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INTERSECTION OF STRATEGIC MANAGEMENT AND MANAGEMENT INFORMATION SYSTEMS DISCIPLINES: ANALYSIS OF THEORIES

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Abstract

Uncertainty, dealing with uncertainty, and making better and faster decisions under uncertain conditions is the biggest challenge for today's businesses. Management Information Systems and Strategic Management are two disciplines addressing uncertainty in the business environment and dealing with it from the decision-making perspective. The study originated from a Ph.D. course related to MIS theories. During the course, it was observed that a significant number of MIS theories originated from the Strategic Management field, and it was decided to conduct research on this topic. The study starts by identifying the most widely used theories in the field of Management Information Systems from different studies and academic databases. Then experts from Strategic Management were asked to list the theories they used the most. We found the commonalities between the two disciplines in terms of the theories used. After different analysis the study identifies 10 theories shared by both disciplines and explains the views of each discipline on each theory. We believe that the study will contribute to both disciplines in many areas. In addition, in the MIS area theories and applying theories are not so common. With this study, we aim to create awareness about big number of theories coming from different disciplines and re-interpreted by MIS scholars. Multidisciplinarity is essential for MIS research, and our paper proves that the Strategic Management field has the closest ties to the MIS discipline in terms of theories.

Keywords: Management, management information systems, strategic management, theory, theories

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1. Introduction

Decision-making under uncertainty and dealing with uncertainty, in general, has always been difficult for businesses and decision-makers. In recent decades, this uncertainty has intensified due to global level changes in political (like globalization, depolarization, and polarization again), economic (like demand and supply fluctuations), cultural, and environmental conditions (like global warming and climate change). Normally, the dynamic and uncertain business environment highly inconvenience businesses to make decisions in uncertain environment, and decision-making is one of the most complex processes in an uncertain environment (Polasky et al., 2011). Most recently the emergence of new and unexpected, unforeseen crises like the COVID-19 and Russia-Ukraine war, problems with worldwide supply, chains, and economic crises create many uncertainties for companies and require them to find, adopt, and use ways to deal with uncertain situations. Now decision-making under uncertainty is vital for companies. All these changes made it necessary for businesses, especially decision-makers, to use various techniques, methods, and technologies to deal and ideally reduce if not totally overcome this uncertainty. The methods and techniques involve data analysis and utilization of mainly statistics, mathematics, and computer science separately or altogether.

Today businesses must collect data in a real-time, process that data immediately, and use it for better and faster decision-making to survive. The discipline of Management Information Systems (MIS) serves this purpose. Although, in the beginning, the discipline of MIS emerged to support all kinds of decision making (under certainty, semi-certainty, and uncertainty), it has recently focused and further developed to support decision making under the most difficult and complex situations unstructured long-term decisions. On the other hand, the discipline of Strategic Management (SM) has been emerged as a sub-discipline of the management discipline and focuses on long-term, strategic, and unstructured decisions in businesses. Considering the strategic management, MIS discipline recently generates solutions for executive management by employing big data, data collection, processing, and reporting by utilizing Intelligent Systems, Artificial Intelligence, Business Intelligence, Data Analytics, Data Science, Data Visualization, etc. Therefore, we can say that the commonality of both disciplines is that they both focus on making decisions under uncertainty and complex situations in businesses.

Decision-making is the foundation of strategic management, and the strategic decision-makers must handle making complex, unstructured and uncertain decisions (Molloy & Schwenk, 1995). Nowadays, data-driven decisions are essential. In this stage of decision making, Management Information Systems (MIS) discipline presents appropriate ways to decision makers of strategic management. Over the last two decades, strategic management feeds MIS in the point of strategic decisions, and MIS supports strategic management in dealing with uncertainty and making better, faster decisions. Furthermore, information systems are designed to support or shape organization's competitive strategies. Thus, MIS and SM have had common study fields as long-range planning, decision making, response management, and innovation management. Recently, digitalization, and digital transformation, which have come to the fore in post-pandemic era, also have been revealed as another joint study field of MIS and SM scholars.

Moreover, the increasing complexity of phenomena in recent years, as Covid 19 leaded structural changes and transformations, has required multidisciplinary perspectives and increased the importance of

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multidisciplinary studies. In this respect, this study aims to examine common theories of MIS and SM fields, which are most frequently used to explain events and facts, and describe how those theories are approached by MIS and SM scholars. For that purpose, firstly, common theories of SM and MIS will be identified, and how those theories have been approached in SM and MIS fields will be examined. Secondly, studies covering those theories and being published in the post-pandemic era will be analyzed. This study revealing the similarities and differences in approaching those theories in SM and MIS fields, and the frequency of those theories' use in post-pandemic era, is expected to make significant contributions to both SM and MIS literature.

2. Literature Review

Theory refers to "a formal statement of the rules on which a subject of study is based or of ideas that are suggested to explain a fact or event or, more generally, an opinion or explanation" (Cambridge Online Dictionary, 2022). Suppe (1977) also defines scientific theories as well-constructed and well-supported systems with high validity and reliability. Looking at the definitions, we can say that scientific theories are used in all branches of science. Theories underpin disciplines in the scientific sense but also explain how things work in practice based on the facts and truths. The interdisciplinarity of MIS has been observed since the emergence of the first MIS theories. Due to MIS' interdisciplinarity, naturally MIS theories are fed by different features of other disciplines, and strategic management is a significant one.

MIS is relatively a new field compared to other disciplines in business schools of universities. It has emerged due to the need for other disciplines to work in integration with each other (Gorgone et al., 2003). MIS is a bridge that connects different disciplines at the point of information and communication technologies. Therefore, MIS is multidisciplinary in nature. MIS is fed by Computer Sciences, Mathematics, Economics, Accounting, Psychology, Management, Systems Theory, Sociology, Statistics, Marketing, etc. (Gorgone et al., 2003; Yarlikas, 2015).

MIS integrates and supports all business functions through its data capturing, collecting, recording, storing, integrating, processing, disseminating, visualizing, and presenting functions. On the other hand, SM needs integrated and well-analyzed data throughout the organization and surrounding environment. With the beginning of the use of intelligent systems, MIS as Decision Support Systems and Expert Systems are in great demand. With MIS's business focus and analytics, great opportunities also arise for strategic management (Huy et al., 2004). MIS applications are supposed to increase organizational performance by supporting decision-makers of strategic management (Gorgone et al., 2003; Huy et al., 2004).

MIS research and activities are built on solid theoretical bases. Theories of MIS have a strong history, considering MIS's multidisciplinary characteristics. It has been enriched by social, technical, and economic factors to improve the business value (Mishra & Dwivedi, 2012). Mathematics, Logic, and Computer Science have been contributors to the foundations of Information Systems for a long time. MIS theories are practical as well as theoretical, as the knowledge is collected systematically, and this collected knowledge enlightens practical applications in business.

Research and discussions interested in the definition of Management Information Systems date back to the 1970s (Gregor, 2006). For example, while Wand and Weber (1990) argued the unique nature

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of IS that distinguishes it from other disciplines, Orlikowski and Iacono (2001) drew attention to the importance of the artificiality of information technologies.

MIS field is interdisciplinary from the beginning and this multidisciplinary causes the nature of its theories to be affected (Gregor, 2006). Thus, the nature of MIS theories is expected to be a combination of the nature of other disciplines and unique and MIS-specific ones. A feature that distinguishes IS theories from other disciplines concerns the use of artifacts in systems with human-computer interaction. Researching in MIS investigates not only the technological or the social systems, or even both at the same time, but also the phenomena that occur when the two interact. Thus, MIS is a concurrent discipline that intersects physical objects and human behavior. Understanding the MIS theories requires connecting the humans' natural, social, and artificial worlds (Gregor, 2006).

Several sources list MIS theories. However, their listing criteria of them are different. For instance, Brigham Young University (BYU) library (2022) lists 89 theories in alphabetic order. Besides that, Dwivedi et al. (2012) sorted 46 theories by the areas they contribute to. For this study, nine sources for theories were found and used after a search in literature and the web. List of these sources and their selection method are shown in Table 1.

Table 1. IS Theories Resources

	Resource	**# Of Theories**	**Selection Method**
1.	Theories Used in IS Research (Wikipedia)	128	IS theories are collected by contributors of Wikipedia, and this website is a project of a Human Behaviour and an IS PhD Preparation Program.
2.	Brigham Young University Library (BYU Library, 2022)	89	IS theories are collected according to related articles of top IS books and journals.
3.	Dwivedi et al. (2012)	45	IS theories in this book consist of theories that IS researchers use as initial point of their works.
4.	Lim et al. (2013)	44	In this study, IS theories are selected by Complex Network Analysis to respond to which theories are used in which research areas, and their linked disciplines.
5.	Boateng (2014) Instructor: Richard Boateng Course Name: Theories and Methods of Information Systems	34	This syllabus consist of IS theories used in the conduct of IS research. Related theories are selected by instructor.
6.	Ramírez-Correa (2016)	16	IS theories in this study, identified by co-citation analysis, according to the most widely applied in IS research from the literature of 2015.
7.	Key MIS Theories (Wikidot, 2007)	13	IS theories are collected by contributors of this website by reviewing MIS literature.
8.	Salam (2011) Instructor: A. F. Salam Course Name: Theories of Information Systems	13	In this syllabus, IS theories are determined by the instructor, according to their importance to students.
9.	Halawi and Mccarthy (2006)	7	Theories in this article are selected by reviewing the theoretical fundamentals of IS theories, and highlighted in terms of their importance for IT.

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Though these resources are significant for Management and Information Systems (IS) fields, MIS literature is lacking in explaining and guiding the use of theories in today's businesses. In addition, the challenges of uncovering the different disciplines embedded in MIS also affect the number of resources in this field (Mishra & Dwivedi, 2012).

In Straub (2012) 's study, MIS theories are examined in two categories: native and imported theories. We know that most MIS theories are borrowed from external (reference) disciplines. However, MIS also has native theories specific to IS and Information Technologies (IT). Unfortunately, IS and IT artifact is challenging to adopt to critical concepts of a field, so the number of native MIS theories are few. Nevertheless, MIS has well-based native theories such as Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Unified Theory of Planned Behavior (UTAUT), Delone and Mclean's Information Success Model, and is Task-Technology Fit Theory (Delone & McLean, 2003; Halawi & Mccarthy, 2006; Straub, 2012; Venkatesh et al., 2003) as well as theories barrowed from other contributing disciplines. For instance, Resource-Based View, Dynamic Capabilities Theory, Competitive Strategy Theory, Porter's Five Competitive Forces Model, Decision Theory, Institutional Theory, and Resource Dependency Theory.

The impact of information systems on strategic management also redounds in theories. In this context, for example the Resource-based View (RBV) is counted as the most common MIS-related strategic management theory (Dwivedi et al., 2012; Wernerfelt, 1984). Moreover, this study is expected to reveal other most common MIS-related SM theories.

3. Methodology and Determination of Common Theories

Theories are approaches having solid foundations. The purpose of this study is to address the intersections and commonalities of the MIS and SM theories. The number of theories used for the MIS discipline is largely due to the field's multidisciplinary characteristics. To achieve this, we have started with determining MIS or IS theories. In order to determine the most common MIS theories, 8 different MIS theories lists are analyzed and combined into a single list. This resulted with 167 theories. The compiled list with 167 theories in alphabetical order was presented to 3 Strategic Management experts to determine which ones are related to the Strategic Management discipline. The three experts were asked to determine and identify the theories which were mainly used and/or originated in strategic management discipline. This way, the theories which were common to both disciplines were identified. Feedback from experts was evaluated, the list was reorganized, and it was clearly seen that 3 experts had a common opinion on 18 theories.

Leading choices of experts have the actual strategic management issues, the competitive environment, and use of resources. Resource-based View, Competitive Strategy Theory, and Dynamic Capabilities take the lead among all theories. In addition to the theories that the 3 experts had a common opinion in, theories approved by any two experts were also considered since opinions that experts have a common idea are valuable. 9 additional theories are common for any two experts, and 26 theories in total were determined. Table 2 indicates 26 ranked theories.

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Table 2. Ranked Theories

Theories	Frequency					
	1	**2**	**3**	**4**	**5**	**6**
1. Actor-Network Theory		5				
2. Administrative Behaviour Theory					12	13
3. Agency Theory	6	11	13	14		
4. Behavioural Decision Theory			12	13	13	
5. Chaos Theory	12			12		12
6. Cognitive Fit Theory						8
7. Competitive Strategy Theory	2	6	1	11	9	6
8. Complexity Theory	11		15			11
9. Contingency Theory	8				5	10
10. Decision Theory	4		11	10	10	7
11. Dynamic Capabilities Theory	5	1	4	5	6	3
12. Game Theory	9	9		4		4
13. General Systems Theory				3	7	9
14. General Theory of Entrepreneurship			10		4	14
15. Institutional Theory	15	10	9	15	14	
16. Internationalization Theory	13	12	8		15	
17. Knowledge- Based Theory of The Firm		8	5	8	8	
18. Organizational Learning Theory	14		6	7		15
19. Porter's Five Competitive Forces Model	10	7	2	1		1
20. Resource Dependency Theory	3	3		6	3	
21. Resource-Based View	1	2	3	2	1	2
22. Social Cognitive Theory				9		
23. Social Exchange Theory		15			2	
24. Social Network Theory		4			11	
25. Stakeholder Theory	7	14	7			5
26. Transaction Cost Theory		13	14			

Then this list of 26 theories was submitted to 6 SM scholars to identify 15 theories mostly used in the SM field and rank them according to the frequency of use in the field. Feedback from experts were consolidated,-and theories commonly chosen by respectively 6, 5 and 4 experts were put in order, which revealed 13 theories to be examined.

Following that, we calculated the median values of 13 theories resulting from the recent ordering and scoring. Theories discussed in the study were selected according to the frequency and median results of the expert rankings. This calculation gave us a list of theories from most important to least important. Theories with a consensus of at least 4 experts and/or a median value of less than 10 are considered for our study and analysis. The final ranking and median scores can be seen in the following Table 3.

Table 3. Frequency and Median Scores of the Theories

Theory	Frequency	Median
1. Resource-Based View	6	2
2. Dynamic Capabilities Theory	6	4.5
3. Competitive Strategy Theory	6	6
4. Porter's Five Competitive Forces Model	5	2

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5.	**Decision Theory**	5	10
6.	**Institutional Theory**	5	14
7.	**Resource Dependency Theory**	4	3
8.	**Game Theory**	4	6.5
9.	**Stakeholder Theory**	4	7
10.	**Knowledge-Based View of the Firm**	4	8
11.	Organizational Learning Theory	4	11.5
12.	Agency Theory	4	12
13.	Internationalization Theory	4	12.5

4. Discussion of Common Theories with MIS and SM Perspectives

As a result of the ranking process, 3 theories came to the fore, on which 6 experts reached a consensus: resource-based view, competitive strategy theory, and dynamic capabilities theory. Moreover, the-Resource-based View is stated in first 5 ranking by all experts.

4.1. Resource-Based View

Resources and products are interacting components for a firm. Many products require several resources, and many resources can be used for several products (Wernerfelt, 1984). Therefore, firms can achieve strategic success through acquiring, developing and deploying scarce resources and skills over time (Connor, 2002). The Resource-Based View (RBV) theory propounded by Wernerfelt (1984) is regarded as one of the theories of strategic management that are referenced particularly. The key action of the RBV is the exploration of a firm's resources to gain a sustainable competitive advantage over competitors in the industry (Mahoney & Pandian, 1992). RBV prompts the managers to focus on the firm's internal resources to identify the assets, capabilities, and competencies that can provide more competitive advantages (Mahoney, 2001).

The resource-based view (RBV) argues that institutions must have the competencies to create unique, high-value, and original values to survive in the competitive market (Barney, 1991; Conner, 1991). Sambamurthy et al. (1994) and Feeny and Willcocks (1998) argue that institutions should adopt IS-related values to create the competencies mentioned above in the competitive market. Studies have shown that the use of IS in the creation of corporate values contributes to the positive development of variables such as performance, productivity, and sustainability (Bharadwaj, 2000; Pavlou & El Sawy, 2006; Ravichandran & Lertwongsatien, 2005; Santhanam & Hartono, 2003; Wade & Hulland, 2004). When the latest research from the 2000s is examined, the Resource-based View theory comes to the forefront of concepts such as IS and especially innovation in creating corporate values and developing tangible and intangible resources. In the IS literature, there are points of view where IS components such as business system thinking, business innovation, business partnership, and planning and change management are used in the Resource-Based View managerial process (Tarafdar & Gordon, 2007).

4.2. Dynamic Capabilities

The Strategic Management perspective concerns how institutions should achieve their goals at the macro and micro levels. Strategic Management theory and Dynamic Capabilities ideas intersect at points

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such as providing training to their employees according to current technologies and adopting innovation. The relevant literature shows that the Strategic Management Dynamic Capabilities theory is approached from a micro-level management perspective (Ambrosini & Bowman, 2009).

Dynamic capabilities are based on RBV (Resource Based View). Dynamic Capabilities are restructuring institutions' internal and external competencies according to competitive market conditions and situations (Teece et al., 1997). It is one of the most studied theories in the IS literature. In the IS literature, there are perspectives such as Dynamic Capabilities accelerating the administrative process of the institution, reducing the cost of product management, and using innovation and technological approaches in creating strategic plans. As can be seen, the foundation of Dynamic Capability is based on knowledge and research topics such as information management and technology integration in the IS field, allowing these two theories to intersect and be discussed in joint research topics (Parida et al., 2016).

4.3. Competitive Strategy Theory

The competitive strategy identifies how a company rivals in a specific industry and gets an edge on a competitive advantage over other competitors (Porter, 1980). Competitive strategy theory is established to describe three generic strategies to tackle competition using microeconomic concepts by Michael Porter (1979; 1997). The relative strength of these forces decides the competitive balance of the industry. Porter also describes three generic strategies to reposition a company regarding its competitors: overall cost leadership, differentiation, and focus (cost focus and differentiation focus) (Porter, 1997). These strategies provide the company to surpass its competitors in the industry.

Cost leadership develops edges to take businesses away from their competitors. This way of competition increases profits by reducing costs and increasing market share. A company with low cost must find and employ all advantageous sources (Porter, 1980). Being sustainable on a low-cost plan and above the market average make the company's overall leadership (Tanwar, 2013). Differentiation type of competitive strategy distinguishes products with higher quality and exceeding services. Technology is crucial in this stage to produce products and services with expected quality. Uniqueness prices the products and services higher than its competitors. People are willing to pay premium prices for unique products, which reduces rivalry (Green et al., 1993). Focus strategy describes the concentration of the firm on a specific target group. Groups can be separated by demographic, geographic, or physical segmentation. The company chooses a niche group, then develops a strategy to serve selected segments. Focus strategy is either used for cost leadership or differentiation strategies (Green et al., 1993). Cost focus strategy seeks the cost advantage in a target group and is interested in the cost behavior in groups. Besides, differentiation focus looks for the special needs of consumers so that higher prices can be valid in those industries (Onyango, 2017).

Leading researchers in the field of Information Systems state that information systems have an essential role in solving the problems of decision making, product management, business management, and the global economy. Researchers and professionals in the field of Information Systems, especially in competitive marketing, which is one of the sub-research groups of the field of strategic management, have the point of view of information systems as an advantage in providing superiority against their

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competitors in the sector in which the enterprise is located. Components of IS such as cost reduction, e-commerce, traditional commerce systems, digital content generation and distribution, client-server and P2P network distribution, business automation, supply chain management, and cloud computing are integrated into strategic management principles (Kauffman et al., 2005).

4.4. Porter's Five (Six) Competitive Forces Model

The foundations of Porter's Five Competitive Forces theory are based on organizational management. Porter's original research was designed to explain why some firms are more profitable than the other firms in the same industries and proposed the five force model. It helps to determine opportunities and threats in an industry by identifying and analyzing five competitive forces that shape any industry. Four forces, the bargaining power of suppliers, the bargaining power of buyers, the threat of substitute products or services, and the threat of new entrants, are the dynamics of the industry's competition, which constitutes the fifth force (Porter, 1979). For long-run profitability, the weaker the forces collectively are required (Porter, 1979). In the 1990s, he proposed the relative power of other stakeholders as the sixth force defining an industry's competition level. However, some scholars still argue that it is challenging to implement the five force model at the institutional level and sustainability due to the inflexibility of its structure in the fast-changing competitive market (Aktouf, 2004; Thurlby, 1998).

In the field of Information Systems, it is seen in research that the Five Forces Model is based on economics and management and is the least adopted theory by IS (Johnson et al., 2008). In IS literature, it is seen that Competitive Marketing is rapidly affected by technological developments. In the IS research conducted in the 2000s, the studies that stated that digitalization was insufficient while the Five Forces Model was being developed and that it was suitable for application in the traditional economy also support the perspectives presented above (Dälken, 2014).

4.5. Decision Theory

Decision theory is relevant to individuals' or agents' choices among the alternatives. In Strategic Management, Decision Theory is considered one of the essential components of the organization, which forms the basis of management principles. It is emphasized that strategic decisions should be unified to achieve organizational goals (Hambrick & Snow, 1977). Bass (1983) explains that the decisions taken in Strategic Management are directly related to the sustainability of organizations and institutions. In SM literature decision are examined in the context of their hierarchical level (corporate strategic, tactical, operational decisions), certainty level (obscure, uncertain, risky, certain), programmability level (structures, semi-structured, unstructured), and number of decision makers (individual, group). Apart from this, decision making is another issue emphasized in SM in the context of decision theory. In the scope of decision-making, SM scholars emphasize decision-making orientations (e.g., rational, intuitive, dependent, avoidant, spontaneous) (Scott & Bruce, 1995), decision-making styles (e.g., analytical, conceptual, directive, behavioral) (Mintzberg et al., 1976), strategic decision making process (evaluation of current performance, scanning external and internal environment, analyzing strategic factors, generating strategic alternatives, choosing the best strategic alternative(s), implementing selected strategy,

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evaluating implemented strategy), strategic decision making characteristics (rare, directive, consequential) (Wheelen & Hunger, 2012) etc. The main purpose is to identify better decision combinations to get a long-term sustainable competitive advantage.

Decision Theory in Information Systems stands out with its vital role in developing reliable information systems. Developing reliable and accurate information systems is a product of managerial decision-making. In the field of IS, decision theory and science are viewed as the core method, as they are widely used in areas such as cost reduction, risk management, quality management, and optimization (Harrison & Pelletier, 1998).

4.6. Institutional Theory

The institutional theory proposes that organizations are products of social factors rather than economic ones. Meyer and Rowan (1977), who built this theory, examine the social structure of the organizations considering the formal and informal governance. Organizations attempt legitimacy by adopting the norms, procedures, and rules. Institutional rules operate as myths that organizations integrate, acquiring legitimacy, resources, and enhanced survival expectancy (Currie & Swanson, 2009; Meyer & Rowan, 1977). Formal organizations are generally known as systems of coordinated activities. However, formal organizational structures in modern societies have higher institutionalized contexts (Berthod, 2016; Meyer & Rowan, 1977). In addition, considering only the rational actions of managers is insufficient in explaining the things that happen in an organization (Mignerat & Rivard, 2015). The 'irrationalities' arising within the institutional context should also be considered (Avgerou, 2000; Orlikowski & Barley, 2001). Tolbert and Zucker (1983) are the scholars who insert institutional theory into SM. According to Tolbert and Zucker, there is a pre-institutionalisation stage characterised by experimentation as organizations seek to align themselves to their task environment. As the success of particular experiments (e.g. new strategies, new products, new technologies or new structures) becomes known, other organizations copy them in such a way as to gain a competitive advantage. In this stage, organizations adopt new practices as an outcome of not calculated rational intent but the product of social beliefs and expectations. In semi-institutionalized stage, organizations adopt new practices *consciously*. When a practice is taken-for-granted, full institutionalization occurs (Tolbert & Zucker, 1983). Tolbert and Zucker's contribution is particularly important because it fundamentally challenges the notion of unrestricted human agency in strategic decision-making (Raynard et al., 2015). Another contribution in this field was made by Oliver (1997), who found that institutional relationships were correlated with performance, especially under conditions of tight market circumstances, and profitability was significantly positively affected by the strength of institutional relationships under conditions of regulatory stringency. Briefly, Institutional theory has been studied mainly in the context of decision-making, strategies, organizational structure, and performance in the SM field.

In an IS context, Institutional Theory has the potential to explain "how institutions influence the design, use, and results of technologies, within organizations" (Orlikowski & Barley, 2001). While the institutional theory is concerned with stability and persistence, information technologies are often associated with rapid and sometimes disruptive societal and organizational changes. Regarding the Institutional Theory, the development and use of IT are subject to societal pressures from external sources

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like professions, government agencies, or legitimacy. Undoubtedly, these institutional pressures prompt individuals and organizations to conform to technology mandatories, follow popular innovations and alter business practices to adapt to technology (Currie, 2011). Consequently, these actions increase opportunities for social approval and legitimacy for the institution. For this reason, information systems innovations naturally necessitate institutional changes (Currie, 2011).

4.7. Resource Dependency Theory

According to the Resource Dependency Theory, a corporation is an open system dependent on the external environment (Pfeffer & Salancik, 1978). Thus, the effects of uncertainty and contingency are inevitable. Furthermore, the context of a business's behavior refers to its external environment. Therefore, external factors cause changes in an organization's behavior, and managers attempt to reduce the uncertainty and external dependence (Hillman et al., 2009).

The Resource Dependency Theory built by Pfeffer and Salancik (1978) examines the impact of resource acquisition on organizational behavior. Businesses engage in conducting with other firms, subcontractors, and different actors. It can be an advantage, but sometimes it can constitute a problem for businesses. Organizations are also faced with scarce resources. Dependency on this kind of resource can result from unequal procedures and unbalanced relations. To prevent such dependencies, organizations develop strategies to improve their transactional processes with other organizations (Hillman et al., 2009; Pfeffer & Salancik, 1978). Developing such strategies aims to increase the scale of production, product, or service diversification, establishing solid and equitable bonds with other organizations. For example, product line diversification reduces a business's dependence on various firms. In other words, according to resource dependency theory from the SM perspective, the basic motivation leading organizations to develop strategies and engage in some activities is decreasing dependency on level of resources, so gaining bargaining power against the providers of those resources and getting a competitive advantage.

Today, as information and knowledge can be seen as significant resources, the establishment of information systems and associated organizational activities is profoundly involved with information resource production, seeking, planning, and coordination for internal and external dependencies (Al-Mashari, 2002; Tsai et al., 2010). Globalization, growing uncertainty, and intense competition in the business environment have actuated the need for information processing and supporting systems in organizations. As information systems are crucial business activities, considering their strategic level of support, it meets the resource dependency perspective when dealing with dependencies and uncertainties within or outside the organizations (Tsai et al., 2010). IS allows managers to view multiple divisions of organizational components such as humans, technologies, designs, and processes under the resource dependency perspective.

4.8. Game Theory

Game Theory provides an analysis tool for describing the decision-making process of one or more players and their behavior when there are plenty of possible outcomes (Busu, 2018). In the Strategic Management literature, Game Theory is considered a method that facilitates the acquisition of quantitative data through mathematical modeling of strategic relations among stakeholders with different

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goals since it is suitable for explaining rational relations (Saloner, 1991). Busu (2018) indicates that the power of game theory applied in strategic management lies in its ability to provide insights into competitive climate and strategies.

There are opinions in the IS literature that Operations Management and Information Systems game theory is slow to adapt due to its complex structure. This is because the IS field prefers decision sciences to make analyses. In the IS field, Game Theory time-based competition, priority pricing for a queuing system, manufacturing/marketing incentives, incentives for information sharing within the oligopolistic competition, and competition in the software market are used (Li & Whang, 2002).

4.9. Stakeholder Theory

Stakeholder theory, which was originally detailed by Freeman (2010), stresses the interconnected relationships between a business and its customers, suppliers, employees, investors, communities, and others who have a stake in the organization. The theory argues that a firm should create value for all stakeholders, not just shareholders. Indeed, stakeholder theory is a management theory with a strategic perspective and an intrinsic link with business ethics and corporate responsibility (Bonnafous-Boucher & Rendtorff, 2016; Goodpaster, 1991; Harrison & Freeman, 1999; Rusconi, 2019), which aims to help the organization strengthen its relationships with its internal and external environment to develop a competitive advantage. Strategic Management researchers look at the Stakeholder Theory as a guide for the systematic conduct of businesses' relationships with their stakeholders. In the Strategic Management literature, the Stakeholder Theory has been examined under the headings of economy-based concepts in 1950-1960, strategic relationship management with stakeholders in 1968-1985, corporate value creation within the framework of preventive financial approaches between 1985-1995, strategic planning and decision science-based management after 1995 (Bonnafous-Boucher & Pesqueux, 2005).

In IS literature, the Stakeholder Theory perspective is a guiding theory in developing information systems that see the developer and the user as the stakeholder and the center. Stakeholder Theory proposes protecting users' ethical rights in IS systems in the context of the fundamentals of stakeholder theory. Stakeholder Theory in IS system provides planning and management of information systems for managers stakeholder hierarchy for service providers; providing order for users as they can understand the admin attitude; also known as the perspective of developing successful projects based on stakeholder management for developers (Mishra & Dwivedi, 2012).

4.10. Knowledge-Based Theory of the Firm

Over the last decides, managing the information resources and the knowledge of their employees have become crucial for managers, and various techniques and instruments have been developed to this end (Tiwana, 2000). A knowledge-based theory proposes an explanation for this movement and the possible implications of knowledge management for firm performance (Burton-Jones, 2003). The history of Knowledge-Based Theory research in Strategic Management literature started with the emergence of the Resource Based View Theory. So, knowledge is considered a firm's resource that should be transformed into competency to gain a distinctive competitive advantage. Strategic Management

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Knowledge-Based Theory looks at companies and organizations as a guide in establishing the intangible value creation principles called soft power in the competitive market (Sveiby, 2001).

In IS Literature, as in the Strategic Management Literature, there is a point of view that information is one of the most important resources in making it stand out in the competitive market. Therefore, knowledge management is as important as knowledge. Consequently, the IS field is shaping itself as a suitable technological environment provider for transferring Knowledge Based Theory and its components regardless of time and place (Bolisani & Scarso, 1999).

4.11. Current Situation of Up-to-Date Researches on Strategic Management on Academic Literature

In order to check the importance of these theories for academia and overall awareness level, we did a quick informal search on Google Scholar and WoS databases. The numbers are presented in Table 4. The results show that publications involving these theories are on the rise in general. Additionally, we wanted to check the effect of COVID-19 on publication numbers as well. Compared with pre-covid yearly averages, post COVID-19 averages are generally higher. This might be an indicator that these theories are important in producing effective solutions in times of crisis. Of course, further detailed analyses are required for testing of these hypotheses.

Table 4. Number of Publications in Web of Science Database relating to reviewed theories

Theory	Pre COVID-19 Period				Post COVID-19 Period			
	Web of Science		Google Scholar		Web of Science		Google Scholar	
	Number of Publications	Average Publication Per Year	Number of Publications	Average Publication Per Year	Number of Publications	Average Publication Per Year	Number of Publications	Average Publication Per Year
1.Resource-Based View	17	3.4	4680	936	11	4.4	2800	1.120
2.Dynamic Capabilities	24	4.8	2410	482	14	5.6	1550	620
3.Competitive Strategy Theory	5	1	251	50	1	0.4	98	39.2
4. Porter's Five Competitive Forces Model	7	1.4	16.600	32.120	1	0.4	16.900	6760
5. Decision Theory	1132	226.4	24.000	4800	646	258.4	18.600	7440
6. Institutional Theory	362	72.2	25.800	5160	171	68.4	18.900	75600
7. Resource Dependency Theory	5	1	10.500	2100	1	0.4	5390	2156
8. Game Theory	2423	480.6	95.000	19.000	1124	449.6	23.000	9200
9. Stakeholder Theory	193	38.7	20.800	4160	102	40.8	17.000	6800

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5. Conclusion

Integrating technological developments with companies in industries enables businesses to gain a superior competitive advantage in the market. Companies that use IT and IS applications effectively have more opportunities to adapt to a new market and to provide sustainability. Moreover, IT is also shifting the focus of businesses from tangible sources to information sources. Recently the resource utilization capacities of data-oriented companies are gradually increasing. MIS, which studies and ensures the dissemination and use of data and information within the enterprise through the proper channels, facilitates the processes of strategic managers making decisions under uncertainty with countless data.

Considering the fact that the nature of MIS is also reflected in its theories, this study is expected to contribute to both MIS and strategic management literature. Based on the contributions of MIS and strategic management to each other in both theoretical and practical applications, this study aims to examine the issues which MIS theories can solve or can create solutions to strategic management problems in the context of theories. Although MIS is a relatively new field, it contributes a lot to strategic management, which has much more solid foundations than MIS. The main reason is that in this age, where technological developments are unstoppable, MIS is a field that attempts to produce technological solutions for businesses to deal with uncertainty.

During the study, due to limited resources and the large number of theories, 6 different strategic management experts were consulted to distinguish the most common and employed theories in the field. Expert opinions are important for this study because MIS is a field that can be viewed from several different perspectives and used for various purposes. Analysis and expert opinions show that Resource-Based View, Dynamic Capabilities, and Competitive Strategy Theory are the most preferred theories in both research contexts.

The intersection of these theories is considering resource management, a better marketplace, and the firm's sustainability in the competitive environment. Other theories in the final list also bring together the MIS and strategic management. The integration of technology causes fundamental changes within the business, but strategically leaves the rivals behind.

MIS strategically serves crucial purposes for management through the proper use of technology. However, challenges for managers and the firms will proceed as long as the competitive and digitalized environment exists. Solutions for challenges should be contributed by applied and academic research. We believe this study will contribute as an introductory and practical study for academicians and graduate students who research the theories of Strategic Management and Management Information Systems, and it can be used to develop new business frameworks and models by examining the intersections of the two fields for professional professionals.

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