UNIVERSITY OF CALIFORNIA
RIVERSIDE

Literature Review on Value Creation and Value Appropriation

A Thesis submitted in partial satisfaction
of the requirements for the degree of

Master of Business Administration

in

Management

by

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June 2016

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ABSTRACT OF THE THESIS

Literature Review on Value Creation and Value Appropriation

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Master of Business Administration, Graduate Program Management
University of California, Riverside, June 2016
Dr. Ashish Sood, Chairperson

The purpose of the thesis is to propose a comprehensive literature review of past studies on value creation and value appropriation, with focus on the understandings of critical factors impacting the two. A literature review provides knowledge of the correlation that exists between the strategic choice between value creation and value appropriation to critical factors influencing the mechanism of creating and appropriating values.

By reviewing 27 articles, this thesis concludes five findings. First, innovation drives the decision-making process behind value creation and appropriation decisions. Second, stock market rewards value appropriation more than value creation; industrial and firm characteristics impact strategic emphasis on value creation or value appropriation. Third, R&D expenditure greatly impacts both value creation and appropriation. Fourth,

marketing activities influence the firm's value and stock performance through value appropriation. Finally, competition within an industry influences a firm's decision on value appropriation.

Table of Content

List of Table

Introduction

Due to the acquisition of competitive advantage in the industry, firms are eager to evaluate the two strategic decisions concerning the trade-off between value creation and value appropriation. The concept of value creation focuses on creating value for customers and shareholders. Strategic investment in value creation can create competitive advantage which leads to the generation of a greater numbers of customers, sales, and better margins than competitors. The second concept is value appropriation, which is the process of a company developing marketing strategies and operations to gain economic return and stronger margins. According to Hofer & Schendel (1978), making wise decisions on the trade-off between value creation and value appropriation has been a critical issue challenging most companies. This trade-off is contingent on a set of factors covering industrial environment, firm characteristics, top management preference and interests, innovation, competition and others.

Definition

Value Creation

Value creation is the production of a product or a service that meets customer demands, and commonly involves innovation and new product development (Ellegaard and Geersbro, and Medlin, 2009). R&D expenditure is identified as an important prediction of a firm’s ability to innovate, and it helps the firm to develop new products that greatly satisfy consumers’ needs while delivering superior customer experience. The two main goals in value creation are: creating value for customers to ensure profit through selling products and services, and creating value for shareholders in the form of stock price increases, when ensures the future availability of investment capital to fund ventures. Value creation is the cornerstone and primary aim of any business operation.

Value Appropriation

Value appropriation occurs when a firm erects barriers against imitation by other companies to protect profits and market share. Companies can filch successful companies by mimicking their products, branding, and marketing platforms, creating a split in the market. The purpose of value appropriation is to obtain a significant economic return and margins through the proper marketing strategies and operations (Mizik and Jacobson, 2003). Marketing activities help a firm to effectively appropriate value, since these processes directly impact the generation of profits. Advertising is an effective measure of appropriating value, and in particular, allows firms to prolong the duration of a unique competitive advantage (Bunch and Smiley 1992, Mizik and Jacobson 2003).

Material and Methods: Data Collection

This thesis conducts literature review on value creation and value appropriation and concludes with five of the most relevant findings. In order to collect all of the data related to the topic, E-journal and online library databases available to the University of California Riverside library and Google Scholar are utilized as major sources of selected articles.

As for research methods, this thesis conducts secondary research for use in examining the concept of value creation and value appropriation, and relevant factors that influence both topics. The secondary data method allows the researcher to gather, compare, and analyze existing articles (Bryman, 2012). The first step is to search for basic findings related to value creation and value appropriation on Google Scholar to completely understand the topic. Then, the search for more involved topics, including value creation and value appropriation + advertising, value creation and value appropriation + R&D, value creation and value appropriation + industry (Table 1), related to the material gathered through Google Scholar using keyword searches.

Table 1. Keywords list

	Key Words
K1	Value creation
K2	Value appropriation
K3	Value creation + value appropriation
K4	Value creation and value appropriation + advertising
K5	Value creation and value appropriation + R&D
K6	Value creation and value appropriation + industry

Source: Self-elaboration

Moreover, this thesis divides findings into different groups by different impact, industry, firm size, innovation, and advertising. Finally, this thesis analyzes and evaluates the empirical evidence into five findings on a spreadsheet.

Literature Review

Value Creation

Value creation is widely discussed in the fields of business and management, partly since it is closely linked with the innovation that many companies struggle to achieve. Innovative firms focus on investment in R&D resources for the implementation of new products or services. Some researchers state that when making strategic decisions on investment in R&D, managers have strongly positive outlooks on the future of the company's growth and financial performance (e.g. Chan, 2001). There is no doubt that there are vastly positive effects on R&D.

Table 2. Different Ways Firms Can Create Value

Author (Year)	Article	Different ways firms can create value
Mizik and Jacobson (2003)	Trading off between value creation and value appropriation: The financial implications of shifts in strategic emphasis	Technology and R&D are critical to business success of a firm through value creation
Keh and Ong (2005)	The Effects of R&D and Advertising on Firm Value: An Examination of Manufacturing and Nonmanufacturing Firms	R&D as a measure for improving value creation positively affects the stock market performance of the manufacturing industry
Sony and Thieme (2006)	A cross-national investigation of the R&D–marketing interface in the product innovation process	R&D with the facilitation of marketing information contributes to value creation by developing new products
Grossmann (2008)	Advertising, in-house R&D, and growth	R&D contributes to firms size positively through value creation. In specific, in-house R&D positively impacts a firm's growth
Adner and Kapoor (2010)	Value creation in innovation ecosystems: how the structure of technological interdependence affects firm performance in new technology generations	Innovation as a driving force affects the development of a firm's value creation when this firm with a technology leadership position
Currim, Lim and Kim (2012)	You Get What You Pay For: The Effect of Top Executives' Compensation on Advertising and R&D Spending Decisions and Stock Market Return	Due to the motivation of compensation's increase, top executives increases R&D expenditure for leveraging stock market performance by improving value creation. R&D expenditure driven by top executives increases the abilities of a firm to create value, particularly stock market return.
Sridhar, Narayanan and Srinivasan (2014)	Dynamic relationships among R&D, advertising, inventory and firm performance	R&D contributes to the improvement of firm value through value creation

Source: Self-elaboration

Value Appropriation

As there is increasingly overwhelming pressure on the financial performance of companies, the firm's refocus on value appropriation can relieve this immense burden (Mizik and Jacobson, 2003). Value appropriation can improve company position in the market by either reducing the value appropriation of its competitors, or increasing the length of the company's value appropriation (Mizik and Jacobson, 2003). According to Mizik and Jacobson (2003), many marketing activities are more effective than investing in patents, since the positive effect of advertising allows firms to obtain persistent profit. Kessides (1990); Mueller (1990); and Mizik and Jacobson (2003) point out that value appropriation and the competitive advantage level of firms are linked. Based on various characteristics of firms and the current business environment, a company may experience a trade-off between value creation and value appropriation, noting that the two are equally linked (Mizik and Jacobson, 2003).

Table 3. Different Ways Firms Can Appropriate Value

Author (Year)	**Article**	**Different ways firms can appropriate value**
Teece (1986)	Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy	Innovation exerts the considerable impact on value appropriation when a firm invests in critical complementary assets. And, competition for occupying critical complementary assets exerts the considerable impact on value appropriation.
Pisano (1990)	The R&D Boundaries of the Firm: An Empirical Analysis	The degree of competitors accessible to know-how influences appropriability, and appropriability concerns facilitate a firm to make decision on in-house or external sources of R&D. For instance, competitors are restricted for accessing know-how, a firm with high level of appropriability would like to internalizes R&D.
Brandenburger and Stuart (1996)	Value-based Business Strategy	Opportunity cost of a firm determines value appropriation by developing the asymmetry
Matraves (1998)	Market structure, R&D and advertising in the pharmaceutical industry	Advertising directly motivates market expansion of the pharmaceutical firms for appropriating more value
Mizik and Jacobson (2003)	Trading off between value creation and value appropriation: The financial implications of shifts in strategic emphasis	Stock market prefers a firm's strategic emphasis on value appropriation, since investors show greatly positive response to value appropriation capabilities of a firm. Advertising contributes to the differentiation of a firm from competitors, and enhances value appropriation capabilities.
MacDonald and Ryall (2004)	How Do Value Creation and Competition Determine Whether a Firm Appropriates Value?	Innovation is perceived as a unique and valuable asset, and most companies struggles to acquire and utilize innovation through value appropriation. Within an industry, imitation on specific innovation increases competition for engaging in value appropriation, rather than value creation.
Lin, Lee and Hung (2006)	R&D intensity and commercialization orientation effects on financial performance	Technological breakthrough and assets are commercialized properly to improve the abilities of value appropriation. R&D intensity improved by commercialization of technological breakthrough and assets contributes to the improvement of value appropriation abilities.
Lavie (2007)	Alliance portfolios and firm performance: A study of value creation and appropriation in the U.S. software industry	Advertising as a measure for value appropriation contributes to the improvement of a firm's stock price
Grossmann (2008)	Advertising, in-house R&D, and growth	Advertising expenditure positively influences company size by appropriating value effectively.
Currim, Lim and Kim (2012)	You Get What You Pay For: The Effect of Top Executives' Compensation on Advertising and R&D Spending Decisions and Stock Market Return	Advertising decision is closely linked with stock market return through value appropriation
Blocker et al. (2012)	The Role of the Sales Force in Value Creation and Appropriation: New Directions for Research	Sales forces as an important channel serves customers by understanding their actual need, and positively impacts on value appropriation
McAlister, Srinivasan and Kim (2013)	Advertising, Research and Development, and Systematic Risk of the Firm	Advertising expenditure contributes to the reduction of systematic risk by leveraging value appropriation. R&D investment positively impacts the reduction of systematic risk through the improvement of value appropriation.
Sridhar, Narayanan and Srinivasan (2014)	Dynamic relationships among R&D, advertising, inventory and firm performance	Advertising positively affects marketing sales and firm value through value appropriation

Source: Self-elaboration

The Relationship between Innovation and Value Creation

Innovation can be considered an application of a better method that meets either a new, unstated, or existing need (Maryville, 1992). Innovation is one of the critical factors in business success (Mizik and Jacobson, 2003), and contributes to the improvement of firm value through value creation (Sridhar, Narayanan and Srinivasan, 2014), specifically when innovators invest in complementary assets (Jacobides, Knudsen and Augier, 2006). Sony and Thieme (2006) also point out that innovation, for example, R&D with the facilitation of marketing information contributes to value creation through the development of new products.

The Relationship between Advertising and Value Appropriation

According to Taylor (1978), the purpose of advertising is to either convince both existing and new customers to purchase a company's products or services, announce new products or services, enhance a company's image, or create need for their product. Advertising contributes to the differentiation of a firm from competitors (Mizik and Jacobson, 2003), and positively affects marketing sales and firm value through value appropriation (Sridhar, Narayanan, and Srinivasan, 2014). Furthermore, advertising expenditure contributes to the reduction of systematic risk by leveraging value appropriation (McAlister, Srinivasan, and Kim, 2013).

Industry

Value creation and value appropriation can affect companies and related industries in various ways. Manufacturing firms benefit the most from investment in R&D, whereas non-manufacturing firms benefit more from advertising investment, as competitors may be discouraged from entering into an advertising-intensive market due to the massive amount of money that would need to be spent in order to overcome established brand loyalty (Ho, 2005). In the pharmaceutical industry, when the core competitiveness of pharmaceutical firms is in value appropriation, it is not necessary to invest a great deal of money in R&D (Gregorio, 2013). In the high-tech industry, firms concentrate more heavily on value creation as opposed to value appropriation because long-term investment in R&D is more financially rewarding than long-term investment in advertising (Sridhar, Narayanan, and Srinivasan, 2014). Effective resource allocation is vital to the success a high-tech firm thanks to the lack of advertisement-driven competition, therefore placing emphasis on R&D. However, although various industry characteristics may lead to different investing decisions, within the same industry, firms consider decisions differently on value creation and value appropriation based on the existing environment and circumstances (Mizik and Jacobson, 2003).

Economy Environment

From an economical aspect, investing in value creation, for example R&D, led to a positive effect, which can accelerate economic growth and productivity (Mizik and Jacobson, 2003). Another point of view is that investing in value creation can always bring growth rate even without advertising expense (Grossmann, 2008). In contrast, value appropriation, for example, advertising, is unable to increase the growth rate (Schmalensee, 1980), unless the growth is not due to economies of scale (Grossmann, 2008).

Size of the Firm

Although a large proportion of people agree that larger firms tend to have greater impact on the effectiveness of value creation and value appropriation, Chauvin and Hirschey (1993) show that smaller, specialized firms can also have a powerful impact on both fields. Compared to large firms, small firms are less likely to have relevant specialized assets, so they have to invest expansively to build assets, or develop coalitions with competitors or the owners of those specialized assets (Teece, 1986).

Summary

The complexity of value appropriation and value creation requires a firm to consider multiple aspects of their business model to determine what course of action they should take. For instance, the firm has to examine the competitive environment that lies within the environment. Depending on the competition, value appropriation or value creation has own distinct advantages. In a high-tech environment, value creation through innovation can promote the firm's standing amongst the competition. In a low-tech environment with many competitive players, value appropriation can help to extend the brand's name and loyalty.

The five findings discussed in the following results section explain how five of the most critical relationships found in value creation and value appropriation can be regarded as imperative to the research. The following section details these findings and provides examples found in the research that will help to explain why these findings are specifically critical to the subject.

Results

The following section details the five findings that were gathered through the research. The complexities of value appropriation and creation are such that it was important to create a shortened list of the most relevant points discovered while researching the subject. Therefore, instead of the evaluation and discussion of each separate topic, five of the most relevant discoveries are laid out for consideration.

This thesis concludes five findings. First, innovation drives the decision-making process behind value creation and appropriation decisions. Second, stock market rewards value appropriation more than value creation; industrial and firm characteristics impact strategic emphasis on value creation or value appropriation. Third, R&D expenditure greatly impacts both value creation and appropriation. Fourth, marketing activities influence the firm's value and stock performance through value appropriation. Finally, competition within an industry influences a firm's decision on value appropriation.

Finding 1: Innovation drives the decision-making process behind value creation and appropriation

The first finding of this research is that innovation drives the decision-making process behind value creation and appropriation**.** Innovation enables a firm to explore and find specific solutions, products, services and other contributors that create value for stakeholders, including consumers, shareholders, and employees. Innovation can be found in many aspects of decision-making in businesses. For example, transferring the traditional transaction model to online transaction, and creating flexible price points to target new groups of consumers are decisions that directly benefit both the company and the customer. Innovation creates measurable value for both firms and consumers. From the perspective of value appropriation, innovation contributes to the cultivation and improvement of specific abilities to commercialize innovation for appropriating value. Furthermore, the ability to commercialize innovation is a key value for firms invested in value appropriation. This finding greatly challenges the conventional understanding of value appropriation through advertising, and other marketing activities. Although Teece (1986); Sony and Tieme (2006); and Xie & Wang (2014), recognize innovation as an important channel for creating value, innovation can be also applied to value appropriation. This research points to the realization that new ways of explaining how value appropriation is intertwined with innovation are required.

We draw on nine specific articles for finding 1 such as Teece (1986); Amit and Zott (2001); MacDonald and Ryall (2004); Sony and Thieme (2006); Jacobides, Knudsen and Augier (2006); Lin, Lee and Hung (2006); Adner and Kapoor (2010); Currim, Lim and Kim (2012); and Xie and Wang (2014). These articles use different examples, perspectives and industrial backgrounds to investigate the relationships that exist between innovation, value creation and value appropriation. There are three groups that the articles can be divided into: the relationship between innovation and value appropriation, the relationship between innovation and value creation, and the impact of innovation on value appropriation decision.

First, referring to the relationship between innovation and value appropriation, Lin, Lee, and Hung (2006) examines the effect of R&D intensity on financial performance. The hypothesis confirms that R&D intensity positively contributes to the improvement of a technological industry firm's financial performance. Lin, Lee, and Hung gather secondary data from 258 U.S. high-tech public companies for the examination of the impact of innovation on value appropriation. The final result confirms that R&D intensity can positively influence a firm's financial performance, although commercialization orientation shows more positive impact on financial performance.

Teece (1986) addresses a critical question of why investment in innovation does not contribute to a firm's profit and economic return, is also explored. This question brings to light the influence of innovation on value appropriation from the perspective of the relationship between innovation and value appropriation. The findings suggest that if a firm makes investment in critical complementary assets for improving innovation, this type of innovation can positively contribute to economic return and profit. Arguably, it confirms that innovation greatly impacts value appropriation. Jacobibes, Knudsen and Augier (2006) shows a positive impact through the mediating effect of investment in complementary assets. This translates to a positive impact on innovation through value appropriation. Innovation that is acquired by a firm is recognized as a source for developing and improving abilities that appropriate value linked with economic return and financial performance, and both Teece (1986) and Jacobibes, Knudsen and Augier (2006) mention investment in the complementary assets' contribution to innovation's effect on value appropriation. Some assets, such as the proper distribution networks to commercialize new products, complementary technologies for the development of new products, and competitive manufacturing capabilities for producing quality and innovative products, can be identified as critical complementary assets. In particular, these complementary assets directly contribute to the commercialization of a firm's innovation, which eventually benefits financial performance.

Secondly, the positive impact of innovation on value creation has been debated and examined, such as by Amit and Zott (2001), Sony and Thieme (2006). According to Sony and Thieme (2006), the cooperation between marketing and R&D enables a firm to develop more suitable products for specific segments, since the interface between marketing and R&D mediates the integration of innovation in new product development. Compared with other researches, Sony and Thieme (2006) conducts an examination of the firm's interface between global marketing and R&D, including in China, Japan and the United States. As these firms from three separate countries have different paths and characteristics when it comes to new product development, international examination increases the value and quality of this research. Although there are differences among these three companies, they recognize that the interface between R&D and marketing has an impact on new product development that eventually creates values for firms and consumers.

Amit and Zott (2001); Adner and Kapoor (2010); and Xie and Wang (2014) examine the relationship between innovation and value creation from different outlooks, including e-business and uncertain market environments. Compared with the previous research focusing on high-tech and manufacturing industries, Amit and Zott (2001) concentrate on the exploration of the interaction between innovation and value creation in the e-business field, and find that the e-business model is a critical source for a company to exploit business opportunities through innovation. The e-business model provides a preferred environment for innovators to accelerate business operations and opportunities, such as with a new transaction system, by aligning distribution networks, or JIT-driven market information management.

With respect to the interpretation of the question on how innovation contributes to value creation, Adner and Kapoor (2010), and Xie and Wang (2014) attempt to explain the mechanism of innovation creating value from the mediating role of competitive advantages. Xie and Wang (2014) assume that under an uncertain market, there is a focus on how a firm makes decisions concerning advertising and R&D from a competitive perspective. The authors show that under any market environment, a firm is inclined to choose R&D to enhance competitiveness, since R&D directly contributes to innovation enhancement linked with value creation and competitiveness. Specifically, Adner and Kapoor (2010) focus on the explanation of the interaction among innovation, competitive advantage, and value creation, and find that competitive advantage as a mediating factor impacts the effect of innovation on value creation. In fact, Amit and Zott (2001); Adner and Kapoor (2010); and Xie and Wang (2014) explain that a firm is committed to innovation through R&D due to competition enhancement resulting from strategic capabilities and competitive advantage acquisition. This competitive advantage, which includes advanced manufacturing technologies for reduced production cost, and aligning distribution networks for added value to consumers, enables the firm to create and deliver value for both consumers and stakeholders.

Third, innovation as a potential factor helps firms to make decisions on value creation and appropriation. MacDonald and Ryall (2004) show that firms consider the competition for innovation as one of the highest factors regarding decision making related to value creation and appropriation. Competition mediates the impact of innovation on value appropriation. If a company is engaged in an innovative process that other companies begin to emulate, then that company faces the decision of whether or not they should commercialize their innovative process.

Teece (1986) finds that competition between firms in regards to innovation and complementary assets can lead to unique decisions concerning value appropriation. When a firm invests in critical complementary assets for commercializing innovation, this firm is more likely to appropriate value based on its possibility of innovation commercialization. Currim, Lim, and Kim (2012) employ the perspective of upper executives to examine the question, “To what extent will a firm recognize innovation as a critical factor that impacts the amount of R&D expenditure?” The main result implies that top executives motivated by monetary compensation commonly increase the investment in R&D to enhance the whole of innovation of their companies, since shareholders strongly react to the decisions made on R&D expenditure. Within most organizations, innovation is perceived as an important factor in creating and appropriating value, and based on this interrelationship; both shareholders and top management prefer decisions to be made on R&D expenditure based on value appropriation.

Finding 2: Stock market rewards value appropriation more than value creation; industrial and firm characteristics impact strategic emphasis on value creation or value appropriation

The second finding is that the stock market rewards value appropriation more than value creation; industrial and firm characteristics impact strategic emphasis on value creation or value appropriation. Finding 2 can be divided into two specific findings: first, from the conventional perspective, the stock market appreciates the decision and strategic emphasis of value appropriation, since value appropriation through advertising and other marketing activities effectively contributes to an increase of company profit. The probability of a firm is positively linked with the stock price. However, it is necessary to examine the critical question of to what extent stock market preferring value appropriation can positively affect value creation. Second, this finding is important as it serves as an explanation as to whether there are industry and firm differences impacting a firm's strategic emphasis on value creation or value appropriation, such as top management's strategic emphasis and preference, industrial barriers to innovation, and industrial structure. The following what will focus on the explanation and discussion of these two sub-findings.

First, referring to the relationship between the stock market and strategic emphasis on value creation or value appropriation, both Lavie (2007) and Mizik and Jacobson

(2003) confirm that the stock market strongly and positively responds to value appropriation strategies and measures, particularly advertising. According to Mizik and Jacobson (2003), shareholders in the market prefer a firm's strategic emphasis on value appropriation over value creation. The motivation of shareholders in their preference of value appropriation is based on the direct contribution of value appropriation to a firm's profitability. Although value creation also contributes to the long-term profitability of a company, it cannot be effectively transformed into the real profit margins most shareholders are concerned with. When encountering trade off between short-term profit and long-term profitability, both top executives and shareholders prefer the short-term profit that dramatically leverages stock price.

Lavie (2007) confirms that shareholders recognize advertising as a predictor for evaluating the investment potential of specific company's stock, since advertising expenditure is positively linked with stock price. In a competitive market, a firm increases its advertising budget for cultivating and improving brand equity in the mind of consumers, and eventually, improved brands significantly enhance consumers' purchasing intentions and behaviors that increase this firm's sales and revenue. Thus, investors purchase more stocks of the company, since the positive relationship between revenue increase and soaring stock price is recognized as important criteria for investors. Thus, shareholders prefer value creation that has an immediately positive effect on revenue and profit.

However, Currim, Lim and Kim (2012), and McAlister, Srinivasan and Kim (2013) argue that the stock market responds positively to value creation. According to Currim, Lim and Kim (2012), preference of the stock market plays a mediating role in a firm's strategic emphasis on R&D expenditure and advertising. Specific findings suggest that the stock market positively responds to both advertising and R&D expenditure. Investors perceive R&D expenditure as an important prediction of a firm's profitability, since innovation ultimately improves and leverages competitive advantages and profitability in the long-term. Moreover, McAlister, Srinivasan, and Kim (2013) examines the effect of strategic decisions on advertising or R&D expenditure on the systematic risk related to the stock market, and finds that both advertising and R&D effectively reduce systematic risks from the stock market perspective. The reduction of systematic risks positively contributes to the stability of a firm's stock price, and both value creation and appropriation positively impact stock price of a firm.

Therefore, Currim, Lim, and Kim (2012), and McAlister, Srinivasan, and Kim (2013) confirm that although value creation has a significant, measurable effect on stock market reaction, value appropriation is still considerably more important to market analyzers when placing value on a firm. When exploring specific determinants that describe the effect value creation and appropriation has on market value, Chauvin and Hirschey (1993) find that some factors, such as agency problems, firm size, and value models are linked with the effect of value creation and appropriation on market value. As a firm perceives its characteristics on different effect, this difference facilitates it to choose more proper strategic decision.

Second, with respect to the effect of industrial and firm's characteristics on strategic emphasis on value creation or value appropriation, Teece (1986), Matraves (1998) examine specific industrial structures and attributes that impact a firm's strategic emphasis on value creation or value appropriation. From Matraves (1998), the pharmaceutical industry's structure motivates pharmaceutical firms to increase concentration, partly since increasing concentration effectively strengthens their competitive position in the global pharmaceutical market. Furthermore, due to the goal of market expansion, these pharmaceutical firms also focus on advertising and other marketing activities that impact OTC market expansion. In general, the pharmaceutical industry is more concerned with a strategic emphasis on value creation.

Teece (1986) shows that industrial characteristics, such as government support and intervention, trade tariffs, and others, are examined by a firm that considers whether it emphasizes the investment in critical complementary assets linked with value appropriation. Government support, for instance, drives the investment behaviors of firms in R&D, particularly the high-tech industry with lower success ratio. The example of the pharmaceutical industry illustrates that under the comprehensive system of respecting intellectual property rights, pharmaceutical firms have incentives to increase R&D expenditures. Therefore, the industrial context and characteristics facilitate firms to make proper decisions on the choices of value creation or value appropriation, or both.

Brandenburger and Stuart 1996; Di Gregoria 2013; Sridhar, Narayanan, and Srinivasan 2014 focus on the effect of firms' characteristics on the strategic emphasis of value creation and appropriation. Di Gregoria (2013) finds that the abilities of a firm to effectively allocate and combine resources influence its decision on value creation, and four specific resources, including market-based bargaining power, relation-based power, isolating mechanisms, and opportunity-based action, affect strategic emphasis on value appropriation. When making strategic decisions on selecting value creation or value appropriation, a firm considers whether it has specific abilities or resources before determining its strategy.

The preference of a firm's top management on marketing sales goals can predict their decisions on value creation and value appropriation. Sridhar, Narayanan, and Srinivasan (2014) indicates that when top management of a firm is committed to the realization of sales objectives, there is an increasing investment in R&D, advertising and inventory holding. The sales objectives are closely linked with the profitability of a firm, and relevant investment in R&D, advertising and inventory holding generally improves the overall market value of this firm. Furthermore, the improvement of a company's market value directly benefits top management via stock market performance-based compensation. Therefore, for public companies, the decision-making of top management is affected by the related market value, and for private enterprises, by specific financial indicators.

Brandenburger and Stuart (1996) investigates the existence of asymmetry between a firm and its competitors, which creates potential for a firm to create added value over its competition. In examining this asymmetry, Brandenburger and Stuart (1996) identify four specific items, including shareholder value maximization, boundaries of the industry, frictions, and unrestricted bargaining. If a company acquires and controls more than one of the following, this company has a strong tendency to create added value. When considering whether to engage in value creation, a firm needs to evaluate internal strengths and external context.

Finding 3: R&D expenditure greatly impacts both value creation and appropriation

Our third finding is that R&D expenditure greatly impacts both value creation and appropriation. The latter focuses on relevant examination based on empirical evidence, particularly secondary database research. Furthermore, relevant empirical evidence employs different perspectives to clarify the effect of R&D expenditure on value creation and appropriation, such as manufacturing vs. non-manufacturing sectors, and others.

First, some researchers, such as Mizik and Jacobson (2003); Keh and Ong (2005); Jacobites, Knudsen, and Augier (2006); Grossman (2008); Currim, Lim, and Kim (2012); and Sridhar, Narayanan, and Srinivasan (2014) confirm the effect of R&D expenditure on value creation. Mizik and Jacobson (2003) identifies that R&D and technology are the critical success factors contributing to the creation and delivery of value, since there is a positive interaction between R&D expenditure and stock market performance. When a firm focuses its strategic emphasis on value creation, an increase of R&D expenditure linked with value creation can be perceived by investors who respond positively to this signal.

Jacobites, Knudsen, and Augier (2006) further identify that R&D expenditure contributes to critical complementary assets linked with innovation, and the interaction between R&D and innovation contributes to value creation and appropriation. In essence, R&D expenditure focuses on the investment in critical complementary assets, rather than abilities and assets, and thus, it mediates the relationship between innovation and value creation. This result is consistent with other research on the positive impact of innovation on value creation, such as is found in Amit and Zott (2001); Sony and Thieme (2006); amd Adner and Kapoor (2010).

Moreover, in the manufacturing industry, Keh and Ong (2005) find that R&D exerts a positive impact on value creation, since the stock market prefers the commitment of manufacturing firms to R&D. However, this result cannot be confirmed in non-manufacturing firms. One explanation is that R&D directly contributes to the acquisition and improvement of technologies and patents, and compared with intangible assets of non-manufacturing firms, technologies and patents can be effectively measured and transformed into competitive position and profitability. However, Chauvin and Hirschey (1993) confirms that R&D positively affects market values of both the manufacturing and non-manufacturing sectors. Arguably, for non-manufacturing firms, R&D expenditure allows them to build and improve service quality, brand equity and other intangible assets and strategic capabilities, which eventually contributes to the creation and delivery of value to both firms and consumers.

Grossman (2008) employs an indicator of firm size and growth for examining the effect of R&D on value creation. The findings indicate that the positive relationship of R&D to value creation increases a firm's size, and furthermore, in-house R&D is more likely to contribute to a firm's growth. Compared with firm size, the predictor of firm growth is more suitable for evaluating the effect of R&D on value creation, since there are interventions on firm size. In particular, Currim, Lim, and Kim. (2012) proposes that the commitment of top executives of a firm to R&D expenditure effectively cultivates and improves strategic abilities of a firm to create value from the performance of stock market return. Their commitment and plan for R&D are communicated with shareholders and potential investors who are more likely to appreciate their company's stock price, when they perceive the positive relationship between R&D expenditure and stock market performance. Thus, R&D expenditure as a prediction of innovation positively impacts value creation of a firm.

Second, in referring to the effect of R&D on value appropriation, Chauvin and Hirschey (1993); Brandenburger and Stuart (1996); Lin, Lee, and Hung (2006); and McAlister, Srinivasan, and Kim (2013) confirm that R&D expenditure can positively drive a firm to effectively appropriate value. Lin, Lee and, Hung (2006) explains that R&D helps a firm to improve value appropriation abilities, particularly the ability to commercialize technological breakthroughs and assets. In essence, there is a positive effect of R&D on value appropriation. Referring to the effect of innovation on value creation, critical complementary assets for creating value are consistent with the ability of value appropriation to commercialize technological breakthroughs and assets. According to McAlister, Srinivasan, and Kim (2013), from the perspective of the stock market's systematic risk, R&D effectively facilitates a firm to appropriate value by reducing systematic risk. The reduction of systematic risk to a great extent increases investors' confidence toward the stock price stability of a firm, and it is acknowledged that R&D greatly increases the ability of a firm to appropriate value.

However, empirical evidence from Chan, Lakonishok and Sougiannis (2001) find that R&D expenditure does not contribute to value appropriation via evidence of the relationship between R&D expenditure and the stock market. Before 2001, due to the bubble of overvalued high-tech companies, most investors showed too pessimistic an attitude toward R&D intensity, and this situation results in the non-relationship between R&D and stock market performance. Still, Teece (1986) and McAlister, Srinivasan, and Kim (2013) propose that there is a positive impact of R&D on value appropriation.

Finding 4: Marketing activities influence firm's value and stock performance through value appropriation

The fourth finding is that marketing activities, particularly advertising, influence a firm's value and stock performance through value appropriation. Advertising as an important measure for appropriating value contributes to the improvement of a firm's value and stock performance. As previously mentioned, advertising is directly linked with the marketing sales and profit increases. Some researches, such as Matraves (1998); Mizik and Jacobson (2003); Grossman (2008); Currim, Lim, and Kim (2012); McAlister, Srinivasan, and Kim (2013); Sridhar, Narayanan, and Srinivasan (2014) confirm that advertising positively impacts firm's value and stock performance through the improvement of value appropriation. This research attempts to explain specific mediating factors impacting the effect of advertising on value appropriation, such as differentiation, market expansion, marketing sales, stock market return, company size, and systematic risks. Mizik and Jacobson (2003) indicates that a firm investing in advertising has strong motivation for differentiating it from competitors, since the huge differentiation contributes to a considerable impact on the improvement of value appropriation capabilities. From the customer perspective, the differentiation development driven by advertising allows consumers to shape specific preferences toward this brand, company and its goods, and therefore, a company can utilize advertising as a source for enhancing its value appropriation abilities through differentiation. McAlister, Srinivasan, and Kim (2013) indicates that advertising contributes to the reduction of systematic risk by leveraging value appropriation. The previous analysis suggests that there is a positive relationship between advertising expenditure and systematic risk reduction.

Furthermore, Matraves (1998) explains that advertising is recognized as the measure facilitating pharmaceutical firms with the ability to implement market expansion, and based on the positive relationship between advertising and market expansion, pharmaceutical firms can invest in advertising for expanding the market base linked with the improvement of marketing sales. Grossman (2008) explains that advertising expenditure positively affects company size by appropriating value effectively. The growing firm size is powered by the delivery of improved value appropriation abilities, and this research points to the fact that advertising enhances the abilities of a firm to appropriate value. Moreover, Sridhar, Narayanan, and Srinivasan (2014) find that advertising positively impacts marketing sales and firm value through value appropriation. Therefore, based on the previous analysis, advertising positively impacts marketing sales, market expansion, differentiation, stock market return, company size and reduces systematic risk, and the improvement of these aspects greatly facilitates a firm to effectively appropriate value.

Besides advertising, Blocker et al. (2012) point out that selling forces are an important channel that serves customers by understanding their actual needs, and positively impacts value appropriation. Sales force allows companies to gather and interpret customer needs and knowledge, and furthermore, plays a critical role in the effective building of customer relationship management. Marketing activities, including advertising and sales forces, exert positive impact on stock market performance by leveraging value appropriation.

Referring to the industrial characteristics impaction, two articles, including Chauvin and Hirschey (1993) and Keh and Ong (2005), focus on the examination of the effect of advertising on stock market performance between the manufacturing and non-manufacturing sectors. Chauvin and Hirschey (1993) finds that advertising facilitating value appropriation positively affects stock market performance of companies from both the manufacturing and non manufacturing industries. However, Keh and Ong (2005) indicate that the non-manufacturing companies can use advertising for the improvement of stock market performance. The previous analysis mentions that for non-manufacturing companies, choosing advertising to effectively appropriate value is vital, since advertising greatly impacts the improvement of intangible assets, such as brand equity. However, manufacturing companies prefer measures linked with value creation for acquiring advanced technologies and strategic resources. Essentially, both manufacturing and non-manufacturing companies can utilize advertising to appropriate value. From a marketing communications perspective, advertising also contributes to the establishment and improvement of strong brand equity of manufacturing companies, which eventually benefits their value appropriation.

Finding 5: Competition within an industry influences a firm's decision on value appropriation.

The fifth finding is that competition within an industry influences a firm's decision on value appropriation. Competition is identified as an important determinant of external environment, and it can affect a firm’s decision on value appropriation. First, Xie and Wang (2014) shows that when a firm recognizes the intention of competitors movement in R&D or advertising, that the competition affects a firm’s decision on its own research or advertising. If competitors make decisions on R&D or advertising, the competing firm has strong intentions to make similar decisions involving R&D and advertising. In the manufacturing industry, for instance, when a firm invests in R&D to improve its ability to create value, due to competition pressure, other competitors also increase investment in R&D. Furthermore, Matraves (1998) investigates the competition of the pharmaceutical industry and the R&D expenditures of a firm, and finds that intense competition in the pharmaceutical industry contributes to an increasing investment in simultaneous R&D. Since the pharmaceutical industry encounters a growing concentrated industry structure, this industrial environment motivates these firms to appreciate R&D investment. Adner and Kapoor (2010) are consistent with this statement. This research indicates that a company with the competitive position of technology leadership is more likely to engage in value creation through the development of competitive advantages (Adner and Kapoor, 2010). Therefore, within an environment, a firm's competitive position can affect strategic emphasis on value creation or value appropriation.

Teece (1986) discusses to what extent a firm occupying critical complementary assets makes strategic emphasis on value creation or value approbation. Its result indicates that a firm acquiring critical complementary assets is more likely to commercialize these assets for appropriating value, instead of pursuing value creation. Moreover, MacDonald and Ryall (2004) indicate that within an industry, imitation of specific innovation increases competition engagement in value appropriation, rather than value creation. In other words, when encountering the owners of strategic assets and technologies closely linked with value creation, competitors are motivated to acquire or imitate these assets and technologies to appropriate value. Pisano (1990) states, when encountering intensive competition, a firm considering appropriation is more likely to internalize R&D, preventing competitors from accessing inside information. This explains the behaviors of the company executives who own the rights to specific technologies and assets with great possibility of commercialization. In fact, it is rational for a firm with strategic technologies, innovation, and assets to prevent competitors from acquiring and imitating these resources and assets.

Conclusion and Limitation

This thesis explains and discusses value creation and value appropriation, and focuses on relevant factors that have an impact on both under different contexts. Through the critical review of 27 quality articles linked with value creation and value appropriation, we identify five findings that clarify these topics. First, innovation drives the decision-making process behind value creation and appropriation decisions. Second, stock market rewards value appropriation more than value creation; industrial and firm characteristics impact strategic emphasis on value creation or value appropriation. Third, R&D expenditure greatly impacts both value creation and appropriation. Fourth, marketing activities influence the firm's value and stock performance through value appropriation. Finally, competition within an industry influences a firm's decision on value appropriation.

In regard of limitations, since the thesis is based on secondary data collection and includes past articles from various researchers, it may have some bias. First, since this research was not gathered by primary information on value creation and value appropriation decisions impacted by different factors, there is no new and profound understanding on these two concept or the relevant factors impacting them. Second, although this thesis makes use of 27 scholarly articles, these five findings and their concepts cannot be held responsible for the comprehension of the exact meaning of value creation and value appropriation. Along with the emergence of new evidence, these five findings may be less profound and have their own set of limitations. In future research, collecting more articles relevant to the topic of value creation and appropriation is proper and feasible.

Tables

Table 4. Literature Review of Value Creation and Value Appropriation

Number	Author (Year)	Article	Conceptual or Empirical	Key Focus: Value Creation or Value Appropriation or Both
1	Teece (1986)	Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy	Conceptual	Value appropriation as it relates to innovation
2	Pisano (1990)	The R&D Boundaries of the Firm: An Empirical Analysis	Empirical	Equal focus on value creation and value appropriation as they relate to R&D
3	Chauvin and Hirschey (1993)	Advertising, R&D Expenditures and the Market Value of the Firm	Conceptual with empirical framework	Equal focus on value creation and value appropriation as they relate to R&D
4	Brandenburger and Stuart (1996)	Value-based Business Strategy	Conceptual	Value appropriation
5	Moran and Ghoshal (1996)	Value creation by firms. Academy of Management Proceedings	Conceptual	Value creation
6	Griffin and Hauser (1996)	Integrating R&D and Marketing: A Review and Analysis of the Literature	Conceptual with empirical framework	Focuses on the initiation of value creation through R&D and the resulting challenge of value appropriation
7	Matraves (1998)	Market structure, R&D and advertising in the pharmaceutical industry	Empirical, uses game theory	Value creation
8	Amit and Zott (2001)	Value creation in E-business	Initially empirical using data collection, then conceptual through model creation and testing	Value creation
9	Chan, Lakonishok and Sougiannis (2001)	The Stock Market Valuation of Research and Development Expenditures	Conceptual	Focuses on both value creation and value appropriation as they relate to R&D
10	Mizik and Jacobson (2003)	Trading off between value creation and value appropriation: The financial implications of shifts in strategic emphasis	Mostly empirical, some conceptual topics	Equal focus on value creation and value appropriation
11	MacDonald and Ryall (2004)	How Do Value Creation and Competition Determine Whether a Firm Appropriates Value?	Conceptual	Focuses on value creation and the resulting value appropriation and competition
12	Destri and Dagnino (2005)	The development of the resource-based firm between value appropriation and value creation	Mainly conceptual with some elements of empirical methodology (Austrian process view)	Equal focus on value creation and value appropriation
13	Keh and Ong (2005)	The Effects of R&D and Advertising on Firm Value: An Examination of Manufacturing and Nonmanufacturing Firms	Empirical, uses data collection	Focuses on both value creation and value appropriation as they relate to R&D and advertising

14	Sony and Thieme (2006)	A cross-national investigation of the R&D–marketing interface in the product innovation process	Empirical, uses data collection	Equal focus on value creation and value appropriation
15	Jacobides, Knudsen and Augier (2006)	Benefiting from innovation: Value creation, value appropriation and the role of industry architectures	Conceptual	More consideration granted to value creation; value appropriation is discussed along with innovation as it relates to value creation
16	Lin, Lee and Hung (2006)	R&D intensity and commercialization orientation effects on financial performance	Empirical	Value appropriation
17	Lavie (2007)	Alliance portfolios and firm performance: A study of value creation and appropriation in the U.S. software industry	Empirical, uses data collection	Equal focus on value creation and value appropriation
18	Grossmann (2008)	Advertising, in-house R&D, and growth	Empirical	Focuses on both value creation and value appropriation as they relate to R&D and advertising
19	Adner and Kapoor (2010)	Value creation in innovation ecosystems: how the structure of technological interdependence affects firm performance in new technology generations	Conceptual with empirical framework	Value creation
20	King and Slotegraaf (2011)	Industry Implications of Value Creation and Appropriation Investment Decisions	Empirical, uses data collection	Equal focus on value creation and value appropriation
21	Currim, Lim and Kim (2012)	You Get What You Pay For: The Effect of Top Executives' Compensation on Advertising and R&D Spending Decisions and Stock Market Return	Empirical, uses data collection	Value creation
22	Blocker, Cannon, Panagopoulos, and Sager(2012)	The Role of the Sales Force in Value Creation and Appropriation: New Directions for Research	Conceptual	Equal focus on value creation and value appropriation
23	McAlister, Srinivasan and Kim (2013)	Advertising, Research and Development, and Systematic Risk of the Firm	Empirical	Mostly focuses on the value appropriation stage of a firm's R&D and advertising expenditure
24	Di Gregorio (2013)	Value creation and value appropriation: An integrative, multi-level framework	Conceptual	Equal focus on value creation and value appropriation
25	Xie and Wang (2014)	Choosing R&D or advertising for competing firms in uncertain market	Conceptual	Equal focus on value creation and value appropriation
26	Sridhar, Narayanan and Srinivasan (2014)	Dynamic relationships among R&D, advertising, inventory and firm performance	Empirical, uses data collection (Tobin's Q ratio)	Value creation
27	Ellegaard, Medlin and Geersbro (2014)	Value appropriation in business exchange – literature review and future research opportunities	Conceptual	Value appropriation

Table 5. Finding 1

Author (Year)	Article	Content
Teece (1986)	Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy	Innovation exerts the considerable impact on value appropriation when a firm invests in critical complementary assets. And, competition for occupying critical complementary assets exerts the considerable impact on value appropriation
Amit and Zott (2001)	Value creation in E-business	E-business companies develop innovation for creating value, such as new transactional content, structure, and novelty resource acquisition.
MacDonald and Ryall (2004)	How Do Value Creation and Competition Determine Whether a Firm Appropriates Value?	Innovation is perceived as a unique and valuable asset, and most companies struggles to acquire and utilize innovation through value appropriation
Sony and Thieme (2006)	A cross-national investigation of the R&D–marketing interface in the product innovation process	R&D with the facilitation of marketing information contributes to value creation by developing new products
Jacobides, Knudsen and Augier (2006)	Benefiting from innovation: Value creation, value appropriation and the role of industry architectures	Investment in complementary assets drives innovation that positively affects value creation and value appropriation
Lin, Lee and Hung (2006)	R&D intensity and commercialization orientation effects on financial performance	Technological breakthrough and assets are commercialized properly to improve the abilities of value appropriation
Adner and Kapoor (2010)	Value creation in innovation ecosystems: how the structure of technological interdependence affects firm performance in new technology generations	Innovation as a driving force affects the development of a firm's value creation when this firm with a technology leadership position.
Currim, Lim and Kim (2012)	You Get What You Pay For: The Effect of Top Executives' Compensation on Advertising and R&D Spending Decisions and Stock Market Return	Due to the motivation of compensation's increase, top executives increases R&D expenditure for leveraging stock market performance by improving value creation
Xie and Wang (2014)	Choosing R&D or advertising for competing firms in uncertain market	Under any market conditions, a firm selects R&D to improving competitiveness, rather than advertising

Table 6. Finding 2

Author (Year)	Article	Content
Teece (1986)	Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy	Innovation on manufacturing, distribution, service, and complementary technologies positively affects value appropriation. And, industry's characterisitcs, such as tariffs, influences the development of critical complementary assets
Chauvin and Hirschey (1993)	Advertising, R&D Expenditures and the Market Value of the Firm	Some determinants, including agency problem, and value models impacts the effect of advertising and R&D on market value
Brandenburger and Stuart (1996)	Value-based Business Strategy	Opportunity cost of a firm determines value appropriation by developing the asymmetry
Matraves (1998)	Market structure, R&D and advertising in the pharmaceutical industry	Market structure of the pharmaceutical industry suggests that the pharmaceutical firms would like to increase concentration.
Mizik and Jacobson (2003)	Trading off between value creation and value appropriation: The financial implications of shifts in strategic emphasis	Stock market prefers a firm's strategic emphasis on value appropriation, since investors show greatly positive response to value appropriation capabilities of a firm.
Lavie (2007)	Alliance portfolios and firm performance: A study of value creation and appropriation in the U.S. software industry	Advertising as a measure for value appropriation contributes to the improvement of a firm's stock price
Currim, Lim and Kim (2012)	You Get What You Pay For: The Effect of Top Executives' Compensation on Advertising and R&D Spending Decisions and Stock Market Return	Stock market is a mediating factor influencing the decision of a firm on R&D expenditure (value creation) and advertising (value appropriation)
McAlister, Srinivasan and Kim (2013)	Advertising, Research and Development, and Systematic Risk of the Firm	Advertising contributes to the reduction of a firm's systematic risk linked with stock market
Di Gregorio (2013)	Value creation and value appropriation: An integrative, multi-level framework	The ability of a firm to allocate and combine resource contributes to the value creation. Furthermore, four sources, including market-based bargaining power, relation-based power, isolating mechanisms, and opportunity-based action, influence value appropriation
Sridhar, Narayanan and Srinivasan (2014)	Dynamic relationships among R&D, advertising, inventory and firm performance	Top management shows great commitment to marketing objective of sales, this contribute to increase the investment in R&D, advertising and inventory holding.

Table 7. Finding 3

Author (Year)	Article	**Content**
Chauvin and Hirschey (1993)	Advertising, R&D Expenditures and the Market Value of the Firm	R&D positively influences the market value of the manufacturing and non manufacturing industries
Chan, Lakonishok and Sougiannis (2001)	The Stock Market Valuation of Research and Development Expenditures	R&D does not contribute to value appropriation based on the performance of stock market
Mizik and Jacobson (2003)	Trading off between value creation and value appropriation: The financial implications of shifts in strategic emphasis	Technology and R&D are critical to business success of a firm through value creation.
Keh and Ong (2005)	The Effects of R&D and Advertising on Firm Value: An Examination of Manufacturing and Nonmanufacturing Firms	R&D as a measure for improving value creation positively affects the stock market performance of the manufacturing industry
Jacobides, Knudsen and Augier (2006)	Benefiting from innovation: Value creation, value appropriation and the role of industry architectures	An innovator makes a decision on R&D expenditure linked with the contribution of complementary assets to innovation, which eventually contributes to value creation and appropriation
Lin, Lee and Hung (2006)	R&D intensity and commercialization orientation effects on financial performance	R&D intensity improved by commercialization of technological breakthrough and assets contributes to the improvement of value appropriation abilities
Grossmann (2008)	Advertising, in-house R&D, and growth	R&D contributes to firms size positively through value creation. In specific, in-house R&D positively impacts a firm's growth.
Currim, Lim and Kim (2012)	You Get What You Pay For: The Effect of Top Executives' Compensation on Advertising and R&D Spending Decisions and Stock Market Return	R&D expenditure driven by top executives increases the abilities of a firm to create value, particularly stock market return.
McAlister, Srinivasan and Kim (2013)	Advertising, Research and Development, and Systematic Risk of the Firm	R&D investment positively impacts the reduction of systematic risk through the improvement of value appropriation
Sridhar, Narayanan and Srinivasan (2014)	Dynamic relationships among R&D, advertising, inventory and firm performance	R&D contributes to the improvement of firm value through value creation

Table 8. Finding 4

Author (Year)	Article	**Content**
Chauvin and Hirschey (1993)	Advertising, R&D Expenditures and the Market Value of the Firm	Advertising positively impacts the market value of the manufacturing and non-manufacturing sectors.
Matraves (1998)	Market structure, R&D and advertising in the pharmaceutical industry	Advertising directly motivates market expansion of the pharmaceutical firms for appropriating more value
Mizik and Jacobson (2003)	Trading off between value creation and value appropriation: The financial implications of shifts in strategic emphasis	Advertising contributes to the differentiation of a firm from competitors, and enhances value appropriation capabilities.
Keh and Ong (2005)	The Effects of R&D and Advertising on Firm Value: An Examination of Manufacturing and Nonmanufacturing Firms	Advertising contributes to the stock market performance of the non manufacturing firms
Grossmann (2008)	Advertising, in-house R&D, and growth	Advertising expenditure positively influences company size by appropriating value effectively.
Currim, Lim and Kim (2012)	You Get What You Pay For: The Effect of Top Executives' Compensation on Advertising and R&D Spending Decisions and Stock Market Return	Advertising decision is closely linked with stock market return through value appropriation
Blocker, Cannon, Panagopoulos, and Sager(2012)	The Role of the Sales Force in Value Creation and Appropriation: New Directions for Research	Sales forces as an important channel serves customers by understanding their actual need, and positively impacts on value appropriation
McAlister, Srinivasan and Kim (2013)	Advertising, Research and Development, and Systematic Risk of the Firm	Advertising expenditure contributes to the reduction of systematic risk by leveraging value appropriation
Sridhar, Narayanan and Srinivasan (2014)	Dynamic relationships among R&D, advertising, inventory and firm performance	Advertising positively affects marketing sales and firm value through value appropriation

Table 9. Finding 5

Author (Year)	Article	**Content**
Teece (1986)	Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy	Competition for the occupation of critical complementary assets makes competitors to obtain significant profits, rather than owners of intellectual property rights
Pisano (1990)	The R&D Boundaries of the Firm: An Empirical Analysis	The degree of competitors accessible to know-how influences appropriability, and appropriability concerns facilitate a firm to make decision on in-house or external sources of R&D. For instance, competitors are restricted for accessing know-how, a firm with high level of appropriability would like to internalizes R&D.
Matraves (1998)	Market structure, R&D and advertising in the pharmaceutical industry	Intensive competition in the pharmaceutical industry contributes to an increase of R&D
MacDonald and Ryall (2004)	How Do Value Creation and Competition Determine Whether a Firm Appropriates Value?	Within an industry, imitation on specific innovation increases competition for engaging in value appropriation, rather than value creation
Adner and Kapoor (2010)	Value creation in innovation ecosystems: how the structure of technological interdependence affects firm performance in new technology generations	Competitive position of a firm determines the effect of innovation on firm performance
Xie and Wang (2014)	Choosing R&D or advertising for competing firms in uncertain market	Competition determines a firm's decision when this firm perceive the intention of competitors on R&D or advertising

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