



## Determining the Suitable Research Strategy in Social Media's Stages of Growth

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### Abstract

Considering the organizations' increasing use of social media, many studies are being conducted in this area. Researchers are faced with a variety of research strategies depending on the nature of the research problem and data. If the right research strategy is not employed, the researcher will lose focus, and the time and effort spent will not necessarily serve the research objectives. When choosing a research strategy, the organization's characteristics should be taken into consideration; otherwise, it may lead to confounding interpretations of the findings. In this regard, the present study aims to introduce an appropriate research strategy for each maturity stage of the organization under study. To this end, using systematic mapping methodology, about 256 articles published within 2011- 2021 were investigated, and the relationship between the types of research strategy used and the different stages of an organization's maturity in using social media was reported. Specifically, by synthesizing the social sciences research methodology framework and the social media stage of the growth model, a mapping was developed between the research strategies and maturity stages. Based on this mapping, it is expected that the appropriate strategy for research at the first maturity stage is exploratory, and for the second and third stages are observational and descriptive, respectively. When the organization moves to the fourth and fifth levels, archival and causal strategies are recommended for research. Using the results of this research, researchers will be able to identify the right research strategy for the maturity stage of the organization under study and develop the appropriate research design accordingly.

**Keywords:** Social Media, Stages-of-growth, Research strategy, Conceptual map, Literature review.

## Introduction

The organizations' presence in social media has raised many questions about the impact of this technology among researchers. In response, a research area called the function of social media in the organization has emerged (Van Osch & Coursaris, 2014). The large number and variety of research questions in this area have led to a wide range of research studies. Such studies aim to answer the organization's questions and problems in the face of social media. Like any other emerging discipline, researchers in the field of social media function face diverse problems. At the top of these problems is the choice of research strategy in accordance with the purpose and conditions of the organization under study (Saunders, Lewis & Thornhill, 2009). Researchers are faced with a variety of research strategies depending on the nature of the problem and the research data (Baker, 2000). Strategy is a general plan for conducting a research study that guides the researcher in planning, conducting, and supervising the research (Johannesson & Perjons, 2014). Without the right strategy, the researcher's focus is lost, and the time and effort spent will not necessarily be in line with the research goals (Noordin & Masrek, 2016). Research strategy is a focal point guided by the researcher's ideology (Saxena et al., 2013). Although researchers can avoid expressing a particular ideology, a high-quality scientific study cannot be designed and completed without a clear strategy. Ideology determines the researcher's way of thinking, while by determining the strategy based on the level of analysis and generalization goal, research goals, hypotheses, and questions are formed (Strang, 2015).

Choosing the right research strategy is not a straightforward process; rather, it is a complex decision that depends on various factors (Noordin & Masrek, 2016). The strategy must be selected in a way to suit its purpose. For example, conducting an experimental study is useful to identify the cause of some events but not suitable for exploring an unknown topic (Wang & Wan, 2009). Similarly, a case study can be appropriate to examine complex social relationships in a particular environment, yet it does not work well for measuring attitudes in large populations (Mann, 2003). In addition, the strategy must be feasible from a practical standpoint so that the researcher has access to the required data sources, such as specific documents, individuals, or resources like laboratory equipment or computer software (Johannesson & Perjons, 2014). In fact, choosing the proper strategy requires tradeoffs among the accuracy of interpretation, relevance, resource constraints, and error risk in results (Wohlin & Aurum, 2015). If an inappropriate strategy is chosen for the research, the results will be faulty and unusable (Uzoh et al., 2020). Appropriate selection guarantees that the author will achieve the research objectives and address the research questions (Rezigalla, 2020).

Different types of research strategies are presented in the introductory books of the social sciences. For example, in Denscombe (2017), the characteristics of different research strategies and methods are described and categorized. Bryman (2016) also introduces various quantitative and qualitative social research methods and their implementation strategies. Oates (2005), too,

introduces research strategies in the area of information systems and computer science. Each research strategy has its strengths and weaknesses and is suitable for a specific type of research or research questions (Johannesson & Perjons, 2014). In the area of social media functions, if the research strategy is not selected according to the nature of the problem and the limitations arising from the level of social media use, the research results will not enjoy high reliability (Wohlin & Aurum, 2015). Indeed, the strategy should be determined based on the area of study, the nature of the research question, and the availability of the required resources. However, so far, no systematic review has been conducted to compare the types of strategies considering the characteristics of the organization under study (Abutabenjeh & Jaradat, 2018). In most articles, the research strategy is selected based on the nature of the problem, and less attention is paid to the characteristics of the organization. When selecting the research strategy, failure to take account of the changes in the organization's characteristics may lead to confounding interpretations of research results (Abu-Alhaija, 2019). In addition, Ngai et al. (2015) considered identifying the maturity stage of the organization in social media and understanding the needs of each stage as the requirements of conducting research on social media functions. This highlights the need to better understand the relationship between research strategy and organizational characteristics.

Despite a large number of review studies in the area of social media functions, the lack of a deserved synthesis concerning the research strategy in terms of the organizations' maturity stage in the use of social media is felt. Most of these articles focus on the characteristics of users and customers of organizations and less on how the organization uses social media (Ngai et al., 2015). However, without considering the organization's maturity stage in the use of social media, it is not possible to provide a suitable solution for success (Chung et al., 2017). In this regard, the purpose of the present study is to answer the following research question: *Which research strategies are appropriate for use at any maturity stage of the organization in the use of social media?*

To answer this question, by synthesizing the literature of this area, a mapping was created between the research strategies and maturity stages. The Social Media Stages of Growth (SMSOG) model presented by Duane and O'Reilly (2017) was used to determine the characteristics of the organizations' maturity stages. This model provides a picture of the organization's current position and future growth, considering the organization's history and future actions in social media (Solli- Sæther & Gottschalk, 2010). The main objective of the present study is to draw researchers' attention to the relationship between the research strategy and the characteristics of the organization under study to ensure that researchers make well-founded and informed decisions about their research designs.

In the following, in the theoretical background section, the types of research strategies and SMSOG maturity stages are described as the theoretical foundation of the study. The third section presents the research methodology and the components of the review study protocol. In

the fourth section, the research findings are provided, and the research question is answered in the discussion. Finally, summaries and suggestions for future research are provided.

## Literature review

The goal of any research study is to develop reliable and useful knowledge based on empirical evidence and logical reasoning (Hanafizadeh & Shaikh, 2021). In this respect, many scientific communities have been established to provide researchers with some research strategies supporting them in creating, structuring, and presenting their results (Johannesson & Perjons, 2014). According to the social sciences research methodology framework presented in Haydam and Steenkamp (2020), research strategies are divided into five categories: (1) archival, (2) exploratory, (3) descriptive, (4) observational, and (5) causal. This section provides a brief description of each of these strategies. Besides, to study how the organization uses social media capabilities, different maturity models have been proposed by researchers. Each model describes in some way the steps the organization takes in utilizing the capabilities of social media (Duane & O'Reilly, 2016). In the following, the SMSOG model, used in this research as a theoretical framework for categorizing studies, is described.

### Social media stage of growth

The use of maturity models in managerial research is to create knowledge about the internal environment of the organizations. These models help obtain organizational performance reports (Duane & O'Reilly, 2012). One popular approach used by researchers to understand the development of information systems is stages of growth models (Chung et al., 2017). These models aim to describe the organizations' maturity stage in the use of information systems (Chan & Swatman, 2004). The social media stage of growth (SMSOG) model was developed by Duane and O'Reilly (2012) to measure the maturity stage of an organization in using social media. This model was theoretically evaluated by Duane and O'Reilly (2014), and its function in SMEs was investigated empirically. Using SMSOG, Duane and O'Reilly (2017) assessed the maturity stage of 103 organizations. In Chung et al.'s (2017) study, it was empirically validated as an optimal model for measuring the maturity stage of organizations. Chung et al. (2018) then identified each maturity stage by examining the dominant problems of different organizations. Also, by synthesizing empirical studies, Hanafizadeh and Shafia (2021) introduced social platforms suitable for each stage. In continuation, Hanafizadeh, Bohlin, and Shafia (2021) identified potential performance consequences for organizations at each stage. Considering the validation and experience of using the SMSOG model in various studies, this framework was used to categorize studies in the present research. The characteristics of each maturity stage of the SMSOG model are explained below:

**The 1<sup>st</sup> stage** (Experimentation and learning): At this stage, each organization member performs their own activities on social media. The employees may post images, videos, or comments

about the organization's products and services on different platforms. At this stage, no managerial action is taken by the organization to use social media. The management merely seeks to recognize the capabilities of this media and does not have a specific plan to enter into it.

**The 2<sup>nd</sup> stage** (Rapid growth): The organization manager monitors the social media usage in all departments. Measures at this stage are taken to focus on the customer. They try to encourage the customer to follow the organization's account on social media. The goal is to inform the audience about the organization and its products through social media.

**The 3<sup>rd</sup> stage** (Formalization): The management plans and controls social media usage in all organization departments. Employees are present in this space based on terms and conditions set. The focus is on planning, strategy, and governing operations in this media. At the third stage, an attempt is made to align the organization's strategy with that of social media presence.

**The 4<sup>th</sup> Stage** (Consolidation and integration): The focus is on optimizing processes using social media capabilities. The organization's key processes are well integrated with social media, and fundamental changes are made in the business process. The organization seeks to create evaluative measures for assessing the processes in the social space. Social media is used to align partners and external suppliers. At the fourth stage, the organization looks at crowdsourcing and co-creation/ ideation using social media capabilities.

**The 5<sup>th</sup> stage** (Institutional Absorption): Social media is the core of all organizational activities. Everything done in this medium is in line with the other organizational actions. Client-supplier integration is carried out through social media. All internal and external partners are concentrated through enterprise-wide social media technologies. In this way, organization-specific social media technologies are then developed. The focus is on creating or reengineering existing business models employing the capabilities of this technology (Chung et al., 2017).

### **Research strategy**

Research strategy is the general plan for answering the research questions (Saunders et al., 2009). In other words, a research strategy encompasses the whole processes of a scientific study from the research questions and objectives, the existing body of knowledge about the issue under study, and research methods and techniques, to the philosophical background of the researcher (Remenyi & Money, 2012). In the following, based on Haydam and Steenkamp (2020), different research strategies are explained.

**Archival:** The goal of the archival strategy is to extract knowledge by analyzing the documents and text materials (Clary-Lemon, 2014). The primary sources used in archival research include published and unpublished materials (Heng et al., 2018). These materials are in different formats (such as photographs, sound, books, artifacts) (Onyancha et al., 2015). These data are typically collected independently of any particular hypothesis and by individuals other than the researcher (Mann, 2003). Since the participants are not informed about the data collection process, the

participants studied behave normally, and there is minimal deviation in the data analyzed in archival research (Clary-Lemon, 2014). Another advantage of the archival strategy compared to other research strategies is the ability to examine socially sensitive phenomena in an ethical manner because it is difficult and immoral to conduct laboratory experiments or field research on socially sensitive issues, such as personal or illegal behaviors (Baker, 2000). The archival strategy is rooted in the scientific premise of “science as a body of scientific knowledge”. Therefore, the archival research strategy enjoys strong scientific support and involves all kinds of information. In contrast, the other four research designs view “science as an ongoing practice of data collection” and are considered distinct research designs (Mouton, 2009).

**Exploratory:** In exploratory strategy, a deep understanding of a particular situation or phenomenon is obtained through hypothesis testing (Babbie, 2020). The main function of exploratory strategy is when the problem is in the preliminary stage (Shao & Zhou, 2002). In exploratory studies, researchers test hypotheses to answer “why” questions (Babbie, 2020). Using this strategy, hypotheses and theories are tested through deductive reasoning, which goes from the general to the specific (Hyde, 2000). In other words, in an exploratory study, the researcher seeks to identify “causes and reasons” by describing “why things are the way they are” (Adler & Clark 2008). The techniques used in exploratory research are generally qualitative (Casula et al., 2020). These include case analysis, grounded theory, and ethnography (Babin & Zikmund, 2015). Case study research provides a rich description of an instance of a phenomenon. The difference between a case study and a survey or laboratory experiment is its focus on depth and context (Johannesson & Perjons, 2014). In grounded theory, a theory is developed by analyzing empirical data (Stebbins, 2001). In ethnography, the content collection is done with the aim of providing rich descriptions of particular situations (Babin & Zikmund, 2015).

**Descriptive:** Descriptive research strategy, also called “sample or census surveys”, involves studies aiming to provide specific details of a situation, social setting, or relationships among phenomena (Casual et al., 2020). In the description, general rules are extracted from specific observable phenomena to expand knowledge (Worster 2013). Descriptive research seeks to answer “What” questions using quantitative and qualitative methods (De Vos et al., 2011). These studies do not often seek to identify the causes; rather, their purpose is to create a general picture of the situation under study (Strydom, 2013). In descriptive strategy, inductive reasoning and probability sampling are generally utilized (Shao & Zhou, 2002).

**Observational:** The observational strategy involves a wide range of non-interventional research designs (Yang et al., 2010). Observational research includes both an exploratory part and a descriptive part (Casula et al., 2020). The main difference between observational research and these two strategies lies in the data collection and the absence of an interviewer (Yang et al., 2010). In an observational study, the behavior of members of a sample is examined without the researcher’s intervention and influence (Kennedy-Martin et al., 2015). Engagement in

observational research is limited to semi-structured assessments to record the participants' behavior and experiences (Rezigalla, 2020). In fact, observational design is used to measure the effectiveness of intervention in non-experimental scenarios in the “real world” (Anglemyer et al., 2014).

**Causal:** The goal of the casual strategy is to confirm or reject the causal relationship between a factor and the observed outcome (Johannesson & Perjons, 2014). In fact, causal studies are used to identify the causes behind processes taking place in the system. Using this knowledge, researchers can take necessary actions to solve problems or optimize results. In causal research, cause-and-effect relationships are measured through complicated experimental designs (Haydam & Steenkamp, 2020). The causal research design is similar to the descriptive research design in almost all aspects. One difference is that cause-and-effect relationships can be investigated in the former through involved sophisticated experimental designs (Haydam & Steenkamp, 2020). Causal research draws on both descriptive and observational research designs for its data collection techniques and methods. The survey method is useful for data generation or information gathering in causal design (Uzoh et., 2020).

Table 1 presents a summary of the advantages and drawbacks of each of the five research strategies mentioned above. Also, for each strategy, research tactics and some of the data collection techniques are pointed out.

Table 1- Research strategy typology overview

	Archival	Exploratory	Descriptive	Observational	Causal
Advantages	<ul style="list-style-type: none"> <li>- Ethically studying sensitive phenomena</li> <li>- Efficient &amp; inexpensive</li> <li>- Data are collected in a standardized way</li> </ul>	<ul style="list-style-type: none"> <li>- Addresses “Why” questions</li> <li>- Problems are in a preliminary stage</li> <li>- Category construction to develop conceptual &amp; theoretical models</li> </ul>	<ul style="list-style-type: none"> <li>- Addresses “What” questions</li> <li>- Describe the characteristics &amp; frequency</li> </ul>	<ul style="list-style-type: none"> <li>- Non-interventional</li> <li>- Multilayered reporting</li> <li>- Measuring structural relationships</li> </ul>	<ul style="list-style-type: none"> <li>- Test hypotheses about cause-and-effect relationships</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>- Data may not be ideally suited to the testing of the current hypothesis.</li> <li>- Sampling bias.</li> </ul>	<ul style="list-style-type: none"> <li>- Results are not usually useful for decision-making</li> <li>- Produce false leads or useless theories</li> <li>- Time-consuming</li> </ul>	<ul style="list-style-type: none"> <li>- Partially defined situation</li> <li>- Not primarily concerned with causes</li> </ul>	<ul style="list-style-type: none"> <li>- Confounders &amp; selection bias</li> <li>- Differentiating between cause &amp; effect from a simple association</li> </ul>	<ul style="list-style-type: none"> <li>- Hidden causes</li> <li>- Coincidence</li> <li>- Expensive</li> </ul>
Tactics	<ul style="list-style-type: none"> <li>- Theoretical analysis</li> <li>- Fact-finding</li> <li>- Model building</li> <li>- Content analysis</li> </ul>	<ul style="list-style-type: none"> <li>- Qualitative research</li> <li>- Case analysis</li> <li>- Preliminary study</li> <li>- Simulated studies</li> </ul>	<ul style="list-style-type: none"> <li>- Non-experimental</li> <li>- Interviews</li> <li>- questionnaires</li> </ul>	<ul style="list-style-type: none"> <li>- Human observation</li> <li>- Observation of physical objects</li> </ul>	<ul style="list-style-type: none"> <li>- Experimental qualitative research</li> <li>- Market testing</li> </ul>
Data collection techniques	<ul style="list-style-type: none"> <li>- Systematic review</li> <li>- Meta-analysis</li> <li>- Data mining</li> <li>- Trade area analysis</li> <li>- Historiography</li> <li>- Social media analytics</li> <li>- Big Data analytics</li> </ul>	<i>Non-probability sampling</i> <ul style="list-style-type: none"> <li>- Grounded theory</li> <li>- Group discussions</li> <li>- Phenomenology</li> <li>- Ethnography</li> <li>- Future research</li> <li>- Pilot study &amp; Narrative</li> <li>- Hermeneutics</li> </ul>	<i>Probability sampling</i> <ul style="list-style-type: none"> <li>- Interview</li> <li>- Survey</li> </ul>	<i>Non-probability sampling</i> <ul style="list-style-type: none"> <li>- Behavioral observation</li> <li>- Physiological reactions measurement</li> <li>- Process &amp; flow analysis</li> </ul>	<i>Controlled probability sampling</i> Descriptive & observational data collection

## Methodology

The employed research methodology was basic, drawing on the sociological and methodological knowledge base. The approach adopted was an inductive rational philosophical approach. Therefore, it can be said that an archival research design was utilized. More specifically, a theoretical analysis through a systematic literature review of the published texts was carried out. In this regard, the relevant literature was systematically mapped to classify and analyze the content of articles based on the model presented by Petersen et al. (2008).

After formulating the research question and the study protocol, to find the selected articles, an automatic search was performed among the articles published in the period 2011 to 2021. The keywords used in the search are as follows:

("Organization" OR "Company") AND "usage" AND ("Social media" OR "Social network" OR "Blog" OR "collaborative site" OR "forum" OR "virtual world" OR "virtual community")

As a result of the electronic search on titles, abstracts and keywords, 491 articles were obtained. In line with the purpose of this study and the interdisciplinary nature of science and industry related to social media function, a collection of journals in the field of business, i.e., the target sample of studies to be searched, was selected. These include Scopus and ISI Web of Knowledge search engines and several other business and management research databases, including Science Direct, Emerald Management e-Journals, and IEE explore. These databases cover social science and management literature more than any other database (Ngai et al., 2015).

After the automatic search, based on Wohlin's (2014) approach, 87 more articles were identified through a snowball sampling method based on articles that were well related to the research topic. Then, by removing duplicate articles, a total of 387 articles were selected for review. After reviewing their text, 131 articles were removed from the sample due to the incompatibility of their content with the scope of research. The control criterion for selecting the articles was the way organization used social media to advance the organization's goals and duties. Therefore, from the studies obtained, the ones that examined the impact of social media on customers were removed. Since academics and experts often use journals to obtain information and publish new findings, studies published in English in journals and conferences were selected.

In contrast, dissertations, textbooks, and reports were removed from the list of selected sources because it is believed that the studies published in prestigious journals present scientific findings, and the findings of removed studies are also included in them (Ngai et al., 2015; Ahmed et al., 2018). In sum, 256 articles were selected for analysis. The bibliographic details of the individual articles are listed in Appendix I.

Our investigation took place in multiple steps, which can be summarized as follows. After



selecting the articles, the maturity stage of the studied organization was identified in each article. The research strategy used in each study was then determined. According to O'Connor and Joffe (2020), independent coders and expert panels were employed to evaluate and quality control the maturity stage and identification strategy of each article. The matching of the levels and strategies identified for each article by an independent researcher outside the research group points to the reliability of the generated data. Finally, each of the 256 selected articles was assigned a stage of the SMSOG model and a research strategy. Then, based on the understanding obtained about the characteristics of research strategies and definitions of maturity stages, mapping was performed between five types of research strategies and five maturity stages of the organization. More details about these steps are provided below.

### **Extracting Data**

By studying the text of the articles, the maturity stage of the organization in using social media was determined based on the SMSOG model. To this aim, in the text of the articles, the characteristics of the studied organizations were searched. The maturity stage of the organization was determined by matching these characteristics with the keywords of each SMSOG stage. The keywords of each stage of the model are explained in the theoretical background section. The theoretical foundations and methodology of each article were reviewed to specify the research strategy used.

The classification presented by Haydam and Steenkamp (2020) was used to select the titles of the strategies. Thus, each article was classified in one of the five categories: (1) Archival, (2) Exploratory, (3) Descriptive, (4) Observational, and (5) Casual. For studies that did not explicitly address the research strategy used, the research strategy was determined based on the data collection techniques and research methods.

### **Integrating Evidence to Address the Research Questions**

A mapping matrix of research strategies and five stages was developed to determine the appropriate research strategy for each stage. Using this matrix, the researchers sought to identify the characteristics of each research strategy grounded in one of the stages of the SMSOG model or the ground is prepared for using its data collection and analysis techniques and methods. In the columns of this matrix for each stage, the focus area, the organization strategy, and the dominant problems were identified. Matrix rows also represent the characteristics and functions of each strategy. By determining the relationship between the characteristics of each stage and the functions of each strategy, each stage was mapped to the appropriate strategy.

To illustrate the mapping method, Table 2 shows part of the matrix as an example (related to mapping the exploratory strategy to the first maturity stage); Exploratory strategy is used in studies with a novel topic or problem (Babbie, 2020). In the first stage, the organization's goal is to assess the feasibility of entering social media and, through identifying the characteristics, it seeks to understand the impact of the individuals' use of social media (Duane & O'Reilly, 2017).

In fact, in this stage, managers do not have a proper understanding of the capabilities and functions of social media (Chung et al., 2018). Therefore, exploratory studies are suitable to gain a deep understanding of this phenomenon in the organization, as this strategy is used to enter the unknown to discover something new (Casula et al., 2020). A case study is one of the data collection tactics in exploratory strategy (Johannesson & Perjons, 2014). This tactic is often used to understand the phenomena deeply (Ponelis, 2015). Using case studies, researchers can obtain general information about the phenomenon of social media in the organization and provide in-depth descriptions of its functions. On the other hand, the organization's focus in the first stage is on posting and providing information about the organization and its products on social media (Duane & O'Reilly, 2016). In exploratory strategy, deductive reasoning is used to analyze the data (Casula et al., 2020). Using deductive reasoning, researchers analyze the performance of users on social media and provide a solution for the organization based on it. In this way, the product presentation methods on social media are well understood by competing organizations, and effective solutions are provided to promote the organization's social presence.

Table 2- Part of the relation matrix of stages and research strategy (Stage1- Exploratory)

		Stage 1									
		Focus		Strategy		Dominant problems					
		Announcing the launch of SM	SM adoption is experimental	Individual or departmental drive	Little management involvement	Lack of understanding of SM	Understand the skills required	Lack of skills & expertise	Difficulty in growing the audience	Test the capabilities of SM	
Exploratory	Characteristics	The problem is in the preliminary or early stages	✓			✓	✓				
		Enter the unknown to discover something new	✓	✓		✓	✓		✓	✓	
		When data is difficult to collect									✓
		Flexible: It doesn't prescribe to which hypotheses to select or not to select.	✓		✓						
		Gathering general information about a topic, rich, in-depth description, and insight of an instance ( <i>Case study</i> )	✓		✓		✓	✓			
		Does not require the collection of huge amounts of quantitative data ( <i>Grounded theory</i> )					✓			✓	
	functions	The theory is tested using deductive reasoning				✓		✓	✓		
		discovering potential generalizations, which can become future hypotheses		✓			✓				
		To uncover facts and opinions regarding a particular subject.				✓			✓	✓	
		To answers the "why" question		✓		✓				✓	
	Deep insight into a phenomenon, community or individual	✓	✓					✓			

Appendix 3 presents the details of the relation matrix of research strategy and SMSOG stages. Using this matrix, concept mapping between maturity stages and research strategy was developed.

## Results

The concept of the social media function in advancing the goals of the organization was introduced in the last decade (Zeng & Gerritsen, 2014). Based on the results of analyzing 256 articles, 2015 can be considered a turning point in developing research in this area. By 2015, articles reviewing the outcomes of using social media have had a slight variation, most of which addressing the primary stages of the SMSOG model. After 2015, exponential growth is observed in the number of articles addressing the middle stages of the maturity model. This upward trend in research in the area of social media function is also observed in other review articles such as Bryikhanova et al. (2021) and Ahmed et al. (2018). This reflects the growing use of social media in organizations. Most articles in 2016 were related to the third stage of maturity. The 2018 articles mostly focus on the fourth stage.

In the following, the distribution of articles is described separately for each stage of maturity. In order to determine the position of each article in the five stages of SMSOG, the definitions presented in Duane and O'reilly (2017) were used.

**Stage 1:** 26 out of the 256 studies reviewed were classified in the first stage. These studies, such as Roy et al. (2020) and Leonardi (2017), mostly evaluated the feasibility and the consequences of entering social media. In addition, studies that have examined the impact of individual members' use of social media are also classified at this stage (Alghizzawi et al., 2019; Simon et al., 2015).

**Stage 2:** 72 articles (28%) were classified in the second stage. This stage includes studies such as Guenzi and Nijssen (2020), Behringer and Sassenberg (2015), and Horton et al. (2012) that deal with managerial supervision over employees' use of social media in the organization. Besides, some studies, including Lima et al. (2019) and Atmaca et al. (2020), that concentrated on customer-oriented activities and encouragement of customers to follow the organization's account in social media, belonged to this stage. Articles on the primary influence of social media in organizations with a consumer-centric focus were assigned to this stage (Prasanna & Fields, 2021; Kwabena et al., 2020; Wang & Kim, 2017).

**Stage 3:** 71 out of the 256 studies were reviewed and classified in this stage. The third stage consisted of articles such as Hamid (2020), Demek et al. (2018), and Lacoste (2016) highlighting the governance and official control of social media by the organization. In addition, studies on the terms and conditions of social media usage and its alignment with the organization's overall strategy were also placed in the third stage. These studies include Jiménez-Zarco et al. (2021), Kotsenas et al. (2018), and Benthaus et al. (2016).

**Stage 4:** This stage involved almost 79 articles (31%) in total. The fourth stage involves studies addressing fundamental changes in work through the integration of social media with business processes. These include Cartwright et al. (2021), Benitez et al. (2018), and Kwahk and Park

(2018). Studies such as Vetráková et al. (2018) and Bashir et al. (2017) that examined the optimization of organizational processes through social media were also put in the fourth stage. On the other hand, articles highlighting crowdsourcing and coordination of stakeholders with suppliers through social media were also classified in the fourth stage, such as Men et al. (2020) and Cho et al. (2014).

**Stage 5:** Only 8 out of 256 selected studies were in line with the characteristics of the fifth stage. This stage includes studies that considered social media the center of all organizational processes like Williams et al. (2018). In addition, studies such as Krings (2020) that deal with the creation or reengineering of business models through social media were also classified at the fifth stage.

According to the classification presented in Haydam and Steenkam (2020), the research strategy used in each of the selected articles falls into one of the five categories: (1) archival, (2) exploratory, (3) descriptive, (4) observational, and (5) causal. In the following, the distribution of articles with respect to the research strategy and methodology used in them is described.

**Archival:** Out of 256 selected articles, 54 used archival strategy to conduct the research. Most of these articles examined the consequences of various social media in organizations by analyzing statistical data. For example, Bitiktaset al. (2021) investigated the communicative behavior of stakeholders by analyzing messages posted on Facebook by shipping companies. Lachlan et al. (2016) also examined the tweets posted before and after a weather crisis through multi-level content analysis and provided solutions for crisis management in organizations and emergency management agencies. Archival research in the social sciences is emerging as a vibrant field of qualitative research (Heng et al., 2018). This type of research involves looking for and extracting evidence from archival records (Clary-Lemon, 2014). Out of 54 archival articles, 12 articles by conducting a systematic literature review of the documents published in a specific area embarked on fact-finding and provided future research directions accordingly. These include Wang et al. (2021), Bhimani et al. (2019), and Tursunbayeva et al. (2017) that by reviewing previous studies, sought to identify repetitive patterns and changes in organizations affected by social media.

**Exploratory:** 58 articles were classified in the category of exploratory research. This strategy is often used in marketing studies, marketing plans, and long-term business strategies to see if an idea is viable in any way. Oskooei (2021), for example, discussed return on social media investment with a critical look at the non-financial aspects. Cartwright et al. (2021) also analyzed the relationship management in B2B through social media. Some articles analyzed the performance of several studies using exploratory strategy to identify the consequences of using social media in the organization. In these studies, some management solutions are presented based on the findings, Such as Xiong et al. (2018), which, using the case study approach, presented methods of using social media as a tool to detect violations and improve organizational knowledge management.

**Descriptive:** Out of 256 selected articles, 39 were classified in the descriptive strategy category.

Articles such as Ahmad et al. (2021), Kim and Johnson (2016), and Jussila et al. (2014) identified new concepts and developed theory through non-experimental methods. Demek et al. (2018) described how the organization uses risk management processes to deal with social media risks. In this article, theories and hypotheses were analyzed using inductive reasoning. Descriptive studies adopting an inductive approach employ a qualitative, naturalistic design. Such design begins with data and seeks to develop a theory by making sense of it. Several descriptive articles described the details of a marketing situation. These articles sought to provide the necessary data and measure changes in attitudes and behaviors over time using surveys, questionnaires, and certain types of experiments. These include Jiménez-Zarco et al. (2021), Wang and Kim (2017), and Mehmet and Clarke (2016).

**Observational:** Out of 256 articles reviewed, the observational strategy was used in 38 articles. In these articles, the goal was to identify the behavior of individuals in different situations. For example, Alhaimer (2021), Sahaym et al. (2019), and Ranginwala and Towbin (2018) collected and analyzed data on changing the behavior of individuals affected by the use of social media in the organization. Researchers in these articles systematically assigned codes to individuals' behavior over time to measure their interactive behavior. In observational research, the researchers seek to observe the impact of different phenomena, such as a risk factor, diagnostic test, treatment, or other intervention on a specific variable. In these studies, the researchers do not make any change in the research context. For example, Gamboa and Gonçalves (2014) identified the factors that reduce the level of customer loyalty by examining Zara's data on Facebook.

**Causal:** Out of 256 articles reviewed, 67 were categorized as causal studies. These articles sought to identify the effective and affected parameters in the social media phenomenon in organizations. For example, Foltean et al. (2019) examined the impact of CRM capabilities on social media use and organizational performance. Pratono (2018) also examined the mediating role of factors such as trust, marketability, and pricing in the impact of social media use and organizational performance. Generally speaking, causal research aims to test the relationship between the elements of a conceptual model. For example, Men et al. (2020) examined the effect of social media on employee engagement based on a conceptual model derived from a theoretical foundation. Al-Rahmi et al. (2018) also presented a conceptual model by combining two theories of constructivism and TAM. The model presented in this study investigated the impact of active collaborative learning, engagement, and satisfaction on the learning performance of researchers through social media in the context of Malaysian higher education.

The distribution of articles by maturity stage and their research strategy is presented in **Error! Reference source not found..**

Table 3- Distribution of the papers on the stages of SMSOG and research strategy

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	N
<b>Archival</b>	[132]; [14]; [17]; [217]	[1]; [112]; [12]; [138]; [164]; [77] [175]; [18]; [191]; [20]; [222]; [250]; [31]; [63]; [68]; [76];	[113]; [114]; [116]; [169]; [174]; [180]; [182]; [208]; [223]; [65]; [7]	[123]; [134]; [142]; [66]; [143]; [149]; [167]; [34]; [184]; [197]; [199]; [201]; [213]; [214]; [233]; [238]; [242]; [30]; [35]; [52]; [53]; [54]	[241]	<b>54</b>
<b>Exploratory</b>	[45]; [64]; [71]; [8]; [78]; [110]; [130]; [25]; [136]; [171]; [178]; [179]; [200]; [202]; [207]; [237]; [254]; [249]; [101]; [109]	[107]; [119]; [84]; [139]; [145]; [86]; [150]; [162]; [96]; [190]; [22]; [231]; [245]; [60]; [61]	[104]; [106]; [124]; [148]; [176]; [19]; [204]; [232]; [246]; [252]; [28]; [37]; [82]	[10]; [105]; [151]; [173]; [234]; [42]; [43]; [87]; [91]	[218]	<b>58</b>
<b>Descriptive</b>	[126]	[102]; [111]; [127]; [133]; [147]; [203]; [230]; [235]; [244]; [247]; [5]; [67]; [88]	[100]; [118]; [135]; [144]; [146]; [157]; [159]; [170]; [172]; [209]; [21]; [93]; [215]; [220]; [236]; [59]; [2]; [248]; [253]; [57];	[120]; [219]; [221]; [225]; [48]		<b>39</b>
<b>Observational</b>		[108]; [129]; [140]; [160]; [181]; [187]; [188]; [206]; [240]; [243]; [255]; [73]; [74]; [81]; [85]; [9]; [97]; [3]	[137]; [141]; [15]; [152]; [189]; [224]; [228]; [251]; [256]; [27]; [49]; [55]; [58]	[205]; [212]; [44]; [50]; [6]; [83]	[56]	<b>38</b>
<b>Causal</b>	[40]	[128]; [154]; [155]; [163]; [185]; [239]; [24]; [47]; [51]; [80]	[166]; [193]; [194]; [210]; [216]; [226]; [32]; [36]; [41]; [69]; [79]; [89]; [90]; [95]	[11]; [115]; [121]; [122]; [99]; [125]; [13]; [131]; [153]; [98]; [156]; [158]; [16]; [165]; [94]; [177]; [183]; [186]; [192]; [92]; [195]; [196]; [198]; [75]; [211]; [229]; [23]; [26]; [29] [72]; [33]; [38]; [39]; [4]; [46]; [62]; [70];	[103]; [117]; [161]; [168]; [227]	<b>67</b>
<b>N</b>	<b>26</b>	<b>72</b>	<b>71</b>	<b>79</b>	<b>8</b>	

In what follows, the components of concept mapping for each SMSOG stage are described separately.

## Discussion

The purpose of the present study was to identify the appropriate research strategy for each maturity stage of the organization in using social media. To meet this goal, after reviewing the literature, a relationship matrix of the characteristics of maturity stages and the capabilities of each strategy was developed (Appendix 2). Using this matrix, a concept map was developed between each of the maturity stages and research strategies. Based on this mapping, an appropriate strategy was identified to respond to the research needs and problems of the organization at each maturity stage.

A proper understanding of the research problem and a sound knowledge base about each decision point is necessary for an effective research strategy. Making decisions about research findings, logic, purpose, and approach are components of a research strategy (Wohlin & Aurum, 2015). Based on the mapping developed, in the last columns of Table 4, the identified research strategies are presented for each maturity stage.

Table 4- Appropriate research strategies per levels of SMSOG model

Stage	Focus (Duane & O'Reilly, 2017)	Dominant problems (Chung et al., 2018)	Proposed platforms (Hanafizadeh & Shafia, 2021)	Appropriate research strategy
<b>Stage1</b>	Announcing the launch of social media, providing some information.	Lack of understanding of SM and skills, Lack of skills & expertise, Difficulty in growing the audience	General social network sites	<b>Exploratory</b>
<b>Stage2</b>	Consumer-centric efforts aimed at increasing internal and external awareness.	Measuring SM ROI, Translating data into actionable strategies, Lack of strategic interest from senior management	General social network sites Instant messaging Creativity works sharing	<b>Observational Descriptive</b>
<b>Stage3</b>	Planning, strategy, governance, and alignment with overall business strategy	Measuring SM ROI, Funding for SM development, Managing user experience, Employee misuse	Creativity works sharing Educational materials sharing General blogs & Microblogs	<b>Descriptive</b>
<b>Stage4</b>	Optimization of processes. Alignment with external partners/suppliers. Creation/ideation.	Negative reviews, Security policy & control, Lack of SM passion & creativity among stakeholders, Lack of clear metrics for ROI	General blogs & Microblogs Collaborative websites Social review sites Company-sponsored network	<b>Archival Casual</b>
<b>Stage5</b>	Enterprise-wide social media. Reengineer business models.	Lack of creativity among stakeholders, Monitor external environment,	Company-sponsored network Collaborative websites Microblogs Business networking sites	<b>Casual</b>

In the following, based on the mapping, the reason for identifying each strategy as

appropriate for each SMSOG stage is explained:

### **Stage 1**

In the first stage, managers and individuals of the organization do not have a proper understanding of social media (Chung et al., 2018). Therefore, researchers in this stage seek to identify the capabilities of social media and its consequences in the organization. Accordingly, in this stage, researchers can reveal facts and opinions about social media technology using exploratory strategy. In the first stage, researchers generally examine the feasibility of the organization's entry into social media. The goal of the exploratory research strategy is to discover potential generalizations that can be used as a hypothesis or theory in future research (Casula et al., 2020). The formation of an idea can lead to conducting other research types. Exploratory research can guide a company in choosing a path to growth and development. This kind of research usually employs qualitative methods such as interviews with consumers, expert and focus groups, and secondary research materials like books, reports, and trade journals. Also, in the first stage, the organization seeks to understand the impact of individuals' use of social media in the organization (Duane & O'Reilly, 2017). The goal of exploratory social research is to examine individuals' responses to specific phenomena, the meanings they assign to their actions, and their concerns. In this type of research, the researcher is concerned with "what is going on in the research setting?". The researcher does not bring any prior expectations in studying the social phenomena (Casula et al., 2020). One popular method in information systems research is the case study used to develop new conceptual and theoretical models based on the literature (Ponelis, 2015).

### **Stage 2**

In the second stage, the organization's focus is on taking consumer-centric actions and enhancing customer relationships through social media (Chung et al., 2017). Thus, the purpose of the second stage of the study is to identify the parameters affecting the creation of effective relationships with the customer. These studies are generally designed with descriptive or observational strategies. In this stage, the descriptive strategy is used to identify the characteristics of various aspects (e.g., the characteristics of the organization's customers) (Casula et al., 2020). These studies gain more importance when one or more observers seek to investigate the processes or objectively assess the behaviors (Kitsantas et al., 2005). One of the most popular data collection methods of such studies is survey due to its broad coverage. Surveys are often employed for collecting data about people, their activities, beliefs, and attitudes in social sciences because they provide a general view of the phenomenon under study (Johannesson & Perjons, 2014).

In addition, the organization in the second stage seeks to increase internal and external awareness of the organization's social media (Chung et al., 2017). Observational strategy is used in social sciences and psychology to evaluate the effectiveness of new interventions and to study



behavior change (Mariani & Pego-Fernandes, 2014). The observational research strategy is used when the independent variable is not under the researcher's control due to ethical concerns or logistical constraints. With this strategy, the researcher draws inferences about the whole population by studying a sample (Kennedy-Martin et al., 2015). One of the goals of the second stage of research is to provide solutions for planning and monitoring how employees use social media in the organization (Hanafizadeh et al., 2021). Changing employee behavior on social media is not directly under the researcher's control (Behringer & Sassenberg, 2015). In addition, monitoring how all employees use social media is not ethically approved (Cai et al., 2018). Therefore, by choosing an observational strategy in second stage research, through sampling and observing the behavior of several employees, a solution is provided to make appropriate changes in all employees of the organization. Another use of observational studies is prevalence estimation, for these studies are less costly to deploy and provide quick results compared to other research strategies. They are also used to study multiple outcomes. One drawback of these studies is that they only identify correlations among phenomena, and the cause and effect relationships cannot be identified through observational strategy in the sequence of events. However, the findings of observational studies can be fed into a cohort study or randomized controlled study for further investigation of the phenomena (Yang et al., 2010).

On the other hand, according to Hanafizadeh and Shafia (2021), platforms suitable for stage two are various social networks and creativity works sharing sites. These platforms are public, and their data is not owned by the organization. Therefore, the organization is not able to change the communication network and have access to the data of these platforms (Cordes, 2017). In this respect, researchers cannot use exploratory research to test hypotheses. Hence, in the second stage of research, sampling of the available data of these platforms is often done using observational research.

### **Stage 3**

In the third stage, social media is formalized in the organization, and a strategy is developed to use it in line with the overall business strategy (Chung et al., 2017). Determining the right strategy requires a good understanding of the organization and its environment, especially the market. For this purpose, researchers use descriptive research. Descriptive research is used to describe a phenomenon or its context in a tangible manner so that companies can guide decisions and monitor progress. Descriptive studies belong to the quantitative research paradigm. Thus, data are collected in a standardized format with close-ended questions to be statistically measured and analyzed (Goeman & Solari, 2011). One of the problems of the organization in the third stage is the employee's misuse of social media and the decline of performance (Chung et al., 2018). To identify solutions for this problem, researchers generally use the descriptive research strategy. Descriptive research mainly describes the nature of a demographic segment and does not deal with the reasons for a specific phenomenon under study (Strydom, 2013). In terms of communication with the external environment, the organization's strategy in the third

stage is to create communication networks to receive feedback (Duane & O'Reilly, 2016). Research in this stage uses descriptive strategies to identify the situation and provide solutions to establish effective communication with the organization's customers. Descriptive research explores and explains data that are often obtained by exploratory research. In the context of a company, this strategy is concerned with a business purchase, a product type, a service offering, or any marketed-related part of the organizational structure. In addition, in the third level, any investment or deployment of resources in social media is based on clear metrics for ROI (Duane & O'Reilly, 2016). Much of marketing analytics is done through descriptive research. Marketing analytics concern measuring, managing, and analyzing marketing performance to maximize effectiveness and optimize ROI (Casula et al., 2020).

#### **Stage 4**

In the fourth stage, social media is coordinated at the business level (Duane & O'Reilly, 2017). In this stage, social media is well-integrated with organizational processes and leads to fundamental changes in work performance (Chung et al., 2018). Using in-depth statistical analysis techniques in archival strategy, researchers can identify the factors affecting the integration of processes in the organization (Maxwell, 2004). Archival research employs a qualitative method in which the data collected by someone else are analyzed to verify different hypotheses. In the fourth maturity stage, social media is used beyond public relations and marketing tools. This technology is utilized as a tool to strengthen employee interaction with external stakeholders (Duane & O'Reilly, 2016). Researchers have access to tools for integrated related datasets, such as Twitter tags and online marketplace bidding logs. The research studies are observing a great shift due to the "Big Data" revolution, which changes archival research into a promising research methodology (Heng et al., 2018). Archival research can help companies develop and monitor advertisement campaigns. Using this form of consumer research, companies can investigate the situation before taking actions that might be costly or ineffective in the future (Maxwell, 2004). This research strategy helps the research probe the phenomenon under study in great detail, like the reasons for product returns or the failure of a target market to understand the service. In these studies, the researcher manipulates a variable to see if the outcome changes, like simply putting a service in a test market at two different price points to investigate whether the purchase rate correlates with the price.

In the fourth stage, besides using public social platforms, the organization creates its own communication networks (Hanafizadeh & Shafia, 2021). These company-sponsored networks are used to create integration between internal processes and the external value chain (Duane & O'Reilly, 2017). Given that the organization possesses the data of these networks, researchers can access these data and identify the factors influencing policies on stakeholders through causal research. In addition, the trends of employee and stakeholder behavior change are examined in this research. One of the problems the organization faces in the fourth stage is the difficulty in positively engaging the audience (Duane & O'Reilly, 2017). Archival research is appropriate for

testing hypotheses where participants cannot be ethically assigned to groups. It is also helpful for studying trends in a population. Since this research strategy uses previously collected data, it is efficient and less costly. Also, because the data are collected in a standardized manner, it is possible to make comparisons over time and between different countries (Mann, 2003). Another problem of the organization in the fourth stage is the lack of social media passion and creativity among stakeholders in the workplace (Chung et al., 2018). Researchers need to examine the behavior of stakeholders over time to identify the causes of this problem. To address this issue, researchers can employ an archival approach to examine phenomena over time. From a classical view, archival research studies historical documents (Clary-Lemon, 2014). due to the longitudinal design of many archival datasets, the impact of durations and the trajectory of phenomena can be investigated. This research strategy is developed to answer real organizational problems through a participative and collaborative approach using different knowledge forms (Onyancha et al., 2015).

### **Stage 5**

After integrating social media with internal systems, the organization's goal in the fifth stage is to create integration among all components of the organization's value chain. The organization at this stage seeks to establish wider business relationships (Duane & O'Reilly, 2016). Using causal strategy, effective factors in strengthening stakeholder relationships can be identified (Zikmund et al., 2012). Causal research helps companies determine the best strategies for customers retention. To identify cause-and-effect relationships, companies can investigate the relationships between their associates and customers; for example, using a product demonstration technique that might increase or decrease sales from the same customers. In the fifth stage, social media is at the center of the organizational actions for the entire workforce (Duane & O'Reilly, 2017). Organizations can examine the impact of their policy initiatives on different individuals in the organization by conducting causal research (Maxwell, 2004). Another objective of the organization in the fifth stage is to empower all stakeholders through social media (Chung et al., 2018). Researchers use causal strategies to identify ways to increase stakeholder productivity. In addition, using this research strategy, researchers can measure how employees learn protocol and other skills during training sessions (Uzoh et al., 2020). One of the problems reported in the fifth stage is the lack of effective monitoring of the external environment (Chung et al., 2018). In causal research, by analyzing pre-existing data in social media, environmental factors influencing the organization's success are identified (Haydam & Steenkamp, 2020).

### **Conclusion**

The purpose of research is to answer the researcher's questions through scientific procedures (Blaikie, 2000). Researchers should determine the research strategy appropriate to the objectives and characteristics of the problem before starting the study (Kadic et al., 2020). One of the determinants of success in research in social media function is selecting the right research

strategy (Uzoh et al., 2020). In this regard, the present study sought to identify appropriate strategies for research in each maturity stage of using social media. To this aim, after going through the systematic review stages, 256 selected articles that used a variety of research strategies at different maturity stages of the organization were studied. In addition, the maturity stage of the organization in the selected articles was determined based on the SMSOG model. Then, a mapping was developed by the relationship matrix of each strategy with the characteristics of maturity stages. This mapping represents a conjecture of the appropriate strategy for each stage of organizational maturity.

In determining the research strategy, besides considering the research goals and questions, it is necessary to evaluate the suitability of the strategy with the available data, its ethical aspects, and its feasibility (Johannesson & Perjons, 2014). Given these conditions, the findings of this study revealed that the exploratory strategy is suitable for use in first-stage maturity research. Observational and descriptive strategies were found to be appropriate for the second and third stages. Archival and causal strategies were also recommended for the goals and characteristics of the fourth and fifth maturity stages.

Using exploratory strategy, one can answer the immediate practical problems policymakers face (Goeman & Solari, 2011). Therefore, exploratory deductive case studies are appropriate tools for identifying the principles and rules of using social media in the organization. Of course, the results of exploratory research can not be the sole criterion for decision-making in organizations because the purpose of this research is simply to create significant insight for the researcher (Casula et al., 2020). In addition, exploratory research is time-consuming (Johannesson & Perjons, 2014). Thus, this strategy is not suitable for small-scale projects. Of course, exploratory research is recommended for researchers developing their research skills and exploring their field and profession. A descriptive strategy is commonly used to gather consumers' demographic information, assess product market potential, or monitor the target group's opinions. Therefore, this strategy is recommended to identify relationships and draw conclusions. The archival strategy includes fruitful and robust techniques to investigate social phenomena (Heng et al., 2018). The use of this strategy is recommended in issues where it is not ethically possible to directly examine the behavior of individuals. The advantage of the archival strategy over laboratory experiments lies in the possibility of analyzing large volumes of data, which can reduce the time and cost of research (Onyancha et al., 2015). It is possible to study thousands (or even millions) of participants in archival research, while the target population of laboratory experiments is often less than a hundred participants. Of course, the weakness of the archival strategy is the researcher's lack of control over the way the data are collected. In the observational strategy, the researcher records what they see without making any changes, while the causal strategy deals with the control group and a testable group (Kitsantas et al., 2005). Therefore, if the goal is to observe certain variables and identify the correlations between them, the use of the observational strategy is recommended. In contrast, a causal strategy is suggested

when the purpose is to identify the cause of a behavior. For example, in research aimed at evaluating marketing initiatives, improving internal processes, and creating more effective business plans, the use of causal research is suggested. Of course, it should be considered that causal research takes a lot of time and is more costly than other strategies.

The results of this study complement the SMSOG theory presented by Duane and O'Reilly (2012). Researchers can use the findings of the present research to determine their research strategy in line with the purpose and characteristics of the organization under study. Of course, the recommendations about appropriate strategies for each maturity stage are not based on experiments with empirical data. They are provided based on previous empirical research reported in the literature. It should be noted that at every maturity stage, there are studies whose strategies have been chosen contrary to the recommendations of this research because the choice of research strategy depends on various factors such as research question, type, size of the organization, the researcher's experience level, cost and time available (Saxena et al., 2013). In this study, recommendations were provided considering the characteristics of each maturity stage of the organization, the appropriateness of the strategy with the research question, and the type of organization. It is suggested that in future research, the relationship between research strategy and the context as well as the size of the organization be examined. In addition, to further develop the SMSOG model, it is recommended to identify appropriate theories for research in each maturity stage

### Conflict of interest

The authors declare no potential conflict of interest regarding the publication of this work. In addition, the ethical issues including plagiarism, informed consent, misconduct, data fabrication and, or falsification, double publication and, or submission, and redundancy have been completely witnessed by the authors.

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**Appendix 1- Bibliographic details of the individual articles**

N	Author(s) & Year	S M	Research Strategy	N	Author(s) & Year	S M	Research Strategy
[1]	(Agnihotri et al., 2012)	2	Archival	[129]	(Lau, 2017)	2	Observational
[2]	(Agostino & Sidorova, 2016)	3	Descriptive	[130]	(Lee & Choi, 2017)	1	Exploratory
[3]	(Aguenza et al., 2012)	2	Observational	[131]	(Lee & Lee, 2020)	4	Causal
[4]	(Ahmad et al., 2018)	4	Causal	[132]	(Lee et al., 2015)	1	Archival
[5]	(Ahmad et al., 2021)	2	Descriptive	[133]	(Lee et al., 2018)	2	Descriptive
[6]	(Alamsyah & Syawiluna, 2021)	4	Observational	[134]	(Leek et al., 2016)	4	Archival
[7]	(Alarcón et al., 2018)	3	Archival	[135]	(Leonardi, 2014)	3	Descriptive
[8]	(Alghizzawi et al., 2019)	1	Exploratory	[136]	(Leonardi, 2017)	1	Exploratory
[9]	(Alhaimer, 2021)	2	Observational	[137]	(Li et al., 2018)	3	Observational
[10]	(Ali et al., 2019)	4	Exploratory	[138]	(Li et al., 2021)	2	Archival
[11]	(Ali Qalati et al., 2021)	4	Causal	[139]	(Lima et al., 2019)	2	Exploratory
[12]	(Al-Kandari et al., 2019)	2	Archival	[140]	(Liu et al., 2019)	2	Observational
[13]	(Al-Rahmi et al., 2018)	4	Causal	[141]	(Loehmer et al., 2018)	3	Observational
[14]	(Amidi et al., 2015)	1	Archival	[142]	(Loukis et al., 2017)	4	Archival
[15]	(Ancillai et al., 2019)	3	Observational	[143]	(Lovejoy et al., 2012)	4	Archival
[16]	(Andrianina & Okle, 2021)	4	Causal	[144]	(Lu & Pan, 2019)	3	Descriptive
[17]	(Andzulis et al., 2012)	1	Archival	[145]	(Lund et al., 2018)	2	Exploratory
[18]	(Arora & Sanni, 2019)	2	Archival	[146]	(Luqman et al., 2021)	3	Descriptive
[19]	(Arshad & Raheed, 2020)	3	Exploratory	[147]	(Ma & Chan, 2014)	2	Descriptive
[20]	(Atmaca et al., 2020)	2	Archival	[148]	(Malthouse et al., 2013)	3	Exploratory
[21]	(Aydin, 2020)	3	Descriptive	[149]	(Manetti & Bellucci, 2016)	4	Archival
[22]	(Bai & Yan, 2020)	2	Exploratory	[150]	(Manika et al., 2017)	2	Exploratory
[23]	(Bashir et al., 2017)	4	Causal	[151]	(Mäntymäki & Riemer, 2016)	4	Exploratory
[24]	(Behringer & Sassenberg, 2015)	2	Causal	[152]	(Marchand et al., 2020)	3	Observational
[25]	(Benetolia et al., 2018)	1	Exploratory	[153]	(Mardi Putra, 2021)	4	Causal
[26]	(Benitez et al., 2018)	4	Causal	[154]	(Martín-Rojas et al., 2020)	2	Causal
[27]	(Benthaus et al., 2016)	3	Observational	[155]	(McCaughy et al., 2014)	2	Causal
[28]	(Bharati et al., 2015)	3	Exploratory	[156]	(McCosker, 2017)	4	Causal
[29]	(Bhatti et al., 2019)	4	Causal	[157]	(Mehmet & Clarke, 2016)	3	Descriptive
[30]	(Bhimani et al., 2019)	4	Archival	[158]	(Men et al., 2020)	4	Causal
[31]	(Bitiktas & Tuna, 2020)	2	Archival	[159]	(Meng et al., 2020)	3	Descriptive
[32]	(Bizzi et al., 2019)	3	Causal	[160]	(Meske et al., 2019)	2	Observational
[33]	(Braojos et al., 2018)	4	Causal	[161]	(Michopoulou et al., 2019)	5	Causal
[34]	(Buratti et al., 2018)	4	Archival	[162]	(Mohajerani et al., 2018)	2	Exploratory



N	Author(s) & Year	S M	Research Strategy	N	Author(s) & Year	S M	Research Strategy
					2015)		
[35]	(Cade, 2018)	4	Archival	[163]	(Mohamed et al., 2019)	2	Causal
[36]	(Cai et al., 2018)	3	Causal	[164]	(Moro et al., 2016)	2	Archival
[37]	(Candra & Susanto, 2020)	3	Exploratory	[165]	(Muninger et al., 2019)	4	Causal
[38]	(Cao & Ali, 2018)	4	Causal	[166]	(Narangajavana et al., 2017)	3	Causal
[39]	(Cao et al., 2016)	4	Causal	[167]	(Nascimento & da Silveira, 2017)	4	Archival
[40]	(Cao & Yu, 2019)	1	Causal	[168]	(Nguyen et al. 2015)	5	Causal
[41]	(Carpentier et al., 2019)	3	Causal	[169]	(Hajli, 2014)	3	Archival
[42]	(Carr et al., 2014)	4	Exploratory	[170]	(Niedermeier et al., 2016)	3	Descriptive
[43]	(Cartwright et al., 2021)	4	Exploratory	[171]	(Nisar et al., 2019)	1	Exploratory
[44]	(Chae et al., 2020)	4	Observationa l	[172]	(Odoom et al., 2017)	3	Descriptive
[45]	(Chan et al., 2018)	1	Exploratory	[173]	(Oksa et al., 2020)	4	Exploratory
[46]	(Charoensukmongkol & Sasatanun, 2017)	4	Causal	[174]	(Olanrewaju et al., 2020)	3	Archival
[47]	(Chatterjee & Kar, 2020)	2	Causal	[175]	(Olsen & Christensen, 2015)	2	Archival
[48]	(Chen & Wei, 2019)	4	Descriptive	[176]	(Oostervink et al., 2016)	3	Exploratory
[49]	(Chen & Wei, 2020)	3	Observationa l	[177]	(Orlandi et al., 2020)	4	Causal
[50]	(Chen et al, 2019)	4	Observationa l	[178]	(Osatuyi, 2013)	1	Exploratory
[51]	(Chierici et al., 2019)	2	Causal	[179]	(Oskooei, 2021)	1	Exploratory
[52]	(Cho et al., 2014)	4	Archival	[180]	(Paniagua & Sapena, 2014)	3	Archival
[53]	(Choo et al., 2015)	4	Archival	[181]	(Parveen et al., 2015)	2	Observationa l
[54]	(Chu, 2020)	4	Archival	[182]	(Parveen et al., 2016)	3	Archival
[55]	(Chung et al., 2016)	3	Observationa l	[183]	(Pekkala & van Zoonen, 2021)	4	Causal
[56]	(Chung et al., 2018)	5	Observationa l	[184]	(Pitt et al., 2018)	4	Archival
[57]	(de Zubielqui & Jones, 2020)	3	Descriptive	[185]	(Prasanna & Fields, 2021)	2	Causal
[58]	(de Zubielqui et al., 2019)	3	Observationa l	[186]	(Pratono, 2018)	4	Causal
[59]	(Demek et al., 2018)	3	Descriptive	[187]	(Price et al., 2018)	2	Observationa l
[60]	(Denyer et al., 2011)	2	Exploratory	[188]	(Quinton & Wilson, 2016)	2	Observationa l
[61]	(Diba et al., 2019)	2	Exploratory	[189]	(Ranginwala & Towbin, 2018)	3	Observationa l
[62]	(Digmayer & Jakobs, 2014)	4	Causal	[190]	(Rapp et al., 2013)	2	Exploratory
[63]	(Dootson et al., 2016)	2	Archival	[191]	(Rasul & Hoque, 2020)	2	Archival
[64]	(Drummond et al., 2018)	1	Exploratory	[192]	(Rialp-Criado & Rialp-Criado, 2018)	4	Causal
[65]	(Duan et al., 2016)	3	Archival	[193]	(Rienda et al., 2020)	3	Causal
[66]	(Dwivedi et al., 2021)	4	Archival	[194]	(Risius & Beck, 2015)	3	Causal

N	Author(s) & Year	S M	Research Strategy	N	Author(s) & Year	S M	Research Strategy
[67]	(Ellison et al., 2011)	2	Descriptive	[195]	(Rizki & Susanto, 2021)	4	Causal
[68]	(Hagg et al., 2018)	2	Archival	[196]	(Robertson & Kee, 2017)	4	Causal
[69]	(Engelstätter & Sarbu, 2013)	3	Causal	[197]	(Robertson et al., 2019)	4	Archival
[70]	(Foltean et al., 2019)	4	Causal	[198]	(Rodrigues et al., 2016)	4	Causal
[71]	(Fraccastoro et al., 2021)	1	Exploratory	[199]	(Rodriguez et al., 2012)	4	Archival
[72]	(Franco et al., 2016)	4	Causal	[200]	(Rollins et al., 2014)	1	Exploratory
[73]	(Galati et al., 2017)	2	Observationa l	[201]	(Roshan et al., 2016)	4	Archival
[74]	(Gamboa & Gonçalves, 2014)	2	Observationa l	[202]	(Roy et al., 2020)	1	Exploratory
[75]	(Gao & Feng, 2016)	4	Causal	[203]	(Saboo et al., 2016)	2	Descriptive
[76]	(Gensler et al., 2013)	2	Archival	[204]	(Sadovykh et al., 2015)	3	Exploratory
[77]	(Geurin & Burch, 2017)	2	Archival	[205]	(Sahaym et al., 2019)	4	Observationa l
[78]	(Giunchiglia et al., 2018)	1	Exploratory	[206]	(Molinillo et al., 2019)	2	Observationa l
[79]	(Godey et al., 2016)	3	Causal	[207]	(Schaupp & Bélanger, 2014)	1	Exploratory
[80]	(Guenzi & Nijssen, 2020)	2	Causal	[208]	(Schniederjans et al. 2013)	3	Archival
[81]	(Hajli & Sims, 2015)	2	Observationa l	[209]	(Scuotto et al., 2017)	3	Descriptive
[82]	(Hamid, 2020)	3	Exploratory	[210]	(Seliaman, 2013)	3	Causal
[83]	(Harden, 2012)	4	Observationa l	[211]	(Seo & Park, 2018)	4	Causal
[84]	(Hollebeek, 2017)	2	Exploratory	[212]	(Sun et al., 2020)	4	Observationa l
[85]	(Holliman & Rowley, 2014)	2	Observationa l	[213]	(Shang et al., 2017)	4	Archival
[86]	(Horton et al., 2012)	2	Exploratory	[214]	(Sharma & Kaur, 2017)	4	Archival
[87]	(Huang et al., 2013)	4	Exploratory	[215]	(Sigala & Chalkiti, 2015)	3	Descriptive
[88]	(Hudson et al., 2015)	2	Descriptive	[216]	(Ali Qalati et al., 2020)	3	Causal
[89]	(Hudson et al., 2016)	3	Causal	[217]	(Simon et al., 2015)	1	Archival
[90]	(Lam et al., 2016)	3	Causal	[218]	(Singaraju et al., 2016)	5	Exploratory
[91]	(Huotari et al., 2015)	4	Exploratory	[219]	(Song et al., 2019)	4	Descriptive
[92]	(Iankova et al., 2019)	4	Causal	[220]	(Sufian et al., 2020)	3	Descriptive
[93]	(Ilham et al., 2021)	3	Descriptive	[221]	(Surucu-Balci et al., 2020)	4	Descriptive
[94]	(Itani et al., 2017)	4	Causal	[222]	(Swani et al., 2013)	2	Archival
[95]	(Jafar et al., 2019)	3	Causal	[223]	(Swani et al., 2014)	3	Archival
[96]	(Janhonen & Johanson, 2011)	2	Exploratory	[224]	(Syaifullah et al., 2020)	3	Observationa l
[97]	(Jermstittiparsert et al., 2019)	2	Observationa l	[225]	(Tajudeen et al. 2018)	4	Descriptive
[98]	(Jha & Sarangi, 2017)	4	Causal	[226]	(Tajvidi & Karami, 2021)	3	Causal
[99]	(Jiang et al., 2016)	4	Causal	[227]	(Tajvidi et al., 2020)	5	Causal
[100]	(Jiménez-Zarco et al., 2021)	3	Descriptive	[228]	(Thompson et al., 2020)	3	Observationa l

N	Author(s) & Year	S M	Research Strategy	N	Author(s) & Year	S M	Research Strategy
[101]	(Jones et al., 2015)	1	Exploratory	[229]	(Torres et al., 2018)	4	Causal
[102]	(Jussila et al., 2014)	2	Descriptive	[230]	(Trainor et al., 2014)	2	Descriptive
[103]	(Kamboj et al., 2018)	5	Causal	[231]	(Trainor, 2012)	2	Exploratory
[104]	(Kane, 2017)	3	Exploratory	[232]	(Triantafillidou & Yannas, 2020)	3	Exploratory
[105]	(Karjaluo et al., 2015)	4	Exploratory	[233]	(Tursunbayeva et al., 2017)	4	Archival
[106]	(Kaur & Kumar, 2020)	3	Exploratory	[234]	(Vetráková et al., 2018)	4	Exploratory
[107]	(Kayumovich, 2020)	2	Exploratory	[235]	(Wang & Kim, 2017)	2	Descriptive
[108]	(Khorsheed et al., 2019)	2	Observational	[236]	(Wang et al., 2016)	3	Descriptive
[109]	(Kim & Benbasat, 2012)	1	Exploratory	[237]	(Wang et al., 2015)	1	Exploratory
[110]	(Kim & Choi, 2019)	1	Exploratory	[238]	(Wang et al., 2021)	4	Archival
[111]	(Kim & Johnson, 2016)	2	Descriptive	[239]	(Whelan et al., 2020)	2	Causal
[112]	(Kim et al., 2015)	2	Archival	[240]	(Wibowo et al., 2021)	2	Observational
[113]	(Kim et al., 2018)	3	Archival	[241]	(Williams et al., 2018)	5	Archival
[114]	(Kizildag et al., 2017)	3	Archival	[242]	(Wu et al., 2018)	4	Archival
[115]	(Korzynski et al., 2019)	4	Causal	[243]	(Wu, 2013)	2	Observational
[116]	(Kotsenas et al., 2018)	3	Archival	[244]	(Wu, 2016)	2	Descriptive
[117]	(Krings, 2020)	5	Causal	[245]	(Wushe & Shenje, 2019)	2	Exploratory
[118]	(Kuegler et al., 2015)	3	Descriptive	[246]	(Xiong et al., 2018)	3	Exploratory
[119]	(Kwabena et al., 2020)	2	Exploratory	[247]	(Zhong et al., 2012)	2	Descriptive
[120]	(Kwahk & Park, 2016)	4	Descriptive	[248]	(Yang, 2020)	3	Descriptive
[121]	(Kwahk & Park, 2018)	4	Causal	[249]	(Yates & Paquette, 2011)	1	Exploratory
[122]	(Kwayu et al., 2018)	4	Causal	[250]	(Yoshida et al., 2018)	2	Archival
[123]	(Lachlan et al., 2016)	4	Archival	[251]	(Zhang et al., 2019)	3	Observational
[124]	(Lacoste, 2016)	3	Exploratory	[252]	(Zhang et al., 2020)	3	Exploratory
[125]	(Laitinen & Sivunen, 2020)	4	Causal	[253]	(Zheng & Zheng, 2014)	3	Descriptive
[126]	(Lambić, 2016)	1	Descriptive	[254]	(Van Zoonen et al., 2017)	1	Exploratory
[127]	(Langaro et al., 2018)	2	Descriptive	[255]	(Zu et al., 2019)	2	Observational
[128]	(Laroche et al., 2012)	2	Causal	[256]	(Cordes, 2017)	3	Observational

**Appendix 2- The relation matrix of research strategy and stages**

		Stage 1 (Experimentation & Learning)											
		Focus		Strategy	Str.	Evolution	Dominant problems				Plt.		
		Announcing the launch of SM	Posting & providing product/service information	SM adoption is experimental with every department	Individual or departmental drive	Little management involvement	Requires departmental champions to drive the use of the SM as a business information system.	Lack of understanding of SM	Underst& the skills required	Lack of skills & expertise	Difficulty in growing the audience	Test the capabilities of SM	General social network sites
Archival	Pre-existing datasets(Haydam & Steenkamp, 2020)												✓
	Seeking out & extracting evidence from archival records (Clary-Lemon, 2014)					✓	✓	✓		✓	✓		
	Large & diverse samples (Uzoh et al., 2020)												✓
	Reduced dem& characteristics(Heng et al., 2018)											✓	
	Increased generalizability (Heng et al., 2018)												
	Directly examine real-world (Baker, 2000)												
Exploratory	Topic or issue is new (Babbie 2020)			✓				✓	✓				
	Enter the unknown to discover something (Casula et al.,2020)	✓		✓		✓		✓	✓		✓	✓	
	Gathering general info about a topic, rich, in-depth description of an instance (Johannesson & Perjons, 2014)	✓			✓			✓	✓				
	Data is difficult to collect (Shao & Zhou, 2002)						✓					✓	
	Not require the collection of huge amounts of quantitative data (Johannesson & Perjons, 2014)							✓			✓		
	It does not prescribe to which hypotheses to select or not(Casula et al., 2020)	✓			✓								
	Using deductive reasoning, (Hyde, 2000)		✓			✓			✓	✓			
	To discover generalizations, which can become future hypotheses (Stebbins, 2001)			✓				✓					
	To uncover facts & opinions regarding a particular subject (Casula et al., 2020)					✓				✓	✓		✓
	Answer the "why" question (Casula et al., 2020)			✓		✓					✓		
	Deep insight into a	✓		✓						✓			







		Stage2 (Rapid Growth)														
		Focus		Strategy		Str	Ev	Dominant problems			Platforms					
		Consumer-centric focus	Customers are encouraged to connect & comment	SM is coordinated across all departments by management	Establish SM goals & objectives	Internal & external awareness	SM activities are linked to the organization's business processes.	Coordinated at the department level	Recognition lack of planning & a clear strategy	Measuring SM ROI	Translating SM data into actionable strategies	Appoint a group to coordinate SM	Lack of strategic interest from senior management	General social network sites	Instant massaging	Creativity works sharing
	The practice of managing & analyzing marketing performance (Casula et al., 2020)		✓			✓										
	Answer the "What" question (Strydom, 2013)	✓				✓			✓							
Observational	Measure a sample without trying to affect them (Kitsantas et al., 2005)	✓	✓			✓				✓						
	where a randomized controlled trial might be unethical (Mann, 2003)		✓			✓										✓
Observational	The Independent variable is not under the control (Kennedy-Martin et al., 2015)		✓			✓						✓				
	Greater proximity to "real-life situations" (Mariani & Pego-Fernandes, 2014)	1														1
	Draws inferences from a sample (Kennedy-Martin et al., 2015)					✓										
	To detect unusual side effects (Mariani & Pego-Fernandes, 2014)	✓				✓										
	To measure the effectiveness of an intervention (Anglemyer et al., 2014)	✓	✓			✓	✓	✓		✓	✓					
Causal	One variable gets manipulated to see if it changes the outcome (Haydam & Steenkamp, 2020)											✓				
	Helpful for operational					✓				✓						









		Stage 3 (Formalization)																
		Focus		Strategy				Str.		Ev	Problems			Plt.				
		customer feedback & analysis	Improve metrics for ROI.	Planning, governance & alignment with overall business strategy.	SM becomes more formalized	SM is controlled across the company	SM strategy aligned with the BP	Adhere to established rules	Further investment/deployment is based on ROI	Coordinated at the business level	Centralized corporate-driven model to coordinate efforts	Need to integrate the SM with existing systems & business processes	Establish metrics for measuring ROI	Funding for SM development	Difficulty managing user experience.	Employee misuse	Lack of understanding of SM	Creativity works sharing
	Draws inferences from a sample (Kennedy-Martin et al., 2015)										✓							
	To detect unusual side effects (Mariani & Pego-Fernandes, 2014)													✓	✓			
	Measure the effectiveness of an intervention (Anglemyer et al., 2014)	✓		✓					✓									
Causal	Test cause-and-effect relationships hypotheses through involved intricate experimental designs (Dudovskiy, 2016)														✓			
	One variable gets manipulated to see if it changes the outcome (Haydam & Steenkamp, 2020)	✓						✓										
	Research is very complex (Dudovskiy, 2016)										✓			✓	✓			
	Provides a unique opportunity to 'test the waters' before fully launch (Maxwell, 2004)	✓											✓					
	Operational planning (Dudovskiy, 2016)		✓					✓	✓	✓								
	To prove or disprove a causal relationship between a factor (Johannesson & Perjons, 2014)							✓										
Causal	Understanding more nuances of a system (Haydam & Steenkamp, 2020)													✓				

		Stage 3 (Formalization)																	
		Focus		Strategy			Str.		Ev	Problems			Plt.						
		customer feedback & analysis	Improve metrics for ROI.	Planning, governance & alignment with overall business strategy.	SM becomes more formalized	SM is controlled across the company	SM strategy aligned with the BP	Adhere to established rules	Further investment/deployment is based on ROI	Coordinated at the business level	Centralized corporate-driven model to coordinate efforts	Need to integrate the SM with existing systems & business processes	Establish metrics for measuring ROI	Funding for SM development	Difficulty managing user experience.	Employee misuse	Lack of understanding of SM	Creativity works sharing	General blogs & Microblogs
	to investigate the impact of one variable against another (Zikmund et al., 2012)														✓				
	Market testing (Haydam & Steenkamp, 2020)	✓												✓					

		Stage 4 (Consolidation & Integration)																
		Focus		Strategy			Str	Evolution		Dominant problems								
		Optimization of processes & scale	Pursue alignment with external partners	Ideation, crowdsourcing emerge	SM is integrated with business processes	SM is used in BI & the integration of stakeholders in NPD	fundamental change in business	Micro outsourcing of activities occur	Coordinated at the business level	Management may decide no integration	Management decides to integrate SM with internal systems processes.	As new SM emerge, management decides to pursue greater integration with the external value chain	Negative comments & feedback	Security policy & control	Difficulty in engaging the audience	Lack of SM passion & creativity among stakeholders	Monologue occurrence resulting from a failure to listen to/involve	Lack of clear metrics for ROI.
Archival	Seeking out & extracting evidence from archival records (Clary-Lemon, 2014)					✓									✓			✓
	Large & diverse samples (Uzoh et al., 2020)														✓			
	Predicted relationships hold true in real-life circumstances (Heng et al., 2018)																✓	✓
	Reduced dem& characteristics(Heng et al., 2018)														✓	✓		
	Examine socially sensitive phenomena in an ethical manner (Heng et al., 2018)															✓		
	Increased generalizability(Hen															✓	✓	✓

		Stage 4 (Consolidation & Integration)																	
		Focus			Strategy		Str		Evolution			Dominant problems							
		Optimization of processes & scale	Pursue alignment with external partners	Ideation, crowdsourcing emerge	SM is integrated with business processes	SM is used in BI & the integration of stakeholders in NPD	fundamental change in business	Micro outsourcing of activities occur	Coordinated at the business level	Management may decide no integration	Management decides to integrate SM with internal systems processes.	Management decides to pursue greater integration with the external value chain	As new SM emerge, management decides to pursue greater integration	Negative comments & feedback	Security policy & control	Difficulty in engaging the audience	Lack of SM passion & creativity among stakeholders	Monologue occurrence resulting from a failure to listen to/involve	Lack of clear metrics for ROI.
	g et al., 2018)																		
	Directly examine real-world (Baker, 2000)															✓	✓	✓	
Exploratory	Enter the unknown to discover something new (Casula et al., 2020)																		
	Gathering general info about a topic, rich, in-depth description of an instance (Johannesson & Perjons, 2014)													✓			✓		
Descriptive	Is not concerned with causes(Strydom, 2013)						✓												
	Provide data to formulate conclusions or measure changing behaviors over time (Casula et al., 2020)							✓								✓			
Descriptive	Presentation of specific details of a situation, social setting or relationship (Shao & Zhou, 2002)									✓									
	Describe characteristics of various aspects (Goeman & Solari, 2011)	✓	✓																
	The practice of managing & analyzing marketing performance(Casula et al., 2020)				✓							✓							
Observational	Measure a sample without trying to affect them (Kitsantas et al., 2005)		✓																
	where a randomized														✓	✓			

		Stage 4 (Consolidation & Integration)																			
		Focus			Strategy		Str		Evolution			Dominant problems									
		Optimization of processes & scale	Pursue alignment with external partners	Ideation, crowdsourcing emerge	SM is integrated with business processes	SM is used in BI & the integration of stakeholders in NPD	fundamental change in business	Micro outsourcing of activities occur	Coordinated at the business level	Management may decide no integration	Management decides to integrate SM with internal systems processes.	Management decides to pursue greater integration with the external value chain	As new SM emerge, management decides to pursue greater integration	Negative comments & feedback	Security policy & control	Difficulty in engaging the audience among stakeholders	Lack of SM passion & creativity	Monologue occurrence resulting from a failure to listen to/involve	Lack of clear metrics for ROI.		
	controlled trial might be unethical (Mann, 2003)																				
	Greater proximity to real-life situations (Mariani & Pego-Fernandes, 2014)					✓		✓			✓		✓								
	Draws inferences from a sample (Kennedy-Martin et al., 2015)			✓																	
	To detect unusual side effects (Mariani & Pego-Fernandes, 2014)						✓		✓												
	To measure the effectiveness of an intervention (Anglemyer et al., 2014)	✓											✓								
Causal	Test cause-and-effect relationships hypotheses through involved intricate experimental designs(Dudovskiy, 2016)	✓					✓										✓				
	One variable gets manipulated to see if it changes the outcome (Haydam & Steenkamp, 2020)						✓						✓		✓	✓					
	Research is very complex(Dudovskiy, 2016)				✓		✓								✓	✓					
	Has the potential to get to the bottom of deeper issues (Zikmund et al., 2012)															✓					
	Provides a unique opportunity to ‘test the waters’ before fully launching into (Maxwell, 2004)					✓	✓														
	Helpful for					✓				✓	✓					✓					

		Stage 4 (Consolidation & Integration)																		
		Focus		Strategy		Str		Evolution		Dominant problems										
		Optimization of processes & scale	Pursue alignment with external partners	Ideation, crowdsourcing emerge	SM is integrated with business processes	SM is used in BI & the integration of stakeholders in NPD	fundamental change in business	Micro outsourcing of activities occur	Coordinated at the business level	Management may decide no integration	Management decides to integrate SM with internal systems processes.	Management decides to pursue greater integration with the external value chain	As new SM emerge, management decides to pursue greater integration with the external value chain	Negative comments & feedback	Security policy & control	Difficulty in engaging the audience	Lack of SM passion & creativity among stakeholders	Monologue occurrence resulting from a failure to listen to/involve	Lack of clear metrics for ROI.	
operational planning (Dudovskiy, 2016)	To prove/ disprove a causal relationship (Johannesson & Perjons, 2014)					✓														
	Understanding more nuances of a system (Haydam & Steenkamp, 2020)			✓								✓						✓		
	to investigate the impact of one variable against another (Zikmund et al., 2012)													✓						
	Developing a dependable & repeatable process (Haydam & Steenkamp, 2020)							✓											✓	
	Market testing (Haydam & Steenkamp, 2020)	✓	✓																	

		Stage 5 (Institutional Absorption)																
		Focus		Strategy		Structure		Ev		problem		Platforms						
		Enterprise-wide SM technologies	Generate/re-engineer existing business models	Sustaining & optimizing the use of established SM applications.	De-facto application for business tasks	SM is embedded into the core of what we do, & how we do it	SM is embedded from internal partners to external partners.	To facilitate business-wide conversations	Aimed at customers, suppliers & partners, as business connectivity	To establish wider business relationships	To empower all stakeholders	Management does not allow hype about new SM applications	Monitor external environment	Lack of creativity among stakeholders	Company-sponsored network	Collaborative websites	Microblogs	Business networking sites
Archival	Pre-existing datasets (Haydam & Steenkamp, 2020)														✓	✓	✓	✓
	Seeking out & extracting evidence from archival records				✓				✓			✓		✓	✓	✓	✓	✓



		Stage 5 (Institutional Absorption)															
		Focus			Strategy		Structure		Ev	problem	Platforms						
		Enterprise-wide SM technologies	Generate/re-engineer existing business models	Sustaining & optimizing the use of established SM applications.	De-facto application for business tasks	SM is embedded into the core of what we do, & how we do it	SM is embedded from internal partners to external partners.	To facilitate business-wide conversations	Aimed at customers, suppliers & partners, as business connectivity	To empower all stakeholders	Management does not allow hype about new SM applications	Monitor external environment	Lack of creativity among stakeholders	Company-sponsored network	Collaborative websites	Microblogs	Business networking sites
	(Clary-Lemon, 2014)																
	Large & diverse samples (Uzoh et al., 2020)	✓								✓				✓	✓	✓	✓
	Predicted relationships hold true in real-life circumstances(Heng et al., 2018)								✓			✓					
	Reduced dem& characteristics (Heng et al., 2018)											✓	✓				
	Examine socially sensitive phenomena in an ethical manner (Heng et al., 2018)												✓				
	Increased generalizability(Heng et al., 2018)												✓				
	Directly examine real-world(Baker, 2000)												✓				
Exploratory	Topic or issue is new (Babbie 2020)																
	Not require the collection of huge amounts of quantitative data (Johannesson & Perjons, 2014)							✓	✓			✓					
Descriptive	Not concerned with causes(Strydom, 2013)											✓					
	Presentation of specific details of a situation, social setting or relationship (Shao & Zhou, 2002)											✓					
	Describe characteristics of various aspects (Goeman & Solari, 2011)											✓					
	The practice of managing & analyzing marketing performance(Casula et al., 2020)											✓					
	“What” question (Strydom, 2013)											✓					



		Stage 5 (Institutional Absorption)																
		Focus			Strategy		Structure		Ev	problem	Platforms							
		Enterprise-wide SM technologies	Generate/re-engineer existing business models	Sustaining & optimizing the use of established SM applications.	De-facto application for business tasks	SM is embedded into the core of what we do, & how we do it	SM is embedded from internal partners to external partners.	To facilitate business-wide conversations	Aimed at customers, suppliers & partners, as business connectivity	To establish wider business relationships	To empower all stakeholders	Management does not allow hype about new SM applications	Monitor external environment	Lack of creativity among stakeholders	Company-sponsored network	Collaborative websites	Microblogs	Business networking sites
	planning (Dudovskiy, 2016)																	
	To look at the impact of specifically identified change on existing norms & assumptions (Haydam & Steenkamp, 2020)		✓											✓				
	To prove/ disprove the causal relationship between a factor (Johannesson & Perjons, 2014)								✓									
	Understanding more nuances of a system (Haydam & Steenkamp, 2020)														✓			
	Developing a dependable & repeatable process (Haydam & Steenkamp, 2020)		✓						✓					✓				

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