



**BRITISH ACADEMY
OF MANAGEMENT**

BAM
CONFERENCE

3RD-5TH SEPTEMBER

ASTON UNIVERSITY BIRMINGHAM UNITED KINGDOM

This paper is from the BAM2019 Conference Proceedings

About BAM

The British Academy of Management (BAM) is the leading authority on the academic field of management in the UK, supporting and representing the community of scholars and engaging with international peers.

<http://www.bam.ac.uk/>

Industry-makers and Strategizing: A Literature Review

Abstract

Industry features are considered by Porter (1980), Schmalensee (1985) and many other scholars as the prime determinants of effective strategy formulation and/or implementation. While industries are widely different from each other, there are some common elements or features that shape all existing and future industries. This paper aims to identify these common building blocks of industries and their possible effects on strategizing. In terms of methodology, a systematic literature review was employed. Inclusion criteria were all published studies in top ten related journals that have at least one of the nine keywords about the industry. This study identified 47 factors or characteristics that form every industry. These industry features grouped into ten sets of elements based on their common-sense connectivity, which shapes a tentative framework, the Ten Forces Framework, reflecting the interaction among building-blocks of the industry with each other and with strategy implementation practice inside of an organization. The macro-environment, industry and organization (MIO) model was proposed by connecting these three levels of analyses together.

Keywords: Industry, Strategy Implementation, MIO Model, Ten Forces framework, building-blocks of the industry, industry characteristic

Introduction

Although among some pioneer scholars there are consensus regarding importance and effects of characteristics of different industries on activities and performance of organizations (Hrebiniak and Snow, 1980; Pfeffer and Leblebici, 1973; Porter, 1980), noticeable disagreement exist about degree of impacts of varied industries. For instance, in a research by Schmalensee (1985), it was shown that industry context has very strong effects on investment's rate of return (industry effects accounted for 75% in industry return). However, "small stable" effect of industry factors were reported by Rumelt (1991) who repeated almost the same study six years later. This argument was continued by McGahan and Porter (1997), who duplicated the original study by Schmalensee (1985) and Rumelt (1991). McGahan and Porter (1997) after a meticulous calculation, conclude that industry factors do have considerable impacts (19%) on the organization's activities and investment. While findings of Schmalensee (1985) and Rumelt (1991) regarding influence of industry factors are appeared to be contradictory, in fact, both of these studies are evidence of effects of different contexts of different industries on organizations. Results of these two studies are different because they were conducted in two different industries that are widely dissimilar to each other. As McGahan and Porter (1997) found, effects of service sector industries, focus of Schmalensee's research, on organizations in these industries are much stronger than influence of manufacturing sector industries, which were main focus of Rumelt's (1991) study.

That is to say, although impact of industry characteristics on organizations and their strategy execution cannot be denied, organizations are not just passive receivers of instructions from industry. In fact, Chandler (1990), Griffiths and Zammuto (2005), and Teece (1993) unanimously believe that industries and organizations "evolve together-that managerial choice can shape the environment/industry as much as the industry/environment shapes firms".

While in this research, focus is on impact of industry characteristics on strategy implementation, we are well aware of the fact that execution of strategy is affected more strongly by some other factors such as intra-organizational elements (Aboutalebi and Tan, 2014) as well as the importance of time of execution, corporate-subsidiaries relationship, and business-specific factors and their complex combinations (McGahan and Porter, 1997).

Peng (2013) defines industry as a group of firms producing products (goods and/or services) that are similar to each other. Industry is defined by Multilingual Dictionary (2013) as "any part of the business of producing or making goods" or "hard work and effort". According to Collins English Dictionary (2012) industry can be perceived as "organized economic activity concerned with manufacture, extraction and processing of raw materials, or construction". College Dictionary (2010) with some differences defines industry as "the aggregate of manufacturing enterprises in a particular field", "any general business activity".

Unfortunately, none of the mentioned definitions could portrait industry and sector in their fullest, so the researcher has prepared a definition for each of them by considering all existing definitions. The

industry is a group of organizations or organized activities that are similar to each other in terms of their inputs, processes, outputs, context and customers with no geographical limitations. Cluster and sector are two other concepts that sometimes are mistaken by industry. A cluster is limited number of similar or different organizations that each of which acts as elements of relevant supply chain in a limited or specific geographical area. The sector is set of interrelated industries that have some degrees of similarities to each other and noticeable differences with industries of other sectors.

Justification of Considering Impacts of Industries

While industry characteristics play an important role in strategy formation (Getz, 1997; Hillman *et al.*, 2004), the role of industry has rarely been studied in past empirical work (Datta *et al.*, 2002, p. 16). That is to say, contingency theory as one of key notions in business challenges universalism and focus on particularism that attention to the effects of different environments/industries on business activities (Lawrence and Lorsch, 1967; Schoonhoven, 1981). Child (1977, p. 181) in his unsuccessful attempt in contradicting contingency theory, claims that “Different approaches to organization are viable within the one industry, and that possibly the most critical criterion for their viability is a reasonable degree of internal consistency”. Although Child (1977) believes that internal consistency inside of an organization is more important than its environment/industry, the study by Yu and his co-authors (2008, p. 462) concludes that “Different industry characteristics present different opportunities and threats for organizations”. Porter in his 1980’s study highlights importance of industries. The same as many other researchers, the main weakness of Child’s (1977) and Porter’s (1980) argument is focusing solely on impacts of industry on strategy formulation and disregarding possible effect of features of different industries on strategy implementation.

Industry is likely to have a major influence on strategic decisions that are taken within an organization because characteristics of the industry form the bases for how the organization competes (Porter, 1980), influencing managers' perceptions of what information is relevant and focusing their attention on the elements judged to be most central to organizational performance (Pablo, 1994, p. 814). It is believed that “the absolute performance of a business entity depends not just on the effectiveness of its internal organization in implementing the chosen strategy, but also on industry characteristics and the choice of strategy itself” (Gupta & Govindarajan, 1984; Lenz, 1981).

Hambrick and Finkelstein (1987) specified seven industry-level (or task environment) factors that determine managerial discretion: “product differentiation, market growth, industry structure, demand instability, quasi-legal constrain, strong outside forces, and capital intensity”.

According to ISIC (2008) there are 419 industries, *industry classes* that shape 233 *industry groups*, 88 *industry divisions*, and 21 *industries*. Michael Porter is one of the most known scholars who studied industries and their structures. While Porter did not introduce industry-based view in strategic management, he surely popularised this perspective. Results of Porter’s (1979) study regarding the influential factors in the competitiveness of industries are reflected in his model known as ‘Five

Competitive Forces'. Porter (1979) identified around 25 factors that have impacts on the competitiveness of an industry and the industry's choice of competitive strategy to survive. Porter arranged these factors in five interrelated groups including 'bargaining power of suppliers', 'bargaining power of buyers', 'threat of new entrants', 'threat of substitute products', and 'competitive rivalry'. Michael Porter as a business historian developed the Five Forces model in 1979 based on a study of historical data and existing archives. So, it is not far from true to assume that this model was already dated even on the first day of its introduction. A model based on outdated data would be an outdated model.

Industries' Influential Features in Strategy Execution

As a result of a systematic literature review approach to reviewing existing literature, 47 factors are identified that shape features and building blocks of any industry. Although all industries have these 47 characteristics, the extent of each of these features may differ in varied industries. In other words, what makes distinction among different industries is the extent of each of these factors, for example regarding the feature of 'technology', while all industries use technology, technological level of different industries can be dissimilar considerably.

List of these 47 characteristics that would be discussed and classified in this section is as follows: Political power, government-industry relationship, federal government purchases, industry size, typical size of organizations, industry concentration, market uncertainty/risk, supply chain, distribution of resources, industry players, degree of competition versus cooperation, stages in an industry life cycle, structure, dynamism/stability, customers, entry barriers, rates and types of innovation, product differentiation, nature of products, frequency of introducing new product/service, capital intensiveness, return on investment (ROI), financial structure, asset specificity, price range, growth/sales, excess capacity versus scarcity, specialized human asset intensiveness, regulatory environment and coercive pressures, culture, technology, frequency of inventing new technology, level of technological uncertainty, munificence/profitability, availability of financial resources, industry acquisition density, R&D intensity, manufacturing intensity, advertising intensity, market size, strong outside forces, demand instability, return on assets (ROA), staff combination, excitement/interest, asymmetry between firms, and industry complexity.

These 47 factors would shape ten groups of sector features based on the degree of similarities and connectivity among elements of each group. These ten sets of industry factors embody: *Technology* (Technological level of an industry, frequency of inventing new technology, research and development intensity, innovation types and rates, sector complexity), *legislations* (government and industry relationship, regulatory environment, outside forces, political powers in sector), *uncertainty* (market uncertainty of sector, level of technological uncertainty, sector dynamism, demand instability of sector, degree of competition), *financial outputs* (market size of sector, Growth of the sector, return on

assets, return on investment, profitability of sector, price range in sector), *financial inputs* (financial structure of sector, asset specificity), *establishment* (entry barriers to sector, capital intensiveness, availability of financial resources, typical size of organizations in sector, impact of industry structure, federal government purchases), *supply* (supply chain, resource distribution of sector, sector players), *products* (product differentiation, nature of product, acquisition density of sector, frequency of introducing new product/service), *structure* (sector size, typical customers of sector, culture of sector, advertising intensity, specialized human asset intensiveness, staff combination of sector, stages in an industry life cycle, excitement of sector), and *operations* (manufacturing intensity, typical excess capacity, sector concentration, organizations' asymmetry of sector).

Legislations

Legislations are set of official rules, laws and policies that govern, guide, protect and limit the sector's functions, customers, and its other stakeholders. While some legislation may be common for some or all of the industries, other regulations can be exclusively developed for a particular sector. Almost all of the legislations are prepared and imposed by the governments. This section discusses the issues that are associated with the institutional-based view (Peng, 2009), one of the three pillars of the strategy tripod.

Government and Industry Relationship

The relationship between government and sector depends on two main issues. One is dominant economic system in a country (Zhu & Chung, 2014) that is not the focus of this discussion; the other issue is the nature of the sector (Bitektine & Haack, 2015). Among the twenty-one mentioned industries in the United Nations' industry classification, at least two of them are directly about the jobs done by governments such as public administration and activities of extraterritorial organizations (Flanagin *et al.*, 2014). Even in some non-governmental industries such as food and pharmaceutical almost all governments regulate and control closely activities of these industries that have direct effects on public health (Den-Hertog, 2014; MacKay & Chia, 2013). Sometimes government interventions in some industries are because of maintaining (Jang *et al.*, 2013) or increasing national competitiveness (Griffiths & Zammuto, 2005).

Regulatory Environment

Regulatory environment refers to either government's regulations regarding industries or sector's self-regulatory bodies (Hambrick & Abrahamson, 1995; Kleinbaum, 2012). Government's regulations are more common and stronger factor such as antitrust enforcement (Katz, 2019). As correctly mentioned by Hillman and Keim (1995) and supported by Schuler, Rehbein and Cramer (2002), government contribute to management or at least monitoring of an industry by developing related policies.

“Government policy determines the rules of commerce; the structure of markets (through barriers to entry and changes in cost structures due to regulations,

subsidies, and taxation); the offerings of goods and services that are permissible; and the sizes of markets based on government subsidies and purchases. Consequently, gaining and maintaining access to those who make public policy may well be a firm's single most important political goal” (Schuler et al., 2002, p. 659).

Some industries do not have any self-regulatory bodies or these bodies do not have actual authorities over their members (Suarez *et al.*, 2015). On the other hand, sector-based regulatory bodies in some industries are powerful and influential in activities or even existence of their members. International Air Transport Association (IATA) is an example of the highly important self-regulatory body (Cornelissen *et al.*, 2015).

Outside Forces

Institutional powers that influence activities of industries are not limited to governments or self-regulatory bodies in industries (Peng, 2009). Pressure groups and some of the non-governmental organizations can very negatively undermine performance and even existence of organizations in the sector (Bitektine & Haack, 2015; Hambrick & Finkelstein, 1987). “General public’s views about different industries can be considered as one of the outside forces (Chang & Chang, 2014; Hambrick & Abrahamson, 1995). While arms manufacturing industry has a negative image in public, education sector is perceived positively by the general public” (Pfeffer & Salancik, 1978; Suarez *et al.*, 2015).

Political Powers in Industry

While some industries are known to be active in politics by lobbying politicians and financing particular political parties, other industries may not have noticeable involvement in politics (Friesl & Silberzahn, 2012; Hillman *et al.*, 2004). At the sector level, firms that take part in corporate political exercises have a tendency to be part of industries that are emphatically influenced by macroeconomic policies or other government choices (Buiren *et al.*, 2019; Oliver & Holzinger, 2008; Yoffie & Kwak, 2001; Zhu & Chung, 2014).

Hillman and Hitt (1999) also contended that organizations or industries “with little involvement in impacting public policy are more inclined to participate in aggregate instead of individual political activities. Since successful aggregate activity advantages all organizations in an industry, the effect of such a strategy on a company's own particular game changer is liable to be restricted” (Feinberg & Gupta, 2009; Gratton, 2014).

The first proposition is about importance of *legislations* (political power in the sector, government-industry relationship, regulatory environment and coercive pressures, outside forces) in activities of industries has emerged as results of the discussions in this section.

Proposition 1: Industry-related ‘legislations’ can distinguish industries from each other.

Establishment

The ‘establishment’ is about initiating new ventures through starting a new business by existing firms or setting up a new organization. Establishing a new venture may need different requirements in dissimilar industries. The frequency of having new ventures can be considered as the degree of the establishment. In industries with a high degree of the establishment, it is common to start a new business more frequently either by current organizations or by the new to the sector investors. In this section, establishment-related factors are discussed briefly.

Entry Barriers to Industry

Although new organizations are established every day, the number of startup organizations are not the same in different industries (Caves *et al.*, 1984; Martin & To, 2013). One of the major factors influencing numbers of startup organizations in varied industries is entry barriers to industries (Gual & Mas, 2011; Porter, 1979, 2008). The modern organization literature has distinguished barriers to entry as a main issue that determines rivalry, and its idea has been regularly characterized regarding the level of capital intensity (Koch, 1974), economy of scale Bitektine & Haack, 2015; McAfee *et al.*, 2004), or product differentiation (Kinal, 2013; Robinson & McDougall, 2001). Entry barriers to some industries are high or very high, then, few new organizations get the chance of entering these industries (Ferrier, 2001; Zhu & Chung, 2014). These industries with high entry barriers can be considered as exclusive clubs for a limited number of exclusive organizations. On the other hand, there are industries with medium or low entry barriers that attract many new organizations (Nicholson, 2013; Scherer & Ross, 1990).

Capital Intensiveness

Capital intensity is about the extent of required fixed assets/capital to establish or run an organization in an industry (Monin *et al.*, 2013; Suarez *et al.*, 2015). As stated by Chandler (1977, 1990) and reconfirmed by Yin and Shanley (2008, p. 54) “Firms in capital-intensive industries will have higher fixed costs and require greater economies of scale and scope to succeed”.

Although, high-capital-intensity industries may benefit from having limited number of competitors, they would face with some serious difficulties as mentioned by Datta, Guthrie and Wright (2005).

“Capital intensity often creates strategic rigidity because fixed costs are high and deviations tend to be expensive. Firms in high-capital-intensity industries tend to focus on leveraging their investments, resulting in a greater concern for cost and efficiency considerations” (Datta *et al.*, 2005, p. 137).

While some industries such as manufacturing and petrochemical require high capital (Argyres *et al.*, 2015; Martin & To, 2013), many other industries such as professional services or finance can be established and run with relatively low fixed assets (Ganco & Agarwal, 2009; Zhu & Chung, 2014).

Availability of Financial Resources

No organization can be established or run without having required finance available to do so (Bitektine & Haack, 2015; Katila & Shane, 2005; Shane & Stuart, 2002). New organizations regularly need sufficient funding to finance their activities and businesses (MacKay & Chia, 2013). Financing can be done by selling the company's share, finding new investors, applying for business loans, selling unnecessary assets, or selling licensing or franchising (Schoonhoven & Jelinek., 1990). Venture capitalists can help new firm development in a few ways (Katila & Shane, 2005). Lenders tend to treat industries differently in terms of the amount can be lent to different industries (Bitektine & Haack, 2015). Industries with considerable fixed assets are more likely to secure a loan because lenders would be able to seize these assets instead of their money if the company difficulties in repaying the loan (Katila & Shane, 2005; MacKay & Chia, 2013).

Typical Size of Organizations

Some industries embody organizations that are typically small while the typical size of organizations in other industries may be medium, large, or very large (Miller & Ghen, 1994; Paton & Wagner, 2014). The size of an organization is "measured in terms of a total number of employees" (Swaminathan, 1995, p. 675). Typical size of organizations in an industry matters because size of an organization has impact on its strategies (Chen & Hambrick, 1995; MacKay & Chia, 2013), competition (Monin *et al.*, 2013), survival (Arthur, 2003), and resourcing (Narula, 2014). A study by Ferrier's team shows that "large firms have simpler competitive repertoires than small firms and are slower in terms of action timing" (Ferrier *et al.*, 1999, p. 380).

Impact of Industry Structure

The structure of an industry is about the way in which some of the main components of an industry are organized (Garcia *et al.*, 2014; Perrow, 1984). As suggested by Bain (1968) and supported by Porter (1981), and Friesl and Silberzahn (2012) the major elements that shape the structure of a sector or industry are "entry barriers, the number of firms in an industry, and their size distribution". A sector's or an industry's structure can contribute significantly to performance and strategizing activities of the organizations in the sector or the industry (Barabasi, 2002; Watts, 2003; Yu *et al.*, 2008). The structure reflects the common behaviour and actions of the member organizations in the industry or sector (Piskorski, 2013). Sector's structure is critical in light of the fact that structure influences conduct, or strategy (Porter, 1981), which in turn has effect on strategy execution (Bain, 1968; Cornelissen *et al.*, 2015).

Federal Government Purchases

Governments can be the biggest customer of some industries in many if not all countries (Kleinbaum, 2012). Importance of government purchases can be widely different in different countries depending on dominant economic and political systems in those countries (Zhu & Chung, 2014). In a country with a free market economy that everything is privatised, government purchase may not be significant (Royer, 2012). Regardless of economic or political systems in countries, some industries such as infrastructure construction, or military air and space almost completely depends on the purchase by national governments (Sharma & Crossler, 2014).

The second proposition of this study that highlights roles of ‘*establishment*’ (entry barriers to sector, capital intensiveness, availability of financial resources, typical size of organizations in sector, impact of industry structure, and federal government purchases) in defining an industry has emerged from what has been discussed in this industry.

Proposition 2: There are significant divergences among separate industries in terms of their ‘establishment’.

Financial Inputs

Financial inputs are about the typical format, type and amount of investment to establish or run a typical organization in an industry. Although there is a need for investment to start or continue existence and activities of an organization in any sector, the required financial inputs may not be the same in all industries. The required financial inputs to start-up or run an organization in an industry can act as one of the major entry barriers to that sector. Only limited number of very large investors could enter an industry that requires high initial investment.

Financial Structure of Industry

The average debt to equity ratio is considered as a financial structure of an industry or even an organization (Bitektine & Haack, 2015). While in some industries ratio of debt to equity is low (organizations receive small loans and credit compare to their own finance), in the other can be medium or high (Chadwick *et al.*, 2015; Majumdar *et al.*, 2018). High debt increases risks and the possibility of collapse due to over-stretching organizational resources (Mount, 2013). On the other hand, expansion based on the borrowed money would be more common in industries with higher debt to equity structure. Faulty financial situations in an industry may make some organizational emergencies (Bitektine & Haack, 2015). Importance of financial lenders such as banks would be much higher in industries with higher debt to equity ratio (Pfeffer & Leblebici, 1973).

Asset Specificity

Asset specificity implies the degree that assets can be productively redeployed if their initial use demonstrates infeasible’ (Tece, 1980, 1982). ‘Industries portrayed by high asset specificity foster

responsibility among staff in terms of using least assets to do their jobs, because it would be expensive to redeploy the assets that are already being used for less profitable activities” (Dobni *et al.*, 2015). As stated appropriately by Yin and Shanley (2008, p. 279) “Large-scale assets will often involve considerable sunkness and that small-scale assets will be more fungible”. There are these assumptions that agriculture and manufacturing-related industries are high asset specificity (Friesl & Silberzahn, 2012) while service-related industries have low or low-to-medium asset specificity (Bitektine & Haack, 2015). There might be less willingness to invest in industries with high asset specificity especially by newcomers due to a higher risk of unwanted long-term involvement in a not so profitable sector.

Another issue that can be considered as one of the factors that separate industries from each other is ‘*financial inputs*’ (financial structure of sector and asset specificity) that is reflected in the following proposition.

Proposition 3: The ‘financial-inputs’ can to significant degrees make differences between distinct industries.

Supply

Supply refers to the exchange of materials, parts, machinery, information, goods or services among organizations in order to support their production of products or provision of services. Regarding the importance of supply for industries, it is stated that “No company can survive without receiving the supplies required for making/providing products/services or without the distributors necessary for selling its products/services.” (Aboutalebi, 2016, p. 1). While the importance of supply can be the same for all industries, the nature, and activities of supply may not be the same in different.

Supply Chain

Although every sector has its own supply chain (Mount, 2013), these supply chains can be hugely different from each other in terms of complexity, length, degrees of vertical or horizontal integration among the chain members, or amount of exclusivity in different industries (Aboutalebi, 2016). Take movie industry as an example of an industry with very limited and exclusive distributors with only seven movie distributors that are in charge of more than %70 of movie distribution worldwide. While the financial sector has a short supply chain, length of the supply chain in automobile industry can be massive (Royer, 2012).

Resource Distribution of Industry

Industries are different regarding the distribution of resources (Van Witteloostuijn & Boone, 2006) or higher-order resources (Wibbens, 2019). Some industries have homogeneous, and others have heterogeneous resource distributions (Sila, 2013). Homogeneous distribution of resources may

intensify competition for these resources among organizations in the sector (Kleinbaum, 2012). In contrast, heterogeneous distribution of resources makes “competition takes place within distinct niches, with little competition between them” (Yu *et al.*, 2008, p. 462).

Industry Players

Supply in an industry may be affected by the number or size of the sector players. Industries can be distinguished from each other based on some competitors with similar powers in those industries (MacKay & Chia, 2013). While aviation industry includes only a few hundred airlines in the whole world, food retail or agriculture industries embody millions of players in almost every country (Royer, 2012). Number of players in an industry is not related to the technological level of that sector (Park & Jang, 2014). One of the most exclusive industries is the beverage that is known to be one of the least technological industries that is dominated by only two players Pepsi and Coca-Cola.

By considering all of these opinions, the research has found another industry feature, ‘*supply*’ (supply chain, resource distribution of sector, and sector players), which can be different in various industries. This view has reflected in the fourth proposition.

Proposition 4: *‘Supply’ activities of industries can distinguish the industries in significant degrees from each other.*

Technology

Technology refers to the extent to which an industry relies on sector-specific machinery or non-machinery to perform its required sector-related tasks for survival and growth. Then, technology is not just about machinery. It includes skills, methods, software, and processes too (Dobni *et al.*, 2015). “Technology constrains the variation in how things are done by defining *what* is being done.” (Chatman & Jehn, 1994, p. 526). If exactly the same technology at the same level for the same function with the similar frequencies is being used by all industries, it can be claimed that technology is not the factor that distinguishes varied industries from each other. The following literature review would assess this argument and its counter.

Technological Level of an industry

Although technology is being used in all industries, the technological levels of different industries are not the same (Chatman & Jehn, 1994). Some industries are more technology-dependent than others. While some industries are considered to have a very high technological level (very high-tech), other industries may possess high, medium, low, or even very low technological levels (Jani & Han, 2013).

Built on Thompson's (1967) typology of technology, there are three groups of industries: long-linked, mediating, and intensive. In all long-linked, or serially reliant industries the common form of technology is an assembly line. Unlike long-linked that has one assembly line for different products,

industries with mediating technology use semi-customised technology for a homogeneous group of projects and customers. Industries with intensive technologies rely on less complex but customised technology for every project” (Zhu & Chung, 2014). Based on the Thompson's (1967) typology long-linked industries have higher technological level than the rest, and the mediating industries are more technological than industries with intensive technology (Dobni *et al.*, 2015).

Frequency of Inventing New Technology

Technology can get obsolete when customers want new products or services with new technologies (Slack *et al.*, 2013; Zammuto & O'connor, 1992). To fulfil customers' need new technology may need to be invented. In some industries such as computing and telecommunication rate of inventing new technology is high (Oliveira & Gimeno, 2014); however, in other industries such as mining or oil and gas rarely new technology is being introduced (Bai & Sarkis, 2014). New technologies and enhanced strategies are regularly joined in light of the fact that they are identified with an industry's sort of work (MacKay & Chia, 2013; Pfeffer & Salancik, 1978).

Research and Development Intensity

Research and development (R&D) intensity reflects the degree to which an industry invests in creating new methods, products or services (Chadwick *et al.*, 2015). Industries can be widely different from each other based on the typical percentage of their incomes being invested in R&D (Miller & Bromiley, 1990). Some industries have high R&D intensity. It means they invest big portion of their incomes in developing new products or services such as pharmaceutical industries that spend around 50% of their incomes for the new medication development (Cornelissen *et al.*, 2015). New product development and investment in research can be insignificant in some industries (Loury, 1979).

Innovation Types and Rates

Innovation may happen in every sector, though, types and rates of innovation can be different in dissimilar industries. Rate of innovation refers to the frequency of inventing new methods, products or services in a particular period normally in one year. In some industries rate of innovation is high, then considerable number of new products or services are introduced in one year such as fashion or music industries (Garud *et al.*, 2002; Sheremata, 2004; To *et al.*, 2015). Some sector may not invent even one new product or service in more than a decade, such as energy sector. Speed of innovation also depends on speed of knowledge absorption by the organizations in the industry (Moreira *et al.*, 2018).

Type of innovation is about the extent to which new product, service or method is different from the existing ones. There are some innovation typologies such as the one proposed by Sheremata's (2004) that assess innovation around two measurements: “level of originality (radical or incremental) and the level of similarity of new innovated items/services with existing ones (consistent or inconsistent)”.

New to the world innovation, as the extreme type of innovation, is about invention of those entities that never existed before such as the first airplane or the first computer (Dewar & Dutton, 1986; Pansiri, 2014). The most common type of innovation is about making a minor modification in existing entities (Singh *et al.*, 2014). Dominant types of innovation can be different in different industries (Cornelissen *et al.*, 2015).

Industry Complexity

As suggested by Child (1972) the industry complexity can be defined as the degree to which the environment of the industry is heterogeneous. The sector complexity can be because of “competitive complexity, market diversity, resource complexity, and process/technology complexity” (Cannon & John, 2007). Technology complexity is one of the important contributors to sector complexity (Curry & Zhang, 2013). Technology complexity is a combination of some technology-related issues such as technological level of an industry and frequency of inventing new technology (Dess & Beard, 1984; MacKay & Chia, 2013). While some industries are highly complex such as telecommunication or pharmaceutical (Zhu & Chung, 2014), other industries may not be very complex such as construction or public services (Fremeth & Shaver, 2014; Qu *et al.*, 2011).

After summing up the above discussions, defining roles of *technology* and technology-centred issues (technological level of an industry, frequency of inventing new technology, R&D intensity, rates and types of innovation, and sector complexity) in characterising the sector has demonstrated in the fifth proposition regarding sector’s features.

Proposition 5: There are significant differences among varied industries in terms of their ‘technology’.

Operations

Operations refer to the process of turning the inputs to the intended outputs. Operations concerned with the efficient and effective production of goods or provision of services. Operations in an industry can cover a variety of issues, however, in this research the focus would be on those factors that are mentioned as influential in shaping and defining an industry in related literature.

Manufacturing Intensity

Although, it is common to assess manufacturing intensity of an industry by calculating average number of products or hours of services in a typical organization within that sector annually (Piskorski, 2013), it is possible to measure manufacturing intensity as “the ratio of the monetary value of manufacturing and the monetary value of shipments in each industry during a year” (Dean & Snell, 1996; Katila & Shane, 2005).

Manufacturing or service provision intensity in some industries such as telecommunications or electronics industries are high to very high (MacKay & Chia, 2013), while, this intensity can be much lower in other industries such as professional services or ship-building (Galbraith & Kazanjian, 1986; Katila & Shane, 2005). In manufacturing-intensive industries, learning of the manufacturing procedures is important to effective new product/service development (Aboutalebi, 2017; Zhu & Chung, 2014).

Typical Excess Capacity

Excess capacity or under-capacity in operations can happen due to the difficulty of forecasting the demand precisely. According to Porter (1980, p. 325) in a highly competitive industries with many competitors "undercapacity in an industry is rarely a problem," but that "industry overbuilding is a chronic problem". Having some degree of excess capacity to cover unexpected demand may be common in some industries such as manufacturing or transportation but not in all industries (Cornelissen *et al.*, 2015). Those industries that produce products or provide services that are seasonal would probably face with the issues of overcapacity or under-capacity regularly (Ackerman, 1970).

Typical excess capacity in an industry can closely relate to typical customers in that sector (Cornelissen *et al.*, 2015). In industries that only deal with business customers, it is expected to have the least excess capacity because business customers' orders are generally stable and done much in advance. So there is no need to have unusual and unused excess capacity to cover volatile orders (Martin & To, 2013).

Industry Concentration

The operations of an industry might be affected by the extent of its concentration too. The sector or industry concentration is about the degree to which market shares are fragmented or concentrated within a sector or industry (Scherer & Ross, 1990). If an industry is concentrated, the just limited number of very large organizations has the majority of the market shares in that sector (Qu *et al.*, 2011; Scherer & Ross, 1990). The economy of scale in operations is more attainable in concentrated industries that large organization are benefiting from large-scale operations that can be cost saving.

The sector concentration also can be used as one of the measures to assess the degree of competitiveness in an industry (Datta *et al.*, 2002; Gual & Mas, 2011). The competition among these limited competitors is expected to be low (Kleinbaum, 2012; Wu *et al.*, 2014). Sector concentration is considered to be high in aviation or food retail industries that are dominated by a relatively small number of companies (Bitektine & Haack, 2015). In less concentrated industries, competition would be high among a large number of competitors (Sharma & Crossler, 2014). Profitability may be low in industries with less degree of concentration due to high competition that may lead to lower price and lower profit (Cherif & Grant, 2014; Yin & Shanley, 2008).

Organizations' Asymmetry of Industry

An industry's operations might be influenced to some extent by the degree of asymmetry among the organizations that shape the sector. Asymmetry is about this view that there are some differences among organizations in the same sector. High degree of asymmetry among an industry's organizations might reflect or lead to higher differentiations in operations of these organizations. The possible importance of the degree to which organizations are asymmetric in the sector on distinguishing industries from each other is mentioned in two or three studies only. Gual and Mas (2011) claimed that "the more asymmetric the organizations, the more improbable are they to conspire. The more diverse the organizations, the more troublesome it may be for them to consent to a required strategy. At the point when there is significant asymmetry, it may get to be less demanding for the main organization or organizations to adventure their predominant position".

All of the above discussions can be summarised in form of the sixth industry-centred proposition regarding *operations* (manufacturing intensity, typical excess capacity, industry concentration, and organizations' asymmetry of sector):

Proposition 6: *The 'operations' can to significant degrees make differences among varied industries.*

Products

Products refer to the intended final outputs of organizations that can be exchanged for money or other perceived values. Products can be in the form of goods, services or combination of the both. Organizations from identical sector may try to attract varied target customers by making some variations in their products in terms of size, design, colour, quality or packaging. Although some differences are expected in products of organizations from the similar sector, fundamental dissimilarities may be observed between products of different industries.

Product Differentiation

While goods or services in some industries are standardised and similar, in other industries goods or services may be differentiated with recognisable differences (Datta *et al.*, 2005; Zhu & Chung, 2014). In industries with standardised goods or services, organizations are in need of reducing costs and increasing efficiency to survive (Porter, 1980; Sila, 2013). Conversely, in industries with differentiated products, cost is a secondary issue to more important factors such as branding (Datta *et al.*, 2002), design (Bitektine & Haack, 2015), and quality (MacKay & Chia, 2013). Regarding importance of product differentiation the study by Gual and Mas (2011) found that:

"The more differentiated the products in an industry, the less likely it is that anti-competitive behavior takes place since companies focus competition on characteristics other than price. Differentiation is in itself a source of market power, and therefore it is

developed endogenously by companies, through investment in R&D and advertising”
(Gual & Mas, 2011, p. 218).

Nature of Products or Services

One of the major factors that separate industries from each other is the nature of the products they produce or services they provide (Cornelissen *et al.*, 2015). Some industries are just service provided with no physical products while, other industries may just produce products with limited or no services (Kinal, 2013). Products of some industries are long-lasting such as construction sector or car manufacturing in contrast to some other industries that their products can be unusable only after a few days such as dairy industry (Kleinbaum, 2012).

Hambrick (1983, p. 688) suggested some other features that shape the product’s nature and separate their industries from one another including: ‘high product dynamism (new item deals and rate of innovative change), product sophistication (requirement for subsequent service and purchase by the experts), high vulnerability (import-focused products with high labour costs), and perceived quality (durability)’.

Acquisition Density of Industry

Although acquisition may happen in every sector, number and frequency of taking over of other organizations are noticeably higher in some industries (Aalbers & Dolfsma, 2014). The acquisition may be more common in those industries that economy of scale is crucial for survival (Kleinbaum, 2012). Acquired organization and its acquirer are expected to be able to reduce costs of their productions by benefiting from the higher capacity for production due to the economy of scale (Aalbers & Dolfsma, 2014; Doan *et al.*, 2018). Some scholars believe higher acquisition density in an industry can show a lack of willingness for competition by taking over the competitors (Bitektine & Haack, 2015).

Frequency of Introducing New Product/Service

Industries are different in terms of number of new products or services they develop in one year (Piskorski, 2013). In some industries such as car manufacturing, it is common to see the introduction of one new model of car every year. In the energy sector, one new product may be developed in every decade or longer (Zhu & Chung, 2014). The degree of the newness of products and services can be different remarkably. The vast majority of the product or services that are being introduced as new, in fact, are just slightly modified version of already existing products or services (Tong *et al.*, 2015). Some industries are capable of developing new products or services more frequently than other due to low costs and higher speed of new product development in those industries (Friesl & Silberzahn, 2012).

The seventh proposition highlights one of the commonly acceptable factors, *products* (product differentiation, nature of product, acquisition density of sector, and frequency of introducing new product/service), which defines the industry.

Proposition 7: Variation in 'products' would lead to significant differentiation amongst non-identical industries.

Financial Outputs

Financial outputs are the end results of investment in an industry that indicate the amount, speed, and continuity of incomes from the investment in that sector. The decisions on whether or not establish, maintain, grow or abandon organizations in an industry depend considerably on potential financial outputs from the sector. Financial viability is matter in every sector even in the governmental and charity ones. Financial gains from the investment in varied industries may be different from each other widely in dissimilar industries.

Market Size of an Industry

Market size of an industry can be measured as the total annual sales in that sector (Piskorski, 2013). Surely, market size does not necessarily reflect the profitability of the sector (Anderson & Vakulenko, 2014). The sizes of markets change as industries advance (Katila & Shane, 2005; Utterback, 1994). An industry with a large market size is more likely to attract new investors with large investments than an industry with a small market (Cornelissen *et al.*, 2015). Also, the sector with large market requires “more comprehensive capabilities in coordinating marketing and customer care than new firms generally possess” (Tripsas, 1997, p. 12). The market size of dissimilar industries can be different to a large extent (Hetzl, 2014; Shane, 2001).

Growth of the Industry

Pfeffer (1982) as one of the most influential scholars who studied industries and industries believe that the “growth rate is characterised as (1) the percent change in incomes and (2) the percent change in number of staff”. While rate of growth of some technology industries in general and the Internet-based industries in specific during relatively short period have been remarkable and unprecedented (Malhotra & Hinings, 2015), some other industries either had small growth or even have declined (Datta *et al.*, 2005; Zhu & Chung, 2014).

Variety of factors may have impacts on the sector’s growth or decline such as invention of new technology (Bitektine & Haack, 2015; Hambrick & Finkelstein, 1987) or the sector’s life cycle (Jang *et al.*, 2013; Sutton, 1991). Development of new technology that can decrease sector uncertainty (Cornelissen *et al.*, 2015; Thompson, 1967) may contribute noticeably to growth of an industry (Katz & Kahn, 1966; Peng *et al.*, 2013).

Return on Assets (ROA)

Return on assets (ROA) is a well-comprehended and broadly utilized financing measure of operational execution in any sector (Zajac & Westphal, 1996). Sector's ROA can be measured as the normal sector's ROA over the initial three years (Shen & Cannella, 2002). Some industries require massive assets that needs for very high investment, but it worth it due to high return on these assets (Chang & Wu, 2014). In contract, ROA can be low to very low in other industries regardless of required assets for establishing the organization in those industries (Bitektine & Haack, 2015). So having high assets does not necessary mean having high ROA (Jain & Singal, 2014).

Return on Investment (ROI)

A ratio with a close connection to ROA is the returns on investment- ROI (Brauer & Schmidt, 2006). Generally, an industry with high assets requires high investment, though, investment in an industry can be almost independent of its required assets (Zhu & Chung, 2014). For example, pharmaceutical industry demands for very high investment in its research and development that do not consider as assets (Nicholson, 2013). ROI can be widely different in different industries (Suarez *et al.*, 2015), thereby; it can be used as one of the features that distinguish dissimilar industries from each other (Bitektine & Haack, 2015).

Profitability of Industry

Industry profitability gives an evidence of the level of profit development or decreases inside an industry normally during one year (Mcnamara *et al.*, 2008). Although there is a relationship between sales and profitability, this relationship is not always direct or positive (Bitektine & Haack, 2015; Qu *et al.*, 2011). Sales or market size of some industries may be high, but their profitability may be medium or even low such as retail sector or aviation (Brauer & Wiersema, 2012). Some service provider industries that may not need a large investment can be among the most profitable industries such as banking, professional services and health industries (Singh & Mishra, 2014). Initial profitability of some service-based industries may be declined if so many organizations enter the race (Castrogiovanni, 1991; Piskorski, 2013). Profitability may be reduced if an industry requires heavy investment in fixed assets such as mining or agriculture industries (Goll & Rasheed, 2005; Sultan & Saurabh, 2013).

Price Range in Industry

While in some industries or industries such as ship-building or construction, price of one finished product can range from £100,000 to more than £1,000,000,000, in other industries, price range of one unit of product or service can be no more than couple of Ponds (Dobni *et al.*, 2015). Even the common

pricing strategies such as high-low pricing, everyday low pricing, or premium pricing are not the same in different industries (Kleinbaum, 2012). Although, price range and pricing strategies are not exclusive indicators for separating varied industries from each other (Zhu & Chung, 2014), it can to some extent help distinguishing them (Curty & Zhang, 2013).

There is support for this view that amount of ‘*financial outputs*’ (market size, growth, return on assets, return on investment, profitability, and price range) of various industries is almost unique for each industry. The eighth proposition highlights this matter.

Proposition 8: ‘Financial-outputs’ of industries may be different from each other at significant levels.

Uncertainty

Uncertainty is the extent to which the sector-related changes may not be predictable due to unprecedented speed, type or spread of the change in the sector. Different industries experience different degrees of uncertainty (Pfeffer & Salancik, 1978; Swoboda *et al.*, 2014). The extent of uncertainty in an industry can have noticeable effects on decisions to invest, renew, divest or continue business in the sector. Sector uncertainty may be results of some factors such as market uncertainty of an industry, the level of technological uncertainty, demand instability or sector dynamism.

Market Uncertainty of Industry

One of the influential factors in sector uncertainty is market uncertainty in the sector (Hrebiniak & Snow, 1980; Jelassi *et al.*, 2014). Market uncertainty is about changes in the average sales of an industry (Westphal & Milton, 2000; Zajac & Westphal, 1996). Changes in the sales may happen because of changes in prices, customers’ preferences or competitors’ actions (Bitektine & Haack, 2015). As stated by Hrebiniak and Snow (1980, p. 755) “Industry is associated with varying levels of the different types of environmental uncertainty”. Although market uncertainty may happen in every sector, the degree of the market uncertainty can be considerably different in dissimilar industries (Huang, 2014; Piskorski, 2013).

Level of Technological Uncertainty

Technology as a key enabler of the sector is not stable (Sher & Kim, 2014). ‘Two sets of interrelated technologies may exist in any sector, the technology in the finished products or services and the technology to produce the products or provide the services’ (Bourgeois & Eisenhardt, 1988; Kleinbaum, 2012). Technological change that creates technological uncertainty may be genuinely persistent in a few industries yet irregular and less unsurprising in others (Argyres *et al.*, 2015). The level of technological uncertainty may have impacts on recruitment of more specialist managers and on shaping new alliance to share the costs of investing in new technology (Yin & Shanley, 2008). It is

expected that level of technological uncertainty to be high in technology industries in comparison with non-technology industries (Perez-Franco, 2014). Technological uncertainty would contribute to overall uncertainty in the sector (Cornelissen *et al.*, 2015; Pfeffer & Leblebici, 1973).

Industry Dynamism

Industry dynamism is about the level of changes inside of an industry (Grossman, 2014; Randolph & Dess, 1984). This definition was made clearer by Castrogiovanni (2002) who mentioned industry dynamism concerns with “the frequency, degree, and unpredictability of changes” that may happen in the industry. Sector Dynamism has been proposed to have a critical influence on the way of rivalry, characterizing the degree to which a firm faces an environment that is unsurprising and stable or changing and uncertain (Kinal, 2013; Monin *et al.*, 2013). Varied industries may have different degrees of dynamism (Qu *et al.*, 2011; Zhu & Chung, 2014). Some industries are more stable than others (Datta *et al.*, 2005; Mcnamara *et al.*, 2008). Dynamic capabilities of the organizations shaping an industry might contribute to some extent to the industry dynamism (Warner & Wäger, 2019).

Demand Instability of Industry

Demand instability in the industry is not just about degree of changes in demands (Hambrick & Abrahamson, 1995; Zhu & Chung, 2014); it is about frequency and predictability/unpredictability of the changes in demands too (Jenkins, 2014). An industry with high changes in predictable demands can be more manageable than an industry with medium changes in unpredictable demands (Bitektine & Haack, 2015). As stated by Hambrick and Abrahamson (1995) one of the results of demand instability in the sector is the creation of “uncertainty about means-ends linkages, and managerial discretion is thus enhanced.” Industries that mainly or only rely on the consumer (end-user) customers are expected to have more demand instability than those industries that do business only with other businesses (Dearlove & Crainer, 2014).

Degree of Competition

One of the issues may have an effect on the uncertainty of an industry is the degree of competition in that sector (Kleinbaum, 2012). Competition can be calculated by considering the number of organizations that produce or sell the same product or services in the same market in one year (Ellero & Pellegrini, 2014; Katila & Shane, 2005; Tushman & Anderson, 1986). That is to say, not everybody is satisfied with these researchers in the way competition is evaluated. Measuring the degree of competition can be misleading if only number of competitors is considered without attention to the size of competitors and their market shares (Fosfuri *et al.*, 2013; Gras & Krause, 2019; MacKay & Chia, 2013). A study by Katila and Shane (2005, p. 816) found that industries can be distinguished from each other based on “the number of competing firms they contain because bandwagon effects,

economic factors, and the attractiveness of a market at a given point in time all influence number of competitors”.

So the ninth proposition would be shaped as a result of these arguments about *uncertainty* (market uncertainty/risk, dynamism, technological uncertainty, demand instability, and degree of competition).

Proposition 9: Industries’ ‘uncertainty’ would create significant differentiation amongst dissimilar industries.

Structure

Structure refers to the organization, projection, and nature of an industry in terms of its format, identity, and stakeholders. An industry’s structure is a multidimensional phenomenon that shapes an industry accordance to the inner- and outer-sector environment. While the structure of an industry is not too rigid, it is not a highly flexible or changeable entity either. Although the factors that shape the structure of an industry are the same in different industries, each sector may have its own unique structure because of differences in intensity of each of the factors in varied industries.

Industry Size

According to Fredrickson and his colleagues (1988, p. 265) “The number of firms indicates the size of the industry”. Different industries have different sizes (Khamseh & Nasiriyar, 2014). Size of an industry can have effect on strategy implementation due to its correlation with other industry characteristics such as level of competition, industry life cycle, uncertainty/risk, specialised human resources, and return on investment (Cornelissen *et al.*, 2015).

As the quantity of organizations inside of an industry increases, the likelihood of having consensus among organizations regarding accepted strategies or behaviour diminishes (Pfeffer & Leblebici, 1973). Industries with a limited number of organizations are more likely to have harmonised set of actions and strategies (Piskorski, 2013). In small sized industries, it may be difficult to find specialist managers with experience of strategy implementation (Khamseh & Nasiriyar, 2014). On the other hand, the bigger the quantity of organizations, the bigger the quantity of available employees in the sector, so, it is more likely to have managers with relevant work and strategy implementation experience in the sector (Lantz & Hjort, 2013; Pfeffer & Leblebici, 1973).

Typical Customers of Industry

Dissimilar industries have dissimilar customers in terms of their types, requirements and needs (Hathroubi *et al.*, 2014). In some industries, the only customers are other organizations, business customers, which are limited in number and have long-term and stable needs (Jani & Han, 2013). For example, a still producing company does not do business with an end-user customer who needs one set of still plates for her home (Royer, 2012). Other industries, especially those that are service providers may mainly or only have consumer customers who receive the services for their own short-term

personal use (Cornelissen *et al.*, 2015). Education or public industries mainly depend on consumer customers with very changeable and mid-term demands (Zhu & Chung, 2014).

Advertising Intensity

This issue is closely linked to the previous discussion, typical customers. Advertising intensity in the sector highly depends on typical customers of that sector (Kleinbaum, 2012). Those industries that mainly or only rely on a large number of consumer customers are more likely to push for a high-intensity advertising campaign to attract customers (Piskorski, 2013). In contrast to this would be those industries that work with one or limited number of business customers. These industries do not need to invest in advertising to find customers (Bitektine & Haack, 2015). That is to say, for the sake of brand recognition some of the organizations in these industries may run strong advertising campaign such as Intel Corporate that produces microprocessors for other companies but still has regular advertising.

Culture of Industry

The culture of an industry is shaped mainly by common value system originated from professional etiquettes of the main professions in the sector (Epstein *et al.*, 2015; Gordon, 1991). Main professions and their etiquettes in different industries are not identical. Thus, it is reasonable to assume that dissimilar industries have a varied culture (Chatman & Jehn, 1994; Zhu & Chung, 2014). For example, the culture of support and cooperation in some industries are stronger than others (Epstein *et al.*, 2015). The sector's culture would be affected partly by national cultures too (Gagliardi, 1986; Pansiri, 2014). Culture of an industry has some effects on the behaviour of employees and their performance including strategy implementation performance (Piskorski, 2013). However, this effect should not be exaggerated because "the culture is not deterministic of specific forms but exerts an influence upon the *nature* of the forms that will be developed" (Gordon, 1991, p. 398)".

Specialized Human Asset Intensiveness

Every sector needs some highly skilful staff, though; this need for specialists is not the same in varied industries (Yin & Shanley, 2008). While some industries require large number of highly specialized employees to deal with highly complex or technological machinery, programmes or systems, the other industries mainly rely on low or average-level skilled/specialized staff (MacKay & Chia, 2013). "Industry-specific human capital has less firm specificity, since any professional can move from firm to firm throughout a market without diminishing the value of his or her industry-specific human capital" (Pennings *et al.*, 1998, p. 427).

The education sector, for example, is one of the industries that has very high specialised human asset intensiveness (Chatman & Jehn, 1994; Singh *et al.*, 2014). At least 50% of employees at

universities and colleges are highly educated and specialised (Zhu & Chung, 2014). In contrast, in an industry such as retail, a small portion of the staff have sale-related degrees or specialities (Suarez *et al.*, 2015; Pennings *et al.*, 1998).

Staff Combination of Industry

There have been some changes in staff combination of industries, but still some industries are known to be almost totally dominated by men such as mining and steel industries (Monin *et al.*, 2013). Arthur (2003) is one of the researchers who is interested in gender diversity in the workplace, so he tried to identify the proportion of female employees in one sector. In addition to staff's gender, other criteria such as the proportion of part-time staff or staff with temporary contracts in comparison to those with long-term or permanent contracts can be considered too (Chatain, 2014). For instance, tourism and hospitality sector is notorious for low job security due to having a high proportion of staff with temporary contracts and part-time jobs. It is claimed that there is a correlation between the nature of jobs in the sector and staff combination in that sector (Curty & Zhang, 2013). Mining is a very difficult and dangerous job, so women do not show any desire to be recruited in the mining sector.

Stages in an Industry Life Cycle

Every industry or sector may go through a life cycle that starts from initial formation and after a few stages might finish by collapse or reborn as part of a new sector. The complete cycle of sector or industry life described by McGahan and colleagues (2004) as follow:

“Industries begin in a period of fragmentation as companies experiment with different approaches. With time, a scalable approach emerges as a dominant model. As the dominant model develops, an industry goes through a shakeout as unaligned firms are forced to exit. Eventually, firms find it difficult to improve their productivity on the dominant model at high rates, volume growth hits a point of diminishing returns, and the industry enters maturity. Ultimately, as volumes drop because of saturated demand or exhausted supply, the industry moves into decline” (McGahan *et al.*, 2004, p. 2).

Another industry life cycle was suggested by Agarwal and colleagues (2002) that divides industry life cycle into just two phases: growth and maturity. This industry life cycle is too simplistic. Some industries such as Internet-based sector are in their infancy stage of life, while, some others may be in their growth, maturity, or decline stage (Kleinbaum, 2012). That is to say, length of the life cycle of different industries can be widely different (Wang & Shaver, 2014). While agriculture sector after more than a millennium is still in its maturity stage (Sila, 2013), some technology industries after a few decades may consider to be declining already (Monin *et al.*, 2013).

Excitement of Industry

McNamara and Bromiley (1997) claimed that “staff's cognitive sensation in an industry may be influenced by ‘the fads-and-fashions effect’ of that sector that indicates the degree of excitement of attraction of the sector”. In other words, McNamara and Bromiley (1997) believe that not all industries

are as exciting as each other. That is to say the paper by McNamara and Bromiley is only one of the two publications that claim excitement of an industry can be considered as a distinguishing factor for separating industries from each other.

The tenth industry-based proposition has developed based on the above mentioned views regarding importance of *structure* (industry size, typical customers of industry, culture of sector, advertising intensity, specialized human asset intensiveness, staff combination of sector, stages in an industry life cycle, and excitement of sector) of an industry.

Proposition 10: *Industries can be distinguished in significant degrees from each other based on their 'structure'.*

Methodology: Systematic Literature Review

This study relies on systematic literature review. As stated by Boland, Cherry and Dickson (2013), the review question was defined and inclusion and exclusion criteria were identified. Inclusion criteria were all published studies in top ten related journals that have at least one of the nine keywords about industry. To determine the studies that can be included in this systematic literature review first, a list of most relevant keywords were prepared that reflect the notion of industry and its features. As a result, nine keywords were prepared. These keywords include: 'industry feature', 'industry characteristic', 'industry determinant', 'industry force', 'industry factor', 'industry component', 'industry aspect', 'industry specification', and 'industry element'.

This research is about building-blocks of the industry and their potential impacts on the execution of the strategy. The top ten relevant journals were searched for industry-related characteristics, determinants, and building blocks. These journals are *Administrative Science Quarterly (ASQ)*, *Academy of Management Journal (AMJ)*, *Academy of Management Review (AMR)*, *Long Range Planning (LRP)*, *Strategic Management Journal (SMJ)*, *Global Strategy Journal (GSJ)*, *Strategic Organization (SO)*, *Journal of Economics and Management Strategy (JEMS)*, *Industry and Innovation (II)*, and *Journal of Industry, Competition and Trade (JICT)*. This research in search of industry-related factors did not limit itself to papers of the top ten journals. Wherever references made to good publications from other journals, conferences, or books these publications were reviewed too. During wide literature reviews, some relevant papers have been identified that all of them have been considered and used in this paper.

To put it simply, in order to find relevant publications to *industry characteristics* in these journals, nine keywords were used in the online format of all of these journals. Results of the search can be seen in Table 1.

Table 1: Number of Found Papers and Books by using nine Keywords

Keywords	Name of Journals
----------	------------------

	ASQ	AMJ	AMR	LRP	SMJ	GSJ	SO	JEMS	II	JICT
Industry feature	1	1	1	3	12	0	3	1	1	3
Industry characteristic	2	17	6	22	62	5	4	5	0	15
Industry determinant	1	0	1	7	80	4	4	0	1	0
Industry force	1	0	3	12	20	0	2	2	0	0
Industry factor	1	6	1	61	116	9	8	1	0	1
Industry aspect	0	2	0	17	21	1	1	1	0	0
Industry dimension	0	0	1	10	38	1	3	0	1	2
Industry component	1	0	0	17	39	2	1	2	1	0
Industry element	0	1	2	6	10	1	0	0	0	0

Source: Developed for this study

The search engine of these journals was set in a manner to permit look for these keywords in the abstract section of each one paper. Nearly 600 publications were identified that some of them include more than one keywords, so they were mentioned more than once in table 1. After ignoring the repeated publications due to containing more than one keywords, five hundred and sixty-three papers and books were found. Then the exclusion criterion was considered to narrow-down the found publications. A thorough examination of one-by-one of the found papers and books revealed that in the vast majority of the findings, there are not any discussions regarding characteristics of the industry, thus they were excluded from further investigations in this study.

Among the 563 found publications, 176 publications had some relevant information about characteristics of industries or their impact on strategy implementation. It is important to mention that the topics and focus of almost none of these found publications were industry characteristics or the effects of the industry, so the relevant information in these publications were very limited.

Grouping Industry Characteristics for Model Development

In search of the features that shape an industry, 47 characteristics are identified that each of which are mentioned and supported with range of scholars who their studies are published either in top three management journals (Administrative Science Quarterly, Academy of Management Journal, and Academy of Management Review) or in other journals or books. As it is reflected in the following tables, number of publications in support of each industry feature is noticeably different. While some of the industry features (e.g. Asymmetry between firms or Manufacturing intensity) are suggested only by one or two researchers, other industry characteristics (e.g. Industry Concentration or Growth/Sales) are heavily endorsed by more than 40 studies.

Table 2: Number of Supporting Publications for each Industry Characteristics

Sector Characteristics	Number of supporting publications	
	ASQ, AMR or AMJ	Other Journals/Books
Political power	9	8
Government-industry relationship	20	10
Federal government purchases	4	2
Industry Size (number of organizations)	12	7
Typical size of organizations	26	9
Industry concentration (concentrated Vs Fragmented)	29	17
Market Uncertainty/Risk	26	7
Supply chain (Sourcing practices)	15	8
Distribution of resources (homogeneous or heterogeneous)	12	6
Industry players (number of competitors with similar power)	20	8
Degree of competition Vs cooperation	28	8
Stages in an industry life cycle	16	7
Structure (degree of robustness)	14	8
Dynamism/Stability	21	15
Customers (types, requirements and needs)	20	3
Entry Barriers	20	19
Rates & types of innovation	16	12
Product Differentiation (Standardized Vs Differentiated)	32	13
Nature of Product (only goods, mainly goods, .. long lasting)	18	8
Frequency of introducing new product/service	18	9
Capital Intensiveness- Average required investment (fixed)	28	14
Return on Investment (ROI)	18	8
Financial structure (average debt to equity ratio)	10	4
Asset Specificity (Sunkness Vs fungible)	9	2
Price Range (Price per product & pricing strategy)	12	5
Growth/sales	36	15
Excess capacity Vs Scarcity	8	2
Specialized Human Asset Intensiveness	12	3
Regulatory Environment and Coercive Pressures	19	6
Culture (common practice, value)	11	4
Technology	30	8
Frequency of inventing new technology	19	7
Level of technological uncertainty	24	7
Munificence/profitability	19	11
Availability of financial resources	4	2
Industry acquisition density	2	4
R&D Intensity	4	5
Manufacturing intensity	3	3
Advertising intensity	6	6
Market size	8	5
Strong outside forces	2	5
Demand Instability	8	5
Return on assets (ROA)	5	4
Staff combination (female proportion, part-timers, ...)	3	3
Excitement/interest	2	0
Asymmetry between firms	0	1
Industry Complexity	4	6

Source: Prepared for this study

Modelling Industries' Influential Features

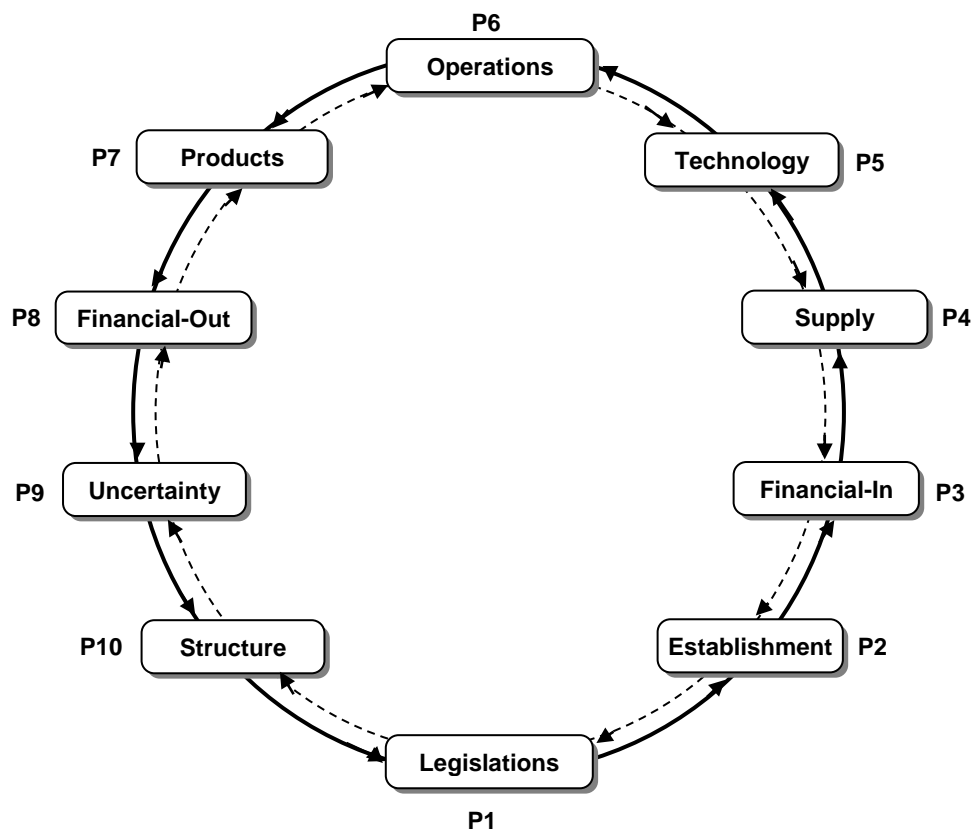
The detailed discussions in previous sections of this paper can be summarised in the following table that illustrate ten industry-related propositions.

Table 3: Sector Characteristics, their Categories and related Propositions

Industry Characteristics	Categories of Features	Related Propositions
Government and industry relationship	Legislations	P1
Regulatory Environment		
Outside forces		
Political powers in industry		
Entry Barriers to industry	Establishment	P2
Capital Intensiveness		
Availability of financial resources		
Typical size of organizations in industry		
Impact of industry structure	Financial Inputs	P3
Federal government purchases		
Financial Structure of industry	Supply	P4
Asset Specificity		
Supply chain	Technology	P5
Resource distribution of industry		
Sector players		
Technological level of an industry		
Frequency of inventing new technology	Operations	P6
Research and development intensity		
Innovation types and rates		
Industry Complexity		
Manufacturing intensity	Products	P7
Typical excess capacity		
Industry concentration		
Organizations asymmetry of industry		
Product Differentiation	Financial Outputs	P8
Nature of Product		
Acquisition density of industry		
Frequency of introducing new product/service		
Market size of industry	Uncertainty	P9
Growth of the industry		
Return on assets (ROA)		
Return on Investment (ROI)		
Profitability of industry	Structure	P10
Price Range in industry		
Market uncertainty of industry		
Level of technological uncertainty		
Sector Dynamism		
Demand Instability of industry		
Degree of competition		
Industry Size		
Typical customers of industry		
Culture of industry		
Advertising intensity		
Specialized Human Asset Intensiveness		
Staff combination of industry		
Stages in an industry life cycle		
Excitement of industry		

Based on the systematic literature review 47 influential factors identified that shape any industry. These 47 factors are arranged into ten groups based on the logical connectivity among them. The ten sets of industry makers that are represented by ten propositions have some interface with each other (see figure 1). In connecting the building blocks of an industry, it is common sense to assume that the element of *legislations* can be considered as the potential starting point. Industry-centred legislations define the boundaries of an industry and the activities that are allowed or mandatory in that industry. *Establishment* can be formed based on the legislations. The *financial inputs* to an industry are directed by the requirements defined in the establishment. The amount and type of financial inputs indicates the extent and quality of *supply* in the industry. *Technology* is one of the factors that is expected to be supplied. Technology also can increase the efficiency of the supply in the industry. *Operations* in any industry depend on required technology as well as the effective supply. *Products* are intended outputs of operations. Exchange of the industry's products with money or other valuables would shape the typical *financial outputs* in the industry. Good financial outputs would help organizations in the industry to deal with many if not all forms of *uncertainty* that are unavoidable. The extent of uncertainty is one of the contributors to forming the industry's *structure*. The structure of an industry is an important determinant of the types of legislations may be required to govern an industry. The reverse impact with less strength in form of feedback can be expected among these ten sets.

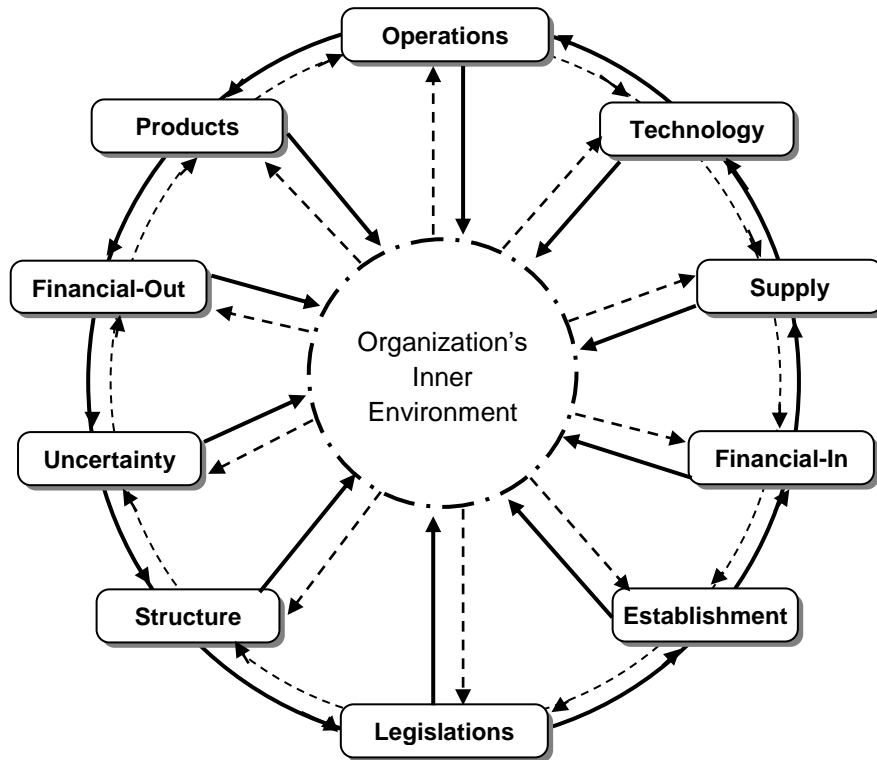
Figure 1: Industry's Building Blocks and the research proposals



Source: Prepared for this study

The analysis illustrates the relatively strong impacts of the industry features on performance of its organizations. There are two-ways influence between an industry and the organizations in that industry because the industry is shaped by its organizations and their common features. Thus, effect of an industry on its organizations is much stronger than the impact each of the organizations that form that industry on the industry (see figure 2). The *Ten Forces Framework* is shaped by the ten sets of factors.

Figure 2: Interactivity among organization and industry (Ten Forces Framework)



Source: Prepared for this study

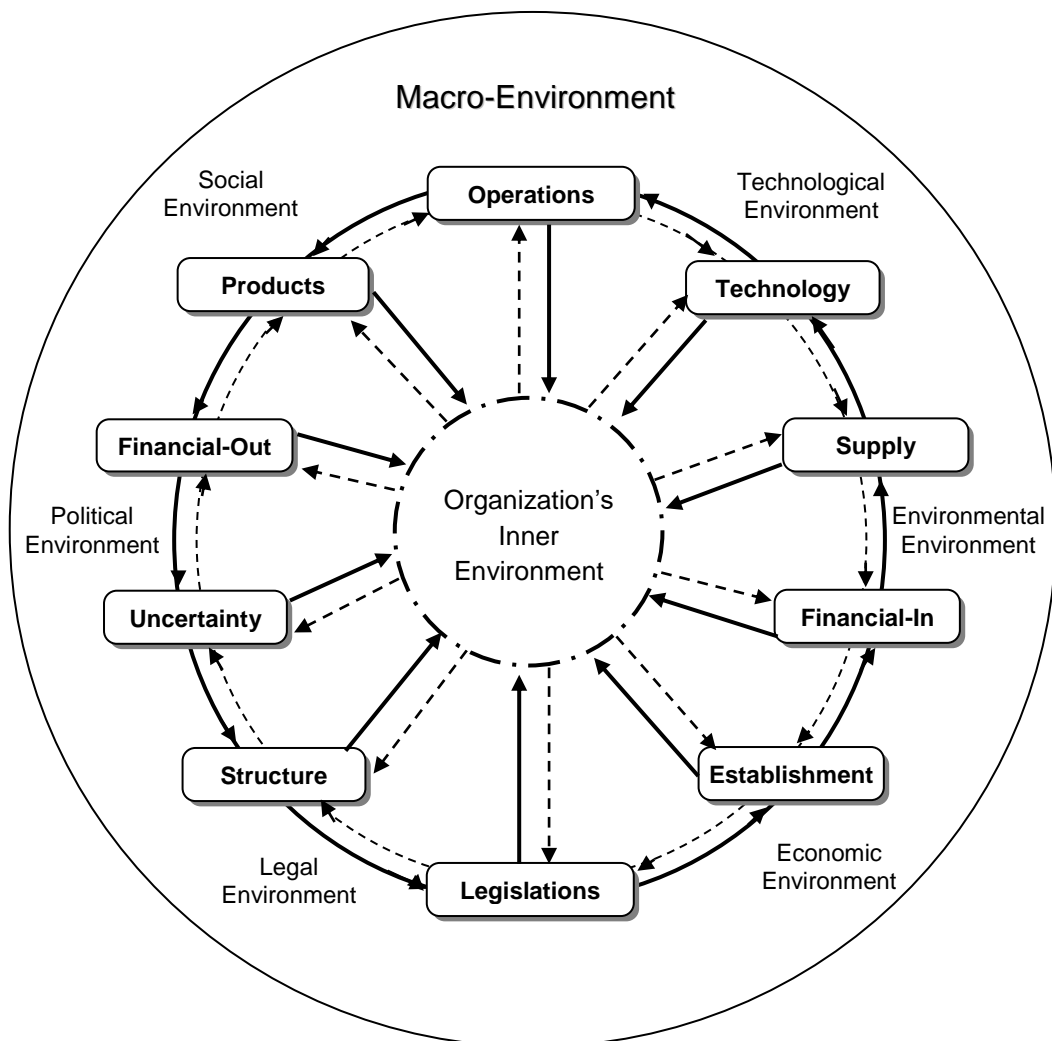
There are three schools of thoughts concerning strategizing and organizational performance including resource-based view (RBV), industry-based view and institutional-based view. Resource-based view focuses only on inside of an organization (Barney, 1991). It is based on this assumption that situation and quality of inner-organizational resources and capabilities should be considered as the prime determinants of an organization's strategic performance (Wernerfelt, 1984). From the RBV point of view, managers have control over only the inter-organizational factors and these factors are the most direct and strongest contributors to the outputs of an organization (Barney, 1991). Thereby, internal environment of an organization should be considered and analysed as part of the process of strategizing or performance management.

Unlike RBV, the industry-based view concentrates its attention to industry forces outside of an organization. The assumption in this view is what make or break an organization is not internal but it comes from the external factors shaping the industry that an organization is the only one member of it (Porter, 1980). According to the industry-based view, industry analysis is a crucial element in any proper strategy and performance management (Hrebiniak and Snow, 1980; Pfeffer and Leblebici, 1973; Porter, 1980).

The institutional-based view highlights the importance of outer-organizational institutions such as governments or communities on supporting or undermining the strategizing activities or performance of an organization (Peng, 2009). The institutional-based view goes beyond industry features and consider effects of some but not all of the macro-environment factors on organizations. This view encourages organizations to monitor and analyse the macro-environment in general and the institutional factors in particular as part of the strategizing activities and output handling.

By considering the institutional-based view, industry-based view and resource-based view, it appears that an organization's strategy formulation, strategy implementation, performance, success or failure are affected noticeably by the macro-environmental conditions, industry forces as well as inner-organizational factors respectively. The macro-environment, industry and organization (MIO) analysis technique is a three-layered comprehensive model for analysing influential factors on an organization's strategizing and performance (see figure 3). The main but not the whole elements of macro-environment can be technological, environmental, legal, economic, political and social factors (Bitektine & Haack, 2015; Hambrick & Abrahamson, 1995). Although conducting a complete analysis by using the MIO analysis technique can be time-consuming, complicated and expensive, it gives a full view of everything is matter for the organization.

Figure 3: Macro-environment, Industry and Organization (MIO) Model



Potential Functions of the Ten Forces Framework and MIO Model

The Ten Forces Framework and the macro-environment, industry and organization (MIO) model have empirical and theoretical functions so they can be used by practitioners and academics. The Ten Forces Framework can be deployed by executives when the industry factors are considered as highly influential in a particular period of time such as the birth or decline stage of an industry. Otherwise, the MIO model is a more suitable analysis technique because it includes the Ten Forces as well as inner-organization and macro-environment factors. Managers may employ the MIO Model as the first step in the process of strategizing and performance management in their organizations. The MIO model will provide the full information about all influential factors in formulating and implementing strategies as well as leading the organization's performance. Managers would be able to make the most appropriate decision and take the most effective actions based on the wealth of data compiled by the MIO model.

From academic point of view, the MIO model as well as the Ten Forces Framework can be considered as the theoretical frameworks capable of mapping the performance determinants and their interactions. These models can be used for single or comparative analysis of one or more organizations from one or more industries in the context of one or more countries. The MIO model can help to measure which of the factors in any of the three levels can be more influential in a particular industry or country in a particular period of time.

Contributions and Limitations

In terms of contributions, this research for the first time identified 47 influential factors or features that form any industry. So far, this study provided the most comprehensive list of industry-makers. Furthermore, the research proposes ten sets of industry characteristics based on systematic grouping of these 47 factors. Thus, it can be said that ten major forces shape and manage every industry. In comparison to Porter's Five Forces with 25 factors, the developed theoretical framework in this investigation with ten forces and 47 factors is more detailed and realistic.

This study has its own limitations. The major limitation is being theoretical based on literature review rather than primary data. The findings could have been more pragmatic aspect if the suggested frameworks (*MIO Model* and *Ten Forces Framework*) had tested in the real world. Also, comparing previous studies that were done based on different methodologies and assumptions in different countries and periods of time might encounter some epistemological and ontological constraints. The researcher minimised these by focusing on the found industry features only rather than merging or comparing the quantitative outputs of these studies.

Conclusion

The research concludes that all industries are built with the same building-blocks or factors. The differences in the intensity of these building factors would separate varied industries from each other. Numerous studies have shown the positive or negative effects of industry or sector-related factors on

either formulating or executing strategies in every industry. The extent to which industry's characteristics influence strategizing depend on many factors one of which is the intensity of these industry features. The literature also indicates that organizations that shaping the industry would to some extent contribute to influence the industry and its features too.

As a result of a systematic approach to reviewing existing literature 47 factors are identified that shape features and building blocks of any industry. Some of these elements are very general and some of them are very specific in a way that can be considered as sub-elements of more general elements. In fact, these factors are partially or completely interrelated.

These 47 factors would shape ten groups of sector features based on the degree of similarities and connectivity among elements of each group. These ten sets of industry factors embody: *Technology* (Technological level of an industry, frequency of inventing new technology, research and development intensity, innovation types and rates, sector complexity), *legislations* (government and industry relationship, regulatory environment, outside forces, political powers in sector), *uncertainty* (market uncertainty of sector, level of technological uncertainty, sector dynamism, demand instability of sector, degree of competition), *financial outputs* (market size of sector, Growth of the sector, return on assets, return on investment, profitability of sector, price range in sector), *financial inputs* (financial structure of sector, asset specificity), *establishment* (entry barriers to sector, capital intensiveness, availability of financial resources, typical size of organizations in sector, impact of industry structure, federal government purchases), *supply* (supply chain, resource distribution of sector, sector players), *products* (product differentiation, nature of product, acquisition density of sector, frequency of introducing new product/service), *structure* (sector size, typical customers of sector, culture of sector, advertising intensity, specialized human asset intensiveness, staff combination of sector, stages in an industry life cycle, excitement of sector), and *operations* (manufacturing intensity, typical excess capacity, sector concentration, organizations' asymmetry of sector).

Two interrelated theoretical frameworks, the Ten Forces Framework and the macro-environment, industry and organization (MIO) model are emerged as a result of systematic grouping of the identified industry and macro-environment factors.

References

- Aalbers, R. & Dolfsma, W. (2014). Innovation despite reorganization. *Journal of Business Strategy*, 35(3), 18-25.
- Aboutalebi, R. (2016). Strategies for effective worldwide supply chains. In B. Christiansen (Ed.), *Handbook of research on global supply chain management* (pp. 1-14). Hershey, PA, USA: IGI Global.
- Aboutalebi, R. (2017). The taxonomy of international manufacturing strategies. In L. Brennan, & A. Vecchi (Eds.), *International manufacturing strategy in a time of great flux*, 17-41. Cham, Switzerland: Springer.
- Aboutalebi, R. and Tan, H. (2014). A Hybrid Model for International Strategy Implementation. In: AIB (Academy of International Business), *56th annual conference of AIB: International Business*,

Local Contexts in Global Business. 23-26 June 2014, Beedie School of Business, Simon Fraser University, Vancouver, Canada.

Ackerman, R. W. (1970). Influence of Integration and Diversity on the Investment Process. *Administrative Science Quarterly*, 15(3), 341-351.

Agarwal, R., Sarkar, M. & Echambadi, R. (2002). The Conditioning Effect of Time on Firm Survival: An Industry Life Cycle Approach. *Academy of Management Journal*, 45(5), 971-994.

Anderson, J. & Vakulenko, M. (2014). Upwardly mobile. *Business Strategy Review*, 25(4), 34-39.

Argyres, N., Bigelow, L., & Nickerson, J. A. (2015). Dominant designs, innovation shocks, and follower's dilemma. *Strategic Management Journal*. 36(2), 216-234.

Arthur, M. M. (2003). Share Price Reactions to Work-family Initiatives: An Institutional Perspective. *Academy of Management Journal*, 46(4), 497-505.

Bai, C. & Sarkis, J. (2014). Determining and applying sustainable supplier key performance indicators. *Supply Chain Management: An International Journal*, 19(3), 275-291.

Bain, J. S. (1968). *Industrial organization* (2d ed.). New York: Wiley.

Barabasi, A. L. (2002). *Linked: The new science of networks*. Cambridge, MA: Perseus Press.

Barney, J. B., (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99-120.

Bitektine, A. & Haack, P. (2015). The 'macro' and the 'micro' of legitimacy: Toward a multilevel theory of the legitimacy process. *Academy of Management Review*, 40(1), 49-75.

Boland A, Cherry MG, Dickson R, (eds) (2013). *Doing a systematic review: A student's guide*. New York, Sage Publications.

Bourgeois, L., & Eisenhardt, K. (1988). Strategic decision processes in high velocity environments: Four cases in the microcomputer industry. *Management Science*, 34: 816-835.

Brauer, M. F. & Schmidt, S. M. (2006). Exploring strategy implementation consistency over time: The moderating effects of industry velocity and firm performance. *Journal of Management and Governance*, 10: 205-226.

Brauer, M. F. & Wiersema, M. F. (2012). Industry Divestiture Waves: How a firm's position influences investor returns. *Academy of Management Journal*, 55(6), 1472-1492.

Buiren, K. V., Veld, D. & Voort, J. V. D. (2019) State Aid and Competition: Application of Social Welfare Criterion to State Aid. *Journal of Industry, Competition and Trade*, 19(1), in-press.

Cannon, A.R., & John, C.H.S. (2007). Measuring environmental complexity: A theoretical and empirical assessment. *Organizational Research Methods*, 10(2), 296-321.

Castrogiovanni, G.J. (1991). Environmental munificence: A theoretical assessment. *Academy of Management Review*, 16(3), 452-565.

Castrogiovanni, G.J. (2002). Organization task environments: Have they changed fundamentally over time? *Journal of Management*, 28(2), 129-150.

Caves, R., Fortunato, M., & Chemawat, P. (1984). The decline of dominant firms: 1905-1929. *Quarterly Journal of Economics*, 99: 523-546.

Chadwick, C., Super, J. F., & Kwon, K. (2015). Resource orchestration in practice: CEO emphasis on SHRM, commitment-based HR systems, and firm performance. *Strategic Management Journal*. 36(3), 360-376.

Chandler, A. (1977). *The visible hand*. Cambridge, MA: Belknap Press of Harvard University Press.

Chandler, A. (1990). *Scale and Scope*. Cambridge, MA: Belknap Press of Harvard University Press.

- Chang, J. S. & Chang, W. H. (2014). Analysis of fraudulent behavior strategies in online auctions for detecting latent fraudsters. *Electronic Commerce Research and Applications*, 13(2), 79-97
- Chang, S. J. & Wu, B. (2014). Institutional barriers and industry dynamics. *Strategic Management Journal*, 35(8), 1103-1123.
- Chatain, O. (2014). How do strategic factor markets respond to rivalry in the product market? *Strategic Management Journal*, 35(13), 1952-1971.
- Chatman, J. A. & Jehn, K. A. (1994). Assessing the Relationship between Industry Characteristics and Organizational Culture: How different can you be? *Academy of Management Journal*, 37(3): 522-553.
- Chen, M., & Hambrick, D. (1995). Speed, stealth and selective attack: How small firms differ from large firms in competitive behavior. *Academy of Management Journal*, 38: 453-482.
- Cherif, E. & Grant, D. (2014). Analysis of e-business models in real estate. *Electronic Commerce Research*, 14(1), 25-50.
- Child, I. (1977). Organization design and performance: Contingency theory and beyond. *Organization and Administrative Sciences*, 8, 169-183.
- Child, J. (1972). Organizational structure, environment and performance: The role of strategic choice. *Sociology*, 6(1), 1-22.
- College Dictionary (2010). *Random House Kernerman Webster's College Dictionary*. K Dictionaries Ltd. Random House, Inc.
- Collins English Dictionary (2012). *Collins English Dictionary: Complete and Unabridged*. HarperCollins Publishers.
- Cornelissen, J. P., Durand, R., Fiss, P. C., Lammercs, J. C., Varra, E. (2015). Putting communication front and center in institutional theory and analysis. *Academy of Management Review*, 40(1), 10-27.
- Curry, R. G. & Zhang, P. (2013). Website features that gave rise to social commerce: a historical analysis. *Electronic Commerce Research and Applications*, 12(4), 260-279.
- Datta, D. K., Guthrie, J. P. & Wright, P. M. (2005). Human Resource Management and Labor Productivity: Does Industry Matter? *Academy of Management Journal*, 48(1), 135-145.
- Datta, D. K., Guthrie, J. P., & Rajagopalan, N. (2002). Different industries, different CEOs? An empirical study of CEO career specialization. *Human Resource Planning*, 25: 14-25.
- Dean, J. W. & Bowen, D. E. (1994). Management Theory and Total Quality: Improving Research and Practice through Theory Development. *Academy of Management Review*, 19 (3), 392-418.
- Dearlove, D. & Crainer, S. (2014). Mobilising value: the turkcell way. *Business Strategy Review*, 25(1), 38-44.
- Den Hertog, C. (2014). Better value chains: a matrix for competitive advantage. *Journal of Business Strategy*, 35(5), 43-48.
- Dess, G. G., & Beard, D.W. (1984). Dimensions of organizational task environments. *Administrative Science Quarterly*, 29(1), 52-73.
- Dewar, R. D., & Dutton, J. E. (1986). The adoption of radical and incremental innovations: An empirical analysis. *Management Science*, 32: 1422-1433.
- Doan, T. T., Sahib, P. R. & Van Witteloostuijn, A. (2018) Lessons from the flipside: How do acquirers learn from divestitures to complete acquisitions? *Long Range Planning*, 51 (X), 252-266.
- Dobni, C. B., Klassen, M., & Nelson, W. T. (2015). Innovation strategy in the US: top executives offer their views. *Journal of Business Strategy*, 36(1), 3-13.
- Ellero, A. & Pellegrini, P. (2014). Are traditional forecasting models suitable for hotels in Italian cities?, *International Journal of Contemporary Hospitality Management*, 26(3), 383-400.

- Epstein, M. J., Buhovac, A. R., & Yuthas, K. (2015). Managing social, environmental and financial performance simultaneously. *Long Range Planning*, 48(1), 35-45.
- Feinberg, S. E. & Gupta, A. K. (2009). MNC Subsidiaries and Country Risk: Internalization as a Safeguard against weak external institutions. *Academy of Management Journal*, 52(2), 381-399.
- Ferrier, W. J. (2001). Navigating the Competitive Landscape: The drivers and consequences of competitive aggressiveness. *Academy of Management Journal*, 44(4), 858-877.
- Ferrier, W. J., Smith, K. G. & Grimm, C. M. (1999). The Role of Competitive Action in Market Share Erosion and Industry Dethronement: A Study of Industry Leaders and Challengers. *Academy of Management Journal*, 42(4), 372-388.
- Flanagin, A., Metzger, M., Pure, R., Markov, A., & Hartsell, E. (2014). Mitigating risk in ecommerce transactions: perceptions of information credibility and the role of user-generated ratings in product quality and purchase intention. *Electronic Commerce Research*, 14(1), 1-23.
- Fosfuri, A., Lanzolla, G., & Suarez, F. F. (2013). Entry-timing strategies: the road ahead. *Long Range Planning*, 46(4-5), 300-311.
- Fredrickson, J. W., Hambrick, D. C. & Baumrin, S. (1988). A Model of CEO Dismissal. *Academy of Management Review*, 13(2), 255-270.
- Fremeth, A. R. & Shaver, J. M. (2014). Strategic rationale for responding to extra-jurisdictional regulation: Evidence from firm adoption of renewable power in the US. *Strategic Management Journal*, 35(5), 629-651.
- Friesl, M. & Silberzahn, R. (2012). Challenges in Establishing Global Collaboration: Temporal, Strategic and Operational Decoupling. *Long Range Planning*, 45(2-3), 160-181.
- Gagliardi, P. (1986). The creation and change of organizational cultures: A conceptual framework. *Organization Studies*, 7: 117-134.
- Galbraith, J.R. & Kazanjian, R.K. (1986). *Strategy implementation: structure, systems, and process*. Eagan, MN: West publishing.
- Ganco, M. & Agarwal, R. (2009). Performance Differentials between Diversifying Entrants and entrepreneurial Start-ups: A Complexity Approach. *Academy of Management Review*, 34(2), 228-252.
- Garcia, M. U., Cortes, C., Marco-Lajara, B., & Zaragoza-Saez, P. (2014). Strategy, training and performance fit. *International Journal of Hospitality Management*, 42(1), 100-116.
- Garud, R., Jain, S., & Kumaraswamy, A. (2002). Institutional entrepreneurship in the sponsorship of common technological standards: The case of Sun Microsystems and Java. *Academy of Management Journal*, 45: 196-214.
- Getz, K. A. (1997). Research in corporate political action: Integration and assessment. *Business and Society*, 36: 32-72.
- Goll, I., & Rasheed, A.A. (2005). The relationships between top management demographic characteristics, rational decision making, environmental munificence, and firm performance. *Organization Studies*, 27(6), 999-1024.
- Gordon, G. G. (1991). Industry Determinants of Organizational Culture. *Academy of Management Review*, 16(2), 396-415.
- Gras, D. & Krause, R. (2019) When does it pay to stand out as stand-up? Competitive contingencies in the corporate social performance–corporate financial performance relationship. *Strategic Organization*, 17(1), in-press.
- Gratton, L. (2014). What a corporation can be. *Business Strategy Review*, 25(2), 10-15.
- Griffiths, A. & Zammuto, R. F. (2005). Institutional Governance Systems and Variations in National Competitive Advantage: An Integrative Framework. *Academy of Management Review*, 30(4), 823-842.

- Grossman, R. S. (2014). *Wrong: nine economic policy disasters and what we can learn from them*. New York, NY: Oxford University Press.
- Gual, J. & Mas, N. (2011). Industry Characteristics and Anti-Competitive Behavior: Evidence from the European Commission's Decisions. *Review of Industrial Organization*, 39: 207-230.
- Gupta, A. K. & Govindarajan, V. (1984). Business Unit Strategy, Managerial Characteristics, and Business Unit Effectiveness at Strategy Implementation. *Academy of Management Journal*, 27(1), 25-41.
- Hambrick, D. C. & Abrahamson, E. (1995). Assessing Managerial Discretion Across Industries: A Multimethod Approach. *Academy of Management Journal*, 38(5), 1427-1441.
- Hambrick, D. C. (1983). An empirical typology of mature industrial product environments. *Academy of Management Journal*. 26: 213-230.
- Hambrick, D. C., & Finkelstein, S. (1987). Managerial discretion: A bridge between polar views on organizations. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior*, vol. 9: 369-406. Greenwich, CT: JAI Press.
- Hathroubi, S., Peypoch, N., & Robinot, E. (2014). Technical efficiency and environmental management: the Tunisian case. *Journal of Hospitality and Tourism Management*, 21(1), 27-33.
- Hetzl, R. (2014). *The great recession: market failure or policy failure?* New York, NY: Cambridge University Press.
- Hillman, A. J., Keim, G. D., & Schuler, D. (2004). Corporate political activity: A review and research agenda. *Journal of Management*, 30: 837-857.
- Hillman, A., & Hitt, M. (1999). Corporate political strategy formulation: A model of approach, participation and strategy decisions. *Academy of Management Review*, 24: 825-842.
- Hillman, A., & Keim, C. (1995). International variation in the business-government interface: Institutional and organizational considerations. *Academy of Management Review*, 20: 193-214.
- Hrebiniak, L. G. & Snow, C. C. (1980). Industry Differences in Environmental uncertainty and organizational characteristics related to uncertainty. *Academy of Management Journal*, 23(4), 750-759.
- Huang, S. L. (2014). The impact of context on display ad effectiveness: Automatic attitude activation and applicability. *Electronic Commerce Research and Applications*, 13(5), 341-354.
- ISIC (2008). *International Standard Industrial Classification of all Economic Activities (ISIC)*. United Nations, Department of Economic and Social Affairs, Statistics Division, USA, New York: United Nations.
- Jain, A. K. & Singal, A. K. (2014). Mapping vulnerability: how emerging markets respond to multinationals. *Journal of Business Strategy*, 35(6), 41-48.
- Jang, J., Kim, S., Lee, Y., & Kim, J. (2013). The effects of relationship benefit on relationship quality and store loyalty from convergence environments—NPS analysis and moderating effects. *Electronic Commerce Research*. 13(3), 291-315.
- Jani, D. & Han, H. (2013). Personality, social comparison, consumption emotions, satisfaction, and behavioral intentions: how do these and other factors relate in a hotel setting?, *International Journal of Contemporary Hospitality Management*, 25(7), 970-993.
- Jelassi, T., Enders, A., & Martinez-Lopez, F. J. (2014). *Strategies for e-business: creating value through electronic and mobile commerce concepts and cases*. Upper Saddle River, NJ: Prentice Hall.
- Jenkins, M. (2014). Innovate or imitate? the role of collective beliefs in competences in competing firms. *Long Range Planning*, 47(4), 173-185.
- Katila, R. & Shane, S. (2005). When does Lack of Resources Make New Firms Innovative. *Academy of Management Journal*, 48(5), 814-829.

- Katz, D., & Kahn, R. L. (1966). *The social psychology of organizations*. New York: Wiley.
- Katz, M. L. (2019) Platform economics and antitrust enforcement: A little knowlwdw is a dangerous thing. *Journal of Economics & Management Strategy*, 28 (1), 138-152.
- Khamseh, H. M. & Nasiriyar, M. (2014). Avoiding alliance myopia: forging learning outcomes for long-term success. *Journal of Business Strategy*, 35(4), 37-44.
- Kinal, T. S. (2013). A recipe for change: management unleashed. *Business Strategy Review*, 24(4), 68-71.
- Kleinbaum, A. M. (2012). Organizational Misfits and the Origins of Brokerage in Intrafirm Networks. *Administrative Science Quarterly*, 57(3), 407-452.
- Koch, J.V. (1974). *Industrial Organization and Prices*. Englewood Cliffs, NJ: Prentice Hall.
- Lantz, B. & Hjort, K. (2013). Real e-customer behavioural responses to free delivery and free returns. *Electronic Commerce Research*, 13(2), 183-198.
- Lawrence, P. R., & Lorsch, J. W. (1967a). Differentiation and integration in complex organizations. *Administrative Science Quarterly*, 12(1), 1-47.
- Lenz, R. T. (1981). "Determinants" of organizational performance: An interdisciplinary review. *Strategic Management Journal*, 2: 131-154.
- Loury, G. C. (1979). Market structure and innovation. *Quarterly Journal of Economics*, 93: 395-410.
- MacKay, R.B. & Chia, R. (2013). Choice, change, and unintended consequences in strategic change: A process understanding of the rise and fall of Northco Automotive. *Academy of Management Journal*, 56(1), 208-230.
- Majumdar, S. K., Moussawi, R. & Yaylacicegi, U. (2018) Capital Structure and Mergers: Retrospective evidence from a natural experiment. *Journal of Industry, Competition and Trade*, 18(1), 449-472.
- Malhotra, N., & Hinings, C. R. (2015). Unpacking continuity and change as a process of organizational transformation. *Long Range Planning*, 48(1), 1-22.
- Martin, E. F. & To, W. M. (2013). Effect of internal market orientation on organizational performance: the case of Macao's gaming industry. *International Journal of Hospitality & Tourism Administration*, 14(3), 233-254.
- McAfee, R.P., Mialon, H.M. & Williams, M.A. (2004). What is a barrier to entry? *American Economic Review*, 94(2), 461-465.
- McGahan, A. M. & Porter, M. E. (1997). How Much Does Industry Matter, Really?. *Strategic Management Journal*, 18: 15-30.
- McGahan, A. M., Argyres, N. & Baum, J. A.C. (2004), Context, Technology and Strategy- Forging new Perspectives on the Industry Life Cycle. In Joel A.C. Baum and Anita M. McGahan (ed.) *Business Strategy over the Industry Lifecycle (Advances in Strategic Management, Volume 21)*, Emerald Group Publishing Limited, pp.1-21.
- McNamara, G. & Bromiley, P. (1997). Decision Making in an Organizational Setting: Cognitive and Organizational Influences on Risk Assessment in Commercial Lending. *Academy of Management Journal*, 40(5), 1063-1088.
- McNamara, G. M., Halebian, J., Dykes, B. J. (2008). The Performance Implications of Participating in an Acquisition wave: Early mover advantages, bandwagon effects, and the moderating influence of industry characteristics and acquirer tactics. *Academy of Management Journal*, 51(1), 113-130.
- Miller, D., & Ghen, M. (1994). Sources and consequences of competitive inertia: A study of the U.S. airline industry. *Administrative Science Quarterly*, 39:1-23.

- Miller, K. D. & Bromiley, P. (1990). Strategic Risk and Corporate Performance: An Analysis of Alternative Risk Measures. *Academy of Management Journal*, 33(4), 756-779.
- Monin, P., Noorderhaven, N., Varra, E., & Kroon, D. (2013). Giving sense to and making sense of justice in postmerger integration. *Academy of Management Journal*, 56(1), 256-284.
- Moreira, S., Markus, A., and Laursen, K. (2018) Knowledge diversity and coordination: The effect of intrafirm inventor task networks on absorption speed. *Strategic Management Journal*, 39(9), 2517-2546.
- Mount, D. J. (2013). Putting the Dollar signs on quality: the cost of experienced problems in the hotel industry. *International Journal of Hospitality & Tourism Administration*, 14(1), 87-97.
- Multilingual Dictionary (2013). *Kernerman English Multilingual Dictionary*. K Dictionaries Ltd.
- Narula, R. (2014). Exploring the paradox of competence-creating subsidiaries: balancing bandwidth and dispersion in MNEs. *Long Range Planning*, 47(1-2), 4-15.
- Nicholson, N. (2013). The invention of leadership. *Business Strategy Review*, 24(2), 14-29.
- Oliveira, A. & Gimeno, A. (2014). Supply Chain Management Strategy: Using SCM to Create Greater Corporate Efficiency and Profits. UK, Pearson FT Press.
- Oliver, C. & Holzinger, I. (2008). The Effectiveness of Strategic Political Management: A Dynamic Capabilities Framework. *Academy of Management Review*, 33(2), 496-520.
- Pablo, A. L. (1994). Determinants of Acquisition Integration Level: A Decision-Making Perspective. *Academy of Management Journal*, 37(4), 803-836.
- Pansiri, J. (2014). Tourist motives and destination competitiveness: a gap analysis perspective. *International Journal of Hospitality & Tourism Administration*, 15(3), 217-247.
- Park, K. & Jang, S. C. (2014). Hospitality finance and managerial accounting research: suggesting an interdisciplinary research agenda. *International Journal of Contemporary Hospitality Management*, 26(5), 751-777.
- Paton, R. A. & Wagner, R. (2014). Management education makes a difference: enhancing German engineering performance. *Long Range Planning*, 47(5), 277-298.
- Peng, J., Quan, J., & Zhang, S. (2013). Mobile phone customer retention strategies and Chinese e-commerce. *Electronic Commerce Research and Applications*, 12(5), 321-327.
- Peng, M. W. (2009). *Global strategy* (2nd ed.). Cincinnati, OH: South-Western Cengage Learning.
- Peng, M.W. (2013). *Global Strategic Management* (3rd Ed), USA, Tennessee: South-Western.
- Pennings, J. M., Lee, K. & Van W., A. (1998). Human Capital, Social Capital, and Firm Dissolution. *Academy of Management Journal*, 41(4), 425-440.
- Perez-Franco, R. (2014). Is your supply chain strategy holding back innovation?. *Supply Chain Management Review*, July/August, 8-9.
- Perrow, C. (1984). *Normal accidents: Living with high-risk technologies*. New York: Basic Books.
- Pfeffer, J. & Leblebici, H. (1973). Executive Recruitment and the Development of Interfirm Organizations. *Administrative Science Quarterly*, 18(4), 449-461.
- Pfeffer, J. & Salancik, G. R. (1978). The External Control of Organizations: A Resource Dependence Perspective. New York: Harper & Row.
- Pfeffer, J. (1982). *Organizations and organization theory*. New York: Harper & Row.
- Piskorski, M. J. (2013). Finn Brunton: Spam: A Shadow History of the Internet. *Administrative Science Quarterly*, 59(3), 29-30.
- Porter, M. E. (1979). How competitive forces shape strategy. *Harvard Business Review*, March–April, 21-38.

- Porter, M. E. (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York: Free Press.
- Porter, M. E. (1981). The Contributions of Industrial Organization to Strategic Management. *Academy of Management Review*, 6 (4), 609-620.
- Porter, M. E. (2008). The five competitive forces that shape strategy. *Harvard Business Review*, January, 78-93.
- Qu, W. G., Pinsonneault, A. & Oh, W. (2011). *Journal of Management Information Systems*, 27(4), 99-127.
- Randolph, W.A., & Dess, G.G. (1984). The congruence perspective of organization design: A conceptual model and multivariate research approach. *Academy of Management Review*, 9(1), 114-127.
- Robinson, K., & McDougall, P. (2001). Entry barriers and new venture performance: A comparison of universal and contingency approaches. *Strategic Management Journal*, 22(6-7), 659-685.
- Royer, S. (2012). *Strategic management and online selling: creating competitive advantage with intangible web goods*. New York, NY: Routledge.
- Rumelt, R. P. (1991). How Much Does Industry Matter?. *Strategic Management Journal*, 12: 167-185.
- Scherer, F.M., & Ross, D. (1990). *Industrial Market Structure and Economic Performance*. Boston: Houghton Mifflin.
- Schmalensee, R. (1985). Do markets differ much? *American Economic Review*, 75: 341-351.
- Schoonhoven, C. B. (1981). Problems with contingency theory: Testing assumptions hidden within the language of contingency. *Administrative Science Quarterly*. 26(3), 349-377.
- Schoonhoven, C. B., Jelinek, M. (1990). Dynamic tension in innovative, high-technology firms: Managing rapid technological change through organizational structure. In M. A. Von Glinow and S. A. Mohrman (eds.) *Managing Complexity in High-Technology Organizations*: 90-118. Oxford: Oxford University Press.
- Schuler, D. A., Rehbein, K. & Cramer, R. D. (2002). Pursuing Strategic Advantage Through Political Means: A Multivariate Approach. *Academy of Management Journal*, 45(4), 659-672.
- Shane, S. & Stuart, T. (2002) Organizational Endowments and the Performance of University Start-ups. *Management Science*, 48(1),154-170.
- Shane, S. (2001). Technology opportunity and firm formation. *Management Science*, 47(2), 205–220.
- Sharma, S. & Crossler, R. E. (2014). Disclosing too much? Situational factors affecting information disclosure in social commerce environment. *Electronic Commerce Research and Applications*, 13(5), 305-319.
- Shen, W. & Cannella, A. A. (2002). Revisiting the Performance Consequences of CEO Succession: The Impacts of Successor Type, Postsuccession Senior Executive Turnover, and Departing CEO Tenure. *Academy of Management Journal*, 45(4), 717-733.
- Sher, M.M. & Kim, S.L. (2014). Supply Chain Coordination with Quantity Discount for Seasonal Demand. *International Journal of Supply Chain Management*, 3(3), 7-15.
- Sheremata, W. A. (2004). Competing through Innovation in Network Markets: Strategies for Challengers. *Academy of Management Review*, 29(3), 359-377.
- Sila, I. (2013). Factors affecting the adaptation of B2B e-commerce technologies. *Electronic Commerce Research*. 13(2), 199-236.
- Singh, N., Cranage, D., & Lee, S. (2014). Green strategies for hotels: Estimation of recycling benefits. *International Journal of Hospitality Management*, 43(1), 13-22.

- Singh, U. S. & Mishra, U. S. (2014). Supply Chain Management through Vertical Coordination in Vegetable Industry. *International Journal of Supply Chain Management*, 3(3), 148-154.
- Slack, N., Brandon-Jones, A., & Johnston, R. (2013). *Operations management* (7th ed.). Harlow, UK: Pearson.
- Suarez, F. F., Grodal, S., & Gotsopoulos, A. (2015). Perfect timing? Dominant category, dominant design, and the window of opportunity for firm entry. *Strategic Management Journal*. 36(3), 437-448.
- Sultan, A. & Saurabh, D. (2013). Achieving Sustainable Development through Value Chain. *International Journal of Managing Value and Supply Chains*, 4(2), 39-46.
- Sutton, J. (1991). *Sunk Cost and Market Structure: Price Competition, Advertising, and the Evolution of Concentration*. Cambridge: MIT Press.
- Swaminathan, A. (1995). The Proliferation of Specialist Organizations in the American Wine Industry, 1941-1990. *Administrative Science Quarterly*, 40(4), 653-680.
- Swoboda, B., Elsner, S., & Morschett, D. (2014). Preferences and performance of international strategies in retail sectors: an empirical study. *Long Range Planning*, 47(6), 319-336.
- Teece, D. J. (1980). Economies of scope and the scope of the enterprise. *Journal of Economic Behavior and Organization*, 1: 223-247.
- Teece, D. J. (1982). Towards an economic theory of the multiproduct firm. *Journal of Economic Behavior and Organization*, 3: 39-63.
- Teece, D. J. (1993). The dynamics of industrial capitalism: Perspectives on Alfred Chandler's Scale and scope (1990). *Journal of Economic Literature*, 31: 199-225.
- Thompson, J. D. (1967). *Organizations in Action: Social Science Bases of Administrative Theory*. New York: McGraw-Hill.
- To, W. M., Martin, E. F., & Yu, B. T. W. (2015). Effect of management commitment to internal marketing on employee work attitude. *International Journal of Hospitality Management*, 45(2), 14-21.
- Tong, T. W., Reuer, J. J., Tyler, B. B., & Zhang, S. (2015). Host country executives' assessments of international joint ventures and divestitures: An experimental approach. *Strategic Management Journal*. 36(2), 254-275.
- Tripsas, M. (1997). Unrevealing process of creative destruction: Complementary assets and incumbent survival in the typesetter industry. *Strategic Management Journal*, 18: 119-142.
- Tushman, M. L., & Anderson, P. (1986). Technological discontinuities and organizational environments. *Administrative Science Quarterly*, 31: 439-465.
- Utterback, J. M. (1994). *Mastering the Dynamics of Innovation*. Harvard Business School Press, Boston.
- Van Witteloostuijn, A., & Boone, C. (2006). A resource-based theory of structure and organizational form. *Academy of Management Review*, 31: 409-426.
- Wang, R. D. & Shaver, J. M. (2014). Competition-driven repositioning. *Strategic Management Journal*, 35(11), 1585-1604.
- Warner, K.S.R. & Wäger, M. (2019) Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 52 (X), In-press.
- Watts, D. J. (2003). *Six degrees: The science of a connected age*. New York: Norton.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171-180.
- Westphal, J. D. & Milton, L. P. (2000). How Experience and Network Ties Affect the Influence of Demographic Minorities on Corporate Boards. *Administrative Science Quarterly*, 45(2), 366-398.

- Wibbens, P. D. (2019) Performance persistence in the presence of higher-order resources. *Strategic Management Journal*, 40(2), 181-202.
- Wu, M., Gide, E., & Jewell, R. (2014). The EBS management model: an effective measure of e-commerce satisfaction in SMEs in the service industry from a management perspective. *Electronic Commerce Research*, 14(1), 71-86.
- Yin, X. & Shanley, M. (2008). Industry Determinants of the “Merger versus Alliance” Decision. *Academy of Management Review*, 33(2), 473-491.
- Yoffie, D. B., & Kwak, M. (2001). Playing by the rules: How Intel avoids antitrust litigation. *Harvard Business Review*, 79(6): 119-122.
- Yu, T., Sengul, M. & Lester, R. H. (2008). Misery Loves Company: The Spread of Negative Impacts Resulting from an Organizational Crisis. *Academy of Management Review*, 33(2), 452-472.
- Zajac, E. J., & Westphal, J. D. (1996). Who shall succeed? How CEO/board preferences and power affect the choice of new CEOs. *Academy of Management Journal*, 39: 64-90.
- Zammuto, R., & O'Connor, E. (1992). Gaining advanced manufacturing technologies' benefits: The roles of organization design and culture. *Academy of Management Review*, 17: 701-728.
- Zhu, H. & Chung, C. N. (2014). Portfolios of political ties and business group strategy in emerging economies: evidence from Taiwan. *Administrative Science Quarterly*, 59(4), 599-638.