Challenges of Cloud Business Intelligence*, pp. 72-101. https://doi.org/10.4018/978-1-7998-5040-3.ch006

Gartner Research, 2008. Overview: Gartner Introduces the EIM Maturity Model, 2008 [online] Available at: https://www.gartner.com/en/documents/3236418 [Accessed on 22.06.2022].

Gluchowski, P., 2020. *Data Governance. Grundlagen, Konzepte und Anwendungen*. Edition TDWI. 1. Auflage. dpunkt.verlag, Heidelberg, 2020

Graesch, J.P., Hensel-Börner, S. and Henseler, J., 2021. Information technology and marketing: an important partnership for decades. *Industrial Management & Data Systems*, 121(1), pp. 123-157. https://doi.org/10.1108/IMDS-08-2020-0510

Gregory, A. and Bentall, L., 2012. Data governance Protecting and managing the value of your customer data assets: Stage 3: Identifying and controlling the risk in using third-party processors. *Journal of Direct, Data and Digital Marketing Practice*, 13(4), pp. 335-344. https://doi.org/10.1057/dddmp.2012.5

Gregory, A. and Hunter, K., 2011. Data governance protecting and unleashing the value of your customer data assets: Stage 2: Fixing the priorities: Increase revenues and profits by raising your data quality IQ. *Journal of Direct, Data and Digital Marketing Practice*, 13(1), pp. 40-56. https://doi.org/10.1057/dddmp.2011.16

Hamidi, A. and Safabakhsh, M., 2011. The impact of information technology on E. Marketing. *Procedia Computer Science*, 3, pp.365-368. https://doi.org/10.1016/j.procs.2010.12.061

IBM, 2007. The IBM Data Governance Council Maturity Model: Building a roadmap for effective data governance, 2007. [online] Available at: https://dokumen.tips/documents/ibm-data-governance-council-maturity-model.html [Accessed on 22.06.2022].

IT Governance Institute, 2007. Board Briefing on IT Governance, 2nd edition, 2007. [online] Available at: https://www.itgovernance.co.uk/files/download/Board_Briefing_on_IT_Governancev6.pdf [Accessed on 15.09.2022].

Jagels, M., Karger, E. and Ahlemann, F., 2021. Already grown-up or still in puberty? A bibliometric review of 16 years of data governance research. *Corporate Ownership & Control*, 19(1), pp.105–120. https://doi.org/10.22495/cocv19i1art9

Jamieson, D., Wilson, R. and Martin, M., 2019. Just ticking the box: A social informatics model of the consequences of consent. *Proceedings of the International Conference on Electronic Business (ICEB)*, December, pp. 530-534.

Jenson, D., 2008. *Enterprise data management: Governing for data security. DB2 Magazine* 13(1).

Kamioka, T., Luo, X. and Tapanainen, T., 2016. An empirical investigation of data governance: The role of accountabilities. *Pacific Asia Conference on Information Systems, PACIS 2016 – Proceedings.*

Khatri, V. and Brown, C.V., 2010. Designing Data Governance. *Communications of the ACM*, 53(1), pp.148-152.

Kitchenham, B., 2004. *Procedures for performing systematic reviews.* [online] Available at: https://www.inf.ufsc.br/~aldo.vw/kitchenham.pdf. [Accessed on 15.09.2022].

Kotler, P. and Armstrong, G., 2009. *Marketing: an introduction.* Upper Saddle River. NJ: Pearson Prentice Hal, 2009.

Kotler, P., 2000. *Marketing management.* The Millenium Edition, London: Prentice Hall International Inc., 2000.

Kotler, P.; Armstrong, G., Harris, C. L. and He, H., 2020. *Principles of Marketing.* Pearson, 2020

Kramer, L. and Wilson, M., 2020. *Informatica's Data Governance Framework.* [online] Available at:http://www.informatica.com/blogs/informaticas-data-governance-framework.html [Accessed on 15.09.2022].

Kumar, V., Chattaraman, V., Neghina, C., Skiera, B., Buoye, A. and Henseler, J., 2013. Data-driven services marketing in a connected world. *Journal of Service Management*, 24(3), pp.330-352.

Lee, S. U., Zhu, L., Jeffery, R. and Bui T.X., 2019. Designing data governance in platform ecosystems. *Proceedings of the Annual Hawaii International Conference on System Sciences.* Volume 2019-January, pp. 6377-6386.

Leeflang, P. S., Verhoef, P. C., Dahlström, P. and Freundt, T., 2014. Challenges and solutions for marketing in a digital era. *European management journal*, 32(1), pp.1-12.

Mahmoudian, H., 2021. Ethics and data governance in marketing analytics and artificial intelligence. *Applied Marketing Analytics*, 7(1), pp.17-22.

Meffert, H., 2000. *Marketing: Grundlagen marktorientierter Unternehmensführung.* Konzepte - Instrumente - Praxisbeispiele. Mit neuer Fallstudie VW Golf. 9. Edition. Gabler Verlag 2000.

Microsoft, 2020. *A guide to Data Governance.* [online] Available at:https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RE4GEtu [Accessed on 22.06.2022].

Mohan, S. and Maguire, J., 2019. *Building a Comprehensive Data Governance Program.* Stamford, CT: Gartner, Inc., G00377901.

Nahm, M., 2012. Knowledge acquisition from and semantic variability in schizophrenia clinical trial data. *Proceedings of ICIQ 2012: 17th International Conference on Information Quality*, 2012, pp. 46-57.

Newman, D. and Logan, D., 2006. *Governance Is an Essential Building Block for Enterprise Information Management.* Stamford, CT: Gartner, Inc., G00139707.

Olbrich, R., 2022. *Marketing. Eine Einführung in die marktorientierte Unternehmensführung*. 3., vollständig überarbeitete und erweiterte Auflage. Berlin, Germany: Springer Berlin Heidelberg.

Oracle, 2011. *Enterprise Information Management. Best Practices in Data Governance.* [online] Available at:https://www.oracle.com/assets/oea-best-practices-data-gov-1357848.pdf [Accessed on 22.06.2022].

Otto, B., 2011a. A morphology of the organisation of data governance. Paper presented at the *19th European Conference on Information Systems, ECIS 2011*. [online] Available at:https://www.scopus.com/inward/record.uri?eid=2-s2.0-84870632185&partnerID=40&md5=0d5dac8d1388f4469bdf84a9296c2595 [Accessed on 15.09.2022].

Otto, B., 2011b. Organizing Data Governance: Findings from the Telecommunications Industry and Consequences for Large Service Providers. *Communications of the Association for Information Systems*, Vol. 29, Article 3. https://doi.org/10.17705/1CAIS.02903

Otto, B., 2012. Managing the business benefits of product data management: The case of Festo. *Journal of Enterprise Information Management*, 25(3), pp.272–297. https://doi.org/10.1108/17410391211224426

Otto, B., 2013. On the evolution of data governance in firms: The case of Johnson & Johnson consumer products North America. In S. Sadiq (Eds.), *Handbook of data quality: Research and practice*, pp. 93–118. https://doi.org/10.1007/978-3-642-36257-6_5

Otto, B., Wende, K., Schmidt, A. and Osl, P., 2007. Towards a Framework for Corporate Data Quality Management, in: Toleman, M., A. Cater Steel, and D. Roberts (eds.) *Proceedings of the 18th Australasian Conference on Information Systems* (ACIS 2007), Toowoomba: The University of Southern Queensland, pp. 916–926. [online] Available at: https://aisel.aisnet.org/acis2007/109/ [Accessed on 15.09.2022].

Page, M.J., McKenzie, J.E., Bossuyt, P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., Shamseer, L., Tetzlaff, J.M., Akl, E.A., Brennan, S.E. and Chou, R., 2021. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *Systematic reviews*, *10*(1), pp.1-11.

Petzold, B., Roggendorf, M., Rowshankish, K. and Sporleder, C., 2020. Designing data governance that delivers value. [online] Available at:http://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/designing-data-governance-that-delivers-value [Accessed on 15.09.2022].

Prajapati, K., 2020. A Study on Digital Marketing and It's Impacts. https://doi.org/10.13140/RG.2.2.21143.80809

Pugliese, R., Regondi, S. and Marini, R., 2021. Machine learning-based approach: Global trends, research directions, and regulatory standpoints. *Data Science and Management,* 4, pp. 19-29. https://doi.org/10.1016/j.dsm.2021.12.002

Salesforce, 2021. *State of Marketing. Insights and trends from over 8,200 global marketers engaging customers from anywhere.* [online] Available at: https://www.salesforce.com/ap/form/pdf/state-of-marketing/ [accessed on 15.09.2022].

Scopus, 2022. *How are CiteScore metrics used in Scopus?* [online] Available at:https://service.elsevier.com/app/answers/detail/a_id/14880/supporthub/scopus/ [accessed 11.10.2022].

Shah, N., Viberg Johansson, J., Haraldsdóttir, E., Bentzen, H.B., Coy, S., Mascalzoni, D., Jónsdóttir, G.A. and Kaye, J., 2021. Governing health data across changing contexts: A focus group study of citizen's views in England, Iceland, and Sweden. *International Journal of Medical Informatics* 156, 104623, 2021.

Sleep, S. and Harrison, D., 2018. Can Marketing and IT Be Friends? The Impact of Information Strategy, Structure, and Processes on Business Performance: An Abstract. Developments in Marketing Science. *Proceedings of the Academy of Marketing Science*, pp. 51. https://doi.org/10.1007/978-3-319-66023-3_21

Sleep, S. and Harrison, D., 2022. Relationship Building Between Marketing and IT: The Impact of Information Governance and Collaboration: An Abstract. In: *F. Pantoja, S. Wu (eds.), From Micro to Macro: Dealing with Uncertainties in the Global Marketplace, Developments in Marketing Science: Proceedings of the Academy of Marketing Science*, pp. 485 – 486, 2022. https://doi.org/10.1007/978-3-030-89883-0_123

Soares, S., 2012. A framework that focuses on the data in big data governance. *IBM Data Management Magazine* (5).

Sollaci, L. B. and Pereira, M. G., 2004. The introduction, methods, results, and discussion (IMRAD) structure: a fifty-year survey. *Journal of the Medical Library Association*. 92 (3), pp.364–367.

Sridharan, M., 2022. *Data Governance Maturity Model.* [online] Available at:https://thinkinsights.net/data-literacy/data-governance-maturity-model/#TDWIs-Data-Governance-Maturity-Model [Accessed on 22.06.2022].

Tapsell, J., Akram, R. N. and Markantonakis, K., 2018. Consumer Centric Data Control, Tracking and Transparency - A Position Paper. *Proceedings - 17th IEEE International Conference on Trust, Security and Privacy in Computing and Communications and 12th IEEE International Conference on Big Data Science and Engineering*, Trustcom/BigDataSE 2018 8456060, pp. 1380-1385.

Vojvodic, M. and Hitz, C., 2020. Compliance and utility in processing customer data - The mediating role of customer-centric cross-functional integration and data governance. *Proceedings of the 31st International Business Information Management Association Conference, IBIMA 2018*: Innovation Management and Education Excellence through Vision 2020 pp. 6504-6523.

Wahono, R. S., 2015. A systematic literature review of software defect prediction. *Journal of Software Engineering*, 1(1), pp.1-16.

Weber, K. and Klingenberg, C., 2021. *Data Governance. Der Leitfaden für die Praxis.* München, Germany: Hanser Verlag.

Weber, K., 2009. *Data Governance-Referenzmodell, Organisatorische Gestaltung des unternehmensweiten Datenqualitätsmanagements.* [online] Available at: https://www.alexandria.unisg.ch/236122/1/Diss%20Data%20Governance%20final.pdf [Accessed on 15.09.2022].

Weber, K., Otto, B. and Österle, H., 2009. One size does not fit all--a contingency approach to data governance. *Journal of Data and Information Quality (JDIQ), 1*(1), pp.1-27. https://doi.org/10.1145/1515693.1515696

Weill, P. and Ross, J. W., 2004. *IT governance. How top performers manage IT decision rights for superior results.* Harvard Business School Press, Boston, Mass.

Weill, P., 2004. Don't just lead, govern: How top-performing firms govern IT, *MIS Quarterly Executive*, 3(1), pp.1-17. [online] Available at:http://www.umsl.edu/~lacitym/topperform.pdf [Accessed on 15.09.2022].

Wirtz, J., Tuzovic, S.G. and Kuppelwieser, V., 2014. The role of marketing in today's enterprises. *Journal of Service Management*. 25(2), pp.171-194.

Zhang, J., Li, S. and Wang, Y., 2021. Shaping a smart transportation system for sustainable value co-creation. *Information Systems Frontiers*, pp.1-16. https://doi.org/10.1007/s10796-021-10139-3