

University of Naples “Federico II”

Seconda University of Naples

University of Naples “Parthenope”



Department of Economics, Management, Institutions

THE EFFECTS OF PERCEIVED BRAND SUSTAINING INNOVATIVENESS ON FIRM  
PERFORMANCE

A Dissertation by

Murat Kayak

Submitted in Partial Fulfilment of the Requirements for the

Degree of Doctor of Philosophy

in

Management

Supervisor:

Prof. Michele Simoni

PhD Coordinator:

Prof. Cristina Mele

## Contents

List of Figures.....	III
List of Tables.....	IV
Introduction.....	1
References.....	5
Chapter 1 - State of the Art .....	8
1.1 The brand image as a strategic asset of firms .....	8
1.2 The two-way relationship between brand and innovation.....	12
1.3 Perceived brand innovativeness and performance.....	13
1.4 The different types of innovations as driver of perceived brand innovativeness.....	15
1.5 The ambiguous role of sustaining innovation in perceived brand innovativeness .....	17
1.6 The need to investigate the paradox of sustaining innovation.....	19
References.....	20
Chapter 2 - Theoretical Model .....	23
2.1 The development of product sustaining innovation .....	23
2.2 The different dimensions of product sustaining innovation .....	31
2.3 The effect of sustaining innovation on perceived firm innovativeness .....	32
2.4 The relationship between perceived firm sustaining innovativeness and firm brand equity.....	34
2.5 The effect of increased brand equity on market performance.....	36
2.6 A comprehensive model of the effect of firm perceived brand sustaining innovativeness on market performance.....	36
References.....	38
Chapter 3 - Methodology .....	41
3.1 Introduction.....	41
3.2 Research settings.....	42
3.3 The on-line survey and classroom .....	43
3.4 The operationalization of model's variables. ....	44
3.4.1 Independent variables.....	51
3.4.2 Dependent variables .....	52
3.5 The statistical methodology .....	52
References.....	56
Chapter 4 – Results.....	58
4.1 Data screening and assessing normality .....	58

4.2 Profile of the respondents.....	59
4.3 Exploratory Factor Analysis .....	70
4.4 Reliability .....	71
4.5 Validity and reliability of the measurement model .....	73
4.6 Common method variance and theoretical model validation .....	76
4.7 Hypotheses testing .....	76
References .....	80
Chapter 5 – Conclusions .....	82
5.1 Discussion .....	82
5.2 Theoretical Implications .....	84
5.3 Practical Implications.....	86
5.4 Limitations .....	89
References .....	91
APPENDIX A .....	93
Survey Questionnaire English Version Questionnaire.....	93
APPENDIX B .....	99
Survey Questionnaire Italian Version Questionnaire .....	99

## List of Figures

<b>Figure 1</b> The figure is adopted based on the study by Christensen (1997) .....	33
<b>Figure 2</b> Argument of the study. The figure is adopted based on the study by Christensen (1997).....	34
<b>Figure 3</b> Research Model.....	37
<b>Figure 4</b> Results of Hypotheses .....	79

## List of Tables

Table 1 Measurement Items with Constructs .....	45
Table 2 Variables of Behavioral Characteristics .....	48
Table 3 Variables of Demographic Characteristics .....	48
Table 4 Variables related to future improvements.....	49
Table 5 Item-Total Statistics .....	50
Table 6 Descriptive Statistics .....	58
Table 7 Profile of demographic characteristics - gender .....	59
Table 8 Profile of demographic characteristics - age.....	60
Table 9 Profile of demographic characteristics – year of study .....	60
Table 10 Profile of demographic characteristics – having a smartphone.....	61
Table 11 Profile of demographic characteristics – which brand using .....	61
Table 12 Profile of demographic characteristics – period of use.....	62
Table 13 Profile of demographic characteristics – the reason of choosing this brand .....	62
Table 14 Profile of demographic characteristics – how much time spending.....	63
Table 15 Profile of demographic characteristics – why use .....	63
Table 16 Smartphone features question for whether future improvement are necessary - design .....	64
Table 17 Smartphone features question for whether future improvement are necessary - screen .....	64
Table 18 Smartphone features question for whether future improvement are necessary – operating system speed .....	65
Table 19 Smartphone features question for whether future improvement are necessary – reliability of operating system .....	65
Table 20 Smartphone features question for whether future improvement are necessary – storage and memory.....	66
Table 21 Smartphone features question for whether future improvement are necessary – Connectivity, WIFI, Bluetooth .....	66
Table 22 Smartphone features question for whether future improvement are necessary – Speakers, earphones.....	67
Table 23 Smartphone features question for whether future improvement are necessary – camera .....	67
Table 24 Smartphone features question for whether future improvement are necessary – battery .....	67
Table 25 Smartphone features question for whether future improvement are necessary – simplicity of interface .....	68
Table 26 Smartphone features question for whether future improvement are necessary – interactivity of interface.....	68
Table 27 Smartphone features question for whether future improvement are necessary – positioning system, GPS.....	69
Table 28 Smartphone features question for whether future improvement are necessary – security .....	69
Table 29 Smartphone features question for whether future improvement are necessary – overall .....	69
Table 30 Reliability Statistics.....	72
Table 31 If item deleted (Cronbach’s Alpha .....	72
Table 32 AVE and Composite Reliability .....	73
Table 33 Correlations of the latent variables and the square root of AVE .....	74
Table 34 Cross-Loadings Matrix.....	75

## Introduction

A number of empirical papers have investigated the impact of perceived firm innovativeness on firm's performance. Past research confirmed that perceived innovativeness is a significant factor for customers' product choices (e.g., Kim et al., 2015; Kunz et al., 2011). However, innovation can be of different types and as argued by Garcia and Calantone (2002) sometimes scholars fail in focusing on such differences. As they assert, "Academics generally believe that they have begun to understand the process of developing innovations and it doesn't matter what they call them; new innovations smell just as sweet by any other name." (p. 110). Distinguishing among different types of innovation (e.g., sustaining innovations, disruptive innovations, radical innovations) is relevant especially because different types of innovation have require business models (Markides, 2006), and can have a different impact on consumer purchasing behavior (Reinhardt & Gurtner, 2015).

This paper focuses on perceived innovativeness of firms as based on firms' effort to develop over time sustaining innovation. The definition of sustaining innovations and disruptive innovations has been largely debated in the literature (e.g., Danneels, 2004; Schmidt & Druehl, 2008; Tellis, 2006; Yu & Hang, 2010). Sustaining innovation originally associates with Christensen (1997), the founder of disruptive innovation theory who introduced the term in contraposition to disruptive innovation. According to Christensen (1997), incumbents keep improving the existing products for existing customers, which he calls sustaining innovations. He thus defines sustaining innovations as "... innovations that make a product or service perform better in ways that customers in the mainstream market already value" (Christensen & Overdorf, 2000, p. 72). Conversely he defines disruptive innovations as innovations that "... create an entirely new market through the introduction of a new kind of product or service, one that's actually worse

initially, as judged by the performance metrics that mainstream customers value” (Christensen & Overdorf, 2000, p. 72).

Specifically, Christensen (1997) argues that continuously increasing the performance of an existing product for existing customers may lead incumbent firms to fail. He describes the following mechanism. Incumbent firms are looking for higher margins and therefore they target the mainstream market rather than small niches. To sustain their success, these firms keep listening to their customers and keep investing aggressively in those technological improvements that are able to provide what mainstream customers want. As a result, these firms are not able to be aware of disruptive innovations that are typically cheaper, smaller, simpler, and frequently more convenient to use but appeal to niche customers because of poorer performance (Christensen, 1997). When disruptive technologies are improved up to a level that appeals mainstream customers incumbents start losing their customer base and become aware the real threat of disruptive innovations. However, it is seldom too late for them to respond this change.

The competition among firms has been fiercer. Firms are under pressure to differentiate their products and services through innovation. Although previous research demonstrated the importance of perceived firm innovativeness on consumer satisfaction (Kim, Kim, Garrett, & Jung, 2015), only few firms were able to be successful (Christensen, 1997). To address this problem, it is important to build a research model with the specific type of innovation (Danneels, 2004).

There has been an increased focus on the relationship between perceived firm innovativeness and consumer loyalty (Kunz, Bernd, & Meyer, 2011), and consumer satisfaction (Kim, Kim, Garrett, & Jung, 2015). Prior studies have found a positive relationship between perceived firm innovativeness and consumer loyalty, and consumer satisfaction. However, the results obtained are not applicable all type of innovation. A specific type of innovation has not been taking account in prior research. They are inconclusive and contradictory. Danneels (2004)

suggests, it is necessary for scholars to develop very careful definitions and classifications of types of technological change.

To fill the literature gap, the overall research question is formed as how firms should manage branding strategy through sustaining innovation. The overall research objective is to investigate how firms should manage branding strategy based on sustaining innovation.

Although perceived firm innovativeness has been investigated in consumer behavior research, (Kunz, et al., 2011; & Kim et al., 2015), the analyses of “innovativeness” has not sufficiently specified. In other words, some important differences among innovation types have not been recognized. In contrast, current research is the first attempt to study the effects of specific type of innovation (*i.e.*, perceived brand sustaining innovation) on firm performance.

Prior research showed the importance of perceived firm innovativeness (Kunz, et al., 2011; Kim et al., 2015). For example, Kunz et al. (2011) developed a perceived firm innovativeness scale. This scale is also used by Kim et al. (2015). However, this study advances prior research by measuring perceived brand sustaining innovativeness to highlight the importance of selective target marketing. To escape from the competition herd (Moon, 2010), managers will be able to be aware of significant contribution of different type of innovation at the stage of new product development by evaluating the market where the firm is operated.

This study assesses how should manage their branding strategy based on sustaining innovation. In order to explore this research question, the definition of sustaining innovativeness is needed. To define sustaining innovativeness, first, innovativeness definition is needed. According to Garcia and Calantone (2002) “Innovativeness is most frequently used as a measure of the degree of “newness” of an innovation. Highly innovative products are seen as having a high degree of newness and “low innovative” products sit at the opposite extreme of the continuum” (p. 112). This study therefore defines sustaining innovativeness as a measurement of the degree of



“newness of a new product version”, which replaces existing products. In particular, sustaining innovativeness is measured at customer level. Perceived firm innovativeness is thus a measurement of consumer’s perception on the degree of “newness of a new product” version, which replaces existing ones.

All may agree that building a unique brand strategy is the primary objective of an existing firm in order to be the owner of an innovation, and to increase firm performance (e.g., Aaker, 2006; Brexendorf, Bayus & Keller, 2015). It is well-known that brand awareness, brand loyalty, and brand satisfaction as an important component of brand equity, plays a significant role in consumers’ product choices (e.g., Keller, 1993; Aaker, 1996; Kapferer, 2008). Therefore, this variables are used as an important component of branding.

## References

- Aaker, D. A. (1996). Measuring brand equity across products and markets. *California Management Review*, 38(3), 102-120.
- Aaker, D. A. (2007). Innovation: Brand it or lose it. *California Management Review*, 50(1), 8-24.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: a review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411-423.
- Brexendorf, T. O., Bayus, B., & Keller, K. L. (2015). Understanding the interplay between brand and innovation management: findings and future research directions. *Journal of the Academy of Marketing Science*, 43(5), 548-557.
- Christensen, C. M. (1997). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Boston: Harvard Business Press.
- Christensen, C. M., & Overdorf, M. (2000). Meeting the challenge of disruptive change. *Harvard Business Review*.
- Cooper, D. R., & Schindler, P. S. (2011). *Business Research Methods* (11th Ed.). NY: McGraw-Hill.
- Danneels, E. (2004). Disruptive Technology Reconsidered: A Critique and Research Agenda. *Journal of Product Innovation Management*, 21(4), 246–258.

- Garcia, R., & Calantone, R. (2002). A critical look at technological innovation typology and innovativeness terminology: a literature review. *Journal of Product Innovation Management*, 19(2), 110-132.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th Ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Kapferer, J. N. (2008). *The new strategic brand management: creating and sustaining brand equity long term* (4th Ed.). UK: Kogan Page.
- Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing*, 57(1), 1-22.
- Kim, J., Kim, K. H., Garrett, T. C., & Jung, H. (2015). The contributions of firm innovativeness to customer value in purchasing behavior. *Journal of Product Innovation Management*, 32(2), 201-213.
- Kunz, W., Bernd, S., & Meyer, A. (2011). How does perceived firm innovativeness affect the consumer? *Journal of Business Research*, 64(8), 816-822.
- Markides, C. (2006), Disruptive Innovation: In Need of Better Theory. *Journal of Product Innovation Management*, 23(1) 19–25.

Reinhardt, R., & Gurtner, S. (2015). Differences between early adopters of disruptive and sustaining innovations. *Journal of Business Research*, 68(1), 137-145.

Schmidt, G. M., & Druehl, C. T. (2008). When is a disruptive innovation disruptive? *Journal of Product Innovation Management*, 25(4), 347-369.

Tellis, G. J. (2006). Disruptive Technology or Visionary Leadership? *Journal of Product Innovation Management*, 23(1), 34-38.

Yu, D., & Hang, C. C. (2010). A reflective review of disruptive innovation theory. *International Journal of Management Reviews*, 12(4), 435-452.

## Chapter 1 - State of the Art

### 1.1 The brand image as a strategic asset of firms

The firm is offering its products and services under a name. It is today well-known that the name represents the term “brand”. American Marketing Association (AMA), one of the largest marketing associations in the world, inspires academics and practitioners such as its Journal of Marketing, defines “A brand is a name, term, design, symbol, or any other feature that identifies one seller's good or service as distinct from those of other sellers.” Aaker (1991) defines “A brand is a distinguishing name and/or symbol (such as a logo, trademark, or package design) intended to identify the goods or services of either one sellers, and to differentiate those goods or services from those of competitors. A brand thus signals to the customer the source of the product, and protects both the customer and the producer from competitors who would attempt to provide products that appear to be identical” (p. 7). Brand management has become a prior research field of scholars. In particular, scholars wonder whether a strong brand enable firms to gain competitive advantage or not (Aaker, 1991; Keller, 1993; Kapferer, 2008). Although building a strong brand is a challenge task, this must be a primary task of firms because there is a growth opportunity by building a brand.

Keller (1993) addressed strategic aspects of brand equity to assist managers and researchers. He developed a conceptual framework, expresses what consumers know about brands and what such knowledge important for marketing strategies of the firm. It is meanwhile to address the definition of customer-based brand equity. According to Keller (1993) “Customer-based brand equity is defined as the differential effect of brand knowledge on consumer response to the marketing of the brand” (p. 2). The first, the aim of customer-based brand equity conceptual framework is to provide a broad view of marketing activity for a brand, and is to recognize the

various influences it has on brand knowledge, in turn, how this brand knowledge affects traditional outcome measures such as sales. The second, it is important to demonstrate the long-term success of all future marketing program for a brand is greatly affected by the knowledge about the brand in memory which has been established by the firm. According to Keller (1993, p. 2) “*Brand knowledge* is defined in terms of two components, *brand awareness* and *brand image*”. He asserted, “*brand awareness*” relates to brand recall and recognition performance by consumers.” “*Brand image*” relates the set of associations linked to the brand that consumers hold in memory.

Aaker (1996) highlighted measuring brand equity by providing four important guidelines. The first, the measures should reflect the construct being measured (*i.e.*, brand equity). In other words, measures should reflect the asset value of the brand and focus on a sustainable advantage not easily duplicated by competitors. The second, the measures should reflect constructs that truly drive the market because they are associated with sales and profit. The third, the selected measures should be sensitive. The fourth, the measures should be applicable across brands, product categories, and markets. According to Aaker (1991) the first four category represents customer perceptions of the brand along the four dimensions of brand equity, loyalty (*price premium, satisfaction/loyalty*), perceived quality (*perceived quality, leadership*), associations / differentiation measures (*perceived value, brand personality, organizational associations*), and awareness (*brand awareness*). The fifth includes two sets of market behavior measures (*market share, price and distribution indices*) that represent information obtained from market-based information rather than directly from customers. It is important to extend the understanding to measure brand equity, which allows highlighting how measuring brand equity is important. The following paragraph summarizes Aaker’s (1996) research on measuring brand equity.

According to Aaker (1996) *loyalty* is a core dimension of brand equity. *Perceived quality* is one of the key dimensions of brand equity. The key *associations / differentiation* component of

brand equity usually involves *image dimensions* that are unique to a product class or to a brand. There are three perspectives to measure associations / differentiation. The first, the brand-as-a product (*value*), the second, the brand-as-person (*brand personality*), the third, the brand-as-organization (*organizational association*). *The brand-as-product perspective* (*value*) focuses on the brands value proposition. The value proposition involves a functional benefit. Brand personality is the second element of associations / differentiation. The brand-as-person perspective (*brand personality*) provides a link to the brands emotional and self-expressive benefits as well as a basis for customer/brand relationships and differentiation. Brand-as-organization (*organizational associations*) considers the organization (people, values, and programs). When brands are similar with respect to attributes, when the organization is visible, or when a corporate brand is involved, it has a key role by showing that a brand represents more than products and services. Awareness (*brand awareness*) is an important and sometimes undervalued component of brand equity. It affects perceptions and attitudes. It is able to be driver of brand choice and even loyalty. The levels of brand awareness is, recognition, recall, top-of-mind, brand dominance, brand knowledge, brand opinion (Aaker, 1996).

Indeed, the importance of brand image and its market performance have been investigated in prior research. In particular, Park, Jaworski, and MacInnis, (1986) highlighted the importance of brand image by presenting strategic brand concept management, for selecting, implementing, and controlling a brand image. A brand image affects sales, which also has a moderating effect on the relationship between product life strategies and sales. (Park *et al.*, 1986). In other words, firm performs better if brand image is managed well. Thus, it is meanwhile to mention another definition of brand image in order to expand the understanding. American Marketing Association defines brand image as “The perception of a brand in the minds of persons. The brand image is a mirror reflection (though perhaps inaccurate) of the brand personality or product being. It is what people

believe about a brand-their thoughts, feelings, expectations.” Thus, brand image is a significant driver to increase firm performance, which must be managed throughout entire life of the firm (Park *et al.*, 1986).

Kapferer (2008) asserted, “The 1980s marked a turning point in the conception of brands. Management came to realise that the principal asset of a company was in fact its brand names (p. 3). Kapferer (2008) continues, “For decades the value of a company was measured in terms of its buildings and land, and then its tangible assets (plant and equipment). It is only recently that we have realised that its real value lies outside, in the minds of potential customers. In July 1990, the man who bought the Adidas company summarised his reasons in one sentence: after Coca-Cola and Marlboro, Adidas was the best-known brand in the world” (p. 3). In other words, firms are trying to find a way to purchase a “*well-known brand*” that is not because of learning production processes; it is purchasing the positions in the minds of potential consumers (Kapferer, 2008). Firms are under pressure in order to gain competitive advantage. Brand helps firm in competitive environment to sustain competitive advantage by capturing value. This shows why building a brand is important.

Barney (1991) addressed the most pressing challenge the firms facing in competitive marketplace. In particular, He suggests firm resources must be valuable, rare, imitable, and non-substitutable (*VRIN Framework*) to sustained competitive advantage. According to Barney (1991), “a firm said to have a *competitive advantage* when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors. A firm is said to have a sustained competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors and when these other firms are unable to duplicate the benefits of this strategy” (p. 102). Firm resources includes all asset such as brand name (Barney, 1991; Wernerfelt, 1984). Brand is thus a strategic asset. The first,



brand is "*intangible asset*, which places in the balance sheet just like other intangible asset (*i.e.*, patent). The second, brand delivers benefit as a *conditional asset*. Brand gives firm ownership of its products and services (Aaker, 2007). Then, firm gains strategic advantage by building a strong brand in long-term. (Aaker, 1991; Keller, 1993; Kapferer, 2008).

## **1.2 The two-way relationship between brand and innovation**

There is a growth opportunity, located in global market if the opportunity is well-searched and well-evaluated (Kapferer, 2008). However, competitive environment does not let the firm to get this opportunity easily. In other words, competition challenges firm to be innovative. However, that does not mean being innovative allow firm to perform better (Kim *et al.*, 2015). That is because; there is a missing concept, brand (Shams, Alpert, & Brown, 2015). The most important way to overcome this challenge is to understand the relationship between brand and innovation. Indeed, being innovative or leading innovation is not enough. Innovation must be supported by brand, and brand must be supported by innovation. There is two-way relationship between brand and innovation. Strong brand helps firm launching innovation, innovation helps firm forming a stronger innovativeness brand image. Journal of Academy of Marketing Science announced a special issue on "Brand and Innovation Interdependency" in 2014 by stating these two field is interrelated. The importance of relationship between brand and innovation has been started to take scholars' attention (Shams *et al.*, 2015). Indeed, Aaker (2007) wrote an article, titled, "*Innovation: brand it or lose it*". Because, brand help a firm to own an innovation. In other words, brand gives ownership of an innovation, add credibility, and legitimacy, to enhance its visibility, and support communication (Aaker, 2007).

This important argument, which documents the dual relationship between brand and innovation is recognized in Brexendorf, Bayus and Keller's (2015) research on "*Understanding*

*the interplay between brand and innovation management: findings and future research directions.”*

One of the aims is to take the attention of researchers on dual relationship between brand and innovation. Because, a lot of research is done separately in the fields of brand and innovation management although these two fields are interrelated. Brexendorf *et al.* (2015) offer a conceptual framework of brand and innovation interdependency by proposing to help to identify the important ways brand and innovation are intertwined and to identify the key challenges at this interface. Their framework focuses on three key outcomes, which are seen to represent a virtuous circle. In other words achievement of one outcome or stage contributes to the success at the next outcome or stage. These three outcomes are the first; brands provide strategic focus and guidance to innovations. The second, brands support the introduction and adoption of innovations. The third, successful innovations improve brand perceptions, attitudes, and usage. This clearly shows that brand and innovation must be always a primary duty of the firm. (Aaker, 2007; Brexendorf *et al.*, 2015).

### **1.3 Perceived brand innovativeness and performance**

The relationship between perceived innovativeness and firm performance has increasingly attracted academics' attention. The first, scholars wonder that whether perceived innovativeness affect firm performance or not. The second, if there is a positive and significant relationship, how this relationship is existing? In particular, prior research empirically investigated the effect of “perceived firm innovativeness” on firm performance by providing a research framework (Kim *et al.*, 2015; Kunz, *et al.*, 2011). Although the dual relationship between brand and innovation is highlighted (Aaker, 2007) prior research did not take the “brand” into core part in their research (Kim *et al.*, 2015; Kunz, *et al.*, 2011). It is well documented that brand does not only give identity to a product or service, it enables firm to be in the mind of its customers (Kapferer, 2008).

Kunz *et al.* (2011, p. 816) asserted, “An innovative firm may thus be associated with images of creativity or dynamism, and whether the firm is seen as changing markets with its offers. Taken together, such associations make up what we call “perceived firm innovativeness” (or PFI). Kunz *et al.* (2011, p. 817) define perceived firm innovativeness as “the consumer’s perception and attribution of such an enduring firm capability. PFI is not an objective assessment. Instead, PFI is a subjective consumer perception and attribution based on consumer information, knowledge, and experience. That is, consumers observe certain firms characteristics and behaviors over time and use their observations to judge innovativeness”. Their aim was that PFI affects consumer behavior, ultimately, firm success. The second, they explore how PFI affects consumer loyalty. According to Kunz *et al.* (2011, p. 817) “it is not possible for a firm to be seen as innovative if its creative ideas fail in the marketplace most of the time. Conversely, ideas that succeed in the marketplace must also be seen as creative and novel; otherwise a firm will not be seen as innovative.” They developed and validated a perceived firm innovativeness scale. Their research indicates that perceived firm innovativeness affected consumer loyalty through two routes—a functional-cognitive and an affective-experiential route. Their result suggests firm must focus consumer perceptions of the firm as a whole, and not only new products and technology. The second, the firm needs to take into account a functional-cognitive perspective as well as consumer emotions and experiences. They build a 7-point Likert rating scales by testing the research hypotheses via structural equation modeling. They collected 1960 data from the university through questionnaire by e-mail.

A similar study is done of perceived firm innovativeness to firm performance (Kim *et al.*, 2015). In particular, Kim *et al.*, (2015) investigated the influence of perceived firm innovativeness and product innovativeness perceived on customer value by using instrumental and symbolic brand benefits as mediator. Their empirical findings indicated, Firm innovativeness significantly affects the symbolic brand benefits, product innovativeness, and partnership value. In addition, product

innovativeness affects the instrumental brand benefits. The instrumental brand benefits and firm innovativeness are important factors with respect to improving the symbolic brand benefits. Expectation value and relationship value affect customer satisfaction. They asserted that the high expectation of innovative products as an expectation value influences customer satisfaction. They argues that these results show that product innovativeness and symbolic brand benefits have key roles in mediating firm innovativeness to instrumental brand benefits and expectation value.

#### **1.4 The different types of innovations as driver of perceived brand innovativeness**

Although it is commonly agreed among academics that innovation is a key factor for firms to gain competitive advantage (Kim et al., 2015; Kunz et al. 2011), the definition of sustaining and disruptive innovation is the most pressing challenge facing the literature today (e.g., Danneels, 2004; Schmidt & Druehl, 2008; Tellis, 2006; Yu & Hang, 2010). Indeed, Garcia and Calantone (2002) asserted, “Academics generally believe that they have begun to understand the process of developing innovations and it doesn’t matter what they call them; new innovations smell just as sweet by any other name.” (p. 110). Is it really a matter to be aware of differences among the types of innovations? When a researcher, or manager start reading “The Innovator’s Dilemma: When New Technologies Cause Great Firms to Fail”, written by Christensen (1997), the answer will definitely be “yes, it is an important matter”.

The term of sustaining innovation originally associates with Christensen, the founder of disruptive innovation theory to classify them. Christensen’s primary work introduces disruptive innovation instead of focusing on sustaining innovation. The original term disruptive technology (Christensen, 1997), replaced as the term “disruptive innovation” by Christensen and Raynor (2003) to widen the application of theory by including services and business models (Yu & Hang, 2010). Danneels (2004) criticizes, “... managers and scholars need to be able to distinguish

disruptive from sustaining technology. What makes a technology disruptive? What are the exact criteria for identifying a disruptive technology? Christensen does not establish clear-cut criteria to determine whether a given technology is considered a “disruptive technology” (p. 247). Tellis (2006) summarized Christensen’s (1997) thesis in five important premises. He concluded that Christensen’s thesis could be formally tested once a precise definition of disruptive technology is adopted although it is not yet done. Christensen (2006) respond to the critiques and complements in his article. In particular, Christensen (2006, p. 45) asserted, “Although Dannels (2004) and other express concern that the model does not provide the ability to predict what will happen, their fear is unfounded. It is true that one cannot think a thought before it has been thought..., The theory must provide the ability to predict what will happen to the incumbents and entrants in the future if they take different actions relative to the innovation.” Christensen (2006, p. 48) also asserted “It would be helpful if Tellis would publish an article predicting which of our predictions will prove false and which will be borne out, based upon which firms he judges to be guided by leaders who possess the requisite vision and which are not. I extend this invitation to him in an honest and sincere way.”

The utmost attention is given to disruptive innovation, while sustaining innovation is suffering under careless literature. The most firms’ business model is based on sustaining innovation today. Reinhardt and Gurtner (2015) empirically evaluated “differences between early adopters of disruptive and sustaining innovation”. Their study suggests conducting research on sustaining innovation to better predict purchasing behavior. To do it, it is essential to define sustaining innovation at the first step. A brief definition, sustaining innovation is improving the performance of existing products by providing the mainstream customer’s needs (Christensen, 1997). The most common example for a sustaining innovation type is Pentium IV relative to Pentium III (Schmidt & Druehl, 2008, p. 348). Taking the example the case of launching a new

product to deepen the understanding, when a firm launches a new product to a specific market for sustaining innovation, it first encroaches on the high end of the existing market and then diffuses downward while it is converse at disruptive innovation, which is 5.25 inch disk drive relative to 8 inch drive (Schimdt & Druehl, 2008, p. 348). The lack of study that specifically address the role played by disruptive and sustaining innovation in forming perceived brand innovativeness of firms. Whereas there is no doubts that disruptive innovation increases perceived brand innovativeness of firms, sustaining innovation role is more questionable.

### **1.5 The ambiguous role of sustaining innovation in perceived brand innovativeness**

The competition among firms has been fiercer. Firms are under pressure to differentiate products and services through innovation. Although prior research demonstrated the importance of perceived firm innovativeness on firm performance (Kunz et al., 2015; Kim et al., 2015), only few firms were able to be successful (Christensen, 1997). In particular, previous research documented the importance of perceived firm innovativeness on consumer loyalty (Kunz et al., 2015), and consumer satisfaction (Kim et al., 2015). Although prior research have found a positive relationship between perceived firm innovativeness and consumer loyalty, and consumer satisfaction, the results obtained are not applicable all type of innovation. A specific type of innovation has not been taking account in prior research. They are inconclusive and contradictory. In other words, the analyses of “innovativeness” has not sufficiently specified. Some important differences among innovation types have not been recognized. Indeed, Dannels (2004) suggested, it is necessary for scholars to develop very careful definitions and classifications of types of technological change. Because, Christensen (1997) illustrated how disruptive technology disrupts the market where the incumbent firms are operated. Those firms were developing products and services under sustaining technology to provide mainstream consumer’s needs. Therefore, in contrast, current research is the

first attempt to study the effects of specific types of innovation (*i.e.*, perceived brand sustaining innovativeness) on consumer purchasing behavior. This study aims to advance prior research hypotheses by measuring perceived brand sustaining innovativeness to highlight the importance of selective target marketing. To escape from the competitive herd (Moon, 2010), managers will be able to be aware of significant contribution of different type of innovation at the stage of new product development by evaluating the market where the firm is operated.

Based on the objective of this study it is essential to define the term perceived brand sustaining innovativeness. However, to define perceived brand sustaining innovativeness, it is first essential to understand “innovativeness”. Garcia and Calantone (2002) asserted, “Innovativeness is most frequently used as a measure of the degree of newness of an innovation. Highly innovative products are seen as having a high degree of newness and low innovative products sit at the opposite extreme of the continuum” (p. 112). Therefore, sustaining innovativeness is a measurement of the degree of “newness of a new product version”, which replaces existing player. The measurement is possible for both firm and customer level. The research measures sustaining innovativeness at customer level. Perceived brand is customer’s perception on sustaining innovativeness. Therefore, perceived brand sustaining innovativeness is a measurement of consumer’s perception on the degree of “newness of a new product version”, which replaces existing player.

Sustain innovation might not lead, and increase of perceived brand innovativeness to the extent that sustaining innovation is expected and considered as obvious. The dynamics by which firms have to innovate to keep the pace of others but without get an advantage in terms of brand image. Firms eventually see their capabilities to differentiate erode. Christensen (1997) showed that at a certain point firms start offering innovations that are above mainstream market needs. This is the situation where a disruptive innovation can emerge and eventually take the lead. This is also a situation in which sustaining innovation is perceived as not so relevant by current customer

because it is above their needs. Therefore, in this situation sustaining innovation may not lead to increased perceived brand innovativeness. That is another reason why focus on perceived brand sustaining innovation is important.

### **1.6 The need to investigate the paradox of sustaining innovation**

There is the need to investigate the paradox of the effect of sustaining innovation on perceived brand innovativeness of the firm. It would be important to understand the antecedents of perceived brand sustaining innovativeness (*i.e.*, what are the variables that allows sustaining innovation to increase perceived brand innovativeness of the firm) and to understand the mediators that link perceived brand sustaining innovativeness to firm performance (*i.e.*, what are the brand dimensions that are affected by perceived brand sustaining innovativeness).



## References

Aaker, D. A. (1991). *Managing brand equity: capitalizing on the value of a brand name*. New York, NY: The Free Press.

Aaker, D. A. (1996). Measuring brand equity across products and markets. *California Management Review*, 38(3), 102-120.

Aaker, D. A. (2007). Innovation: Brand it or lose it. *California Management Review*, 50(1), 8-24.

American Marketing Association. Retrieved October 04, 2015 from <https://www.ama.org/resources/Pages/Dictionary.aspx?dLetter=B>

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.

Brexendorf, T. O., Bayus, B., & Keller, K. L. (2015). Understanding the interplay between brand and innovation management: findings and future research directions. *Journal of the Academy of Marketing Science*, 43(5), 548-557.

Christensen, C. M. (1997). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Boston: Harvard Business Press.

Christensen, C. M. (2006). The ongoing process of building a theory of disruption. *Journal of Product Innovation Management*, 23(1), 39-55.

Christensen, C. M., & Raynor, M. E. (2003). *The Innovator's Solution: Creating and Sustaining Successful Growth*. Boston, MA: Harvard Business School Press.

Danneels, E. (2004), Disruptive Technology Reconsidered: A Critique and Research Agenda. *Journal of Product Innovation Management*, 21(4), 246–258.

Garcia, R., & Calantone, R. (2002). A critical look at technological innovation typology and innovativeness terminology: a literature review. *Journal of Product Innovation Management*, 19(2), 110-132.

Kapferer, J. N. (2008). *The new strategic brand management: creating and sustaining brand equity long term* (4th Ed.). UK: Kogan Page.

Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing*, 57(1), 1-22.

Kim, J., Kim, K. H., Garrett, T. C., & Jung, H. (2015). The contributions of firm innovativeness to customer value in purchasing behavior. *Journal of Product Innovation Management*, 32(2), 201-213.

Kunz, W., Bernd, S., & Meyer, A. (2011). How does perceived firm innovativeness affect the consumer? *Journal of Business Research*, 64(8). 816-822.

Moon, Y. (2010). *Different: Escaping the Competitive Herd*. New York: Crown Business.

Park, C. W., Jaworski, B. J., & MacInnis, D. J. (1986). Strategic brand concept-image management. *Journal of Marketing*, 50(4), 135-145.

Reinhardt, R., & Gurtner, S. (2015). Differences between early adopters of disruptive and sustaining innovations. *Journal of Business Research*, 68(1), 137-145.

Schmidt, G. M., & Druehl, C. T. (2008). When is a disruptive innovation disruptive? *Journal of Product Innovation Management*, 25(4), 347-369.

Shams, R., Alpert, F., & Brown, M. (2015). Consumer perceived brand innovativeness: conceptualization and operationalization. *European Journal of Marketing*, 49(9/10), 1589-1615.

Tellis, G. J. (2006). Disruptive Technology or Visionary Leadership? *Journal of Product Innovation Management*, 23(1), 34-38.

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171-180.

Yu, D., & Hang, C. C. (2010). A reflective review of disruptive innovation theory. *International Journal of Management Reviews*, 12(4), 435-452.

## Chapter 2 - Theoretical Model

### 2.1 The development of product sustaining innovation

Prior research has documented the positive relationship between perceived firm innovativeness and performance (Kim et al., 2015, Kunz et al., 2011). For example, Kim et al., (2015) investigated the influence of perceived firm innovativeness and product innovativeness on customer value and customer satisfaction by using instrumental and symbolic brand benefits as mediator. Their empirical findings indicated that firm innovativeness significantly affects the symbolic brand benefits, product innovativeness, and partnership value. Product innovativeness affects the instrumental brand benefits. The instrumental brand benefits and firm innovativeness are important factors to improve the symbolic brand benefits. In addition, expectation value and relationship value affect customer satisfaction.

However, these findings are not applicable to all types of innovation. In other words, some important differences among innovation types have not been recognized. As noted by Danneels (2004) it is necessary for scholars to develop very careful definition and classification of types of technological innovation in order to fully capture their contribution to firm's performance. Accordingly, this study focuses on the notable distinction between disruptive innovations and sustaining innovations to analyse the relationship between innovation, brand and performance (Christensen, 1997). Disruptive innovations are usually defined as innovations that "... create an entirely new market through the introduction of a new kind of product or service, one that's actually worse initially, as judged by the performance metrics that mainstream customers value" (Christensen & Overdorf, 2000, p. 72). Sustaining innovations is usually defined as "... innovations that make a product or service perform better in ways that customers in the mainstream market already value" (Christensen & Overdorf, 2000, p. 72).

Whereas disruptive innovations clearly contribute to perceived firm's innovativeness, recent studies have shown that firms promoting continuous sustaining innovation, in the attempt to achieve brand differentiation may incur in the paradox of end up by being perceived as increasingly similar by customers, hampering in this way their performance (Kim & Mauborgne, 2005; Moon, 2010). For example, Kim and Mauborgne (2005) argue that only way to beat the competition is to stop trying to beat the competition. According to Kim and Mauborgne (2005), there are two sorts of oceans: red oceans and blue oceans. Red oceans represent all the industries in existence today. This is the known market space. Blue oceans represents the industries not in existence today. This is the unknown market space. Kim and Mauborgne (2005) conclude that firms should focus on creating a new market space instead of keep innovating in the same market. Similarly, Moon (2010) argues that instead of following up the same opportunities of its competitors, a firm should try to find a way to offer a product that is meaningfully different. Accordingly, branding should be based on "differences that make a difference".

To investigate how sustaining innovations affect perceived brand innovativeness and how perceived brand innovativeness affect customers' purchasing behaviour this study proposes a specific operationalization of sustaining innovativeness, contributing to clearly distinguish disruptive from sustaining innovation (e.g., Schmidt & Druehl, 2008; Tellis, 2006; Yu & Hang, 2010), define a theoretical model of the relationships among relevant variables and uses this model it to conduct an empirical analysis.

Although the objective of this study is to investigate the impact of sustaining innovations on perceived firm's brand innovativeness, and its impact on brand equity and firm performance, it is essential to build theoretical model by addressing disruptive innovation as well because these two notable types of innovations, sustaining innovations and disruptive innovations has been popularized by Clayton M. Christensen for presenting the original idea of disruptive innovations.

Sustaining innovations are usually defined as “... innovations that make a product or service perform better in ways that customers in the mainstream market already value” (Christensen & Overdorf, 2000, p. 72). Disruptive innovations are usually defined as innovations that “... create an entirely new market through the introduction of a new kind of product or service, one that’s actually worse initially, as judged by the performance metrics that mainstream customers value” (Christensen & Overdorf, 2000, p. 72).

Christensen (1997) argues that continuously increasing the performance of an existing product for existing customers results leading firms to fail. According to him, leading firms has excellent-management. Because, they are able to improve the existing products continuously, however this is the greatest error that the incumbents firms doing because this results them to fail. He highlights four main major issues in respect to the management of leading firms. The first, leading firms are keep listening to their customers. According to Christensen (1997), customers in mainstream market continuously demand the product with higher performance from incumbent firms. This brings the second issue that incumbent firms keep investing aggressively in technologies in their research and development department in order to provide what their customers want. The third, incumbent firms are looking for higher margins and the fourth, those leading firms are targeting larger markets rather than smaller ones.

According to Christensen, one of the reason is why incumbent firms usually invest sustaining technologies is that because they are not as much as risky as disruptive technologies. The second, as stated above, the existing customers always demand higher product performance. However, Christensen (1997) pointed out that leading firms are not able to be aware of disruptive technological change till the disruptive technologies become a threat to them. When the leading firms start losing their customers, they become aware the real threat of disruptive innovations, however, it becomes too late for them to respond this change.

Disruptive innovations are typically cheaper, smaller, simpler, and frequently more convenient to use (Christensen, 1997). The main target of disruptive innovators are non-consumer market. At the beginning, leading firms are not aware of the threat of disruptive innovations because, they are as much as busy to invest in research and development for improving the performance of existing products for their existing customers. In addition, at the beginning, disruptive innovations are not as much as attractive for mainstream market, because product performance are very poor comparing with sustaining technologies. However, with the time, disruptive innovators improve the product performance as much as quite enough for mainstream customers' desires. When the mainstream customers shift to the disruptive innovations from products based on sustaining innovations, the dramatic story is starting for incumbent firms.

Disruptive innovations are well-discussed in literature. For example, *Journal of Product Innovation Management*, announced a special issue for disruptive innovation in 2006 (e.g., Christensen, 2006; Danneels, 2006; Markides, 2006; Tellis; 2006). For example, Markides (2006) asserted that it is a continuous error to explain all kinds of disruptive innovations based on Christensen's (1997) disruptive technologies theory. The core argument of Markides (2006) is different types of innovations should be considered differently by scholars since those innovations create different types of markets and competitive impact. From this standpoint, he aimed to contribute the literature by focusing on two specific types of disruptive innovations namely, business-model innovations and radical (new to the world) product innovations.

Markides (2006, p. 19) argue that there is a significant distinction between a disruptive *technological* innovation, disruptive *business-model* innovation, and disruptive *product* innovation. Markides (2006) defines "Business-model innovation is the discovery of a fundamentally different business model in an existing business" (p. 20). According to Markides (2006), business-model innovators are not the innovators of new products or services, they are the

innovators of re-shaping existing products or services offerings through a different approach or a way (e.g., Amazon did not discover bookselling, it re-shaped bookselling service).

As stated above, business-model innovations are different than technological innovations according to Markides (2006). In spite of a suggestion to respond to disruptive innovations through establishing separate organization by Christensen (1997), Markides (2006) argues that incumbents should focus on a different way to respond to disruptive innovations not by establishing separate unit. Specifically, incumbents do not have to adopt to disruptive innovations. He suggests that, if there is a disruptive innovators in the market, instead of adopting disruptive innovations, incumbents firms should aggressively invest in their existing business model to make the traditional way of competing even more competitive.

Next, Markides, (2006, p. 22) highlight that a second type of innovation that tends to be disruptive to the established competitors is radical innovation, which creates new-to-the-world products (e.g., the car, television, personal computers, mobile phones). According to him, radical innovations are disruptive to consumers because they introduce products and value propositions that change the consumers' behaviors and their habits in a major way and producers because they change the business way what the existing businesses have already invested in. Once again, as argued by Markides (2006), business-model innovations are different from technological innovations, radical innovations are also different from technological innovations. As highlighted by Markides (2006), since the radical innovations are disruptive to the established firms. Markides (2006) suggests that established firms should not waste the resources and managerial talent at growing new radical businesses. Conversely, the objectives of established firms should focus on creating, sustaining, and nurturing a network.

As a result, Markides (2006) proposes that technological, business-model, and new-to-the-world product innovations should be investigated as distinct phenomena because business-model



innovations, and radical innovations are different than technological innovations. Business-model innovations, as very clear description is highlighted by Markides (2006) that, this type of innovation (i.e., business-model innovation for instance, Amazon), seems similar to the disruptive innovations however they are not similar because Christensen's (1997) original thesis is on disruptive innovation that creates entirely new market with a simpler, cheaper, lower performance products by starting from the bottom of the market. Radical innovations are also to seem too similar to the disruptive innovations. As pointed out by Markides (2006), those innovations are different from disruptive innovations because, radical innovations are rarely developed, and new-to-the-world innovations. In other words, they are the innovations that the world have never met before.

Many firms keep developing technological products developed based on sustaining innovations (e.g., smartphone, television, and computer). As Markides (2006) argued that, at the first introduction, of course, those products (i.e., smartphone, television, and computers) were radical innovations which change the way the world is spinning around consumers and firms. Conversely, the world is now spinning around those products. Firms, in today's global marketplace, are aggressively presenting their most advance technologies in smartphones, televisions, and computers. Although, as known, there are similarities and differences among those products, firms should try to find a way to make a difference by investing what they are good doing at (Markides, 2006). Based on the objective of this study, following section is continuous with the different dimensions that incumbents firms developing products based on sustaining technologies could benefit from the those dimensions fully.

The Innovator's Dilemma is intended to help a wide range of managers, consultants, and academics in manufacturing and service businesses—high tech or low—in slowly evolving or rapidly changing environments. Given that aim, technology, as used in this book, means the processes by which an organization transforms labor, capital, materials, and information into

products and services of greater value. Christensen's (1997) thesis was "Why do well-managed companies fail?" He argues that the well-managed companies are failed because they are excellent at developing the sustaining technologies that improve the performance of their products for their existing customers. According to Christensen (1997), their management practices are biased toward:

1. Listening to customers.
2. Investing aggressively in technologies that give those customers what they say they want
3. Seeking higher margins.
4. Targeting larger markets rather than smaller ones.

According to Christensen (1997, p. 49) "In response to the needs of current customers, the marketing managers threw impetus behind alternative sustaining projects, such as incorporating better heads or developing new recording codes. These gave customers what they wanted and could be targeted at large markets to generate the necessary sales and profits for maintaining growth. Although often involving greater development expense, such sustaining investments appeared far less risky than investments in the disruptive technology: The customers existed, and their needs were known"

Christensen (1997) argued, "Disruptive technologies change the value proposition in a market. When they first appear, they almost always offer lower performance in terms of the attributes that mainstream customers care about. In computer disk drives, for example, disruptive technologies have always had less capacity than the old technologies. But disruptive technologies have other attributes that a few fringe (generally new) customers value. They are typically cheaper, smaller, simpler, and frequently more convenient to use. Therefore, they open new markets. Further, because with experience and sufficient investment, the developers of disruptive technologies will always improve their products' performance, they eventually are able to take over

the older markets. This is because they are able to deliver sufficient performance on the old attributes, and they add some new ones” (p.175).

Christensen (2006) explains building descriptive theory in order to provide how he developed his disruptive innovation theory. Christensen (2006) stated, there are three stages to build a descriptive theory; observation, categorization, and association. The first step researchers observe a phenomena. They describe and measure what they see at the same time researchers develop constructs. Christensen’s research was on the disk drive industry. He stated that his data were a complete census, not a statistical sample. In this stage, he developed two intersecting trajectories of performance improvement. At the classification stage, researchers addresses theory-building pyramid then classify the phenomena into categories. Categorization simplifies and organizes the world in ways that highlight possibly consequential relationship between the phenomena and the outcomes of interest. The third stage is defining relationships, researchers explore the association between the category-defining attributes of the phenomena and the outcomes observed. Researcher’s addresses such as regression analysis often are useful in defining these correlations in the stage of descriptive theory building. The output of studies at this step are as models.

According to Christensen’s (2006) findings the industry’s leading firms almost always triumphed in battles of sustaining innovation and that entrants firms typically beat the incumbent leaders when disruptive innovations emerged was the conclusion of this stage in the process of building the theory of disruption; at this point in the research, this was a statement of correlation (p. 41). Incumbent firms are focusing on improving the performance of products which is defined as sustaining innovation. While incumbents are investing product performance at the sustaining innovation, which possibly increase the cost of the products. Therefore, product sustaining innovation is more expensive than the product disruptive innovation. As seen from the Figure 1,

disruptive innovation represents the products which are the performance are lower than the sustaining one. In other words, disruptive products are simpler, cheaper, and inexpensive compared to sustaining innovation.

## **2.2 The different dimensions of product sustaining innovation**

Value creation widely discussed in the literature and is often a part of organizations' mission statements and objectives (Sweeney & Soutor, 2001). Perceived value is a strategic tool for firms (Sweeney & Soutor, 2001). Sweeney and Soutor (2001) investigated perceived value by offering social value, emotional value and functional value. They developed and validated a perceived value scale.

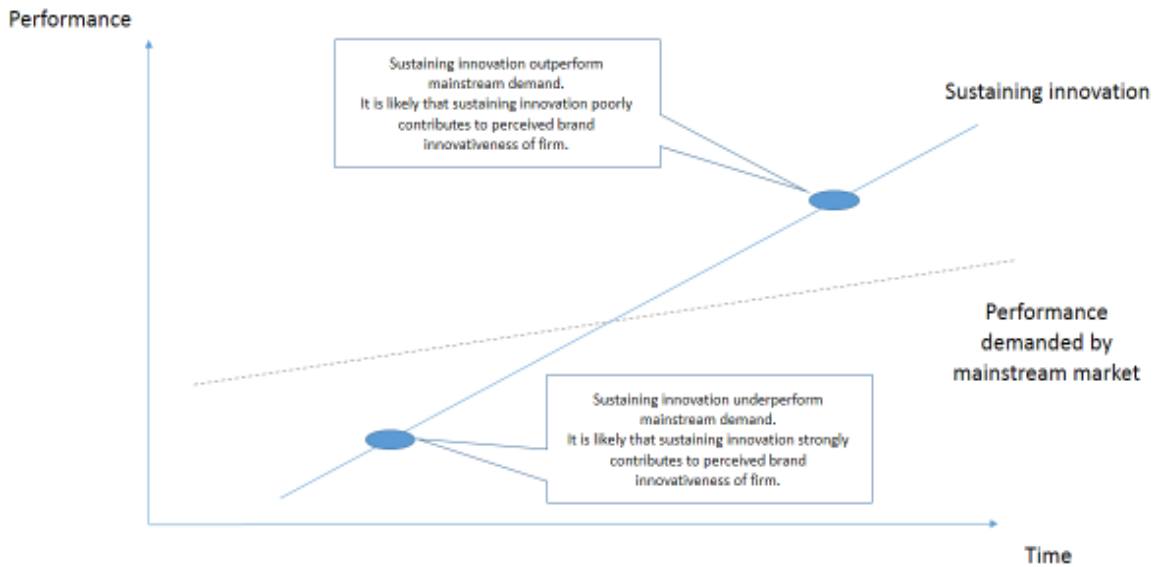
According to Sweeney and Soutar (2001) social value is “the utility derived from the product’s ability to enhance social self-concept”. Emotional value is “the utility derived from the feelings or affective states that a product generates”, Functional value is “the utility derived from the perceived quality and expected performance of the product” (p. 211). They developed this scale based on factor analysis. They extend our knowledge of perceive consumer value by developing and testing a perceived value scale. They found that the scale was found to help significantly in explaining attitudes and behavior. Reliability of the individual scales ranging from 0.82 to 0.91 according to study by Sweeney and Soutar (2001).

Similar study conducted by Gallarza and Saura (2006). They investigated, the first, the dimensionality of consumer value in a travel-related context (students' travel behavior), second, to they explored the relations between consumer perceptual constructs such as perceived value, satisfaction and loyalty. They undertook by providing an LISREL model. The results confirm the existence of a quality-value-satisfaction-loyalty chain and illustrate the complexity of value dimensions that have been shown to be highly sensitive to the experience.

### **2.3 The effect of sustaining innovation on perceived firm innovativeness**

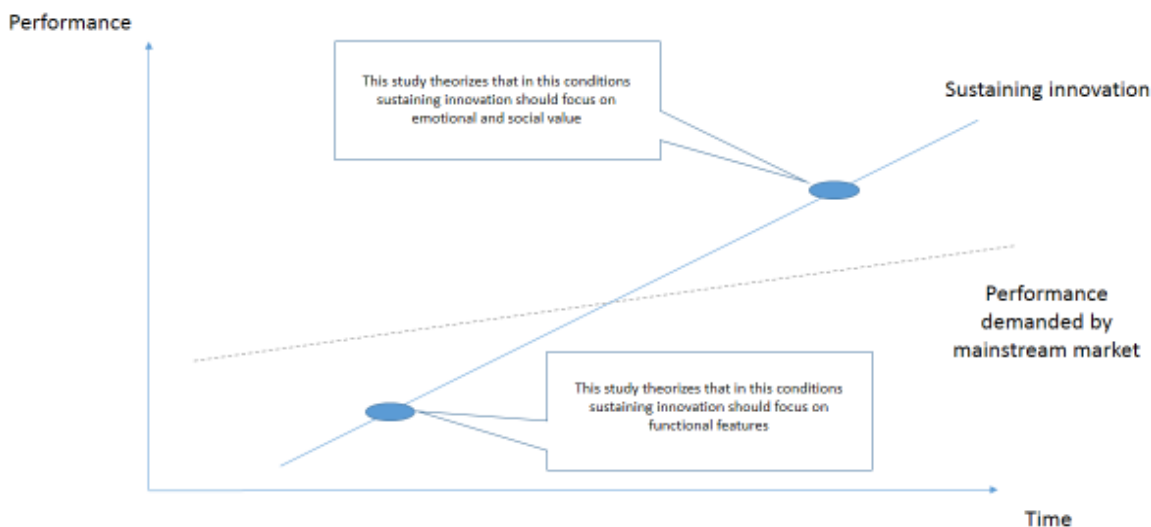
In this study, these three constructs (i.e., social value, emotional value, functional value) represent sustaining innovations (Sweeney & Soutar, 2001). This study argues that if a firm raises social value, emotional value and functional value of the products, this positively increases the perceived brand innovativeness by the consumer. In other words, Sweeney and Soutar (2001) measure, for example, social value as (1) would help me to feel acceptable, (2) would improve the way I am perceived, (3) would make a good impression on other people, (4) would give its owner social approval. Based on these items, it might be accepted that if a firm increases the product feature as social value, the consumer might perceive this product as more innovative. Similarly, the same perception might be on emotional value and functional value. Based on the objective of this study, smartphone is used to measure independent and dependent variables. Therefore, based on the software application or marketing strategy, if a smartphone brand increases the social value of their own brand, this might affect consumer perception on innovativeness of a product. In other words, raising social value of the products means raising brand innovativeness by consumer perception. Figure 1 demonstrates the overall model based on performance and time. If a sustaining innovation underperforms mainstream demand it is likely that sustaining innovation strongly contributes to perceived brand innovativeness of firm. Conversely, if a sustaining innovation outperforms mainstream demand it is likely that sustaining innovation poorly contributes to perceived brand innovativeness of firm (Christensen, 1997).

In this standpoint, it is easy to measure social value, emotional value, and functional value. If sustaining innovation underperforms mainstream demand it is likely that sustaining innovation strongly contributes to perceived brand innovativeness of firm. Conversely, if sustaining innovation outperforms mainstream demand it is likely that sustaining innovation poorly contributes to perceived brand innovativeness of firm.



**Figure 1** The figure is adopted based on the study by Christensen (1997)

Figure 2 shows the overall argument of the study. If sustaining innovation outperform mainstream demand, then firm should focus on emotional and social value of the products. Conversely, firm should focus on functional features of the product till firm catch the performance demanded by mainstream market. If functional value of the product is above performance demanded by mainstream market then consumer no more perceive brand as more innovative. For example, if a 1 terabyte hardisk of a smartphone is enough for a consumer, if firm produce 2 terabyte, consumer does not perceive this brand as much as innovative anymore.



**Figure 2** Argument of the study. The figure is adopted based on the study by Christensen (1997)

## **2.4 The relationship between perceived firm sustaining innovativeness and firm brand equity**

Many firms presents different innovative brands in the global marketplace (Aaker, 1996). This study assesses how the firm should manage their branding strategy through the sustaining innovation. In order to explore this research question, brand awareness, brand loyalty, and brand satisfaction is used as brand equity model in this study (Aaker, 1996).

To define sustaining innovativeness, first, innovativeness definition is needed. According to Garcia and Calantone (2002) “Innovativeness is most frequently used as a measure of the degree of “newness” of an innovation. Highly innovative products are seen as having a high degree of newness and “low innovative” products sit at the opposite extreme of the continuum” (p. 112). This study therefore defines sustaining innovativeness as a measurement of the degree of “newness of a new product version”, which replaces existing products. In particular, sustaining innovativeness is

measured at customer level. Perceived firm innovativeness is thus a measurement of consumer's perception on the degree of "newness of a new product" version, which replaces existing ones.

According to Aaker (1996, p. 114), brand awareness is an important and sometimes undervalued component of brand equity. Awareness can affect perceptions and attitudes. In some contexts, it can be a driver of brand choice and even loyalty. Brand awareness reflects the salience of the brand in the customers mind. There are levels of awareness, of course, which include: recognition, recall, top-of-mind, and brand dominance, brand knowledge, brand opinion. For new or niche brands recognition can be important. Measurement such as I have an opinion about the brand.

Loyalty is used as a brand equity dimension in this study. According to Aaker (1996, p. 105-106), "loyalty is a core dimension of brand equity". Loyalty is connected to the brand. Therefore, brand equity blunders that go to the heart of the customer relationship should affect loyalty. A loyal customer base represents a barrier to entry, a basis for a price premium, time to respond to competitor innovations, and a bulwark against deleterious price competition.

According to Aaker (1996), "A direct measure of customer satisfaction can be applied to existing customers, who can perhaps be defined as those who have used the product or service within a certain time frame such as the last year. The focus can be the last use experience or simply the use experience from the customers view." (p. 108).

All may agree that building a unique brand strategy is the primary objective of an existing firm in order to be the owner of an innovation, and to increase firm performance (e.g., Aaker, 2006; Brexendorf, Bayus & Keller, 2015). It is well-known that brand awareness, brand loyalty, and brand satisfaction as an important component of brand equity, plays a significant role in consumers' product choices (e.g., Keller, 1993; Aaker, 1996; Kapferer, 2008). Therefore, raising brand



awareness, brand loyalty, and brand satisfaction means that there is the probability to increase firm's performance.

## **2.5 The effect of increased brand equity on market performance**

It is accepted that market performance can be measured based on brand awareness, brand loyalty, brand satisfaction that has a positive impact on repurchase intention (Aaker, 1996). Therefore, in this study, brand awareness, brand loyalty, and brand satisfaction is used as dependent variables. In other words, raising perceived brand innovativeness of firm means raising market performance of a brand.

## **2.6 A comprehensive model of the effect of firm perceived brand sustaining innovativeness on market performance**

Research hypotheses and research model is presented in Figure 3.

H1: Social value positively affects perceived brand innovativeness of firm.

H2: Emotional value positively affects perceived brand innovativeness of firm.

H3: Functional value positively affects perceived brand innovativeness of firm.

H4: Perceived brand innovativeness of firm positively affects brand awareness

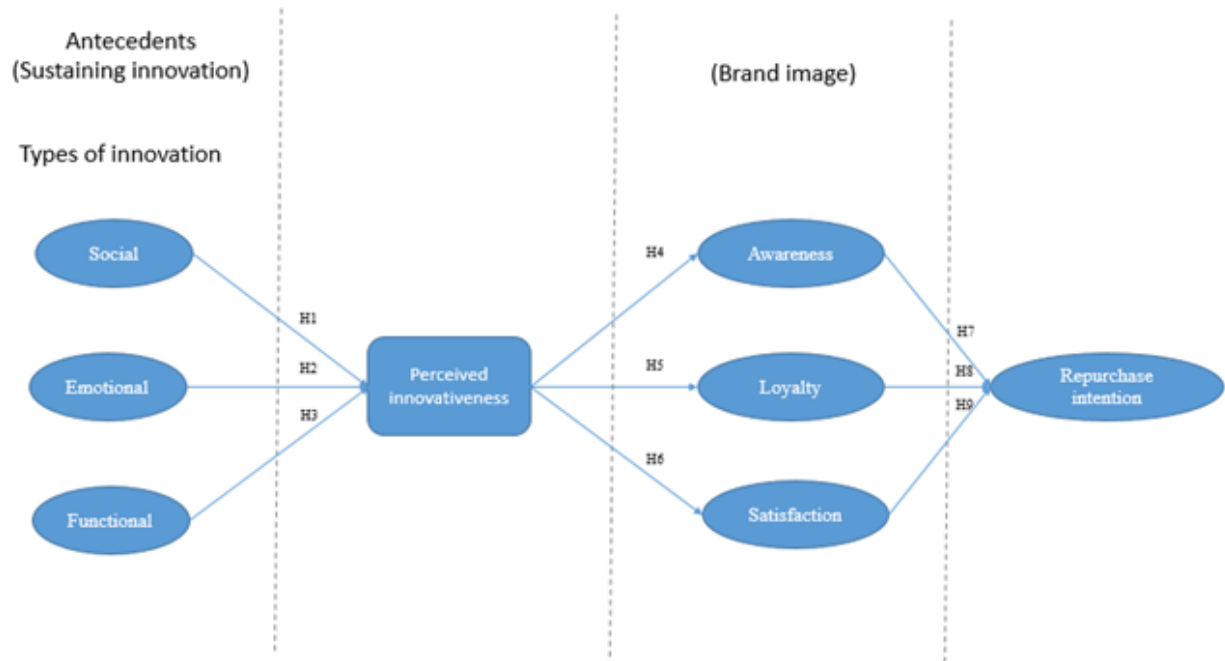
H5: Perceived brand innovativeness of firm positively affects brand loyalty

H6: Perceived brand innovativeness of firm positively affects brand satisfaction

H7: Brand awareness positively affects brand repurchase intention

H8: Brand loyalty positively affects brand repurchase intention

H9: Brand satisfaction positively affects brand repurchase intention.



**Figure 3** Research Model

## References

- Aaker, D. A. (1996). Measuring brand equity across products and markets. *California Management Review*, 38(3), 102-120.
- Aaker, D. A. (2007). Innovation: Brand it or lose it. *California Management Review*, 50(1), 8-24.
- Brexendorf, T. O., Bayus, B., & Keller, K. L. (2015). Understanding the interplay between brand and innovation management: findings and future research directions. *Journal of the Academy of Marketing Science*, 43(5), 548-557.
- Christensen, C. M. (1997). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Boston: Harvard Business Press.
- Christensen, C. M., & Overdorf, M. (2000). Meeting the challenge of disruptive change. *Harvard Business Review*.
- Danneels, E. (2004). Disruptive Technology Reconsidered: A Critique and Research Agenda. *Journal of Product Innovation Management*, 21(4), 246–258.
- Garcia, R., & Calantone, R. (2002). A critical look at technological innovation typology and innovativeness terminology: a literature review. *Journal of Product Innovation Management*, 19(2), 110-132.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th Ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Kapferer, J. N. (2008). *The new strategic brand management: creating and sustaining brand equity long term* (4th Ed.). UK: Kogan Page.

Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing*, 57(1), 1-22.

Kim, J., Kim, K. H., Garrett, T. C., & Jung, H. (2015). The contributions of firm innovativeness to customer value in purchasing behavior. *Journal of Product Innovation Management*, 32(2), 201-213.

Kunz, W., Bernd, S., & Meyer, A. (2011). How does perceived firm innovativeness affect the consumer? *Journal of Business Research*, 64(8), 816-822.

Markides, C. (2006), Disruptive Innovation: In Need of Better Theory. *Journal of Product Innovation Management*, 23(1) 19–25.

Reinhardt, R., & Gurtner, S. (2015). Differences between early adopters of disruptive and sustaining innovations. *Journal of Business Research*, 68(1), 137-145.

Schmidt, G. M., & Druehl, C. T. (2008). When is a disruptive innovation disruptive? *Journal of Product Innovation Management*, 25(4), 347-369.

Tellis, G. J. (2006). Disruptive Technology or Visionary Leadership? *Journal of Product Innovation Management*, 23(1), 34-38.

Yu, D., & Hang, C. C. (2010). A reflective review of disruptive innovation theory. *International Journal of Management Reviews*, 12(4), 435-452.

## Chapter 3 - Methodology

### 3.1 Introduction

Chapter 3 presents the methodology of the research. Easterby-Smith, Thorpe, and Jackson (2012) stated, “Most of the central debates among philosophers concern matters of ontology and epistemology. Ontology is about the nature of reality and existence; epistemology is about the best way of enquiring into the nature of the world. Scientists and social scientists generally draw from different ontological and epistemological assumptions when developing their methodologies for conducting research” (p. 17). According to Easterby-Smith et al., (2012, p. 18), ontology is philosophical assumptions about the nature of reality, epistemology is a general set of assumptions about ways of inquiring into the nature of the world, methodology is a combination of techniques used to inquire into a specific situation, and methods and techniques is individual techniques for data collection, analysis, etc.

Johnson, and Duberley (2000) stated, “... epistemology is the study of the criteria by which we can know what does and does not constitute warranted, or scientific, knowledge. Therefore it would seem that epistemology assumes some vantage point, one step removed from the actual practice of science itself. At first sight this promises to provide some foundation for scientific knowledge: a methodological and theoretical beginning located in normative standards that enable the evaluation of knowledge by specifying what is permissible and hence the discrimination of warranted belief from the unwarranted, the rational from the irrational, the scientific from pseudoscience” (p. 2-3).

Therefore, research is a systematic design process that involves finding suitable research question, developing hypotheses, designing questionnaires, collecting data, testing hypotheses, presenting results, and interpretation of theoretical and practical implications. Designing a research

through quantitative and qualitative have both advantages and disadvantages. In this study, research hypotheses are developed and tested using the following methods. Quantitative research method is used in this study. As known, quantitative methodology is a positivist approach to social phenomena. In this approach, researcher inquired about causality, and researcher develop hypotheses, and making operationalization concepts need to be defined in ways that enable facts to be measured quantitatively (Easterby-Smith et al., 2012, p. 23). Bryman (1984) stated, "Quantitative methodology is routinely depicted as an approach to the conduct of social research which applies a natural science, and in particular a positivist, approach to social phenomena" (p. 77). The survey is commonly used in quantitative research methods. Items can be operationalized through questionnaire (Bryman, 1984). The research model and hypotheses are constructed according to research question and the review of the literature to answer the research questions and examine all hypotheses through partial least square structural equation modeling. The research question is how firms should manage their branding strategy through sustaining innovation. In order to answer this research question nine hypotheses developed based on the relevant literature with eight constructs. Questionnaire design and data collection process are presented in detail.

### **3.2 Research settings**

This empirical study selects Italian students as the relevant sample in which to test the research hypotheses because, students are potential consumers commonly using smartphone. A questionnaire designed by the researcher was originally developed in English, consisted of four parts, in addition to an introduction describing the research objective. The questionnaire was based on smartphone that students had previously used. Asking students smartphone that they use enables this study to consider respondents' thoughts about own smartphone and avoid the bias associated with brand awareness. Therefore, after introducing the research objective, the question, whether

students use smartphone or not, and the second question was which smartphone brand they use is asked to the students in order to get the answer based on the research objective. Data is collected between 02.03.2016 to 18.06.2016. Students indicated a total of eleven smartphone brand (i.e., Apple, Samsung, Huawei, Nokia, LG, HTC, Asus, Microsoft, Mediacom, Xiaomi, Google Nexus). Most of students (52.8%) use Apple in the sample. During the period of data collection, it is important to introduce the most recent technology in smartphone industry.

During the period of data collection, the most advanced model of Apple was iPhone 6s and iPhone 6s Plus. One of the differences between these two phones was the screen size. iPhone 6s has 4.7-inch display whereas iPhone 6sPlus has 5.5-inch display. Both smartphones provide both 32GB and 128GB capacity. Display is Retina HD display with 3D Touch. Chip is A9 chip with 64-bit architecture Embedded M9 motion coprocessor (<http://www.apple.com/iphone/compare/>).

Samsung introduced the model of Galaxy S6 and Galaxy Note 5 as their most advanced smartphone technology. Galaxy S6 has 5.0-inch display with 32GB. Galaxy Note 5 has 5.11-inch display with 32GB. One of the differences between these smartphones is Galaxy Note series provides a pen to use this smartphone (<http://www.samsung.com/us/mobile/phones/>)

### **3.3 The on-line survey and classroom**

To collect data in Italy, the English version of the questionnaire was translated into Italian. After translation, an online survey questionnaire was designed on Google, [www.google.com](http://www.google.com), and the prepared link was sent by e-mail via self-administrated survey. The second, online questionnaires are printed and delivered to the students in the classroom in order to collect data. A total of three hundred four students filled the questionnaires. After data were collected, the questionnaire's Italian was translated back into English. Data screening procedures is done. Data is collected



between 02.03.2016 to 18.06.2016. Seventy five data were discarded from the sample. Because data screening procedures suggested to remove them. Two hundred twenty nine data were valid.

### **3.4 The operationalization of model's variables.**

The research operationalized eight constructs namely; social value, emotional value, functional value, perceived brand innovativeness, brand awareness, brand loyalty, brand satisfaction and repurchase intention. Each of the variables is introduced in subparagraphs. At the stage of scale development, all items were discussed in person with scholars who have research experience in management. As recommended, construct validity was pre-tested (Cooper & Schindler, 2011; Hair, Black, Babin, & Anderson, 2010). Thereafter, a preliminary pre-test was administered to a group of academic experts.

There were total of eight variables that represent independent and dependent variables. Social value, emotional value, functional value, perceived brand innovativeness, brand awareness, brand satisfaction, brand loyalty and repurchase intention. Social value, emotional value, functional value scale was developed based on the study by Sweeney and Soutar (2001). Perceived brand innovativeness scale is newly developed. Brand awareness scale, brand satisfaction scale and brand loyalty scale and repurchase intention are developed based on the study by Aaker (1996). Respondents were to rate using a 7-point Likert scale, with “strongly disagree – 1” and “strongly agree – 7.” (i.e., 1=strongly disagree, 2=disagree, 3=somewhat disagree, 4=neither agree nor disagree, 5=somewhat agree, 6=agree, 7=strongly agree). Table 1 presents the items that asked at the questionnaires. Table 1 shows the how the constructs are measured.

Table 1 Measurement Items with Constructs

Measurement	Sources
<p data-bbox="199 331 367 363">Social Value</p> <ol style="list-style-type: none"> <li data-bbox="199 405 1117 436">1.The new features of my smartphone brand helps me to feel acceptable</li> <li data-bbox="199 478 1065 583">2.The new features of my smartphone brand improves the way I am perceived</li> <li data-bbox="199 625 1133 730">3.The new features of my smartphone brand makes a good impression on other people</li> <li data-bbox="199 772 1045 877">4.The new features of my smartphone brand gives its owner social approval</li> </ol>	<p data-bbox="1214 331 1382 436">(Sweeney &amp; Soutar, 2001)</p>
<p data-bbox="199 919 418 951">Emotional Value</p> <ol style="list-style-type: none"> <li data-bbox="199 993 980 1024">1.The new features of my smartphone brand makes me enjoy</li> <li data-bbox="199 1066 1081 1098">2.The new features of my smartphone brand makes me want to use it</li> <li data-bbox="199 1140 1136 1245">3.The new features of my smartphone brand makes me feel relaxed about using it</li> <li data-bbox="199 1287 1029 1318">4.The new features of my smartphone brand makes me feel good</li> </ol>	<p data-bbox="1214 919 1382 1024">(Sweeney &amp; Soutar, 2001)</p>
<p data-bbox="199 1360 423 1392">Functional Value</p> <ol style="list-style-type: none"> <li data-bbox="199 1434 1114 1465">1.The new features of my smartphone brand provides consistent quality</li> <li data-bbox="199 1507 1130 1539">2.The new features of my smartphone brand is well-designed, well-made</li> <li data-bbox="199 1581 1146 1686">3.The new features of my smartphone brand has an acceptable standard of quality</li> <li data-bbox="199 1728 1123 1833">4.The new features of my smartphone brand operating systems performs consistently</li> </ol>	<p data-bbox="1214 1360 1382 1465">(Sweeney &amp; Soutar, 2001)</p>

<p>Perceived brand innovativeness</p> <ol style="list-style-type: none"> <li>1. My smartphone brand keep improving incrementally its product features.</li> <li>2. My smartphone brand keep providing better value comparing the previous version</li> <li>3. My smartphone brand keep providing much better performance than previous version</li> <li>4. My smartphone brand is able to keep over times an advantage in terms of innovation.</li> <li>5. My smartphone brand keep developing new versions of the product that meet my needs.</li> </ol>	New
<p>Brand awareness</p> <ol style="list-style-type: none"> <li>1. I am aware of my smartphone brand.</li> <li>2. I easily recognize my smartphone brand.</li> <li>3. I know what my smartphone brand stands for in the smartphone industry.</li> <li>4. I have a clear opinion about my smartphone brand.</li> </ol>	(Aaker 1996)
<p>Brand satisfaction</p> <ol style="list-style-type: none"> <li>1. My smartphone brand develops product's features that I like the most.</li> <li>2. I get satisfying information and services from my smartphone brand.</li> <li>3. Overall, I am delighted with my smartphone brand.</li> </ol>	(Aaker 1996)
<p>Brand loyalty</p> <ol style="list-style-type: none"> <li>1. I recommend my present smartphone brand to my friends.</li> <li>2. I'm not willing to switch to another brand in the near future.</li> </ol>	(Aaker 1996)

3.I'll remain loyal to my present smartphone brand for a long time.	
Repurchase intention  1.I'll buy the next version of my smartphone brand for sure.  2.I'll substitute my current smartphone with a new version from the same brand as soon as it's available.	(Aaker 1996)

Armstrong and Kotler (2011) stated one of the advantages of the survey method is to provide flexibility to the researcher. However, applying a quantitative research method and gathering data have both opportunities and difficulties. Questionnaire design is a very important task. Therefore, a survey questionnaire was designed for gathering data based on smartphone brand that student previously used. A survey questionnaire is important to collect data, however, respondents might not answer all the questions. This is the disadvantages of survey method.

After a review of the literature, a questionnaire was based upon the research question which was originally developed in English. The English version of the questionnaire is double back translated into Italian. The translation was performed by a Professor who is a native speaker of Italian. The survey questionnaire consisted of 4 parts. Each part is presented below in order to explain how the data is collected. Before the first part an introduction is described the research objective to the respondents. Firstly, the questionnaire started with a description of introduction of the purpose of the research. The first part of the questionnaire includes instructions and contains the questions to define behavioral and demographic characteristic of the participants as presented in Table 2 and Table 3, respectively.

Table 2 Variables of Behavioral Characteristics

1. Do you have a smartphone
2. Which smartphone brand do you have?
3. How old the smartphone is?
4. Why did you choose this brand?
5. How much time do you spend on smartphone daily?
6. How do you use your smartphone?

The second part includes the measurement variable that are presented in Table 1. The third part includes the variables of demographic characteristics of the respondents as shown below Table 3.

Table 3 Variables of Demographic Characteristics

1. Gender
2. Age
3. Education

Finally, fourth part, includes the question related to how the respondents consider future improvements of smartphone brand with respect to the following aspects as shown in Table 4. Measurement included as 1 (irrelevant), 2 (Not important), 3 (Important) and 4 ( Fundamental).

Table 4 Variables related to future improvements

1. Design
2. Screen
3. Speed of operating system
4. Reliability of operating system
5. Storage/memory
6. Connectivity (Wifi, Bluetooth, GSM)
7. Camera
8. Battery
9. Simplicity of interface
10. Interactivity of interface
11. Positioning system (GPS)
12. Security
13. Overall

Furthermore, Hair et al. (2010) stated, “All constructs must display adequate construct, validity, whether they are new scales or scales taken from previous research; even previously established scales should be carefully checked for content validity” (p. 686). Furthermore, Hair et al. (2010) also stated, “Content validity should be of primary importance and judged both qualitatively (e.g., experts opinion) and empirically (e.g., unidimensionality and convergent validity)” (p. 696).

Therefore, while the survey questionnaire was being prepared, the panel of experts who are professors at the university was formed to review and comment on the survey instrument to measure its ability to draw meaningful inferences. The experts were selected based on their relevant

experience, education, and overall qualifications in relation to the PhD dissertation topic. Feedback was taken from expert opinions, and the survey instrument revised.

Furthermore, after obtaining feedback from the experts on the survey instrument, a pilot study was performed. The purpose of pilot survey questionnaire was to observe whether the questions were clear in sentence structure and grammar and whether the questions were appropriate to the intended research questions and hypotheses of the study. Translated questionnaires were pre-tested on 25 participants. The participants indicated that the questionnaire was appropriate to answer. Therefore, the last version of the survey questionnaire was distributed in the classroom and online.

Hair et al. (2010) suggested that a reliability test should be performed before an assessment of its validity. “Reliability is an assessment of the degree of consistency between multiple measurements of a variable” (Hair et al., 2010, p. 125). Furthermore, Churchill (1979) also stated, “Coefficient alpha absolutely should be the first measure one calculates to assess the quality of the instrument” (p. 68). Cronbach’s alpha reliability coefficient was conducted to measure of the internal consistency of the survey instrument. The scale yielded a overall high reliability score, .857. Table 5 shows the reliability of the scale if items are deleted. After the reliability, in order to established validity, convergent and discriminant validity is conducted in Smart PLS 3. (Hair et al., 2011).

Table 5 Item-Total Statistics

Constructs	Cronbach's Alpha if Item Deleted
B1_social_value	.856
B3_social_value	.856
B4_social_value	.850

C1_emotional_value	.847
C4_emotional_value	.848
D3_functional_value	.849
D4_functional_value	.850
E1_perceived_brand_innovativeness	.852
E2_perceived_brand_innovativeness	.854
E3_perceived_brand_innovativeness	.854
E4_perceived_brand_innovativeness	.852
E5_perceived_brand_innovativeness	.849
F1_brand_awareness	.854
F3_brand_awareness	.849
F4_brand_awareness	.849
G1_satisfaction	.853
G3_satisfaction	.847
H1_loyalty	.846
H2_loyalty	.847
H3_loyalty	.846
I1_repurchase_intention	.843
I2_repurchase_intention	.856

---

### 3.4.1 Independent variables

Social value, emotional value and functional value delivered from the study by (Sweeney & Soutor, 2001), formed as independent variables.



### **3.4.2 Dependent variables**

Perceived brand innovativeness is a new developed scale based on the previous literature, brand awareness, brand loyalty, brand satisfaction and repurchase intention delivered from the study by Aaker (1996), formed as dependent variables in the research model of the study.

### **3.5 The statistical methodology**

The research model is constructed according to research question and the review of the literature in order to answer the research question of the study. Armstrong and Kotler (2011) stated, “Marketing research is the systematic design, collection, analysis and reporting of data relevant to a specific marketing situation...” (p.134). In other words, it provides more insight by selecting a specific research question. This research inquired about how firms should manage its branding strategy through the sustaining innovation. A quantitative research is employed. Therefore, a primary data needed to examine the relationship among the constructs. Therefore, a quantitative research approach is applied with a survey questionnaire method.

Data of this study was collected in survey questionnaire format to collect information about demographics, behavioral characteristics, and perception of a smartphone brand by the respondents. Armstrong and Kotler (2011) stated, “Survey research defines gathering primary data by asking people questions about their knowledge, attitudes, preferences and buying behavior” (p. 139). Armstrong and Kotler (2011) also stated, “Survey research is the most widely used method for primary data collection...” (p. 139). The stratified sampling method is conducted in this study. Armstrong and Kotler (2011) defines stratified sampling method as “The population is divided into mutually exclusive groups (such as age groups), and random samples are drawn from each group” (p. 146).

Data screening procedures were examined for missing cases, outliers and scale by using the following statistical methods. Normality was evaluated through calculation of the mean, standard

deviations, skewness and kurtosis for each item in SPSS (Tabachnick & Fidell, 2001). Next, an exploratory factor analysis with promax rotation was conducted because the constructs are correlated (Hair et al., 2010). Then, the internal consistency of each factor identified in the exploratory factor analysis was examined by calculating Cronbach's alphas for reliability. Next, common method variance was examined because a single survey method was used to measure independent and dependent variables (Lindell & Whitney, 2001). Finally, the theoretical model was implemented using SmartPLS 3.0. SmartPLS is a structural equation modeling (SEM) package based on the partial least squares (PLS) method of assessing a measurement model and a structural model. PLS-SEM is a powerful method for identifying key driver constructs in small samples (Hair, Ringle, & Sarstedt, 2011; Hair, Hult, Ringle, & Sarstedt, (2013), which fits the aim of this research, which uses generally not to big sample to analyze a new specific latent variables.

The data was processed and entered by SPSS Statistics (Statistical Package for the Social Sciences) software for analysis. Descriptive statistics, mean and standard deviations, and Cronbach's alpha are conducted in SPSS. Smart PLS 3 is used for the examination of measurement model and a structural model (Hair et al., 2013). After the data is entered in SPSS, the data file is taken to the Smart PLS 3. Partial Least Squares Structural Equation Modeling (PLS-SEM) is used in order to test the research hypotheses. PLS-SEM is very useful method. Hair et al., (2011) stated, "The path modeling procedure is called partial because the iterative PLS-SEM algorithm estimates the coefficients for the partial ordinary least squares regression models in the measurement models and the structural model. More specifically, when a formative measurement model is assumed, a multiple regression model is estimated with the latent construct as the dependent variable and the assigned indicators as independent variables (computation of outer weights). In contrast, when a reflective measurement model is assumed, the regression model includes single regressions with each indicator individually being the dependent variable, whereas the latent construct is always the

independent variable (computation of outer loadings). When the structural model relationships are calculated, each endogenous latent construct represents the dependent variable with its latent construct antecedents as independent variables in a partial regression model. All partial regression models are estimated by the iterative procedures of the PLS-SEM algorithm” (p. 141-142).

Research hypotheses are presented below:

H1: Social value positively affects perceived brand innovativeness of firm.

H2: Emotional value positively affects perceived brand innovativeness of firm.

H3: Functional value positively affects perceived brand innovativeness of firm.

H4: Perceived brand innovativeness of firm positively affects brand awareness

H5: Perceived brand innovativeness of firm positively affects brand loyalty

H6: Perceived brand innovativeness of firm positively affects brand satisfaction

H7: Brand awareness positively affects repurchase intention

H8: Brand loyalty positively affects repurchase intention

H9: Brand satisfaction positively affects repurchase intention.

The research was carried out through ten stages as below:

1. Identifying the research topic: the research topic was first proposed by the researcher. The research topic was discussed and finalized with the supervisor.
2. Identifying the research question, and developing hypotheses.
3. Reviewing the relevant literature: to better understand the relevant research findings in this field.
4. Establishing a research methodology: adopting a quantitative approach, in order to answer the research questions and examine the hypotheses.
5. Developing the questionnaire: Experts opinions, pre-test and pilot study.
6. Delivering the questionnaires
7. Collecting the questionnaires

8. Coding and analyzing the data: SPSS and Smart PLS 3 were conducted.
9. Findings of the research and conclusions: based on the result of data analysis, conducting the writing of research finding and the conclusions.
10. Proposing the dissertation.

## References

- Armstrong, G., & Kotler, P. (2011). *Marketing an introduction* (10th Ed.). Upper Saddle River, New Jersey, NJ: Pearson Prentice Hall.
- Bryman, A. (1984). The debate about quantitative and qualitative research: a question of method or epistemology?. *British journal of Sociology*, 75-92.
- Churchill, G. A. J. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, 16(1), 64-73.
- Cooper, D. R., & Schindler, P. S. (2011). *Business Research Methods* (11th Ed.). NY: McGraw-Hill.
- Easterby-Smith, M., Thorpe, R., & Jackson, P. R. (2012). *Management research*. Sage.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th Ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M. (2013). *A primer on partial least squares structural equation modelling (PLS-SEM)*. Sage, Thousand Oaks.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139-152.

Johnson, P., & Duberley, J. (2000). *Understanding management research: An introduction to epistemology*. Sage.

Henseler, J., Ringle, C. M., Sinkovics, R. R., (2009). The use of partial least squares path modelling in international marketing. *Advances in International Marketing*, 277-320.

Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of applied psychology*, 86(1), 114-121.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using Multivariate Statistics*. Boston: Allyn and Bacon.

## Chapter 4 – Results

### 4.1 Data screening and assessing normality

There were no missing values. Possible outliers were detected by calculating the z value (Tabachnick & Fidell, 2001). A smaller sample size with an absolute value of 2.58 was appropriate; therefore, detected outliers were removed from the sample (Tabachnick & Fidell, 2001). The response variability was satisfactory because standard deviations for the individual items are greater than or close to +1.00, -1.00. The majority of items were distributed within the adequate levels. Final means, standard deviations, skewness and kurtosis of individual items are presented Table 6 below.

Table 6 Descriptive Statistics

Constructs	N	Mean	Std. Deviation	Skewness	Kurtosis
B1_social_value	229	6.25	1.955	.161	-.192
B3_social_value	229	6.77	1.692	.417	-.153
B4_social_value	229	5.24	1.764	.188	-.208
C1_emotional_value	229	5.14	1.678	-.336	-.701
C4_emotional_value	229	5.08	1.660	-.312	-.673
D3_functional_value	229	5.73	1.011	-.642	.400
D4_functional_value	229	5.61	1.027	-.524	-.171
E1_innovativeness	229	6.19	.775	-.738	.182
E2_innovativeness	229	6.34	.803	-.196	.316
E3_innovativeness	229	6.30	.766	-.858	-.630
E4_innovativeness	229	6.30	.760	-.739	-.296

E5_innovativeness	229	6.00	.918	-.790	.237
F1_brand_awareness	229	5.83	1.094	-.884	.235
F3_brand_awareness	229	5.65	1.188	-.924	.681
F4_brand_awareness	229	5.84	.937	-.519	-.367
G1_satisfaction	229	5.61	1.089	-.955	.818
G3_satisfaction	229	5.84	.957	-.760	.371
H1_loyalty	229	5.41	1.432	-.959	.577
H2_loyalty	229	5.35	1.522	-.795	-.012
H3_loyalty	229	5.82	1.284	.029	.494
I1_repurchase_intention	229	6.61	1.782	-.407	-.633
I2_repurchase_intention	229	6.48	1.808	-.326	-.803
Valid N (listwise)	229				

## 4.2 Profile of the respondents

After the data screening procedures, 229 data remained (Tabachnick & Fidell, 2001). Table 7 shows the profile of respondents. There were more female (55%) than male (45%) participants

Table 7 Profile of demographic characteristics - gender

Variables	Frequency	Percent
L1 Gender		
Male	103	45.0
Female	126	55.0
Total	229	100.0

Most of the respondent were age above 23 (%46.7) as shown in Table 8



Table 8 Profile of demographic characteristics - age

Variables	Frequency	Percent
L2 Age		
18-21	49	21.4
22-23	73	31.9
Above 23	107	46.7
Total	229	100.0

Year of study of most of students were specialistica (%58.5) as shown in Table 9.

Table 9 Profile of demographic characteristics – year of study

Variables	Frequency	Percent
L3 Year of study		
Triennale	95	41.5
Specialistica	134	58.5
Total	229	100.0

According to the question of whether students using smartphone or not, answers showed that all the students using smartphone as shown in Table 10.

Table 10 Profile of demographic characteristics – having a smartphone

Variables	Frequency	Percent
A1 Having a smartphone		
Yes	229	100.0
No	0	0.0
Total	229	100.0

Respondents articulated a total of 11 smartphone brand, and the most cited smartphone was Apple Iphone (52.8%) as presented in Table 11.

Table 11 Profile of demographic characteristics – which brand using

Variables	Frequency	Percent
A2 Which brand		
Apple	121	52.8
Samsung	71	31.0
Huawei	15	6.6
Nokia	4	1.7
LG	8	3.5
HTC	4	1.7
ASUS	2	.9
Microsoft	1	.4
Mediacom	1	.4
Xiaomi	1	.4
Google Nexus	1	.4
Total	229	100.0

Table 12 shows the question of period of use. In the sample, it is clear that 41% of students use smartphone more than 24 month.

Table 12 Profile of demographic characteristics – period of use

Variables	Frequency	Percent
A3 Which year bought		
Less than 4 month	5	2.2
4-6 month	16	7.0
7-12 month	51	22.3
13-24 month	63	27.5
more than 24 month	94	41.0
Total	229	100.0

Table 13 presents the reason of choosing this brand. Most of students indicated that brand trust (36.7%) is the most important factor. Second important factor was performance (21.8%)

Table 13 Profile of demographic characteristics – the reason of choosing this brand

Variables	Frequency	Percent
A4 Why choose this brand		
Price	27	11.8
Performance	50	21.8
Operating system	43	18.8
Design	15	6.6
Brand trust	84	36.7
Earlier the same brand	1	.4

Gift	8	3.5
Service support	1	.4
Total	229	100.0

Table 14 indicates that how much time students spend time during using their smartphone in a day. Most of students indicates that they are spending 1-3 hours (38.0%).

Table 14 Profile of demographic characteristics – how much time spending

Variables	Frequency	Percent
A5 How much time spend		
Less than 1 hour	6	2.6
1-3 hours	87	38.0
4-6 hours	77	33.6
More than 6 hours	59	25.8
Total	229	100.0

In addition, most of students use smartphone for entertainment (85.6%).

Table 15 Profile of demographic characteristics – why use

Variables	Frequency	Percent
A6 Why use		
Business	33	14.4
Entertainment	196	85.6
Total	229	100.0

Furthermore, in order to understand future improvement whether necessary or not, design, screen, speed of operating system, storage/memory, connectivity, speakers & earphones, camera, battery simplicity of interface, interactivity of interface, positioning system (GPS), security and overall questions are asked to the respondents.

Table 16 shows that most of students indicated for whether future improvement necessary for design (53.3%) as important.

Table 16 Smartphone features question for whether future improvement are necessary - design

	Irrelevant	Not important	Important	Fundamental	Total
<b>Design</b>					
Frequency	6	12	122	89	229
Percent	2.6	5.2	53.3	38.9	100.0

Table 17 shows that most of students indicated for whether future improvement necessary for screen (54.1%) as fundamental.

Table 17 Smartphone features question for whether future improvement are necessary - screen

	Irrelevant	Not important	Important	Fundamental	Total
<b>Screen</b>					
Frequency	4	17	84	124	229
Percent	1.7	7.4	36.7	54.1	100.0

Table 18 shows that most of students indicated for whether future improvement necessary for operating system speed (87.3%) as fundamental.

Table 18 Smartphone features question for whether future improvement are necessary – operating system speed

	Irrelevant	Not important	Important	Fundamental	Total
<b>Operating system speed</b>					
Frequency	1	2	26	200	229
Percent	.4	.9	11.4	87.3	100.0

Table 19 shows that most of students indicated for whether future improvement necessary for reliability of operating system (84.7%) as fundamental.

Table 19 Smartphone features question for whether future improvement are necessary – reliability of operating system

	Irrelevant	Not important	Important	Fundamental	Total
<b>Reliability of operating system</b>					
Frequency	1	1	33	194	229
Percent	.4	.4	14.4	84.7	100.0

Table 20 shows that most of students indicated for whether future improvement necessary for storage and memory (64.2%) as fundamental.

Table 20 Smartphone features question for whether future improvement are necessary – storage and memory

	Irrelevant	Not important	Important	Fundamental	Total
<b>Storage and memory</b>					
Frequency	1	15	66	147	229
Percent	.4	6.6	28.8	64.2	100.0

Table 21 shows that most of students indicated for whether future improvement necessary for connectivity, WIFI, Bluetooth (72.1%) as fundamental.

Table 21 Smartphone features question for whether future improvement are necessary – Connectivity, WIFI, Bluetooth

	Irrelevant	Not important	Important	Fundamental	Total
<b>Connectivity, WIFI, Bluetooth</b>					
Frequency	3	3	58	165	229
Percent	1.3	1.3	25.3	72.1	100.0

Table 22 shows that most of students indicated for whether future improvement necessary for speakers and earphones (47.6%) as important.

Table 22 Smartphone features question for whether future improvement are necessary – Speakers, earphones

	Irrelevant	Not important	Important	Fundamental	Total
<b>Speakers and earphones</b>					
Frequency	13	28	109	79	229
Percent	5.7	12.2	47.6	34.5	100.0

Table 23 shows that most of students indicated for whether future improvement necessary for camera (60.7%) as fundamental.

Table 23 Smartphone features question for whether future improvement are necessary – camera

	Irrelevant	Not important	Important	Fundamental	Total
<b>Camera</b>					
Frequency	4	13	73	139	229
Percent	1.7	5.7	31.9	60.7	100.0

Table 24 shows that most of students indicated for whether future improvement necessary for battery (87.3%) as fundamental.

Table 24 Smartphone features question for whether future improvement are necessary – battery

	Irrelevant	Not important	Important	Fundamental	Total
<b>Battery</b>					
Frequency	1	4	24	200	229
Percent	.4	1.7	10.5	87.3	100.0



Table 25 shows that most of students indicated for whether future improvement necessary for simplicity of interface (48.9%) as important.

Table 25 Smartphone features question for whether future improvement are necessary – simplicity of interface

	Irrelevant	Not important	Important	Fundamental	Total
<b>Simplicity of interface</b>					
Frequency	10	20	112	87	229
Percent	4.4	8.7	48.9	38.0	100.0

Table 26 shows that most of students indicated for whether future improvement necessary for interactivity of interface (51.1%) as important.

Table 26 Smartphone features question for whether future improvement are necessary – interactivity of interface

	Irrelevant	Not important	Important	Fundamental	Total
<b>Interactivity of interface</b>					
Frequency	7	27	117	78	229
Percent	3.1	11.8	51.1	34.1	100.0

Table 27 shows that most of students indicated for whether future improvement necessary for positioning system, GPS (41.5%) as important and fundamental.

Table 27 Smartphone features question for whether future improvement are necessary – positioning system, GPS

	Irrelevant	Not important	Important	Fundamental	Total
<b>Positioning system,</b>					
<b>GPS</b>					
Frequency	6	33	95	95	229
Percent	2.6	14.4	41.5	41.5	100.0

Table 28 shows that most of students indicated for whether future improvement necessary for security (79.5%) as fundamental.

Table 28 Smartphone features question for whether future improvement are necessary – security

	Irrelevant	Not important	Important	Fundamental	Total
<b>Security</b>					
Frequency	2	7	38	182	229
Percent	.9	3.1	16.6	79.5	100.0

Table 29 shows that most of students indicated for whether future improvement necessary for overall (61.6%) as fundamental.

Table 29 Smartphone features question for whether future improvement are necessary – overall

	Irrelevant	Not important	Important	Fundamental	Total
<b>Overall</b>					
Frequency	0	2	86	141	229
Percent	.0	.9	37.6	61.6	100.0

### **4.3 Exploratory Factor Analysis**

Exploratory factor analysis (EFA) is based on the common factor model, and seeks to represent the structure of correlations among measured variables using a relatively small set of latent variables. EFA is primarily a data-driven approach. No a priori number of common factors is specified and few restrictions are placed on the patterns of relations between the common factors and the measured variables (i.e., the factor loadings.) EFA provides procedures for determining an appropriate number of factors and the pattern of factor loadings primarily from the data. (Fabrigar, Wegener, MacCallum, & Strahan, 1999, p. 276-277). During EFA, several rotation procedures are commonly used and have been found to generally produce satisfactory solutions (Fabrigar et al., 1999). Promax rotation is used when the constructs are correlated (Hair et al., 2010).

Next, an exploratory factor analysis was conducted with promax rotation because constructs are correlated. The Kaiser-Meyer-Olkin statistic of 0.840 indicates that the data are appropriate for factor analysis. Six factors emerged based on eigenvalues over 1.0. Although the results showed that items were cleanly and separately loaded onto the corresponding factors, at the next run fixed number of factors 8 were extracted. A series of factor analysis suggested to remove, coded B2, C2, C3, D1, D2, F2, G2 items. There were total of 29 items. 7 of them removed based on factor analysis. Therefore, the 7 items were discarded from the analysis, reducing the scale to 22 items. Then, 22 items were entered for the next run, and 8 factors based on fixed number were extracted. All items loaded cleanly and highly onto the 8 factors, representing social value, emotional value, functional value, perceived brand innovativeness, brand awareness, brand satisfaction, brand loyalty, and repurchase intention, as shown in Table 30.

Table 30 Exploratory Factor Analysis

	Component							
	1	2	3	4	5	6	7	8
E3_perceived_brand_innovativeness	<b>.921</b>	-.173	-.007	.002	-.082	-.009	.130	-.075
E2_perceived_brand_innovativeness	<b>.880</b>	-.040	.062	-.172	.116	-.004	-.018	-.123
E1_perceived_brand_innovativeness	<b>.817</b>	-.045	-.069	-.042	-.089	.063	.038	.192
E4_perceived_brand_innovativeness	<b>.734</b>	.129	-.041	.021	.284	-.039	-.135	-.028
E5_perceived_brand_innovativeness	<b>.721</b>	.070	-.017	.284	-.079	-.008	-.003	.118
B1_social_value	-.001	<b>.887</b>	-.036	.033	-.042	-.028	.002	.031
B3_social_value	-.107	<b>.883</b>	-.077	-.038	.000	.024	.057	.070
B4_social_value	-.017	<b>.756</b>	-.049	-.114	.081	.155	.208	.001
H3_loyalty	-.029	-.116	<b>.876</b>	-.013	.037	.081	.027	.033
H2_loyalty	-.099	-.203	<b>.869</b>	-.092	.043	.092	.118	.104
H1_loyalty	.131	.306	<b>.707</b>	.077	-.197	-.133	-.008	.039
F4_brand_awareness	-.079	.019	-.114	<b>.855</b>	.150	-.042	.103	.038
F3_brand_awareness	.053	-.094	-.088	<b>.789</b>	-.257	.168	.118	.115
F1_brand_awareness	-.035	-.059	.213	<b>.729</b>	.138	-.110	-.187	-.167
G1_satisfaction	.078	-.040	-.093	-.088	<b>.902</b>	-.012	.012	.118
G3_satisfaction	-.011	.089	.111	.217	<b>.725</b>	.019	.032	-.007
I2_repurchase_intention	-.042	.018	-.015	-.039	-.037	<b>.971</b>	-.085	.024
I1_repurchase_intention	.106	.134	.187	.081	.075	<b>.732</b>	-.042	-.129
C1_emotional_value	.004	.112	-.023	.097	.059	.005	<b>.877</b>	-.141
C4_emotional_value	.049	.208	.188	-.058	-.040	-.160	<b>.779</b>	-.028
D4_functional_value	.021	.165	.132	-.009	.017	-.051	-.257	<b>.934</b>
D3_functional_value	-.029	-.161	-.002	.032	.266	.019	.251	<b>.725</b>

Rotation Method: Promax with Kaiser Normalization.

#### 4.4 Reliability

Cronbach (1951, p 297) stated, “Any research based on measurement must be concerned with the accuracy or dependability or, as we usually call it, reliability of measurement”. Hair et al. (2010) suggest that a reliability test should be performed before an assessment of its validity. “Reliability is an assessment of the degree of consistency between multiple measurements of a variable” (Hair et al., 2010, p.125). Furthermore, Churchill (1979) also stated, “Coefficient alpha absolutely should be the first measure one calculates to assess the quality of the instrument” (p. 68). Cronbach’s alpha

reliability coefficient was conducted to measure of the internal consistency of the survey instrument. As suggested, overall scale has a high reliability over .70 as shown in Table 31 (Cronbach, 1951, Churchill, 1979)

Table 30 Reliability Statistics

Cronbach's Alpha	N of Items
.857	22

Table 31 shows Cronbach's Alpha values if item deleted.

Table 31 If item deleted (Cronbach's Alpha

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
B1_social_value	111.12	189.526	.348	.856
B3_social_value	111.60	193.811	.327	.856
B4_social_value	111.14	187.240	.450	.850
C1_emotional_value	110.23	185.668	.516	.847
C4_emotional_value	110.29	186.857	.495	.848
D3_functional_value	108.64	197.187	.488	.849
D4_functional_value	108.76	198.032	.449	.850
E1_perceived_brand_innovativeness	108.18	202.431	.410	.852
E2_perceived_brand_innovativeness	108.03	204.209	.315	.854
E3_perceived_brand_innovativeness	108.07	203.946	.345	.854
E4_perceived_brand_innovativeness	108.07	202.376	.422	.852
E5_perceived_brand_innovativeness	108.37	198.217	.504	.849
F1_brand_awareness	108.55	200.986	.319	.854
F3_brand_awareness	108.72	195.448	.458	.849
F4_brand_awareness	108.53	197.671	.513	.849
G1_satisfaction	108.76	200.102	.350	.853
G3_satisfaction	108.53	195.434	.587	.847
H1_loyalty	108.97	188.841	.538	.846
H2_loyalty	109.02	188.864	.500	.847
H3_loyalty	108.55	191.047	.546	.846

I1_repurchase_intention	109.76	180.727	.588	.843
I2_repurchase_intention	109.89	191.662	.343	.856

#### 4.5 Validity and reliability of the measurement model

It is necessary to establish convergent and discriminant validity, as well as reliability when doing a PLS-SEM. There are some measures in order to establish validity such as composite reliability and average variance extracted (Hair et al., 2010). First, the composite reliability coefficients for measures should be exceeding the recommended minimum of .70 (Bagozzi, 1981; Fornell & Larcker, 1981) and providing evidence of convergent validity. Second, average variance extracted for these measures should be exceeding the recommended minimum of .50 (Fornell & Larcker, 1981). Further, average variance extracted should be greater than the squared correlations between constructs (Fornell & Larcker, 1981), demonstrating discriminant validity.

The measurement model was tested for reliability and validity using SmartPLS 3.0. Composite reliability and average variance explained (AVE) of social value, emotional value, functional value, perceived brand innovativeness, brand awareness, brand satisfaction, brand loyalty, and repurchase intention are shown in Table 32. The composite reliability for each of the latent variables was ranged between .836 - .909, and the AVE was higher than 0.50, indicating strong reliability and convergent validity, respectively. (Bagozzi, 1981; Fornell & Larcker, 1981)

Table 32 AVE and Composite Reliability

	AVE	CR
Social value	0.630	0.907
Emotional value	0.706	0.909
Functional value	0.641	0.863

Innovativeness	0.660	0.908
Awareness	0.759	0.836
Loyalty	0.634	0.877
Satisfaction	0.600	0.896
Repurchase	0.666	0.890

---

Table 33 presents the ratio of the square root of the AVE of each reflective latent variable and the correlation coefficients between the constructs. The diagonal elements in parentheses are the correlations of each construct with its own measure, which is the square root of the AVE. Off-diagonal elements include correlations between constructs. Diagonal elements should be larger than the entries in the corresponding rows and columns for adequate discriminant validity. Clearly, each construct is more highly correlated with its own measure than with any other constructs, indicating strong discriminant validity under the Fornell-Larcker criterion (Fornell & Larcker, 1981).

Table 33 Correlations of the latent variables and the square root of AVE

Latent variable	1	2	3	4	5	6	7	8
1.Social	(0.794)							
2.Emotional	0.425	(0.840)						
3.Functional	0.404	0.444	(0.801)					
4.Innovativeness	0.203	0.295	0.261	(0.813)				
5.Awareness	0.420	0.394	0.519	0.308	(0.871)			
6.Loyalty	0.384	0.479	0.290	0.211	0.246	(0.796)		
7.Satisfaction	0.016	0.106	0.052	0.554	0.086	0.129	(0.775)	

---

8.Repurchase      0.474    0.347    0.386    0.087    0.407    0.340    0.110    (0.816)

---

Cross loadings indicate that how strongly each item loads on the other factors (Hair et al., 2010). The loadings and cross-loadings of the items compared across all latent variables show strong discriminant validity with high loading scores (all higher than 0.7), as Table 34 shows (Hair et al., 2010).

Table 34 Cross-Loadings Matrix

	BA	BL	BS	EV	FV	RI	SV	PBI
B1SV	.060	.123	.057	.487	.066	.125	<b>.821</b>	.042
B3SV	.004	.078	.031	.513	.073	.100	<b>.982</b>	.134
B4SV	.048	.178	.136	.586	.147	.231	<b>.812</b>	.021
C1EV	.230	.243	.266	<b>.912</b>	.289	.233	.487	.080
C4EV	.142	.296	.211	<b>.914</b>	.274	.153	.526	.080
D3FV	.376	.349	.521	.335	<b>.863</b>	.229	.044	.344
D4FV	.356	.337	.388	.206	<b>.879</b>	.201	.104	.365
E1PBI	.373	.257	.277	.082	.385	.288	.099	<b>.833</b>
E2PBI	.256	.262	.291	.001	.237	.242	.153	<b>.783</b>
E3PBI	.363	.253	.260	.035	.262	.260	.199	<b>.862</b>
E4PBI	.377	.298	.413	.058	.331	.244	.047	<b>.794</b>
E5PBI	.515	.328	.317	.151	.406	.332	.009	<b>.804</b>
F1BA	<b>.704</b>	.361	.314	.030	.234	.244	.102	.335
F3BA	<b>.849</b>	.323	.218	.178	.354	.371	.033	.422
F4BA	<b>.822</b>	.341	.457	.261	.403	.286	.092	.366
G1BS	.235	.270	<b>.871</b>	.165	.470	.181	.047	.322
G3BS	.463	.499	<b>.930</b>	.290	.469	.323	.117	.369
H1BL	.333	<b>.735</b>	.251	.316	.258	.323	.277	.293
H2BL	.340	<b>.868</b>	.415	.230	.378	.431	.011	.260



H3BL	.397	<b>.909</b>	.435	.213	.350	.445	.013	.323
I1RI	.411	.514	.330	.236	.249	<b>.950</b>	.156	.373
I2RI	.242	.301	.148	.116	.181	<b>.839</b>	.049	.197

---

#### 4.6 Common method variance and theoretical model validation

In addition, this study attempted to control the potential impact of common method variance, as a single survey was used to measure the latent variables. The items were specifically developed by reviewing the relevant literature, and the study introduces and adopts the social value, emotional value, functional value, perceived brand innovativeness, brand awareness, brand loyalty, brand satisfaction and repurchase intention constructs based on the previous literature. Furthermore, “gender” is included as a marker variable to check common method bias, which is theoretically an unrelated variable (Lindell & Whitney, 2001). Thus, the relationship among social value, emotional value, functional value, perceived brand innovativeness, awareness, loyalty, satisfaction, and repurchase intention and gender as a marker variable was evaluated, and the findings showed that gender has no significant correlation with the study variables, offering additional evidence for discriminant validity. In other words, these findings show that common method variance does not significantly affect the relationship among the latent variables in this study.

#### 4.7 Hypotheses testing

After the theoretical model validation. Hypotheses are tested via Smart PLS 3. The structural model in the PLS-SEM had eight latent variables, the measurement model had twenty-two indicator variables that were directly measured in the research sample. The latent variables are social value, emotional value, functional value, perceived brand innovativeness, brand awareness, brand loyalty, brand satisfaction and repurchase intention. Constructs are considered either exogenous or endogenous. Whereas exogenous constructs act as independent variables, endogenous constructs

are explained by other constructs while often considered as the dependent variable within the relationship, endogenous constructs can also act as independent variables when they are placed between two constructs (Hair et al., 2014). In this research, exogenous constructs are social value, emotional value and functional value. Endogenous constructs are perceived brand innovativeness, brand awareness, brand loyalty, brand satisfaction and repurchase intention (Hair et al., 2014). All the variables are formed as reflective variables (Hair et al., 2014) and measured as strongly disagree (1) to strongly agree (7) then PLS-SEM is started to test the research hypotheses. Hypotheses results are presented in Figure 4, respectively.

According to Hypothesis 1, social value positively affects perceived brand innovativeness of firm. The result shows that the path coefficient of social value to perceived brand innovativeness of firm ( $\beta=0.203$ ) is significant at  $p < 0.05$ , supporting H1.

According to Hypothesis 2, emotional value positively affects perceived brand innovativeness of firm. The result indicates that the path coefficient of emotional value to perceived brand innovativeness of firm ( $\beta=0.295$ ) is significant at  $p < 0.05$ , supporting H2.

According to Hypothesis 3, functional value positively affects perceived brand innovativeness of firm. The results shows that the path coefficient of functional value to perceived brand innovativeness of firm ( $\beta=0.261$ ) is significant at  $p < 0.05$ , supporting H3.

According to Hypothesis 4, perceived brand innovativeness of firm positively affects brand awareness. The result demonstrates the path coefficient of perceived brand innovativeness of firm to brand awareness ( $\beta=0.474$ ) is significant at  $p < 0.05$ , supporting H4.

According to Hypothesis 5 perceived brand innovativeness of firm positively affects brand loyalty. The result shows that the path coefficient of perceived brand innovativeness of firm to brand loyalty ( $\beta=0.308$ ) is significant at  $p < 0.05$ , supporting H5.

According to Hypothesis 6, perceived brand innovativeness of firm positively affects brand satisfaction. The result indicates that the path coefficient of perceived brand innovativeness of firm to brand satisfaction ( $\beta=0.554$ ) is significant at  $p < 0.05$ , supporting H6.

According to Hypothesis 7, brand awareness positively affects repurchase intention. The result demonstrates that the path coefficient of brand awareness to repurchase intention ( $\beta=0.407$ ) is significant at  $p < 0.001$ , supporting H7.

According to Hypothesis 8, brand loyalty positively affects repurchase intention. The result indicates that the path coefficient of brand loyalty to repurchase intention ( $\beta=0.340$ ) is significant at  $p < 0.001$ , supporting H8.

According to Hypothesis 9, brand satisfaction positively affects repurchase intention. The result shows that the path coefficient of brand satisfaction to repurchase intention ( $\beta=0.510$ ) is significant at  $p < 0.001$ , supporting H9.

Social, emotional and functional value together explain 19% variance in perceived brand innovativeness of firm, while perceived firm innovativeness, explains 22.5% variance in brand awareness, 15% variance in brand satisfaction, 12% variance in brand loyalty, while perceived brand innovativeness, brand awareness, brand satisfaction, and brand loyalty explain 28% variance in repurchase intention.

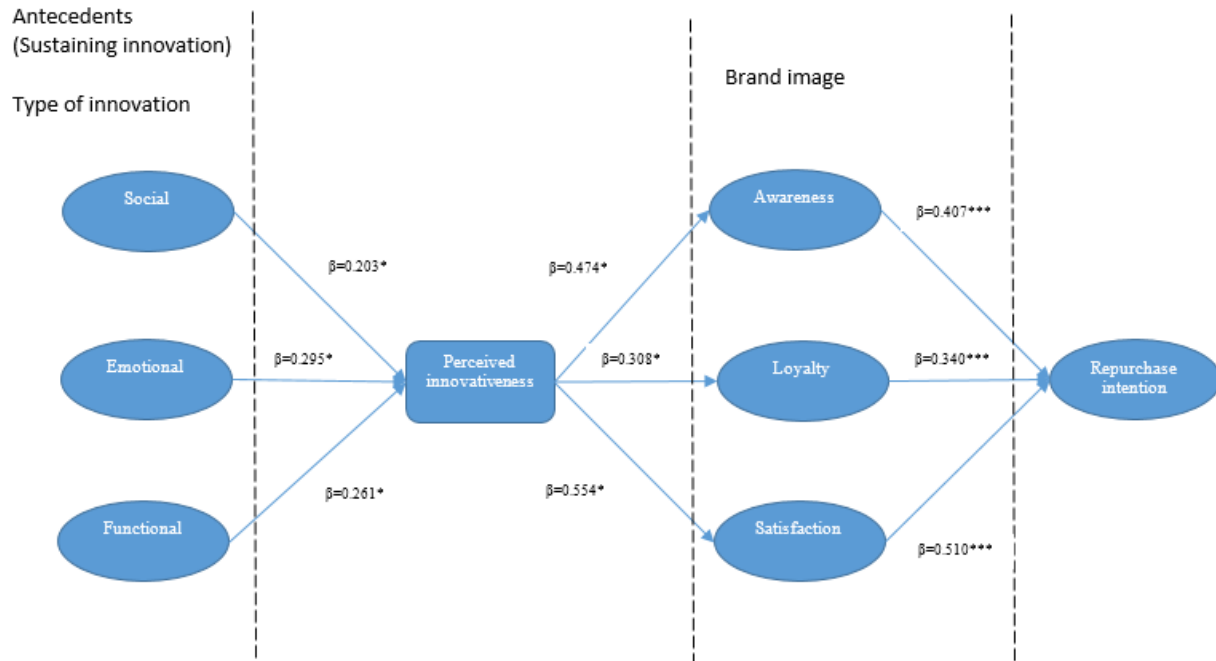


Figure 4 Results of Hypotheses

## References

- Churchill, G. A. J. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, 16(1), 64-73.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297-334.
- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, 4(3), 272-299
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1)39-50.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, 18, 382–388.
- Hair, J. F. Jr., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review*, 26(2), 106-121.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th Ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of applied psychology, 86*(1), 114-121.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using Multivariate Statistics*. Boston: Allyn and Bacon.

## Chapter 5 – Conclusions

### 5.1 Discussion

This study is started with a clear conceptualizing and operationalizing of perceived brand innovativeness of firm through sustaining innovation (Garcia & Calantone, 2012), and provides a clear evidence to measure it (Danneels, 2004; Schmidt & Druehl, 2008; Tellis, 2006; Yu & Hang, 2010) by defining sustaining innovativeness as a measurement of the degree of “newness of a new product version” which replaces existing player. The measurement is possible for both firm and customer level. The research measures sustaining innovativeness at customer level. Perceived brand is customer’s perception on sustaining innovativeness. Therefore, perceived brand sustaining innovativeness is a measurement of consumer’s perception on the degree of “newness of a new product version”, which replaces existing player. Furthermore, this research aimed to introduce how to measure sustaining innovation, and to determine whether sustaining innovation improves firm performance. Primary data were collected in Italy to test the research hypotheses. A sustaining innovativeness scales are developed and validated.

As argued in chapter 2, prior research has documented the positive relationship between perceived firm innovativeness and performance (Kim et al., 2015, Kunz et al., 2011). Kim et al., (2015) investigated the influence of perceived firm innovativeness and product innovativeness on customer value and customer satisfaction by using instrumental and symbolic brand benefits as mediator. Their empirical findings indicated that firm innovativeness significantly affects the symbolic brand benefits, product innovativeness, and partnership value. Product innovativeness affects the instrumental brand benefits. The instrumental brand benefits and firm innovativeness are important factors to improve the symbolic brand benefits. In addition, expectation value and relationship value affect customer satisfaction.

However, these findings are not applicable to all types of innovation. In other words, some important differences among innovation types have not been recognized. As noted by Danneels (2004) it is necessary for scholars to develop very careful definition and classification of types of technological innovation in order to fully capture their contribution to firm's performance. Accordingly, this study focuses on the notable distinction between disruptive innovations and sustaining innovations to analyse the relationship between innovation, brand and performance (Christensen, 1997).

To fill this literature gap, the research question of this study focused on exploring how firms should manage their branding strategy through sustaining innovation. A sustaining innovation scale is developed and validated. The empirical evidence shows that sustaining innovation (i.e., social value, emotional value and functional value) is a significant impact on perceived brand innovativeness of firm. Coefficient of emotional value is 0.295, coefficient of functional value is 0.261, and coefficient of social value is 0.203. Coefficient of emotional value is stronger than functional and social value in the structural model. Furthermore, perceived brand innovativeness of firm has a positive impact on brand awareness, brand loyalty, and brand satisfaction. In addition, brand awareness, brand loyalty and brand satisfaction positively and significantly affect repurchase intention.

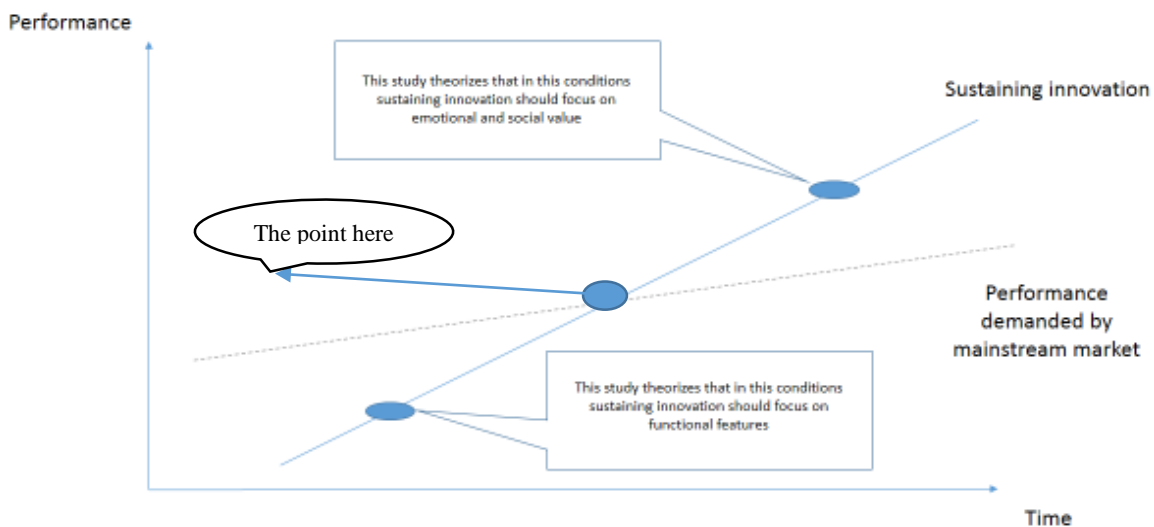
The results confirm that social value, emotional value and functional value are three key antecedents of sustaining brand innovativeness of firm, collectively explaining substantial variance in perceived brand sustaining innovativeness. Going further, the study findings show that perceived brand innovativeness of firm has a direct and positive impact on brand awareness, brand loyalty and brand satisfaction. In other words, raising perceived brand innovativeness of firm means raising brand equity. Furthermore, brand awareness, brand loyalty, and brand satisfaction has a



positive and significant impact on repurchase intention. Thus, increasing sustaining brand innovativeness means increasing the firm performance.

## 5.2 Theoretical Implications

Figure 2 shows the overall argument of the study. If sustaining innovation outperforms demanded by mainstream market, then firm should focus on emotional and social value of the products. Conversely, firm should focus on functional features of the product till firm catches the performance demanded by mainstream market if sustaining innovation underperforms demanded by mainstream market. After this condition, the functional value of the product will be above performance demanded by mainstream market. Then, consumer no more perceives that brand as more innovative. For example, if a 1 terabyte hardisk of a smartphone is enough for a consumer, if firm produce 2 terabyte, consumer does not perceive this brand as much as innovative anymore.



**Figure 5** Argument of the study. The figure is adopted based on the study by Christensen (1997) Because, after this condition, the functional value of the product will be above performance demanded by mainstream market. It is seen that in the structural model, functional value is the

second important construct when checking the coefficient values and it is significant. Therefore, the point in the figure 2 is neither on the above nor on the below. The point is in the middle.

This research is developed three key antecedents of sustaining innovation (i.e., social value, emotional value and functional value), and hypothesized these three key antecedents by arguing social value, emotional value and functional value have a positive impact on sustaining brand innovativeness of firm. The structural model analysis shows that there is a positive and significant relationship between mentioned variables. In other words, it is likely that if perception of social, emotional and functional value raise perceived brand sustaining innovativeness of firm also raises. Furthermore, perceived brand sustaining innovativeness of firm has also positive and significant impact on awareness, loyalty and satisfaction which have also positive and significant impact on repurchase intention. On the other hand, research also measured smartphone features question for whether future improvements are necessary or not. Overall, students indicated future improvement are necessary as fundamental (61.6% ), as second, important (37.6%). That means, smartphone companies should improve further functionality of the smartphones.

As argued before, the relationship between perceived innovativeness and firm performance has increasingly attracted academics' attention. The first, scholars wonder that whether perceived innovativeness affect firm performance or not. The second, if there is a positive and significant relationship, how this relationship is existing? In particular, prior research empirically investigated the effect of "perceived firm innovativeness" on firm performance by providing a research framework (Kim et al., 2015; Kunz, et al., 2011). However, as stated before, those studies did not investigated specific innovation. As theoretical implications, this study provides more insight how a specific type of innovation has an impact on firm performance.

In terms of the complexity of measuring sustaining innovation, branding, and firm performance, this research provide a holistic model for a specific type of innovation i.e., sustaining

innovation of a brand by filling a gap in the relevant literature, along with other comparable research (Kim et al., 2015; Kunz et al., 2011), which is one of the first studies to conceptualize and empirically examine the effects of social value, emotional value, functional value on perceived brand innovativeness of firm. Social value, emotional value and functional value is discussed in the literature (Sweeney & Soutar, 2011) however, it has not been used as a measurement of sustaining innovation. It is a meaningful contribution to the literature in terms of understanding how firms should manage their branding strategy through sustaining innovation. This feature makes the present study unique, as it empirically tests a previously untested relationship between social value, emotional value, functional value, perceived brand innovativeness of firm, brand awareness, brand loyalty, brand satisfaction and repurchase intention. Moreover, there has been little quantitative research on social value, emotional value and functional value. To fill this gap, this study set out to theorize social value, emotional value, and functional value on sustaining brand innovativeness of firm.

### **5.3 Practical Implications**

Firm managers are under pressure to create competitive advantage in the global marketplace (Christensen, 1997), and this study's findings hold several important implications for firm managers of smartphones. It is important to understand sustaining innovation, and it is important to understand how to measure sustaining innovation. The findings of this study highlights that social value, emotional value and functional value are important antecedents of perceived brand sustaining innovativeness of firm. These are an important contribution for the practitioners. Practitioners should be aware of these three antecedents, for it is an important predictor of perceived brand innovativeness of firm.

As predicted in Hypothesis 1 (social value positively affects perceived brand innovativeness of firm. The result shows that the path coefficient of social value to perceived brand innovativeness of firm ( $\beta=0.203$ ) is significant at  $p < 0.05$ , supporting H1,) Hypothesis 2 (emotional value positively affects perceived brand innovativeness of firm. The result indicates that the path coefficient of emotional value to perceived brand innovativeness of firm ( $\beta=0.295$ ) is significant at  $p < 0.05$ , supporting H2.), and Hypothesis 3 (functional value positively affects perceived brand innovativeness of firm. The results shows that the path coefficient of functional value to perceived brand innovativeness of firm ( $\beta=0.261$ ) is significant at  $p < 0.05$ , supporting H3.) then the recommendation for firm managers might be to concentrate their efforts on the development of social value, functional value and emotional value in order to make their brand image more competitive in Italian market. In other words, the empirical evidence specifically suggests that managers should concentrate on the social value, emotional value and functional value variable when developing a strategy to attract Italian buyers to their smartphone brands.

Furthermore, as predicted in Hypothesis 4 (perceived brand innovativeness of firm positively affects brand awareness. The result demonstrates the path coefficient of perceived brand innovativeness of firm to brand awareness ( $\beta=0.474$ ) is significant at  $p < 0.05$ , supporting H4), Hypothesis 5 (perceived brand innovativeness of firm positively affects brand loyalty. The result shows that the path coefficient of perceived brand innovativeness of firm to brand loyalty ( $\beta=0.308$ ) is significant at  $p < 0.05$ , supporting H5), and Hypothesis 6 (perceived brand innovativeness of firm positively affects brand satisfaction. The result indicates that the path coefficient of perceived brand innovativeness of firm to brand satisfaction ( $\beta=0.554$ ) is significant at  $p < 0.05$ , supporting H6), Hypothesis 7 (brand awareness positively affects repurchase intention. The result demonstrates that the path coefficient of brand awareness to repurchase intention ( $\beta=0.407$ ) is

significant at  $p < 0.001$ , supporting H7), Hypothesis 8 (brand loyalty positively affects repurchase intention. The result indicates that the path coefficient of brand loyalty to repurchase intention ( $\beta=0.340$ ) is significant at  $p < 0.001$ , supporting H8), and Hypothesis 9, brand satisfaction positively affects repurchase intention. The result shows that the path coefficient of brand satisfaction to repurchase intention ( $\beta=0.510$ ) is significant at  $p < 0.001$ , supporting H9), then the recommendation for firm managers might be to concentrate their efforts on the development of brand awareness, brand loyalty and brand satisfaction in order to make their brand image more competitive in Italian market. Because this strategy allows to attract Italian buyers to their smartphone brands. These are important for the practitioner as they are able to understand which variable should be developed based on their most advance technology for their users.

Furthermore, according to the targeted markets, these constructs scale may easily be adopted by practitioners to measure sustaining innovation and its effects on brand and firm performance, and to determine whether it is an important driver. If this holistic model is significant, then the same strategy can be implemented in those countries. Based on this study's findings, it is clear that there is a growing opportunity to capture value by managing and developing sustaining innovation.

In addition, this study measured design, screen, operating system speed, reliability of operating system, storage memory, connectivity (WIFI, Bluetooth), Speakers and Earphones, Camera, Battery, simplicity of interface, interactivity of interface, positioning system, GPS, security, and overall based on irrelevant, not important, important and fundamental. 61.6 respondents indicated fundamental whereas 37,6 indicated important. These results show that, current smartphones are not improved well according to users in Italian market. For more detail,

please see results section that provide additional theoretical and practical contribution to the literature.

#### **5.4 Limitations**

The paper presents novel insights that contribute with knowledge of the ways in which we are to understand the effects of perceived brand sustaining innovativeness on firm performance. The results show that perceived brand sustaining innovativeness increase the firm performance in this study. There are many smartphone brands and it is very common to use. This prompted this research to explore a specific type of innovation in smartphone industry however, as known, each research have limitations. With this reason, it is important to discuss the limitations related to the research question under investigation. Thus, this research has some limitations that provide recommendations for future research.

First of all, this study focused on sample of students. The sample of students limits the generalizability of the study findings because of the students are a subset of consumers. Therefore, the sample of future research should be older people. Because, this study collected data from students as younger consumers. Because, it is possible that older consumers might react differently than younger consumers. The result would be useful in science by comparing older and younger consumers in technological products. Second, the study data is collected in Italy. Thus, the findings are limited to Italian market. Further research should be conducted among other nationalities for generalizability. For example, other research could be conducted in Spain or Turkey whether result is similar or different because all these three countries are Mediterranean. Third, future research should also investigate what role do word-of-mouth play in affecting perceived brand sustaining innovativeness. Because, it would be useful to investigate by analyzing word-of-mouth in perceived brand sustaining innovativeness.

Finally, as argued before, many firms presents different innovative brands in the global marketplace (Aaker, 1996). This study assessed how the firm should manage their branding strategy through sustaining innovation. In order to explore this research question, brand awareness, brand loyalty, and brand satisfaction is used as brand equity model in this study (Aaker, 1996). Future research should also analyze brand prestige whether it is an important component or not in technological products with the specific type of innovation. Finally, as also argued before, different types of innovations should be considered differently by scholars since those innovations create different types of markets and competitive impact (Markides, 2006). Therefore, future research should investigate the important components with the specific type of innovation. With the specific type of innovation, the results of study could teach more novel insights as Christensen (1997) showed and with specific brand components, managers can learn more novel practical implications (Moon, 2010).

## References

- Aaker, D. A. (1996). Measuring brand equity across products and markets. *California Management Review*, 38(3), 102-120.
- Christensen, C. M. (1997). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Boston: Harvard Business Press.
- Danneels, E. (2004), Disruptive Technology Reconsidered: A Critique and Research Agenda. *Journal of Product Innovation Management*, 21(4), 246–258.
- Garcia, R., & Calantone, R. (2002). A critical look at technological innovation typology and innovativeness terminology: a literature review. *Journal of Product Innovation Management*, 19(2), 110-132.
- Kim, J., Kim, K. H., Garrett, T. C., & Jung, H. (2015). The contributions of firm innovativeness to customer value in purchasing behavior. *Journal of Product Innovation Management*, 32(2), 201-213.
- Kunz, W., Bernd, S., & Meyer, A. (2011). How does perceived firm innovativeness affect the consumer? *Journal of Business Research*, 64(8). 816-822.
- Markides, C. (2006), Disruptive Innovation: In Need of Better Theory. *Journal of Product Innovation Management*, 23(1) 19–25.



Moon, Y. (2010). *Different: Escaping the Competitive Herd*. New York: Crown Business.

Schmidt, G. M., & Druehl, C. T. (2008). When is a disruptive innovation disruptive? *Journal of Product Innovation Management*, 25(4), 347-369.

Tellis, G. J. (2006). Disruptive Technology or Visionary Leadership? *Journal of Product Innovation Management*, 23(1), 34-38.

Yu, D., & Hang, C. C. (2010). A reflective review of disruptive innovation theory. *International Journal of Management Reviews*, 12(4), 435-452.

## APPENDIX A

### Survey Questionnaire English Version Questionnaire

Dear Students,

Greetings.

This questionnaire has been prepared as a part of research project being undertaken in order to investigate your experiences and perceptions on your smartphone brand. The questionnaire takes only a few minutes to complete and will provide very valuable information in science. The findings will only be used for academic purposes. Please focus on new features of your smartphone that your brand introduces. Please, also give the most appropriate answers for each questions.

Thank you very much in advance for your participation.

Yours Sincerely.

---

PART 1. Please respond the questions below:

1. Do you have a smartphone?
  - a. Yes
  - b. No
2. Which smartphone brand do you have?
  - a. \_\_\_\_\_(please indicate)
3. How old the smartphone is?
  - a. Less than 3 months
  - b. 4-6 months
  - c. 7-12 months
  - d. 12-24 months
  - e. More than 24 months
4. Why did you choose this brand? (Please choose the most important one)
  - a. Price
  - b. Performance
  - c. Operating System
  - d. Design
  - e. Brand trust
  - f. Other \_\_\_\_\_(please indicate)
5. How much time do you spend on smartphone daily?
  - a. Below 1 Hours
  - b. 1-3 Hours
  - c. 4-6 Hours
  - d. 7 Hours or Above
6. How do you use your smartphone?
  - a. Business
  - b. Entertainment

PART 2. As considering YOUR SMARTPHONE BRAND that you stated above, please choose a number from 1 to 7 for next to each statement to indicate how much you agree with that statement. 1 means “Strongly Disagree” and 7 means “Strongly Agree”.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or disagree	Somewhat Agree	Agree	Strongly Agree

Social Value, (Sweeney & Soutar, 2001)

1. \_\_\_\_\_ The new features of my smartphone brand helps me to feel acceptable
2. \_\_\_\_\_ The new features of my smartphone brand improves the way I am perceived
3. \_\_\_\_\_ The new features of my smartphone brand makes a good impression on other people
4. \_\_\_\_\_ The new features of my smartphone brand gives its owner social approval

Emotional value, (Sweeney & Soutar, 2001)

1. \_\_\_\_\_ The new features of my smartphone brand makes me enjoy
2. \_\_\_\_\_ The new features of my smartphone brand makes me want to use it
3. \_\_\_\_\_ The new features of my smartphone brand makes me feel relaxed about using it
4. \_\_\_\_\_ The new features of my smartphone brand makes me feel good

Functional value (Quality), (Sweeney & Soutar, 2001)

1. \_\_\_\_\_ The new features of my smartphone brand provides consistent quality
2. \_\_\_\_\_ The new features of my smartphone brand is well-designed, well-made
3. \_\_\_\_\_ The new features of my smartphone brand has an acceptable standard of quality
4. \_\_\_\_\_ The new features of my smartphone brand operating systems performs consistently

Perceived brand sustaining innovativeness

1. \_\_\_\_\_ My smartphone brand keep improving incrementally its product features.
2. \_\_\_\_\_ My smartphone brand keep providing better value comparing the previous version
3. \_\_\_\_\_ My smartphone brand keep providing much better performance than previous version
4. \_\_\_\_\_ My smartphone brand is able to keep over times an advantage in terms of innovation.
5. \_\_\_\_\_ My smartphone brand keep developing new versions of the product that meet my needs.

Awareness (Aaker, 1996)

1. \_\_\_\_\_ I am aware of my smartphone brand.
2. \_\_\_\_\_ I easily recognize my smartphone brand.
3. \_\_\_\_\_ I know what my smartphone brand stands for in the smartphone industry.
4. \_\_\_\_\_ I have a clear opinion about my smartphone brand.

Satisfaction (Aaker, 1996)

1. \_\_\_\_\_ My smartphone brand develops product’s features that I like the most.
2. \_\_\_\_\_ I get satisfying information and services from my smartphone brand.
3. \_\_\_\_\_ Overall, I am delighted with my smartphone brand.

Loyalty (Aaker, 1996)

1. \_\_\_\_\_ I recommend my present smartphone brand to my friends.
2. \_\_\_\_\_ I'm not willing to switch to another brand in the near future.
3. \_\_\_\_\_ I'll remain loyal to my present smartphone brand for a long time.

**Purchasing intention**

1. \_\_\_\_\_ I'll buy the next version of my smartphone brand for sure.
2. \_\_\_\_\_ I'll substitute my current smartphone with a new version from the same brand as soon as it's available.

PART 3. Please respond the questions below:

1. Please indicate your gender.
  - a. Male
  - b. Female
2. Please indicate your age.
  - a. 18-21
  - b. 22-23
  - c. Over 23
3. Please indicate your education
  - a. Bachelor
  - b. Master

PART 4. How do you consider future improvements of your smartphone brand with respect to the following aspects? (From 1 to 4)

1	2	3	4
Irrelevant	Not important	Important	Fundamental

1. \_\_\_\_\_ Design
2. \_\_\_\_\_ Screen
3. \_\_\_\_\_ Speed of operating system
4. \_\_\_\_\_ Reliability of operating system
5. \_\_\_\_\_ Storage/memory
6. \_\_\_\_\_ Connectivity (Wifi, Bluetooth, GSM)
7. \_\_\_\_\_ Speakers & earphones
8. \_\_\_\_\_ Camera
9. \_\_\_\_\_ Battery
10. \_\_\_\_\_ Simplicity of interface
11. \_\_\_\_\_ Interactivity of interface
12. \_\_\_\_\_ Positioning system (GPS)
13. \_\_\_\_\_ Security
14. \_\_\_\_\_ Overall

## **APPENDIX B**

### **Survey Questionnaire Italian Version Questionnaire**

Gentile studente,

il presente questionario è volto a rilevare le tue percezioni circa la marca dello smartphone che attualmente utilizzi. Il questionario richiede solo pochi minuti per essere completato, è anonimo, e ha esclusivamente finalità di ricerca accademica.

Prima di rispondere al questionario soffermati un attimo a pensare alle nuove funzionalità e caratteristiche introdotte di recente dal produttore dello smartphone che utilizzi.

Cerca di rispondere alle domande in maniera accurata e veritiera.

Grazie per la tua partecipazione e per aver contribuito all'avanzamento della ricerca scientifica.



## PARTE 1.

Per favore rispondi alle seguenti domande

A1. Possiedi uno smartphone?

- a) Si      b) No

A2. Quale marca di Smartphone possiedi?

\_\_\_\_\_

A3. Da quanto tempo è uscito il modello del tuo smartphone sul mercato?

- a. Meno di 3 mesi
- b. 4-6 mesi
- c. 7-12 mesi
- d. 12-24 mesi
- e. più di 24 mesi

A4. Perché hai scelto questa marca? (Per favore indica il motivo principale)

- a. Prezzo
- b. Performance
- c. Sistema operativo
- d. Design
- e. Fiducia nella marca
- f. Altro \_\_\_\_\_(indicare)

A5. Quanto tempo passi ogni giorno sul tuo smartphone?

- a. Meno di 1 ora
- b. 1-3 ore
- c. 4-6 ore
- d. più di 6 ore

A6. Il tuo uso primario dello smartphone è per?

- a. Lavoro
- b. Svago/intrattenimento

## PARTE 2.

Nel seguito troverai una serie di affermazioni. Pensando allo smartphone che attualmente utilizzi indica quanto sei d'accordo con ciascuna affermazione utilizzando una scala da 1 a 7.

1 significa che sei molto in disaccordo, 7 che sei molto d'accordo.

La scala è la seguente:

1	2	3	4	5	6	7
Molto in disaccordo	In disaccordo	Parzialmente in disaccordo	Nè d'accordo nè in disaccordo	Parzialmente d'accordo	D'accordo	Molto d'accordo

## Valore sociale

B1. Le nuove funzionalità e caratteristiche del mio smartphone mi fanno sentire accettato dagli amici e dai conoscenti

B2. Le nuove funzionalità e caratteristiche del mio smartphone migliorano la mia immagine

B3. Le nuove funzionalità e caratteristiche del mio smartphone migliorano l'impressione che io faccio sugli altri

B4. Le nuove funzionalità e caratteristiche del mio smartphone aumentano il mio status

## Valore emozionale

C1. Le nuove funzionalità e caratteristiche del mio smartphone mi rendono felice

C2. Le nuove funzionalità e caratteristiche del mio smartphone mi invogliano ad utilizzarlo

C3. Le nuove funzionalità e caratteristiche del mio smartphone mi fanno sentire a mio agio e rilassato quando lo utilizzo

C4. Le nuove funzionalità e caratteristiche del mio smartphone mi fanno stare bene

## Valore funzionale

D1. Le nuove funzionalità e caratteristiche del mio smartphone sono di alta qualità

D2. Le nuove funzionalità e caratteristiche del mio smartphone sono progettate in maniera adeguata e funzionano bene

D3. Le nuove funzionalità e caratteristiche del mio smartphone mi consentono di usarlo meglio

D4. Le nuove funzionalità e caratteristiche del mio smartphone ne hanno migliorato le prestazioni e aumentato l'utilità

## Innovatività percepita della marca

E1. Il produttore del mio smartphone migliora continuamente le funzionalità e le caratteristiche dei suoi telefoni

E2. Il produttore del mio smartphone accresce continuamente il valore dei suoi telefoni lanciando nuovi modelli/versioni

E3. Il produttore del mio smartphone accresce continuamente le prestazioni dei suoi telefoni lanciando nuovi modelli/versioni

E4. Il produttore del mio smartphone riesce a rimanere innovativo nel tempo

E5. Il produttore del mio smartphone sviluppa nuovi modelli/versioni che sono in linea con le mie esigenze e con quelle di altri clienti come me

Notorietà

F1. Ho grande familiarità con la marca del mio smartphone

F2. Riconosco facilmente la marca del mio smartphone

F3. So esattamente cosa rappresenta la marca del mio smartphone nel mercato della telefonia

F4. Ho un'idea chiara circa la marca del mio smartphone

Soddisfazione

G1. Le prestazioni del mio smartphone sono perfettamente in linea con le mie aspettative

G2. Le caratteristiche e le funzionalità del mio smartphone mi gratificano pienamente

G3. Sono estremamente soddisfatto del mio smartphone

Fedeltà

H1. Raccomando di solito la marca del mio smartphone ad amici e conoscenti

H2. Non ho intenzione di cambiare marca di smartphone nel prossimo futuro

H3. Penso di rimanere fedele alla marca del mio smartphone per molto tempo

Intenzioni di riacquisto

I1. Comprerò sicuramente il prossimo modello/versione del mio smartphone

I2. Sostituirò il mio smartphone con uno nuovo della stessa marca appena sarà disponibile

### PARTE 3

Indica quanto ritieni importante importante che il produttore del tuo smartphone in futuro sviluppi i seguenti aspetti del prodotto utilizzando una scala da 1 a 4. 1 significa irrilevante e 4 significa fondamentale.

La scala è la seguente:

1	2	3	4
Irrelevante	Non importante	Importante	Fondamentale

1. Design
2. Schermo
3. Velocità del sistema operativo
4. Affidabilità del sistema operativo
5. Capacità della memoria
6. Connettività (Wifi, Bluetooth, GSM)
7. Altoparlanti e cuffie
8. Fotocamera
9. Batteria
10. Semplicità delle interfacce grafiche
11. Interattività delle interfacce grafiche
12. Sistema GPS
13. Sicurezza dei dati

Usando la stessa scala fornisci una valutazione complessiva circa la necessità da parte del produttore del tuo smartphone di svilupparne in futuro funzionalità e caratteristiche.

1. Valutazione complessiva

## PARTE 4

Per favore rispondi alle seguenti domande

## L1. Sesso

- a. Uomo
- b. Donna

## L2. Età

- a. 18-21
- b. 22-23
- c. oltre 23

## L3. Corso di studi

- a. Triennale
- b. Specialistica