



รายงานวิจัยฉบับสมบูรณ์

โครงการ: ปัจจัยสำคัญที่ทำให้ผลิตภัณฑ์นวัตกรรมประสบความสำเร็จในประเทศไทย -
การศึกษาแบบองค์รวม

TITLE: KEY FACTORS FOR THE SUCCESS OF INNOVATIVE PRODUCTS IN
THAILAND - A HOLISTIC STUDY

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ABSTRACT

This research focuses on the identification of critical success factors of the innovative products, created by design at the product level. It adopts a holistic approach, studying both companies and consumers' perspectives. It develops a theoretical framework by studying the concept of the value curve in Blue Ocean Strategy. This framework is used as the research methodology. The twelve product values are identified: Functional Value, Physical Value, Emotional Value, Eco Value, User Value, Cultural Value, Social Value, Brand Value, Trend Value, Knowledge Background of Brand, Product Competitors and Support Product/Service System. These values are evaluated through the four companies perspectives, the baseline consumer analysis (300 samples) and the consumers' analysis of both five successful and un/less successful innovative products (500 samples). The research suggests three critical success factors of the value curve of innovative products: Functional Value, Physical Value and Support Product/Service System. The successful innovative products tend to provide much more value elements in the critical level than the un/less successful ones, in particular on these critical success factors. The first priority of the product value in both companies' and consumers' perspectives is the product-related values, i.e. Functional and Physical Values. The user-related and context-related value is sequence. Moreover, the result of the research on the consumer perspective suggests that Thai consumers tend to be inclusive and analytic and less likely to be structured and systemic when making buying decision.

Keywords: Innovative Product, Product Value, Blue Ocean Strategy, Design Management, Design Innovation, Critical Success Factor, Value Curve

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CHAPTER 1: INTRODUCTION

1.1 Introduction

The development of innovative products is one of the most critical strategies for enterprises in any sizes and types in Thailand. The enterprises will die or survive because they are currently in the 'in-between' crisis in the global context. On the one hand, they need to compete with the emerging industrial countries providing lower cost production capacities, such as China, Vietnam, India and Indonesia. In comparison with these countries, Thai manufacturing industries has higher labour skill and knowledge, and over 30 years experience in the improvement of production quality. On the other hand, the enterprises need to compete with the developed countries providing good design and high quality products and trusted brands, such as UK, Japan, Italy and USA. It is suggested that the development of new product development capability of Thai enterprises is the top priority for their competitiveness.

At the beginning of the twenty-first century, the importance of new product development capability has been raised by the government. The competitive strategy of Thai local enterprises has to be based on research, design and development of their own products and brands. Not only does the role of research and development does play a significant part for the industries, but also the added value driven by design is promoted, particularly on the product-oriented manufacturing industries, such as Furniture, Home Decorative Items and Gifts and new entrepreneurs. This research focuses on the development of innovative products driven by design. Design not only creates physically attractive products, but also integrates knowledge in science, technology, engineering and marketing all together. As a result, design generates the following values for innovative products: (i) creating desirable and functional products, (ii) creating products commercial possibilities, (iii) creating products fit to human behaviours and (iv) creating products enhance quality of life. As a result, design helps to integrate all required criteria, generate creative solutions and implement them to innovative products, rather than focusing on an aspect of aesthetic appearance.

To encourage the local enterprises to enhance the development capabilities of innovative products driven by design, there are many supportive initiatives run by the governmental bodies as the following:

- Office of Product Value Development, Department of Export Promotion (DEP), Ministry of Commerce, has initiated design supportive schemes, such as Design-Business Matching, Design Seminar and Workshop and Design Circle. These schemes promote design to add more commercial value to products. Designers play a key role in initiating new products.
- National Electronics and Computer Technology Center (NECTEC) and National Metal and Materials Technology Center (MTEC), part of National Science and Technology Development Agency (NSTDA), Ministry of Science and Technology have promoted 'design' at the research and development (R&D) and design implementation levels, such as material, engineering and technology R&D and their design implementation and design prototyping, testing and simulation. They have initiated the design-related projects, such as Eco Design and Ceramic Design.
- National Innovation Agency (NIA) has initiated funding schemes for research and development of innovations. Design Solutions is one of the key areas. The schemes provide support for research, prototype implementation, manufacturing process and business venture. According to these four schemes, 'design' as a process has not been recognised as a significant process for funding support.
- The Office of Knowledge Management and Development (OKMD), working under the Office of Prime Minister, aims to 'promote and share opportunity and intellect to Thai society' in order to provide equal opportunity in accessing all learning facilities (OKMD Website, 2008). One of the key objectives is 'to trigger new ideas and inspire new creativities' (OKMD Website, 2008). Thailand Creative and Design Center (TCDC), one of the eight divisions of OKMD, provide creative and design resources for designers, product developers and/or entrepreneurs to create and add value to their products. Apart from the learning materials and resources, TCDC has initiated other design-supportive activities, i.e. Design Exhibitions from world-famous

designers and brands, Design Seminars, and Creative and Design Training Programmes.

- Office of Small and Medium Enterprises Promotion (OSMEP), Ministry of Industry, has initiated product design and development center, named iSMEs. The letter 'i' stands for Integration, Idea, Intelligence, Innovation, International, Information and Information Technology (IT). This center aims to give support and advice for small and medium enterprises (SMEs) to plan design and marketing strategy and production technology process.

As mentioned earlier, design is an integrative discipline. Since the end of the twentieth century, the role of design in the countries, i.e. UK, Japan and USA has changed. The benefits of design are involving not only the aesthetic appearance of products or services, but also their strategic creative and innovative solutions. Design helps to generate innovative products/services, which solve users' problems, create original design solutions and integrate desirable appearance. In Thailand, design is mainly recognised as a marketing strategy for product cosmetics. Innovative products driven by design are paid less attention in the local enterprises because they require both deductive and inductive thinking, more research and knowledge, leadership and vision in design. Enterprises need to implement design at the strategic level as a core of business.

There are a handful number of companies in Thailand achieving design at the core business, recognised worldwide as good design products with creative and innovative solutions. Inevitably, the development of the innovative products is high investment and return (e.g. Tidd et al, 2001). It involves with high cost and risk (e.g. Ulrich and Eppinger, 1995; Home-Martin et al, 2002). This means there is a big chance for failure and a small opportunity to success. However, the development of the innovative products is a critical activity which the local enterprises have to implement as a core value creation strategy in their businesses. It may cause business failure if the enterprises fail to design and develop their own products to strengthen their brand and competitiveness. As a result, the development of the innovative products is one of the key criteria for success of the local enterprises.

To create the innovative products driven by design, the local enterprises are experiencing many problems. Human resources are one of the critical problems. To change the local enterprises' capability from production owners and goods licensees & importers to design, product and brand owners demands additional human resources and skills in R &D, a variety of design disciplines, marketing research and strategy (not sale marketing) and business mindset change, from business follower to visionary design leadership. Regarding new product development process, the local enterprises are lack of experience and the human resources at the beginning to the end of the process. As mentioned earlier, innovative product development activities require high investment causing high risk. These activities are accumulative knowledge and experience. Even though enterprises can initiate, design, develop, implement innovative solutions and launch the innovative products to market, it does not mean all launched products will be commercially success. According to Cooper (2000) the rate of commercial success of innovative product development is only one out of four. The competitiveness on the local, regional and global market is intense. Customers are segmented and have a variety of direct and indirect competitive products. Tom Kelly suggested that customers demand humanised products fitting to their total human value, i.e. transaction appeal; user performance; lifestyle fit; symbolic, social and cultural value and self-esteem. As a result, the uncertainties of both internal and external factors cause difficulties for the inexperienced local enterprises in the implementation of the innovative product development activities. In comparison with the country the local industries on the development of innovative products are lagging behind Japan around fifty years.

Reviewing the literature in the areas of new product development, innovation and design management since the 1950s published in the UK and USA, there are a number of the researches suggesting key success factors in relation to innovative products:

- (1) the introduction of the identification of key factors that contributes to the success of innovative products at the product level (e.g. Cooper and Press, 1995; Cooper 2000)
- (2) the introduction of key success factors both internal and external factors for the development of innovative products (e.g. Rothwell, 1972; Cooper, 1983; Cooper 1993)

- (3) the introduction of key success factors for innovation management at the corporate level, for example sources of new ideas, new product development process, innovation strategy and innovative culture (e.g. Brunel University, 2000; Tidd et al, 2001)
- (4) the introduction of key success factors for multidisciplinary team working within organisations (e.g. Hauptman and Hirji, 1999; Holland et al, 2000)
- (5) the introduction of key success factors for the development of innovative products within collaborative networks among multidisciplinary organisations (e.g. Bussracumpakorn et al, 2010)

According to the literature review, all results are focused on the perspectives of either customers and corporate on innovative products. This main argument is the success of innovative products needs to be synergistic. On the one hand, consumers have been more demanding and getting more complicated. They require efficient, effective and ethical products. On the other hand, businesses must build and sustain consumer relationship, experience and brand equity. One of the fundamental understandings, which have been missing in the previous studies, is the understanding of the value of the innovative products from both customers and corporate perspectives. The success cannot depend on one party. The success of the innovative products must fulfill both parties. In Thailand, the development of the innovative products is one of the critical aspects, which the local enterprises have not been mainly focused. They are more focusing on price, place and promotion. Though the governmental bodies have initiated many supportive schemes to help the local enterprises, from handicrafts to blue-sky products and from individual entrepreneurs to large enterprises, the innovative product development has not mainly been a main practice in them. Inevitably, the most critical part of the development of innovative products is the uncertainties of the successful innovative product in corporate, market and human levels. Even though the Thai enterprises are operating at the local level, they are competing at the global level. As a result, not only do they need to plan and implement the practice of the development of the innovative products as the whole process at the corporate level, but also they expect their innovative products to succeed in market.

To predict the success of the innovative products launched in market is extremely difficult, in particular 'blue ocean' products. The previous studies, as mentioned

above could not identify key factors to predict the success of the innovative products. The prediction of the success of the innovative products is not only extremely difficult for the local enterprises, but also the global ones. The critical point is that they are lack of a theoretical framework to analyse the success of the innovative products. As a result, the aim of this research is to identify a framework and critical success factors of innovative products at the product level. The following objectives are:

- (1) To develop a theoretical framework for the analysis of the success of the innovative products based on Blue Ocean Strategy principle
- (2) To analyse key success factors of the innovative products
- (3) To suggest the analytical framework and critical success factors of the innovative products

1.2 Literature Review

Reviewing the literature (Von Stamm, 2008), product innovation is generally defined into five types: (i) New-to-the-World, (ii) Major Developments, (iii) Line Extensions, (iv) Minor Developments and (v) Me-Too). According to this classification, the levels of innovative products are categorised by the level of technology and the market entry. For example, New-to-the-World products introduce new technology and also new to the market, such as the first launch of mobile phone and desktop computer. Me-Too products represent the change of product appearance and trying to fit the existing products to segmented markets. In the creative world, the classification of product innovation based on the technology and marketing factors is too narrow to understand innovative products driven by design as the main focus of this research.

Regarding this research, innovative products driven by design have been categorised into four groups: (i) Basic Product, (ii) Creative Breakthrough Product (Cagan and Vogel, 2002), (iii) Unique/Inventive Product and (iv) 'Blue Ocean' Product (Kim and Maubourge, 2005). The level of the innovative products is defined by two aspects: style and function, not technology and market. These aspects are significant in industrial/product design practice. This is because design is applied, integrative, interdisciplinary knowledge discipline. Design cannot invent new technology, but it can invent and innovate new function and style of products. It also help to generate creative problem-solving and transferring ideas to tangible solutions. The basic product has existing/adjusted function and style. The unique/inventive product has

existing/adjusted function and distinctive style. The creative breakthrough product has distinctive function and existing/adjusted style. The blue ocean product has distinctive function and style. In this research, innovative products driven by design are used as 'the innovative products'. The innovative products include the following product categories: Basic Product, Creative Breakthrough Product and Unique/Innovative Product. Figure 1.1 illustrates four types of the innovative products according to function and style.



Figure 1.1: Four Types of the Innovative Products

To develop a theoretical framework to analyse the innovative products in order to predict their success, the research selects Blue Ocean Strategy (BOS) Principle as means to understand the success of the innovative products. The BOS principle has been developed by Kim and Maubourge. It has been initiated by the study of 150 strategic moves in more than 30 industries for over 100 years, from 1880 – 2000. 'Value Innovation' is the key success of the BOS principle by the simultaneous pursuit of differentiation and low cost to create new market space, as shown in Figure 1.2

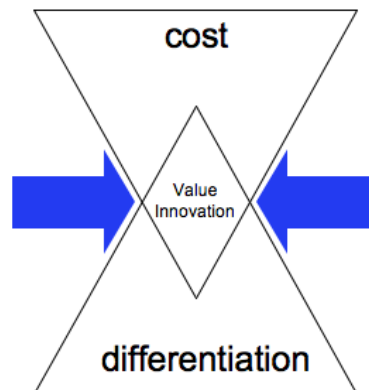


Figure 1.2: Value Innovation Concept

BOS offers a set of repeatable methodology and tools in the pursuit of value-driven innovation. It includes the followings: Strategy Canvas, Value Curve, Four Actions Framework, Six Paths Framework, Buyer Experience Cycle, Buyer Utility Map and Blue Ocean Idea Index. Reviewing these methods and tools, the key aspect of the BOS is the identification of the distinctive value curve for customers/buyers/users in the untapped market. The distinctive, differentiate value is the value-added on products, called value curve. Regarding the ERRC (Eliminate, Reduce, Raise and Create) Grid principle, in order to add the BOS value into products, there are the following guidelines:

- (i) Which of the factors that the industry takes for granted should be eliminated?

For example, the following competing standard factors should be eliminated from products, i.e. take-it-for-granted and slow-down features. In the development of the economic class seat in the plane, the bulky-styled seat is taken for granted should be eliminated. Though the seat look and feel comfortable, this causes passengers have less room when they sit.

- (ii) Which factors should be reduced well below the industry's standard?

For example, the following competing standard factors should be reduced, i.e. soar costs, inefficiency, long process, problematic cause and unnecessary issues. In the development of the economic class seat in the plane, the tight and cramp environment in the limited airplane space could be reduced.

(iii) Which factors should be raised well above the industry's standard?

For example, the following competing standard factors should be raised, i.e. potential benefits. In the development of the economic class seat in the plane, the following potential benefits for passengers may be raised, such as increasing more front legs room, seat size, seat accessibility and style.

(iv) Which factors should be created that the industry has never offered?

New competing standards should be created for products. Products should create new competing standards.

To identify the distinctive value or create a new value curve for a commercially viable, innovative product in the industry, the BOS Formulation Principle process is suggested:

- Reconstructing market boundaries. To reconstruct market boundaries from head-to-head competition to untapped one, industries need to analyse six key aspects, named Six Paths Framework, i.e. Industry, Strategic Group, Buyer Group, Scope of Product/Service Offering, Functional-Emotional Orientation and Time. This helps identify convincing blue ocean opportunities
- Focusing on the holistic picture. To visualise value curve, Strategy Canvas is used as a method and tool, as mentioned earlier. The value curve is the distinctive value of a blue ocean product in comparison with other existing products in the same industry.
- Reaching new demands. 3 types of noncustomers should be explored: Soon-to-be customers, Refusing customers and Unexplored customers. First, the soon-to-be customers are persons on the edge of the market, waiting to jump in. Secondly, the refusing customers are persons consciously choose not to use or cannot afford to use the product. Thirdly, the unexplored customers are persons are in the distant market.
- Get the Strategic Sequence Right. The aim of this final stage is to ensure blue ocean ideas are commercial viability. There are four sequential steps to ensure that: Exceptional Buyer Utility, Accessible Price, Target Cost and Adoption Hurdles.

Reviewing the four steps of the BOS formulation principles, these steps have been adopted as the following theoretical research framework:

- (1) According to the principle of Reconstructing Market Boundaries, I selected the 10 innovative products based on the six paths framework. These products tend to offer blue ocean opportunities in any of the six paths. These products are in the following three innovative product categories: unique/Inventive product, creative breakthrough product and blue ocean product. To ensure the selected products offer blue ocean opportunities, the products are evaluated with substitute and alternative products in international market.
- (2) According to the principle of Focusing on the Holistic Picture, the strategy canvas tool is used to identify the value curve of the product categories in comparison with the value curve of the innovative products.
- (3) According to the principle of Reaching New Demands, both value curves as mentioned above are evaluated by noncustomers. The research employs random sampling. The random sampling represents the noncustomers population without defining the types.
- (4) According to the principle of Get the Strategic Sequence Right, the research focuses on the first critical step, i.e. buyer utility, especially the concept of utility levers. BOS suggested six utility levers to provide exceptional utility for buyers. To provide exceptional utility is to provide exceptional value.

According to the BOS theory, the successful innovative products tend to create the distinctive value in comparison with its product category.

1.3 Research Structure

According to the research framework mentioned above, Figure 1.3 shows the research structure.

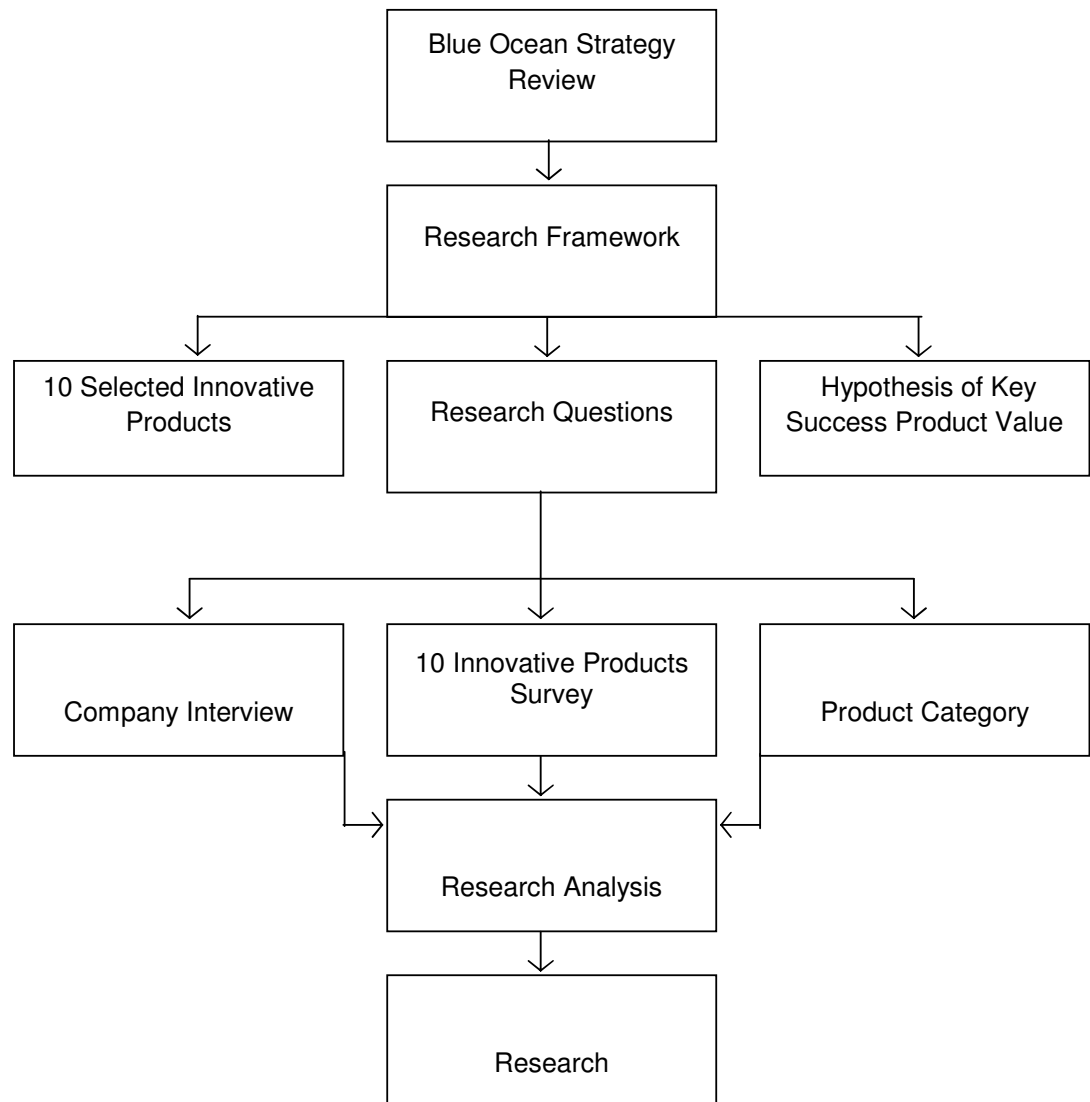


Figure 1.3: Overall Research Structure

As shown in Figure 1.3, the structure of the research process is illustrated. The details of each element are:

- Literature Review and Study Framework (Chapter 1)
- Research Methodology: 10 innovative products selections, identification of research questions, interview and survey methods and research design (Chapter 2)
- Research Data Analysis: the companies' perspective on their innovative products, the consumer's baseline analysis on three product categories and the consumers' perspective on the 10 selected innovative products (Chapter 3)
- Conclusions and Suggestions (Chapter 4)

1.4 Scope of Research

The scope of the research comprises two stages:

Stage 1 investigates a theoretical framework of Blue Ocean Strategy which would be implemented to the success of innovative products. Based on the analysis of BOS, Stage 1 suggests a theoretical framework for the analysis of the success of innovative products

Stage 2 is the main research focus. It examines critical success factors of the 10 selected innovative products in Thailand, in particular at the product level. These innovative products consist of two groups: successful and unsuccessful products. The criteria to identify the difference between both types of innovative products are explained in Section 2.3.

1.5 Intended Research Readership

The intended readership is 'leaders/owners/CEO of organisations', who have the authority and accountability to make decisions, direct organisations and change the dynamics of the business system. The belief of leaders represents that of their organisations. If leaders are willing to change their attitudes and have insights into critical success factors of the development of the innovative products, the whole dynamics of the product innovation system will be changed. Also, it has been widely recognised that the achievement of great design and product innovation within organisations is driven by leaders, owners and Top Management. In addition, my

study would be a general interest to any designers and readers (e.g. project managers, engineers, marketers and researchers) who are working in the development of the innovative products.

1.6 Research Limitations

A theoretical study and an empirical study are two research parts. The limitations emerge when the research tries to match a theoretical view with the empirical study. This is particularly significant when the theoretical 'Blue Ocean Strategy' (BOS) methodology is related to the empirical study of the ten selected innovative products. The research limitations occur beyond the controlled ability of the research because of the following reasons:

As I had not directly participated or worked in the development of innovative products, my research position is as a potentially threatening investigator and outsider of the products and their creation process. As a result, it is very difficult to observe and to get access to all of the information in details.

Secondly, the subject of the empirical study, innovative products, is related to both expected and unexpected sensitive issues: the former, the commercial sensitivity of innovative product information, and the latter, the internal product innovation evaluation process and business performance.

Thirdly, innovative products are difficult to be identified in Thailand. A majority of the new developed products are 'copy and development' products. There is unlikely to employ the stage of research, design and development at the outset of product development process. To prove the innovativeness of the selected innovative products, the research needs to compare them with existing product competitors both national and international level.

Fourthly, some innovative products are difficult to be tested. For example, the sanitary products need to be installed in a proper space. This requires a big investment to set up all the systems. To conduct the research in the official

showroom, it is very difficult to fit the research method with the showroom conditions. Instead of touching and feeling the real products, the research participants have to watch the video of product presentation to assess the innovative product value.

As a consequence, these problems cause the following limitations and difficulties: the accessibility of the in-depth investigation of the empirical study, the understanding of the whole product innovation evaluation process, the limited resources of Thai innovative products, and the assessment of the innovative product value in the sanitary product category. Inevitably, these problems affect the data collection during the empirical study and the study findings.

CHAPTER 2: RESEARCH METHODOLOGY

Introduction to Chapter 2

Chapter 1 suggests an introduction of this research. It identified theoretical research framework based on the theory of blue ocean strategy.

Chapter 2 describes the empirical research structure and methodology. The following sections are:

Section 2.1 describes the research rationale and approach. This research employs the holistic approach. To identify key success factors of innovative products, it needs to understand them from, not only the consumer's perspective, but also the company's perspective. Moreover, it needs to understand both successful and unsuccessful innovative products.

Section 2.2 describes the research structure: the selection of 10 successful and unsuccessful innovative products in Thailand, the assessment of innovative product values, data collection protocol and research data analysis

Section 2.3 describes the criteria of the innovative product selection and their success.

Section 2.4 describes the details of the 10 selected innovative products.

Section 2.5 describes a theoretical framework to analyse key success factors of innovative products at the product level. It proposes 12 non-price values of innovative products which are significant to distinguish their success and failure.

Section 2.6 describes main concerns in designing the research process in order to identify key success factors of the selected innovative products, particularly on the consumer perspective.

Section 2.7 describes the research data collection protocol: data collection approach, methods and tools. Regarding the data collection approach, it explains the data

collection process, from Data Collection Planning to After Data Collection. It also describes two data collection methods: face-to-face, structured interview and questionnaire. Moreover, it describes the research tools used for both companies and samples.

Section 2.8 describes the research data analysis methods: Strategy Canvas, Pattern-Matching, Value Measurement, Prioritisation and Comparative Value.

2.1 Research Rationale and Approach

To identify key success factors of the innovative products, the holistic approach has been used. Based on Fuller's theory of synergy (Fuller, 1975), understanding the relationships of the whole system tends to reveal the underlying factors, behaviours, structure, and dynamics of the relations. Fuller (1975) asserts that the advantage of analysing the holistic system is to investigate hidden causes which cannot be identified by the lack of understanding the relationships of the whole systems. As a result, to understand key success values of the innovative products at the product level, it is significant to understand both creator and consumer perspectives. The understanding of both relations among interacting parts is more important than each individual part.

Although there are comparative studies in the identification of key success factors of innovative products at the product level in the West, they have been reflected from only one part, either creator or consumer perspective. Nonetheless, there is no comparative work in Thailand. Instead of using a reflection of one perspective, the research methodology is based on the reflection of both perspectives. The creator and consumer perspectives need to be investigated.

To analyse key success factors of the innovative products at the product level, the research adopts the principle of the relational structures or relations of interacting factors. This means the success of the innovative products depends on the interacting parts of intrinsic product values (as mentioned in details in Section 2.4), which exclude price, place and promotion values. According to the Blue Ocean Strategy (BOS) Principle, the success of the innovative products depends on the relations of the significant levels of competing and distinctive factors. As shown in the principle of ERRC (Eliminate, Reduce, Raise and Create), an innovative product must have the relational combination of the following factors: (i) eliminating the competing product factors, such as Take-for-granted and Negative Effects, (ii) reducing the competing product factors, such as Soar Costs, Inefficiency, Long Process, Cause of Problems and Unnecessary Issues, (iii) raising the competing product factors, such as Potential Benefits and Standard Value, and (iv) creating the distinctive product factors, such as Uniqueness, Cult and Exclusivity. As a result, to analyse key success factors of innovative products, the research needs to understand the relational structure of the significant levels of the ERRC factors.

To tackle the above mentioned interest, a handful number of samples are the research approach. The samples of the research are selected, based on the principle of 'case study' approach rather than other research approaches, such as survey, experiment and history. Yin (1982) suggests that the case study approach allows the investigation to retain the holistic and meaningful characteristics of real-life events, such as individual life cycles, organisational and managerial processes, and international and industrial relations. Marshall and Rossman (1999) also assert that the case study method is suitable for delving into complexities and processes. The following arguments are mentioned to reason the research approach:

- (i) The research attempts to search for the innovative products designed and created in Thailand. As detailed in Section 1.2, innovative products are driven by design, not technology or market. Designing the innovative products can be categorized into three groups, i.e. Creative Breakthrough Products, Inventive Products and Blue Ocean Products. It is very difficult to find these innovative product groups. The product innovation strategy, such as 'me-too' or 'copy-development' is the most common practice in this country.
- (ii) It would be extremely difficult to understand the underlying key success factor of the innovative products without understanding the relational structure of innovative product values and the holistic perspectives between creators and consumers.
- (iii) Finally, to understand the richness of the underlying, interacting product values to make the innovative product success from the holistic perspectives, the research must rely on, not only retrieved documents and the investigation of physical artifacts which are dominating in the historical method, but also from systematic interviews with the innovative product creator and real innovative product assessment from consumers as the main sources of evidence.

2.2 Research Structure

The research structure is an essential requirement in order to increase reliability. The objective of reliability is to demonstrate that the operations of a study can be repeated with the same results. Its goal is to ensure reliable research procedures and results. Also, it is to minimise the errors and biases in a research. Figure 2.1 depicts the research structure:

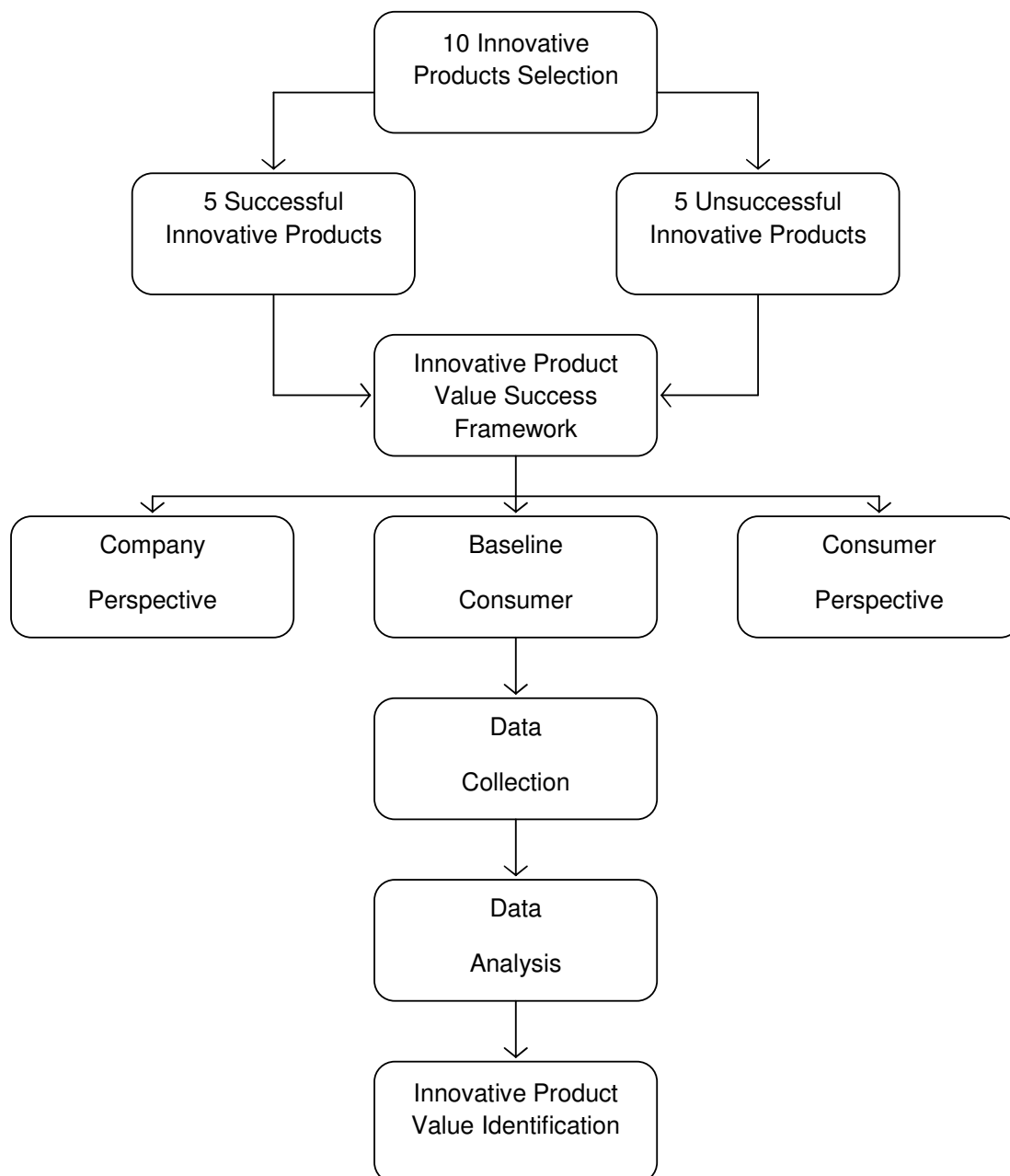


Figure 2.1: The Research Structure

As shown in Figure 2.1, the research selects the 10 innovative products in Thailand. The selection criteria of the innovative products and their success and failure are elaborated in Section 2.3. The innovative product value success framework and 12 proposed innovative product values are explained in Section 2.4. Section 2.5 describes the research design and planning process. Section 2.6 describes the research data collection protocol and Section 2.7 describes the research data analysis methods.

2.3 Innovative Product Selection

2.3.1 Innovative Product Criteria.

To identify the relational structures of the significant levels of competing and distinctive factors underlying the success of innovative products at the product level, the research selects the 10 innovative products as samples. The innovative product selection criteria are:

- (1) Innovative products are designed in Thailand.
- (2) Innovative products are in the following categories: (i) Creative Breakthrough Products, (ii) Inventive Products and (iii) Blue Ocean Products (as explained in Section 1.2).
- (3) Innovative products are driven by design, not technology and market. Design is not just only styling (new product appearance, i.e. colour, materials, shape and patterns), but also uniqueness, differentiation and superiority in comparison with existing competitive products. According to the ERRC principle, innovative products need to demonstrate the 'Create' Factor, i.e. creating product distinctiveness.

2.3.2 Innovative Product Success Criteria

Regarding the 10 selected innovative products, five of them are successful innovative products. The following success criteria are

- (i) Good Performance of Sales. Successful innovative products have a singly well-performing sales record, i.e. the best seller or always sales. Their success is qualitatively identified by the products' owners because financial information of each innovative product is commercially sensitive.

- (ii) Good Design Recognition. Innovative products should get honorable recognition by good design awards, either national or international level. The examples of good design awards are: DeMark, G-Mark, IF and/or Red Dot.
- (iii) Comparative Sales Performance. Innovative products should have better sales performance in comparison with the other products in the same product category.
- (iv) No/Little Design-related Problems. Innovative products have no/little design-related problems at the product level. The problems are identified by either the product owners or consumers' feedback.

Innovative products categorised as 'success' need to perform well at least on three out of the four main criteria.

2.4 Ten Innovative Products

As mentioned above, the successful innovative products are selected according to the three out of four main criteria. The summary of the 10 selected innovative products is shown in Table 2.1. Please see the image of all products in comparison with their direct and substitute competitors in Appendix 2-A.

Table 2.1: Summary of the 10 selected innovative products

Product Name	Product Code	Company Name	Product Category/ Strategic Group	'Create' Factor
Dancing Alligator	T1	Plan Toys	Toy/ Wooden	Click-Clack Sound, Rhythmic Movement
Pounding Power	T2	Plan Toys	Toy/ Wooden	Automatic Pounding System
Contemporary Dollhouse	T3	Plan Toys	Toy/ Wooden	Future Style,
Tori	T4	Plan Toys	Toy/ Wooden	Foldable, easy storage
Lini Bench	F1	Osisu	Furniture/ Bench	Multi-purpose Bench

Elle Chair	F2	Yothaka	Furniture/ Dinning Chair	Water Hyacinth
Earth Bench	F3	Osisu	Furniture/ Bench	Sand Paper
Scapa	F4	Osisu	Furniture/ Stool	Left-over Button Stamped Sheet
Together	S1	Bathroom Design	Sanitaryware/ Bathtub	Waterfall Experience, I- Spa2 Technology
Adrenaline	S2	Bathroom Design	Sanitaryware/ Bathtub	BedTub, I-Vichy Experience

The 10 selected innovative products are in the three product categories: Toys, Furniture and Sanitary Ware.

Table 2.2: Summary of the 5 selected successful innovative products

Product Code	Good Sales Performance	Design Recognition	Comparative Performance	No/Little Design Problems
T1	Good Record	Good Toy Award (UK), Spiel Gut (Germany), Oppenheim Best Toy	Always Sale	None
T2	Good Record	G-Mark (Japan)	Always Sale	None
T3	Well on the first launch	-	Slow	n.a.
T4	Not well	-	Slow	n.a.
F1	Good Record	-	Always Sale	None
F2	Good Record	-	Always Sale	None
F3	A few	-	Very Slow	n.a.
F4	Not much	DEmark (Thailand), GMark (Japan)	Not well	n.a.
S1	Good Record	IF (Germany)	Well	n.a.
S2	Not well	DEmark (Thailand)	Quite OK	n.a.

Source: Extracted from the Company's Interview

As shown in Table 2.2, the 10 selected innovative products are divided into 2 groups as the success criteria described in Section 2.3.2: the successful innovative products

and the unsuccessful innovative products. The successful innovative products, T1, T2, F1, F2 and S1 are highlighted in grey.

2.5 Innovative Product Values

As mentioned in Section 1.2, the research has developed a theoretical framework to analyse key success factors of innovative product at the product level. As shown in Figure 2.2, the strategic sequence of Blue Ocean Strategy comprises four sequential stages, i.e. Buyer Utility, Price, Cost and Adoption. The first stage is the buyer utility. According to the concept of the buyer utility, the questions leading to the success of innovative products would be; Is there exceptional buyer utility in your product? Does your product offer unlock exceptional utility? Is there a compelling reason for consumers to buy it? This stage is the most significant. Kim and Mauborgne (2005) suggest that if these questioned product qualifications are absent, no product opportunity will be begun with. Two product alternatives are in this stage, either freeze the idea or rethink it until an affirmative answer is reached. The buyer utility concept is likely related to the 4P marketing strategy. The first P is Product, one of the most significant aspects in marketing strategy. Without compelling product, it is hard to sustain good sales performance.

As mentioned above, it demonstrates the most significant role of product in relation to the success of business and/or marketing functions. Product is at the top of the commercial viability in the strategic sequence. Regarding the principle of the buyer utility, the innovative products need to offer exceptional value. Many companies fail to deliver the exceptional product value, because they obsess the novelty of their technology in products or services (Kim and Mauborgne, 2005). The research argues that the exceptional value of innovative products cannot be achieved without the understandings of their intrinsic values of buyer experience.

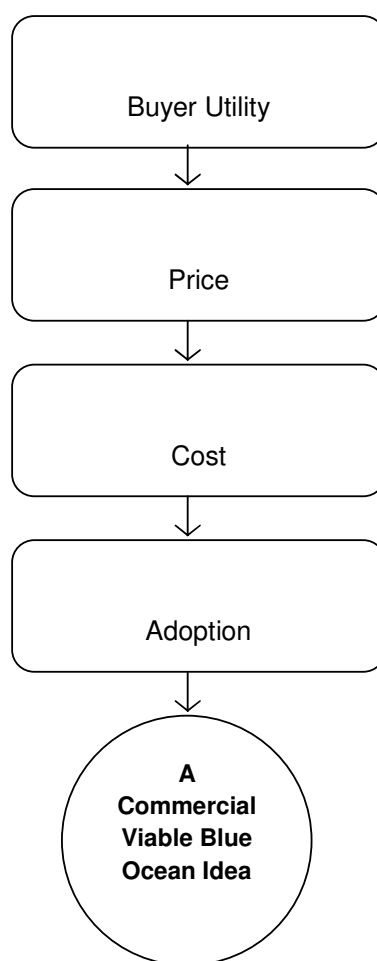


Figure 2.2: The strategic sequence of Blue Ocean Strategy

According to the buyer utility, it lists the 'six utility levers' on the six stages of the buyer experience cycle to deliver exceptional utility value to buyers, i.e. Customer Productivity, Simplicity, Convenience, Risk, Fun & Image and Environmental Friendliness. Using these levers as the starting point, the research reviews more literature related to product values affecting the success of innovative products. All values are non-price values. The research identifies 12 innovative product values:

Table 2.3: The identification of 12 innovative product values

Key Product Values	Value Description	Sources
Physical Value	Product Perception	Cagan and Vogel (2002),
Functional Value	Product Benefits	Cagan and Vogel (2002), Kim and Maubourge (2005)
Emotional Value	User's Emotion	Cagan and Vogel (2002), Kim and Maubourge (2005)
Eco Value	Environmental Advantages	Kim and Maubourge (2005), McDonough and Braungart (2002)
User Value	Self- and Social Perception	Boztepe (2007)
Cultural Value	Thai Value	Adopted from Japanese Kansei Design
Social Value	Social Responsibility	Whiteley (2003), Cooper (2005), Davey et al (2005)
Brand Value	Brand Identity	Aaker and Joachimsthaler (2000), Knapp (2008)
Trend Value	Consumer Behaviour Forces	Sparke (1986), Higham (2009)
Knowledge Background of Brand	Brand Recognition	Cagan and Vogel (2002),
Product Competitors	Product Knowledge	Kim and Maubourge (2005)
Supportive System Value	Product Services	Cagan and Vogel (2002), Kim and Maubourge (2005)

According to the innovative product value identification, three value creation levels are defined: (i) Product Value, (ii) Product Surroundings Value, and (3) Personal User Value. The product value includes physical and functional values. The product surroundings value includes product competitors, product supportive system, brand value and consumer trends. The user level includes user value, emotional value, personal preferential value (eco, cultural and social values) and brand knowledge.

2.6 Research Design

As mentioned in Section 2.1, the research employs the holistic approach. Research data needs to be collected from both creator and consumer perspectives. Regarding the creator or company perspective, the research decides to interview business owners or design directors who understand the whole design process, from ideas to

commercialization. Regarding the consumer perspective, it consists of two parts: (1) the baseline analysis of three product groups, i.e. Toys, Seating Furniture and Sanitary Ware and (2) the innovative product analysis of the 10 selected innovative products. In order to evaluate innovative product values, the research adopts a theory testing. The twelve selected innovative product values and their details, as shown in Table 2.4, are:

Table 2.4: Twelve innovative product values and their details

Key Product Values	Value Description	Value Details
Physical Value	Product Perception	Aesthetics, Good Quality, Appropriate to the context of use, Enabling, Durability, Differentiation, Uniqueness, Innovativeness
Functional Value	Product Benefits	Comfort, Safety, Ease of Use, Multi-functions, Convenience
Emotional Value	User's Emotion Fulfillment	Adventure, Independence, Security, Sensuality, Confidence, Power, Fun, Affection, Memorability, Taste
Eco Value	Environmental Advantages	Energy Saving, Rethinking Ideas, Biodegradable, Green Energy, CO2 Reduction
User Value	Self and Social Perception	Saving Expenses, Time Saving, Convenience, Efficiency, Role Fulfilling Self-Fulfillment, Social Image, Group Belongingness
Cultural Value	Thai Value	Thainess, Thai Knowledge, Thai Tradition
Social Value	Social Responsibility	No Child Labour, Human Rights, Made-in-Thailand, Social Wellbeing, Fair Trade
Brand Value	Brand Essence	Brand Image, Brand Identity, Brand Promise, Brand Personality
Trend Value	Consumer Behaviour Forces	Trendy, In-Trend Internationally, In-Trend Nationally
Knowledge Background of Brand	Brand Recognition	Brand Awareness, Brand Loyalty
Product Competitors	Product Knowledge	Direct Competitor, Substitute Competitor, Alternative Competitor
Supportive System Value	Product Services	After-sale Service, Warranty, Product Accessories, Product Extendables, System Platform, Product Supplements

2.7 Data Collection Protocol

2.7.1 Data Collection Methods

As mentioned in Section 2.1, the research has adopted the holistic approach. To identify key success factors of the innovative products, not only are the selected companies' perspectives are examined, but also consumers' perspectives. Three main data collection methods are used to investigate both parties: face-to-face, structured interview and questionnaire.

2.7.1.1 Face-to-Face Structured Interview

Interviewing is described as 'conversation with a purpose' (Kahn and Cannell 1957, 149). The face-to-face, structured interview with open-ended and close-ended questions is adopted to understand key success factors of the innovative products from the creator perspective. Coolican (1999) describes structured interview that it is the standardised interviewing procedure which includes pre-set questions in a predetermined order. Coolican suggests the advantages of the structured interview that it is to help to avoid 'looseness and inconsistency' which accompany interview data gathered by the categories of informal interviews: non-directive interview, informal interview and semi-structured interview. In comparison with the informal interviews, Coolican claims that the structured interview also provides the ease of data comparison and analysis. This is because the informal interviews are difficulties in analysis because answers may consist of a wide variety of qualitative information. The informal procedure could also make data comparison less fair and reliable. Moreover, Coolican asserts that the structured interview reduces interpersonal bias factors. Furthermore, it can be managed in given low time and effort commitment in comparison with informal interviews which would consume more time and energy because of the length and depth of the interviewing process.

2.7.1.2 Questionnaire

To reach a targeted number of consumers' perspectives, a questionnaire method is adopted. The details of the research questionnaire are shown in Section 2.7.3.

2.7.1.3 Review of Retrieved Documents

The review of retrieved documents is used to supplement interview and innovative product data. The documents, including organisation objective, strategy, structure,

culture and the details of innovative products are gathered and analysed. It also includes competitive products. The sources of the documents include published organisational websites, annual reports and/or formal publications. This review is used for the description of the behaviour of organisations, and the product details. As Yin (1982) claims that this method can provide history and context. Also, Marshall et al (1999) assert that the review of retrieved documents is rich in portraying the values and beliefs of participants.

2.7.2 Data Collection Approach

Data collection approach comprises four main stages: (1) data collection plan, (2) before data collection, (3) during data collection and (4) after data collection.

2.7.2.1 Data Collection Plan

The research plans to collect data of company and consumer perspectives on the ten selected innovative products. Three research steps have been planned. First, the research approaches the companies who designed and developed the products. There are four main companies, i.e. Plan Toys, Yothaka, Bathroom Design and Osisu. The face-to-face, structured interview is adopted as the main research method. Secondly, the research examines the baseline consumer perspectives on the ten selected innovative products, categorized into three product categories, i.e. Toys, Seating Furniture and Sanitary Ware. The final stage is the examination of the ten products

2.7.2.2 Before Data Collection

To collect research data of private companies, the formal approach is the best strategy to access required internal data. Before interviewing, the formal introductory letter was sent to Director or Design Director of the companies. After that, the companies were contacted by telephone to discuss more details about the investigation and to arrange further appointment to interviews. On the other hand, to collect data of consumers, a few of the pilot questionnaires were designed. Each pilot questionnaire was tested by a small sample of four. After the pilot study had done several times, the final questionnaire is finalized. The final one is used for the baseline consumer perspective and consumer perspective of the innovative products.

2.7.2.3 During Data Collection

There are two types of data collection methods of company and consumer perspectives: interview and questionnaire. First, by the face-to-face, structured interview for the companies, the research participants are visited in their offices at their convenient time. The interview is approximately one and a half hour. With research participants' permission, tape and video recorders are used during the interview to assist in writing up afterwards. Small notes were written on the interview script during interview. To collect data of the baseline consumer perspective of the three product categories, over three hundred sixty questionnaires were randomly distributed, approximately one hundred twenty questionnaires for each product category. Not only are the baseline consumer perspectives of the three product categories collected, but also the consumer perspectives of the ten selected innovative products as mentioned in Section 2.4. To investigate the consumer perspective on each innovative product, 50 samples are randomly picked for each product. During the data collection, the participants can see, touch and/or feel the real product while they are answering all of the questions. If they require more explanation in any aspects related to the innovative products, the research assistants will support on more elaborated details on any product and company details. In the sanitary ware category, there are difficulties to access the real installed products because of its size and technical installation. To solve this problem, the prepared video presentation of two sanitary wares (S1 and S2) is used to show the products to the research participants.

2.7.2.4 After Data Collection

Regarding the face-to-face, structured interview, the interview verbatim is transcribed and filed according to the categorization of questions in the data collection tool after each interview. The video record is kept with the interview transcript in a computer file. The transcript is in the form of paragraphs, in the format of question and answer. On the other hand, all the questionnaire data are recorded in the Microsoft Excel. The data is double-checked again before starting the analysis process. The original questionnaires are categorized according to the type of innovative products.

2.7.3 Data Collection Tools

There are two types of data collection tools, i.e. (1) structured interview questions with an interview note for the company interview, as shown in Appendix 2-B and (2) questionnaire 1 and 2 for the consumers' product evaluation, as shown in Appendix 2-C. The tools are based on the same design principle.

The data collection tool is designed by employing twelve selected innovative product values as guidelines in structuring all data collection questions. Regarding the structured interview, it comprises three parts:

Part 1 aims to investigate the background of innovative products and their process in companies. Open-ended questions are employed. It is suggested that the open-ended questions allow interviewees to freely and spontaneously express their own views and experience (Oppenheim, 1992; Coolican, 1999). The research questions in Part 1 are:

- Please define the characteristics of your innovative products
- How your company manages the development of innovative products with your company? Any standards or documents?

Part 2 aims to examine the value assessment of the innovative products within companies. There are two types of questions, i.e. (i) open-ended questions and (ii) close-ended questions. The open-ended questions are:

- Have critical success factors of the innovative products been clearly identified with the company? If yes, what? And How to achieve each critical success factor with the company's new product development practice?
- How do you define the success of the innovative products within your company?
- What factors make successful innovative products differ from unsuccessful ones? In which level: organisation support, new product development process and product.
- Please give the example of successful and unsuccessful innovative products

The close-ended questions are designed to identify significant value of twelve selected innovative products value, as shown in Table 2.3. These questions are:

- Please identify the following innovative product values, in which factors/aspects do you put in your innovative products
- Please rank five key innovative product values in order, to make your innovative product success

- Please rank five key innovative products in order, to make your innovative product failure

Part 3 aims to end the interview. It is designed to ask interviewee's opinion regarding the increase of the rate of innovative product success within the company. The open-ended question is:

- In your opinion, how to increase the rate of innovative product success in your company? Do you think is it possible?

2.8 Data Analysis

The data analysis of this research is divided into 3 parts: i.e. (i) the analysis of the company practice on innovative products, (ii) the comparative analysis between the baseline consumer analysis on the product groups and the consumer assessment of ten selected innovative products, and (iii) the comparative analysis between the company and the overall consumer perspectives.

First, the analysis of the companies' practice on innovative products aims to identify the following:

- the characteristics of innovative products
- the procedural management of innovative product development
- critical success factors to assess innovative products
- key success factors for the development of innovative products
- the example of successful and unsuccessful innovative products
- the significant value of innovative products
- the priority of the significant value of innovative products

The second analysis is the comparative analysis between the baseline consumer analysis on the product groups and the consumer assessment of ten selected innovative products. The aim of this analysis is to understand key success factors of innovative products on the consumer perspective. Regarding the baseline consumer analysis on three product groups (Toys, Seating Furniture and Sanitary Ware), this helps to understand the significant value of the customer expectation on the selected twelve innovative product values in each product group. Regarding the consumer assessment of the innovative products, this helps to understand the significant value of the consumer assessment on both successful and unsuccessful innovative products. To compare the significant values of both analyses, this helps to

understand the difference between the success and failure of innovative products on the consumer perspective. According to the research hypothesis, the successful innovative products tend to provide higher level of the significant values than the baseline consumer expectation. On the contrary, the unsuccessful innovative products tend to provide lower level of the significant values than the baseline consumer expectation.

Finally, the comparative analysis among the company value, the baseline consumer value analysis and the significant values of the consumer assessment on the innovative products aims to understand the relationship between the intended product value provided by the company and the perceived product value received by the product consumers. According to the research hypothesis, if the consumer expectation and priority of the significant values of innovative products is met, innovative products at the product level tend to be successful. If not, innovative products tend to be unsuccessful.

As Yin (1982) suggests that knowing the analytical strategy and methods before conducting research helps to increase the internal validity and reliability of collecting data. Before approaching the research data, three main analysis methods are planned: (1) Strategy Canvas, (2) Pattern-Matching, and (3) Prioritisation.

2.8.1 Strategy Canvas

Strategy Canvas is a technique to visualise the collected data in a graphic form. According to Kim and Mauborgne (2005), this technique is used for not only a diagnostic framework, but also an action framework. On the canvas, it captures the current stage of competing/baseline actions, such as investing, competitive and offering factors. Figure 2.3 shows the example of strategy canvas for this research. The horizontal axis captures the existing product values, which the product is competing in the market. The research selects twelve innovative product values. The vertical axis captures the level of the significant value across all product values, perceived by consumers. High level means high significance. If it is compared to score, high significant level means high score. There are four significant levels, level 1 – 4. The level one means the lowest score. The level four means the highest score. After the significant levels across all product values have been measured by using the principle of the four significant level, 'strategic profile' or 'value curve' is drawn. The value curve represents a graphic depiction of the overall value performance. In this research, the strategy canvas is used as a key data analysis tool and method in

the understanding of the value curve of the baseline consumer perspective on the product categories in comparison with the consumer perspective on the selected innovative products.

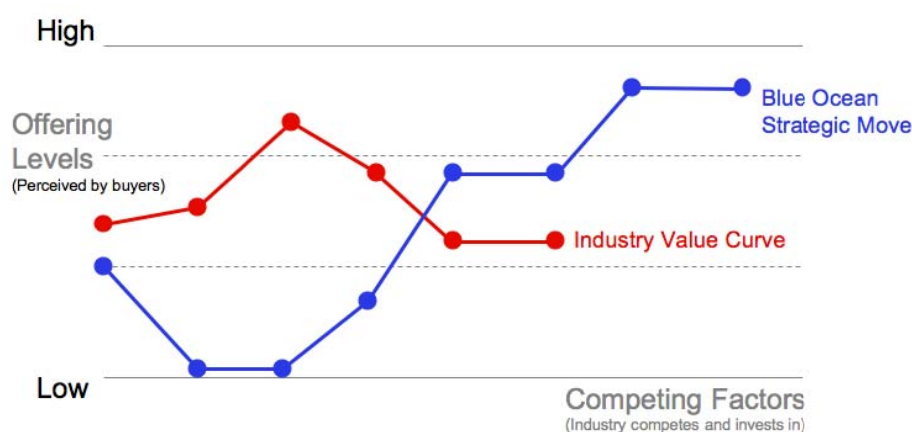


Figure 2.3: Strategy Canvas Tool

2.8.2 Pattern-Matching

It is claimed that pattern-matching is a deductive methodology of data analysis. The categories of analysis, 'theoretical patterns' are developed through logical deduction from the pre-existing description, explanation, or theory. In my study, the theoretical patterns (twelve innovative product values) are pre-defined before the data collection will start. The strategy of this analysis method is to bring these theoretical patterns to test against collected data. These patterns are used to find/compare an analysed pattern with a predicted theoretical pattern or with several alternatives of theoretical patterns. Yin (1984) describes that if the pattern of collected data matches, it will find an explanation and strengthen up the research internal validity. Please note, this strategy is not only used for the analysis method, but also used to shape up the research questions and for making decisions on data sources. Yin claims that to do this helps to strengthen the research reliability.

2.8.3 Prioritisation

To understand the most significant value of the twelve selected innovative product values on the ten selected innovative products and the baseline consumer perspective of the three product categories, it is important to understand the priority

of the significant product values in consumers' cognitive and emotional model. This will help create innovative products bridging the gap between consumers and creators' need and desire.

2.8.4 Comparative Value

Comparative value is mainly used to analyse the value curve and the value level of each product value and value elements/factors in the product values. In this research, the research participants are asked to evaluate each product value and its value elements, ranging from 1 (low level) to 4 (high level). These evaluated values are plotted to illustrate the value curve (as shown in Section 2.8.1) of both companies and consumers' perspectives. To identify the value of each product value and its value elements, six value levels are used as the level measurement: 3.5 – 4.0 = the most significant level, 3.00 – 3.49 = the highly significant level, 2.5 – 2.99 = the significant level, 2.00 – 2.49 = the less significant level, 1.5 – 1.99 = the least significant level and 1.00 – 1.49 = not significant.

APPENDIX 2

APPENDIX 2-A: 10 INNOVATIVE PRODUCTS

F1

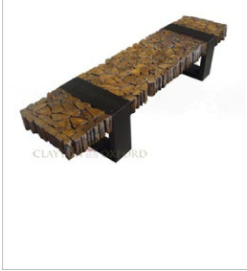
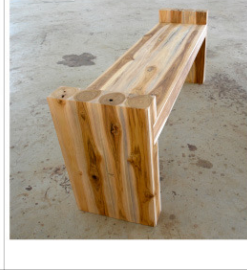
LINI BENCH – OSISU

	<i>Product description:</i> A reader bench with shelves for books. The bench is handcrafted from teak off-cuts, reclaimed from lumber yards. Three angled supports are designed for a more playful aesthetics—advocating that reading is leisure. <i>Key Features&function</i> Recycled teak off-cuts, Design oriented, Eco-friendly, multifunction <i>Advantage:</i> Eco-friendly, multifunction use, material from construction site <i>Price:</i> 13000 THB <i>Material :</i> TEAK Off-Cuts
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Competitive products

Recycled teak wood bench	Maku Bench	Seating Bench	Carpenter Bench
			
<i>Company:</i> Artemano <i>Handmade Recycled teak wood bench</i> <i>Size:</i> 30x12x18 <i>Price:</i> \$295.00 <i>Year:</i> 2009	<i>Company:</i> Maku Furnishing Garden, museum, foyer, bedroom - indoors or out. The Maku Bench is the perfect accessory for any space in need of additional seating or to simply add understated elegance in contemporary terms. Made of fine, sustainable, plantation grown or reclaimed teak and meticulously manufactured for lasting quality. - Made from 100% reclaimed or plantation teak - Post-consumer use metal hardware - Non-toxic, water-based finish <i>Size:</i> 72W x 23D x 18H <i>Price:</i> \$629.00 <i>Year:</i> 2009	<i>Company:</i> Blue Bone The range, made entirely from recycled timber, provides all the tradition, innovative style and charm of what is arguably, the most durable and sought after hardwood in the world. And it comes without cost to the environment. The sources of this timber may date back hundreds of years. Having outlived its original use (bridges, wharfs or jetties; structural beams, frames, and flooring; shipping and railway structure etc.), this magnificent timber has been carefully selected and skillfully restored to produce this bench-made furniture range. Constructed from timber of such diverse heritages and uses, each piece of the teak range will be unique, living proof of the durability, charm and character of teak wood furniture. - Solid Chunky Teak- Contoured Wood grain Finish- Reclaimed Timber- Environmentally Sound- Dove tail jointing- Arrives assembled <i>Size:</i> 45 x 134 x 43 cm <i>Price:</i> £179.00 <i>Year:</i> 2009	<i>Company:</i> Poynters Eclectic, contemporary design comes together beautifully in the Carpenter table. The classic carpenter's bench inspired these updated designs. 100% FSC grade natural, oiled, reclaimed teak timber is used for the table top in a defibre finish which lends the table an rustic charm by imitating an aged wood grain texture. French sourced high grade 304 grade stainless steel is used for modernity, strength and durability in stark contrast to the soft lines of 100% FSC teakwood. Exquisite outdoor furniture pieces of modern design and exceptional build quality. FSC certification is your assurance that the timber used has been harvested from sustainable forests. <i>Size:</i> 140cm L x 30cm W x 46cm H <i>Price:</i> \$795.00 <i>Year:</i> 2009

Substitute

Clayton Oxford	TeakBlock Bench	Clayton Oxford	Rustic Farmer Long Bench
			

F2

P-MOTE dinning set – YOTHAKA

	Product description: Dinning sets, Water Hyacinth Furniture with wood structure and the cloth cushion. Key Features&function Design oriented, cloth cushion, and the strong structure Advantage: Eco-friendly, waste weed reduction. Price: 10,000 THB Size: 62x57x90 Material: Water Hyacinth, Wood and Cloth for cushion Year: 2006
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Competitive products

CH01013-WH	CH01012-WH	CH01011-WH	ELLE DINNING CHAIR
			 Design by Pramot Khasamang
Company: <i>Natural Decor</i> Wood bases, with water hyacinth for armrest and the backrest. Water Hyacinth YEAR 2009 SIZE :54 x 60 x 77 cm PRICE: \$5500	Company: <i>Natural Decor</i> Wood legs with water hyacinth weaving for seat, backrest, and armrest. YEAR 2009 SIZE :58 x 52 x 101 cm PRICE: \$5300	Company: <i>Natural Decor</i> Wood structure for legs and armrests, weaving water hyacinth for backrest and seat. YEAR 2009 SIZE :54 x 55 x 86 cm 57 x 60 x 90 cm PRICE: \$5500	Company: <i>Yothaka</i> Dinning sets, Water Hyacinth Furniture with wood structure and the cloth cushion. YEAR 2009 SIZE :570x600x810 PRICE:

F3

EARTH BENCH – OSISU**Product description:**

Bench made of blended wasted sand paper, the color and shape represent the tree and it strength

Key Features&function:

Design oriented for both colour and shape, recycled wasted and left-off sandpaper , strong structure,

Advantage:

Eco-friendly material, use recycled wasted material, strong structure, outdoor or indoor use, innovative use of material.

Price: 10200 THB

Material: wasted sandpaper and wasted wood

Substitute Products

<i>Kraft Bench</i>	<i>Raw Bench</i>	<i>Branch Recycled Paper bench</i>
		

F4

SCAPA STOOL – Sonite, designed by Osisu

	Product description: Scapa stool is a versatile stool, which has been created as part of an effort to achieve environmentally conscious design. A large part of this stool came from salvaged material. It is strong and comes in a wide variety of colors. Key Features&functions: Recycled material, Design oriented, Eco-friendly by using recycled material, no resistance to direct heat source, the material property is vary from nontranslucent to translucent Advantage: Eco-friendly, customized colour, various selection of material properties Price: 12,840 THB Material: Rejected plastic buttons and resin YEAR: 2008
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Competitive products

N+ew	100%
	
Designer: Rodrigo Alonso (N+ew: No More Electronic Waste) Stool-sculpture-installation, produced with electronic waste, epoxic resin and melted aluminum. Produced in limited editions, or special orders. Each is a single, unique piece; non is equal in its filling. Able to personalize. custom made and handmade In associate with Recycla Chile YEAR 2007 Price: \$1460	Company: Fahneu Designer: Rodrigo Alonso Plastic waste obtained from electronic devices, toys, drink trays, stadium seats, etc, etc. is used in very few end products due to the complexity of separating the various categories, leading only to generate poorly esthetic products. The Rotomoulded technique, with its beauty and simplicity, allows this to take over, transforming the result in a different, identifiable real object. What you get are beautiful, durable and new conceptually pieces. YEAR 2009 Price: \$170

Substitute

<i>Linz Hocker</i>	<i>Re-Form Furniture by Aaron Moore</i>	<i>Cappellini Recycle paper stool</i>	<i>Hex_Peg & Hammer</i>
			

S1

Together bathtub – Bathroom Design

	Product description: The overflow bathtub that inspire by the waterfall, using granite and acrylic as material for bathtub and faucet from Italy. The featuring technology I-spa2, presenting the spiral, the calorie consumption during the use of bathtub. The recognition system that recognize user's temperature, time, flowing, radio station, autopilot, heater, filling water system, premix water system, and the music function. Key Features & functions: I-spa system: controlling and automatic recognise temperature, time and flowing of the user. This I-spa can be choose between single electronic set or completed electronic set. Size: 206 x 113 x 48 cm Advantage: Intelligence system, and easy to use.
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Competitive Products

Overflow tub: My Life	WISH	LE COB BATH	LAKE
			
Company: AQUA NOVO Specification: 1960x1120x460mm Features: - Hydro massage - Air Massage Price:	Company: KÄSCH GmbH Specification 2200x1700x550 mm Description Wish's fascination is reflected in its quiet contours and pleasing elliptical form. Unobtrusive elegance and a hint of luxury are the defining features of this tub design. Price:	Company: OMVIVO Specification 2200x690x535 mm Description: Timeless design combined with a novel method of water massage. Conceived as a duo-tub, this tub's size is equally suited for a relaxing bath just for your own enjoyment alone. Price:	Company: KÄSCH GmbH Specification: 2200 x 1300 x 500 mm Description: The simple beauty of LAKE's classical bathtub form is visually enchanting. The simplest of materials, such as stone, cement, glass and aluminium combine in the award winning whirlpool bathtub LAKE to create an unforgettable ambiente. You may freely select the materials suitable for your bathroom. Price:

Substitute products

<i>KÄSCH Oriental</i>	<i>Meeus - Pure</i>	<i>Plinth</i>	<i>Thalassor: Baleina</i>
			

S2

Adrenaline – Bathroom Design


Product description:
The Adrenaline BedTUB series by Bathroom Design i-Spa is a hydrotherapy tub with a folding bed that combines the unique Vichy and Bath therapy concept to produce a rejuvenating bathing and cascading rain experience.
Through the whirlpool and air pool jet, the BedTUB creates an underwater therapeutic massage to relieve the muscles in the body. Once the bed is unfolded over the bathtub, one can enjoy the soothing Vichy therapy, a form of aqua therapy where warm water flows from the I-Vichy rain shower to massage the body while the user is lying flat atop the bed.

Key Features&function:

- I-Vichy: the water massage system with adjustable falling water pattern.
- I-Wave: the adjusting of system and control of the bathtub sets by touching sensor.
- I-Crylic: the acrylic that allow the led light shine thru to increase the sensual feeling of the user include the light at the control point or button.
- I-Temp: the temperature control system and the presentation of the temperature to the user. (additional)
- I-Aroma: the aromatherapy purposes

Advantage:
Using advance technology to combine therapy system such I-aroma -aromatherapy; I-vichy: Hydrotherapy and chromotherapy; I-crylic:

Year: 2009

Competitive Products

Ocean Vichy Bath	Vichy Shower Bath	Computer Intelligentized Vichy Shower	BSW-D	SH-A300
				
Company: Royalsun Industrial Group Limited Specification: 228×106×190cm Functions: • 8 massage jets spout water like tropical rain • 5 kinds of color light wave (red, yellow, blue, green, purple) • Active rain shower • Adjust the temperature of cold water and hot water • Adjust the water power • Massage for side body with water • O3 whiten skin & sterilization system • Many kinds of hydrotherapy and beautify body items could be steted	Company: Queen Beauty Industrial Co., Ltd. Specification: 2250x1150x740mm 1910x420x310 1790x700x260 Functions: • 19 high-pressure jets for massage/ 12 jets on top for vichy shower • Internal or external water circulation modes • You can apply herbal treatment or skin whitening treatment when using external water • Thai-style shampooing unit • OEM and ODM orders welcomed	Company: Guangzhou Haobang Radium Beauty & Hairdressing Equipment Co., Ltd. Specification: 215x100x65 cm 215x100x183 cm Functions: • Microcomputer automatic control system • Spectrum therapy with color light • Four types of water jet can be set freely • Top shower automatic controlled • Sprinkler can be adjusted to different angles and heights • Massage the waist, leg and ankle through side atomizing spraying • Massage the bottom of the feet by water therapy • Massage, washing head by sprinkler	Company: Foshan Walter Sanitary ware Specification: 2248x690x780 mm Functions: • 7 hydraulic jets • 1 movable hand shower • PU pillow • Top lamp& Ceiling shower • waste drainer • material Acryl and stainless steel.	Company: Royalsun Industrial Group Limited Specification: 2520×950×1900 mm Functions: • Tropical rain forest hydrotherapy (5 kinds of shower type provided) • Finger press acupoints & surf massage • Sunlight bath • Color light therapy (5 kinds of optical wave:red,yellow,bl ue,green,purple) • Hydro spout gun massage • shower Description: SH-A300 is the most advanced Rain Forest hydrotherapy product, it brings a whole new feeling to the people who enjoys the SPA. 18 nozzles stimulate acupoint in original treatment ways bring surf massage effect. 14 nozzles of them at both side directly massage the body 每个 points, such as shoulder, waist, hip, leg and foot. Other 4 nozzles massage the back,help to ease pressure, reduce ache,lost weight, improve the blood circulation. Otherwise, the temperature difference of water and the power of warm water shower hits people 每个 body(5 kinds of characteristic shower hitting type could be provided). Bring perfume steaming, spread on body

				with seaweed and mine earth into this product, formed a special treatment with sunlight bath and color light therapy. It is prefect combination of SPA & Health care. People can enjoy SPA 調 pleasure under the easy situations.
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Substitute Products

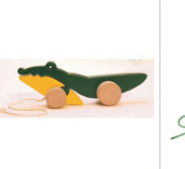
<i>Vellman shower tower</i>	<i>Silver Tag</i>	<i>Diamond Bathtub</i>	<i>Bitthermal vichy shower</i> <i>Trautwein : ARC-EN-CIEL</i>
			

T1

Dancing Alligator

	Product description: This cute little alligator is an adorable pull toy designed in an alligator-like shape. The dancing alligator moves his head and tail up and down while being pulled. The wooden pieces making up his body click together making a rhythmic click-clack sound. Toddlers will enjoy watching this dancing alligator as they pull it along on a two-foot leash while learning to walk. Key Features&function This toy stimulates manual dexterity and hand-eye coordination as well as promotes physical development, creative development and language and communication. Advantage: hand-eyes-ears coordination development, eco-friendly material, Target Audience: Age 1years old and over Price: £14.95 Material : Rubberwood
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Competitive products

Alligator Pull Along	Wooden Pull Along Crocodile	Crocolo Crocodile Pull Toy	Snapping croc	Pull Along alligator
				
Company:Manhattan Toys Made from solid wood and painted with bold, bright colours, Pull-a-long Friend Alligator is sure to become a lifelong friend. Just tug it along and Alligator will open and close its mouth. Rubber on the wheels provides added stability. Superbly Made Size: 16cm x 38cm x 6cm. Aged 18 months + Price: £14.00	Company: Sevi Your little one will have endless fun with this colourful pull-along crocodile. Made from wood, he has a beaming smile, yellow wheels, green body and soft felt spikes along his tail. A yellow cord is attached to his front so he can go wherever your child goes! Age: 1+ years Size: 14x13x8cm Price: £12.95	Company: Selecta You need to be quick on your feet, if you don't want to be caught. Fortunately, Crocolo does not bite. It would much rather tinkle its bell while rolling along and wiggle its body. A pulling toy with a huge fun factor. It's great to be a child! Price: £17.99	Company: Bajo All wood comes from FSC-certified woodlots and old fruit orchards near the workshop. The wood is a hallmark of Bajo toys, and showcases the vitality and variety of nature. The colour, adhesives and coatings all come from the very particular Germans, and are accredited as meeting E.U. safety standards. The colour, varnish and adhesives are all certified non-toxic. Price: £12.50	Company: John Crane This adorable wooden alligator pull along is so much fun to watch as he wiggles and shakes as he is pulled along the floor. He also makes a great sound as your child pulls him around. A great toy for encouraging new walkers. Beautifully made in wood and painted in child safe colours. Price: £15.95

T2

Tower Pounding – Plan Toy

	Product description: Pound the 3 balls, whilst the toy is rocking. Inspired by a free-form curved shape and vibrant colour, educational wooden toys have never been more appealing! Key Features&function Price, Comfort, Organic Material, Brand, Usability, Eco Awareness, Complication, Durability Advantage: Eco-friendly, Natural Product, Recycle wood, Non-toxic dyes and colour, Non chemical treatment in the manufacturing process, Product life time, OSHAS18001, Target Audience: Age 2 -5 years old. Price: 850 THB Material : Rubberwood
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Competitive products

Hammer Bench	Hammer Bench	Pounding Ball	Battino	Hit the hen
				
Company: GOKI This brightly coloured toy encourages co-ordination, dexterity and colour recognition its fantastic for encouraging fine motor skills and above all its lots of fun! Age 12 Mths+ Price: \$49.95 AUD	Company: Wooden toy what a fun, colourful, satisfyingly noisy toy! This Hammering Bench comes with four red, yellow, blue and green balls that can be bashed with the hammer through holes in the top of the bench. A solid toy that will take considerable punishment, Hammering Bench is an ideal toy for those active little ones who need to direct their urge for rough play. The balls are a challenge, but not too hard to get through the holes. They then run down little ramps and out of the bench. Great Fun! Price: \$19.95 AUD	Company: Wonderworld Hit the coloured balls through the holes and see them automatically roll down to the exit. Age 18 Mths + Price: 550 THB Material: Wood	Company: Selecta Featuring: Brightly colored. Listen to the musical notes as the balls roll along the xylophone underneath. Or, turn it over and drop the balls to hear them slide down the notes. Pounding toys develop good hand/eye coordination as well as gross motor skills. Age 18 mths + Price: £28.74	Company: Djeco Featuring: Hit the chicken to make the bell ring! This wooden toy improves the hand-eye coordination of your toddler. When hit properly the child is rewarded with the modest sound of a bell that rings Price : £24.99

Substitute

	Miracle Hammer		Hex_Peg & Hammer
			

T3

Contemporary Dollhouse

	Product description: A wonderfully bright and airy new concept for a dollhouse with fantastic skylight roofing. The unique curved features used in this dollhouse are innovative in both terms of design and production. This futuristic dollhouse has 2 open levels allowing for trouble-free access to the interior which comes with transparent panelling that can slide from side-to-side; and its own staircase which can be moved to any part of the house. Key Features&function Natural Wood, Contemporary style, management development, Advantage: easy access, eco-care, contemporary design, contemporary decorating, Target Audience: Age 3 years old and over Price: \$129.99 Material : Rubberwood
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Competitive products

Wooden Dollhouse	Cozy Country Wooden Dollhouse	The Creekside Cabin Dollhouse	Magnolia Dollhouse	The Glencroft Dollhouse
				
Company: Deluxe Large, spacious, and open for easy access and play. This beautiful American-styled home has all the upgrades an imaginative child could want ~ 3 levels, a garage and upper balcony, a ground-level deck with fence, and a staircase leading to the top floor. Large enough for two children to play comfortably. Complete with a handle on top for easy moving. Made of solid natural wood with smooth, rounded edges. Assembles in 30 minutes with included tool. Accessories sold separately. Price: \$159.99	Company: Imaginarium Country dollhouse is decorated in pretty pastels Features 3 levels with: kitchen, bedroom, sitting room, terrace, bathroom and staircase Fits 12" fashion dolls (sold separately) Includes dollhouse, 11 pieces of furniture, necessary hardware and instructions Age: 3 years and up Price: \$129.99	Company: CORONA "This versatile cabin is perfect as a modern home or a rustic country retreat. Using the built in fireplace as a focal point, the spacious interior allows plenty of room for all your miniatures. Now featuring Corona's new interlocking corner system, you will be amazed at how quickly you can assemble this beautiful home. Price: \$113.99	Company: Greenleaf Steel Rule a classic country farmhouse that features long pointed gables with decorative trim, fixed double hung windows, and four spacious rooms. Two sets of French doors leading to balconies and a cozy fireplace add to its country charm. Other features include a full porch, silk screened windows and a curved staircase. Assembly required. Price: \$102.99	Company: Glencroft Tudor cottage reflects the designers' research into authentic English architecture. With its picket fence and half-timbered exterior, the house is a visual delight; it has silk-screened windows to simulate leaded glass, and a flower box too. Interior features are equally charming. There are four spacious rooms, beamed ceiling, built-in bookcases, two window seats and two fireplaces. A winding staircase completes the mood of this wonderful English Tudor. Price:\$105.95

T4

Tori – Rocking Horse

	Product description: Crafted in Thailand, the Tori is made from rubberwood recycled from the latex production industry. We like its simple plainness, but DIY-types could have fun painting or decorating it. Key Features&function Natural Wood, Euro-Contemporary style, Balancing development, gentle rock arc, muscle development, foldable, stopper to prevent unintentional unlock, wide seat, seat sliding back stopper, feet rail, hand peg Advantage: easy to fold, natural, non-toxic colour or dyes, wide seat, safety for rocking, seat back slide, space saver, Target Audience: Age 2 -5 years old. Price: \$99.99 Material : Rubberwood
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Competitive products

Kiddie-up prince rocking horse	Sparky	Baby rocking horse	Natural pony rocking horse	Rocking Horse
				
Company: Level of Discovery® The Kiddie Ups Rocker is an imaginative combination of rocking horse and rocking chair! This Prince version features a removable padded backrest with cut-out detail, silky satin mane and ears, and a regal banner with gold tassels. beautifully handcrafted, hand-decorated wooden with superb attention to detail. Is a great eye catching centerpiece for any boys room. Age 4 yrs Price: \$169.99	Company: PINTOY® the colourful, smiley-faced Pintoy wooden rocking horse, 73 x 34.7 x 55 cm Age 18mths + Price: \$89 NZ	Company: PINTOY® A first rocking horse designed to evolve as the rider becomes more confident The protective seat surround is replaced by a back wedge and the foot rests become the handlebars The rockers have rubber tips to add stability and protect floors Flat packed 25 minutes assembly time Age 12 Mths + Price: £56.99	Company: Kidkraft Heirloom quality Wool mane and tail Anti-tip rockers Made of wood Price: \$79.38	Company: Alexander Taron The Small Brown and White Pinto Plush Rocking Horse with the intricately crafted Rocking horses. Price : \$225

Substitute

APPENDIX 2-B: BUSINESS INTERVIEW QUESTIONS

Interviewee Name:

Date:

Appointment Time:

Location:

Introduction Question:

How your company manages the development of innovative products within your company? Any standards or documents? Can you share me your process?

Body of Questions

Please describe the characteristics of innovative products in your company

Have 'critical success factors of innovative products' been clearly identified within the company?

* If yes, what?

* How to achieve each critical success factor with the company's new product development practice?

How do you define the success of innovative products within your company?

Successful innovative products vs unsuccessful innovative products of the company, what factors make them different?

- In which level: organisation support, New product development process and Product
- Please give me the same example of your successful innovative products and unsuccessful innovative products

Please identify the following innovative product values, in which factors/aspect do you put in your innovative products:

* Physical/Functional Value

* Emotional Value

* Brand Value

- * Cultural Value
- * Social Value
- * User Value
- * Fashionable or Trend value
- * Environment Value
- * The Background knowledge of the company's brand
- * The Background knowledge of competitive products
- * Supportive product/service/system
- * Any other values

Please rank five key innovative product values in order, to make your innovative products success

Please rank five key innovative product values in order, to make your innovative products failure

In your opinion, how to increase the rate of innovative product success in your company? Do you think is it possible?

APPENDIX 2-C: QUESTIONNAIRE

QUESTIONNAIRE 1

วิจัยเรื่อง

ปัจจัยสำคัญในการตัดสินใจเลือกผลิตภัณฑ์...

หัวหน้าโครงการวิจัย

ดร. โชคอนันต์ บุษราคัมภากร

คณะสถาปัตยกรรมศาสตร์และการออกแบบ

มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าธนบุรี

ที่ปรึกษาโครงการ

ศ. ดร. สำเริง จักรใจ

งานวิจัยเรื่อง ปัจจัยสำคัญในการตัดสินใจเลือกผลิตภัณฑ์ของเล่นสำหรับเด็กอายุ 1-6 ขวบ เป็นส่วนหนึ่งของงานวิจัยเรื่อง ปัจจัยสำคัญที่ทำให้ผลิตภัณฑ์นวัตกรรมประสบความสำเร็จในประเทศไทย: การศึกษาแบบองค์รวม ได้รับทุนสนับสนุนจาก สำนักงานกองทุนสนับสนุนการวิจัย (สกว.) ร่วมมือกับสำนักงานคณะกรรมการการอุดมศึกษา (สกอ.)

ในส่วนที่ท่านกำลังให้ความร่วมมือ เป็นการศึกษาปัจจัยสำคัญในการตัดสินใจเลือกผลิตภัณฑ์ของเล่นสำหรับเด็กอายุ 1-6 ขวบ ในมุมมองของผู้บริโภค โดยเน้นที่คุณค่าของผลิตภัณฑ์เป็นหลัก การวิจัยนี้จะไม่รวมถึงเรื่องปัจจัยทางด้านราคา (PRICE) การส่งเสริมการขาย (PROMOTION) และสถานที่จัดจำหน่าย (PLACE) งานวิจัยนี้ประกอบด้วย 2 ส่วน

ส่วน ก

ข้อมูลส่วนบุคคล

ส่วน ข

การประเมินคุณค่าผลิตภัณฑ์ภายในใจผู้บริโภค

ความร่วมมือของท่านครั้งนี้ มีส่วนในการพัฒนาองค์ความรู้ใหม่เกี่ยวกับปัจจัยสำคัญในการตัดสินใจเลือกซื้อผลิตภัณฑ์นวัตกรรมของผู้บริโภคในประเทศไทย ซึ่งองค์ความรู้ดังกล่าวจะช่วยให้ผู้ประกอบการออกแบบและพัฒนาผลิตภัณฑ์นวัตกรรมโดยเน้นผู้บริโภคหรือผู้ใช้เป็นศูนย์กลาง รวมถึงการออกแบบและพัฒนาผลิตภัณฑ์นวัตกรรมใหม่ๆ อย่างต่อเนื่อง เพื่อเพิ่มคุณภาพชีวิตให้กับผู้บริโภค และ พัฒนาสังคมและเศรษฐกิจสร้างสรรค์ของประเทศอย่างยั่งยืน

ในการตอบคำถามนี้ จะมีนักวิจัยทำหน้าที่แนะนำ อธิบาย และสังเกตท่านระหว่างการตอบคำถาม การตอบคำถามจะใช้เวลาประมาณไม่เกิน 20 นาที ท่านสามารถถามคำถามหรือพูดคุยกับนักวิจัยระหว่างที่ท่านตอบคำถาม

ท่านต้องตอบคำถามทั้งหมด 2 ส่วน

ส่วน ก ข้อมูลส่วนบุคคล

ส่วน ข การประเมินคุณค่าผลิตภัณฑ์ภายในใจผู้บริโภค

ในส่วน ข ประกอบด้วยคำถาม 3 ส่วน

ส่วนที่ 1 การประเมินคุณค่าผลิตภัณฑ์ภายในใจผู้บริโภค โดยการให้ระดับความสำคัญของคุณค่าผลิตภัณฑ์

ส่วนที่ 2 การเรียงลำดับความสำคัญ 1 - 5 ของคุณค่าผลิตภัณฑ์ ที่มีคุณค่าอยู่ในระดับสูงเท่านั้น

ส่วนที่ 3 การค้นหาแนวทางการตัดสินใจเลือกซื้อผลิตภัณฑ์

กลุ่มเป้าหมาย: ผู้ตอบคำถาม...

วิธีการตอบคำถาม

ลักษณะคำถามภายในงานวิจัยนี้มีอยู่ 3 ประเภท

1. คำถามปลายปิด หรือ คำถามที่มีตัวเลือก ให้ท่านทำตามคำสั่งนี้

กรุณาเขียนเครื่องหมายกากบาท (X) ลงใน ☐ หน้าข้อความที่ตรงกับลักษณะแต่ละข้อ ของตัว
ท่านเอง หรือ ความคิดที่ท่านตัดสินใจ

2. คำถามคำสั่ง ให้ท่านทำตามคำสั่งที่คำถามกำหนด เช่น

กรุณาเรียงลำดับความสำคัญ 1 – 5 ของคุณค่าผลิตภัณฑ์ ลำดับที่ 1 หมายถึงสำคัญที่สุด
และ ลำดับที่ 5 สำคัญน้อยที่สุด และ ท่านสามารถเลือกลำดับที่ 1 ได้มากกว่า 1 ข้อ

3. คำถามปลายเปิด หรือ คำถามที่ท่านสามารถตอบได้อย่างอิสระ เช่น

ท่านมีการตัดสินใจเลือกซื้อผลิตภัณฑ์นวัตกรรมอย่างไร

กรุณาตอบคำถามทุกคำถามให้ตรงกับความคิดของท่านมากที่สุด

ไม่ควรตอบคำถามตามความนึกคิดในอุดมคติของท่าน

ส่วน ก. ข้อมูลส่วนบุคคล (Personal Data)

1.1 เพศ (Gender)

☐ ชาย (Male)

☐ หญิง (Female)

1.2 อายุ (Age)

☐ น้อยกว่า 25 ปี (Less than 25 year)

☐ 26 – 30 ปี (Year)

☐ 31 – 35 ปี (Year)

☐ 36 – 40 ปี (Year)

☐ 41 – 50 ปี (Year)

☐ มากกว่า 51 ปี (Over 51 year)

1.3 สถานะ (Status)

☐ โสด (Single)

☐ สมรส (Married) จำนวนบุตร คน

☐ อื่นๆ (Others)

1.4 ระดับการศึกษา (Education)

☐ มัธยม (High School)

☐ อาชีวะ (Vocational School)

☐ปริญญาตรี (Bachelor Degree)

☐ปริญญาโท (Master Degree)

☐ปริญญาเอก (PhD)

☐ อื่นๆ (Others)

1.5 รายได้ต่อเดือน (Income per Month)

☐ น้อยกว่า 15,000 บาท

☐ 15,001 – 25,000 บาท (Baht)

(Less than 15,000 Baht)

☐ 25,001 – 35,000 บาท (Baht)

☐ 35,001 – 45,000 บาท (Baht)

☐ 45,001 – 55,000 บาท (Baht)

☐ มากกว่า 55,001 บาท

(over 55,000 Baht)

1.6 อาชีพ (Occupation)

.....

1.7 ท่านเคยซื้อผลิตภัณฑ์เครื่องเรือนสำหรับเด็ก 1-6 ปีหรือไม่

(Have you ever bought toys for 1-6 year old kids?)

☐ เคย (Yes) จำนวนชิ้น

☐ ไม่เคย

ส่วน ข. การประเมินคุณค่าผลิตภัณฑ์ (Product Value Assessment)

กรุณาประเมินคุณค่าผลิตภัณฑ์ในการตัดสินใจเลือกผลิตภัณฑ์ของเล่นเด็กอายุ 1-6 ขวบ โดยให้ คุณให้ค่าความสำคัญในด้านต่างๆ ให้ตรงกับความคิดของคุณมากที่สุด ไม่ควร ตอบคำถาม ตามความคิดแบบอุดมคติ

คุณค่าผลิตภัณฑ์	ระดับความสำคัญ			
	ไม่เคยคิด	น้อย	ปานกลาง	สูง
คุณค่าทางกายภาพ (Physical Value)				
- ความสวยงาม (Aesthetics)				
- คุณภาพดี (Good Quality)				
- เหมาะสมกับสภาพแวดล้อมในการใช้งาน (Appropriateness to the context of use)				
- น่าเชื่อถือ (Enabling)				
- ความทนทาน (Durability)				
- ความแตกต่าง (Differentiation)				
- เอกลักษณะเฉพาะ (Uniqueness)				
- ความเป็นนวัตกรรม (Innovativeness)				
คุณค่าทางประโยชน์ใช้สอย (Functional Value)				
- นำใช้งาน (Comfort)				
- ความปลอดภัย (Safety)				
- ใช้งานง่าย (Ease of Use)				
- ใช้งานได้หลายอย่าง (Multi-functions)				
- ความสะดวกสบาย (Convenience)				

คุณค่าผลิตภัณฑ์	ระดับความสำคัญ			
	ไม่เคยคิด	น้อย	ปานกลาง	สูง
คุณค่าทางอารมณ์ (Emotional Value)				
- ประสบการณ์แปลกใหม่ (Adventure)				
- อิสระและเสรีภาพ (Independence)				
- รู้สึกปลอดภัย (Security)				
- ตอบสนองความสุขทางใจ (Sensuality)				
- สร้างความมั่นใจ (Confidence)				
- มีอำนาจ (Power)				
- ความสนุกสนาน (Fun)				
- เสน่หา (Affection)				
- สร้างความทรงจำ (Memorability)				
- รสนิยม (Taste)				
คุณค่าของผู้ใช้ (User Value)				
- ประหยัดค่าใช้จ่ายอื่นๆ (Saving expenses)				
- ประหยัดเวลา (Time Saving)				
- ความสะดวกสบาย (Convenience)				
- ความมีประสิทธิภาพ (Efficiency)				
- เติมเต็มบทบาทของตัวเอง (Role Fulfilling)				
- เติมเต็มความสุขส่วนตัว (Self-Fulfilment)				
- สร้างภาพลักษณ์ในสังคม (Social Image/Impression)				
- เป็นส่วนหนึ่งของกลุ่ม (Group Belongingness)				

คุณค่าผลิตภัณฑ์	ระดับความสำคัญ			
	ไม่เคยคิด	น้อย	ปานกลาง	สูง
- ส่งเสริมความโชคดี (Good Fortunate)				
คุณค่าเพื่อสิ่งแวดล้อม (Eco Value)				
- ประหยัดพลังงาน (Energy Saving)				
- นำกลับมาใช้ใหม่ได้ (Rethinking Ideas)				
- ย่อยสลายตามธรรมชาติ (Biodegradable)				
- ใช้พลังงานทางเลือก (Green Energy)				
- ลดปริมาณสารคาร์บอนไดออกไซด์ (CO2 Reduction)				
คุณค่าทางวัฒนธรรม (Cultural Value)				
- มีเอกลักษณ์ไทย (Thainess)				
- ใช้ภูมิปัญญาไทย (Thai Knowledge)				
- รักษาขนบธรรมเนียมประเพณี (Thai Tradition)				
คุณค่าทางสังคม (Social Value)				
- การไม่ใช้แรงงานเด็ก (No Child Labour)				
- สิทธิมนุษยชน (Human Rights)				
- ผลิตในประเทศไทย (Made-in-Thailand)				
- การเพิ่มคุณภาพชีวิตกับสังคม (Social Well Being)				
- มีความยุติธรรมทางการค้า (Fair Trade)				
คุณค่าของแบรนด์ (Brand Value)				
- ภาพลักษณ์ของแบรนด์ (Brand Image)				
- เอกลักษณ์เฉพาะของแบรนด์ (Brand Identity)				

คุณค่าผลิตภัณฑ์	ระดับความสำคัญ			
	ไม่เคยคิด	น้อย	ปานกลาง	สูง
- คำมั่นสัญญาของแบรนด์ (Brand Promise)				
- บุคลิกลักษณะของแบรนด์ที่ตรงกับ บุคลิกลักษณะของผู้ใช้ (Brand Personality)				
คุณค่าของเทรนด์ (Trend Value)				
- นำสมัย (Trendy)				
- เก่าติดกระแสนิยมต่างประเทศ (In-Trend Internationally)				
- เก่าติดกระแสนิยมภายในประเทศ (In-Trend Nationally)				
ความรู้เกี่ยวกับแบรนด์ (Knowledge Background of Brand)				
- การรับรู้การมีอยู่ของแบรนด์ (Brand Awareness)				
- ความภักดีกับแบรนด์ (Brand Loyalty)				
ความรู้เกี่ยวกับสินค้าคู่แข่ง (Product Competitor Knowledge)				
- สินค้าคู่แข่งในประเภทเดียวกัน (Direct Competitor) เช่น น้ำอัดลมประเภทโคคา โคล่า หลายๆ แบรนด์				
- สินค้าประเภทใกล้เคียงกัน (Substitute Competitor) เช่น โค้ก กับ สไปรท์				
- สินค้าประเภทอื่นๆ (Alternative Competitor Analysis) เช่น โค้ก กับ น้ำผลไม้				
คุณค่าของระบบสนับสนุน (Supportive System Value)				
- บริการหลังการขาย (After Sale Service)				

คุณค่าผลิตภัณฑ์	ระดับความสำคัญ			
	ไม่เคยคิด	น้อย	ปานกลาง	สูง
- การรับประกันคุณภาพ (Warranty)				
- ผลิตภัณฑ์และอุปกรณ์เสริม (Product Accessories)				
- การยืดอายุการใช้ผลิตภัณฑ์ (Product Extendables)				
- ระบบมาตรฐานที่นำมาใช้กับผลิตภัณฑ์ (System Platform)				
- ผลิตภัณฑ์ที่นำมาใช้ร่วมด้วย เพื่อทำให้เกิดการใช้งานอย่างมีประสิทธิภาพ (Product Supplements)				

ส่วนที่ 2 กรุณาเรียงลำดับความสำคัญ 1 - 5 ของคุณค่าผลิตภัณฑ์คุณให้คุณค่าสูง (นำเฉพาะคุณค่าที่อยู่ในช่องสี่เหลี่ยมเรียงลำดับ) สามารถเลือกลำดับ 1 ได้มากกว่า 1 ปัจจัย

1.
2.
3.
4.
5.

ส่วนที่ 3 ท่านมีวิธีการตัดสินใจเลือกซื้อผลิตภัณฑ์ประเภทดังกล่าวอย่างไร

(ท่านสามารถเลือกคำตอบได้มากกว่า 1 ข้อ)

- | | |
|--|---|
| ☐ เรียงลำดับความสำคัญจากมากไปน้อย | ☐ มองหลายปัจจัยร่วมกัน |
| ☐ เน้นปัจจัยสำคัญมากในรายละเอียด | ☐ การเปรียบเทียบในรายละเอียดทั้งหมด |
| ☐ คิดถึงผลิตภัณฑ์อื่นควบคู่กันไป | ☐ ต้องมีคุณค่าครบตามที่เรียงลำดับไว้ |
| ☐ ความสัมพันธ์ของปัจจัยต่างๆ | ☐ อื่นๆ โปรดระบุ |

ขอขอบคุณทุกท่านที่ร่วมงานวิจัยครั้งนี้

ถ้ามีข้อแนะนำเกี่ยวกับงานวิจัยนี้ กรุณาติดต่อ ดร. โชคอนันต์ บุษราคัมภากร

การออกแบบและวางแผนมหาบัณฑิต (หลักสูตรนานาชาติ)

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โทร 02 470-9940-1 หรือ แฟกซ์ 02 470-9942

QUESTIONNAIRE 2

วิจัยเรื่อง

การประเมินคุณค่าผลิตภัณฑ์นวัตกรรม

หัวหน้าโครงการวิจัย

ดร. โชคอนันต์ บุษราคัมภากร

คณะสถาปัตยกรรมศาสตร์และการออกแบบ

มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าธนบุรี

ที่ปรึกษาโครงการ

ศ. ดร. สำเริง จักรใจ

งานวิจัยเรื่อง การประเมินคุณค่าผลิตภัณฑ์นวัตกรรมเป็นส่วนหนึ่งของงานวิจัยเรื่อง ปัจจัยสำคัญที่ทำให้ผลิตภัณฑ์นวัตกรรมประสบความสำเร็จในประเทศไทย: การศึกษาแบบองค์รวม ได้รับทุนสนับสนุนจาก สำนักงานกองทุนสนับสนุนการวิจัย (สกว.) ร่วมมือกับสำนักงานคณะกรรมการการอุดมศึกษา (สกอ.)

ในส่วนที่ท่านกำลังให้ความร่วมมือ เป็นการประเมินคุณค่าผลิตภัณฑ์นวัตกรรมที่มีผลต่อความสำเร็จของผลิตภัณฑ์นวัตกรรม ในมุมมองของผู้บริโภค โดยให้ประเมินคุณค่าของผลิตภัณฑ์ การวิจัยนี้จะไม่รวมถึงเรื่องปัจจัยทางด้านราคา (PRICE) การส่งเสริมการขาย (PROMOTION) และสถานที่จัดจำหน่าย (PLACE) งานวิจัยนี้ประกอบด้วย 2 ส่วน

ส่วน ก ข้อมูลส่วนบุคคล

ส่วน ข การประเมินคุณค่าผลิตภัณฑ์ที่กำหนด

ความร่วมมือของท่านครั้งนี้ มีส่วนในการพัฒนาองค์ความรู้ใหม่เกี่ยวกับปัจจัยสำคัญในการตัดสินใจเลือกซื้อผลิตภัณฑ์นวัตกรรมของผู้บริโภคในประเทศไทย ซึ่งองค์ความรู้ดังกล่าวจะช่วยให้ผู้ประกอบการออกแบบและพัฒนาผลิตภัณฑ์นวัตกรรม โดยเน้นผู้บริโภคหรือผู้ใช้เป็นศูนย์กลาง รวมถึงการออกแบบและพัฒนาผลิตภัณฑ์นวัตกรรมใหม่ๆ อย่างต่อเนื่องเพื่อเพิ่มคุณภาพ ชีวิตให้กับผู้บริโภค และ พัฒนาสังคมและเศรษฐกิจสร้างสรรค์ของประเทศอย่างยั่งยืน

รายละเอียดของคำถาม

ในการตอบคำถามนี้ จะมีนักวิจัยทำหน้าที่แนะนำการทดลองผลิตภัณฑ์ หรือ การสาธิตผลิตภัณฑ์ อธิบาย และสังเกตท่านระหว่างการตอบคำถาม การตอบคำถามจะใช้เวลาประมาณไม่เกิน 20 นาที ท่านสามารถถามคำถาม หรือพูดคุยกับนักวิจัยระหว่างที่ท่านตอบคำถาม

ท่านต้องตอบคำถามทั้งหมด 2 ส่วน

ส่วน ก ข้อมูลส่วนบุคคล

ส่วน ข การประเมินคุณค่าผลิตภัณฑ์ภายในใจผู้บริโภค

ในส่วน ข ประกอบด้วยคำถาม 4 ส่วน

- ส่วนที่ 1 การประเมินคุณค่าผลิตภัณฑ์ภายในใจผู้บริโภค โดยการให้ระดับความสำคัญของคุณค่าผลิตภัณฑ์
- ส่วนที่ 2 การเรียงลำดับความสำคัญ 1 - 5 ของคุณค่าผลิตภัณฑ์ ที่มีคุณค่าอยู่ในระดับสูงเท่านั้น
- ส่วนที่ 3 การค้นหาแนวทางการตัดสินใจเลือกซื้อผลิตภัณฑ์
- ส่วนที่ 4 การตัดสินใจเลือกซื้อผลิตภัณฑ์

กลุ่มเป้าหมาย: ผู้ตอบคำถามที่มีประสบการณ์ในการตัดสินใจเลือกซื้อผลิตภัณฑ์
ประเภทดังกล่าว

วิธีการตอบคำถาม

ลักษณะคำถามภายในงานวิจัยนี้มีอยู่ 3 ประเภท

1. คำถามปลายปิด หรือ คำถามที่มีตัวเลือก ให้ท่านทำตามคำสั่งนี้

กรุณาเขียนเครื่องหมายกากบาท (X) ลงใน หน้าข้อความที่ตรงกับลักษณะแต่ละข้อ ของตัวท่านเอง หรือ ความคิดที่ท่านตัดสินใจ

2. คำถามคำสั่ง ให้ท่านทำตามคำสั่งที่คำถามกำหนด เช่น

กรุณาเรียงลำดับความสำคัญ 1 – 5 ของคุณค่าผลิตภัณฑ์ ลำดับที่ 1 หมายถึงสำคัญที่สุด และ ลำดับที่ 5 สำคัญน้อยที่สุด และ ท่านสามารถเลือกลำดับที่ 1 ได้มากกว่า 1 ข้อ

3. คำถามปลายเปิด หรือ คำถามที่ท่านสามารถตอบได้อย่างอิสระ เช่น

ท่านมีการตัดสินใจเลือกซื้อผลิตภัณฑ์นวัตกรรมอย่างไร

กรุณาตอบคำถามทุกคำถามให้ตรงกับความคิดของท่านมากที่สุด

ไม่ควรตอบคำถามตามความนึกคิดในอุดมคติของท่าน

ส่วน ก. ข้อมูลส่วนบุคคล (Personal Data)

1.1 เพศ (Gender)

ชาย (Male)

หญิง (Female)

1.2 อายุ (Age)

น้อยกว่า 25 ปี (Less than 25 year)

26 – 30 ปี (Year)

31 – 35 ปี (Year)

36 – 40 ปี (Year)

41 – 50 ปี (Year)

มากกว่า 51 ปี (Over 51 year)

1.3 สถานะ (Status)

โสด (Single)

สมรส (Married) จำนวนบุตร คน

อื่นๆ (Others)

1.4 ระดับการศึกษา (Education)

มัธยม (High School)

อาชีวะ (Vocational School)

ปริญญาตรี (Bachelor Degree)

ปริญญาโท (Master Degree)

ปริญญาเอก (PhD)

อื่นๆ (Others).....

1.5 รายได้ต่อเดือน (Income per Month)

น้อยกว่า 15,000 บาท (Less than 15,000 Baht)	15,001 – 25,000 บาท (Baht)
25,001 – 35,000 บาท (Baht)	35,001 – 45,000 บาท (Baht)
45,001 – 55,000 บาท (Baht)	มากกว่า 55,001 บาท (over 55,000 Baht)

1.6 อาชีพ (Occupation)

1.7 ท่านเคยซื้อผลิตภัณฑ์เครื่องเรือนสำหรับนั่ง หรือไม่

(Have you ever bought furniture for sitting?)

เคย (Yes) จำนวน.....ชิ้น ไม่เคย

ส่วน ข. การประเมินคุณค่าผลิตภัณฑ์ (Product Value Assessment)

กรุณาประเมินคุณค่าผลิตภัณฑ์ในการตัดสินใจเลือกผลิตภัณฑ์ โดยให้คุณให้ค่าความสำคัญในด้านต่างๆ ให้ตรงกับความคิดของคุณมากที่สุด ไม่ควรตอบคำถามตามความคิดแบบอัตโนมัติ

คุณค่าผลิตภัณฑ์	ระดับความสำคัญ			
	ไม่มี	น้อย	ปานกลาง	สูง
คุณค่าทางกายภาพ (Physical Value)				
- ความสวยงาม (Aesthetics)				
- คุณภาพดี (Good Quality)				
- เหมาะสมกับสภาพแวดล้อมในการใช้งาน (Appropriateness to the context of use)				
- นำเชื่อถือ (Enabling)				
- ความทนทาน (Durability)				
- ความแตกต่าง (Differentiation)				
- เอกลักษณะเฉพาะ (Uniqueness)				
- รูปแบบ มีความเป็นนวัตกรรม (Innovativeness)				
คุณค่าทางประโยชน์ใช้สอย (Functional Value)				
- นำใช้งาน (Comfort)				
- ความปลอดภัย (Safety)				
- ใช้งานง่าย (Ease of Use)				
- ใช้งานได้หลายอย่าง (Multi-functions)				
- ความสะดวกสบาย (Convenience)				

คุณค่าทางอารมณ์ (Emotional Value)				
- ได้รับประสบการณ์แปลกใหม่ (Adventure)				
- ส่งเสริมความรู้สึกอิสระและเสรีภาพ (Independence)				
- สร้างรู้สึกปลอดภัย (Security)				
- ตอบสนองความสุขทางใจ (Sensuality)				
- สร้างความมั่นใจ (Confidence)				
- ทำให้รู้สึกถึงอำนาจ (Power)				
- ความสนุกสนาน (Fun)				
- สร้างเสน่ห์ (Affection)				
- สามารถสร้างความทรงจำ (Memorability)				
- รสนิยม (Taste)				
คุณค่าของผู้ใช้ (User Value)				
- ประหยัดค่าใช้จ่ายอื่นๆ (Saving expenses)				
- ประหยัดเวลา (Time Saving)				
- สร้างความสะดวกสบาย (Convenience)				
- ความมีประสิทธิภาพ (Efficiency)				
- เต็มเต็มบทบาทของตัวเอง (Role Fulfilling)				
- เต็มเต็มความสุขส่วนตัว (Self-Fulfilment)				
- ส่งเสริมภาพลักษณ์ทางสังคม (Social Image/Impression)				
- สร้างความรู้สึกเป็นส่วนหนึ่งของกลุ่ม (Group Belongingness)				
- ส่งเสริมความโชคดี (Good Fortunate)				

คุณค่าเพื่อสิ่งแวดล้อม (Eco Value)				
- ประหยัดพลังงาน (Energy Saving)				
- แนวคิดการนำกลับมาใช้ใหม่ได้ (Rethinking Ideas)				
- วัสดุที่ใช้สามารถย่อยสลายตามธรรมชาติ (Biodegradable)				
- ใช้พลังงานทางเลือก (Green Energy)				
- สามารถลดปริมาณสารคาร์บอนไดออกไซด์ (CO2 Reduction)				
คุณค่าทางวัฒนธรรม (Cultural Value)				
- มีเอกลักษณ์ไทย (Thainess)				
- ใช้ภูมิปัญญาไทย (Thai Knowledge)				
- รักษาขนบธรรมเนียมประเพณี (Thai Tradition)				
คุณค่าทางสังคม (Social Value)				
- การไม่ใช้แรงงานเด็ก (No Child Labour)				
- คำนึงถึงสิทธิมนุษยชน (Human Rights)				
- ผลิตในประเทศไทย (Made-in-Thailand)				
- การเพิ่มคุณภาพชีวิตกับสังคม (Social Well Being)				
- มีความยุติธรรมทางการค้า (Fair Trade)				
คุณค่าของแบรนด์ (Brand Value)				
- ภาพลักษณ์ของแบรนด์ (Brand Image)				
- เอกลักษณ์เฉพาะของแบรนด์ (Brand Identity)				
- คำมั่นสัญญาของแบรนด์ (Brand Promise)				
- บุคลิกลักษณะของแบรนด์ที่ตรงกับ บุคลิกลักษณะของผู้ใช้ (Brand Personality)				

คุณค่าของเทรนด์ (Trend Value)				
- นำสมัย (Trendy)				
- เกาะติดกระแสนิยมต่างประเทศ (In-Trend Internationally)				
- เกาะติดกระแสนิยมภายในประเทศ (In-Trend Nationally)				
ความรู้เกี่ยวกับแบรนด์ (Knowledge Background of Brand)				
- การรับรู้การมีอยู่ของแบรนด์ (Brand Awareness)				
- ความภักดีกับแบรนด์ (Brand Loyalty)				
ความรู้เกี่ยวกับสินค้าคู่แข่ง (Product Competitor Knowledge)				
- สินค้าคู่แข่งที่เหมือนกัน (Direct Competitor) เช่น น้ำอัดลมประเภทโคล่าหลายๆ แบรนด์				
- สินค้าประเภทใกล้เคียงกัน (Substitute Competitor) เช่น น้ำอัดลมหลายหลายกลิ่นและรสชาติ				
- สินค้าประเภทอื่นๆ (Alternative Competitor Analysis) เช่น เครื่องดื่มประเภทอื่นๆ				
คุณค่าของระบบสนับสนุน (Supportive System Value)				
- บริการหลังการขาย (After Sale Service)				
- การรับประกันคุณภาพ (Warranty)				
- ผลิตภัณฑ์และอุปกรณ์เสริม (Product Accessories)				
- การยืดอายุการใช้ผลิตภัณฑ์ (Product Extendables)				
- ระบบมาตรฐานที่นำมาใช้กับผลิตภัณฑ์ (System Platform)				
- ผลิตภัณฑ์ที่นำมาใช้ร่วมด้วย เพื่อทำให้เกิดการใช้งานอย่างมีประสิทธิภาพ (Product Supplements)				

ส่วนที่ 2 กรุณาเรียงลำดับความสำคัญ 1 - 5 ของคุณค่าผลิตภัณฑ์คุณให้คุณค่าสูง
สามารถเลือกลำดับ 1 ได้มากกว่า 1 ปัจจัย

คุณค่าทางกายภาพ	คุณค่าทางประโยชน์ใช้สอย
—	—
(Physical Value)	(Functional Value)
คุณค่าทางอารมณ์	คุณค่าของผู้ใช้
—	—
(Emotional Value)	(User Value)
คุณค่าเพื่อสิ่งแวดล้อม	คุณค่าทางวัฒนธรรม
—	—
(Eco Value)	(Cultural Value)
คุณค่าทางสังคม	คุณค่าของแบรนด์
—	—
(Social Value)	(Brand Value)
คุณค่าของเทรนด์	ความรู้เกี่ยวกับแบรนด์
—	—
(Trend Value)	(Knowledge Background of Brand)
ความรู้เกี่ยวกับสินค้าคู่แข่ง	คุณค่าของระบบสนับสนุน
—	—
(Product Competitor Knowledge)	(Supportive System Value)

ส่วนที่ 3 ท่านมีวิธีการตัดสินใจเลือกซื้อผลิตภัณฑ์ประเภทดังกล่าวอย่างไร
(ท่านสามารถเลือกคำตอบได้มากกว่า 1 ข้อ)

เรียงลำดับความสำคัญจากมากไปน้อย

มองหลายๆปัจจัยร่วมกัน

เน้นปัจจัยสำคัญมากในรายละเอียด

การเปรียบเทียบในรายละเอียดทั้งหมด

คิดถึงผลิตภัณฑ์อื่นควบคู่กันไป

ต้องมีคุณค่าครบตามที่เรียงลำดับไว้

ความสัมพันธ์ของปัจจัยต่างๆ

อื่นๆ โปรดระบุ

ส่วนที่ 4 ท่านจะตัดสินใจเลือกซื้อผลิตภัณฑ์หรือไม่เพราะอะไร

เลือก เพราะ

ไม่เลือก เพราะ

.....

ไม่แน่ใจ เพราะ

.....

ขอขอบคุณทุกท่านที่ร่วมงานวิจัยครั้งนี้

ถ้ามีข้อแนะนำเกี่ยวกับงานวิจัยนี้ กรุณาติดต่อ ดร. โชคอนันต์ บุษราคัมภากร

การออกแบบและวางแผนมหาบัณฑิต (หลักสูตรนานาชาติ)

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โทร 02 470-9940-1 หรือ แฟกซ์ 02 470-9942

CHAPTER 3: RESEARCH ANALYSIS

Introduction to Chapter 3

Chapter 2 describes the whole research methodology. It includes the research rationale and approach, the research structure, the criteria of the 10 innovative products selection, the hypothesis of the 12 innovative products value, the research data collection protocol and the research data analysis methods.

Chapter 3 describes the whole research analysis of key success factors of the innovative products, particularly focusing on the value of the innovative products on the company and customer perspectives. The following sections are:

Section 3.1 describes the analysis of key success factors of the innovative products on the company perspective. According to the 10 selected innovative products, there are four companies, i.e. Plan Toys, Yothaka, Osisu and Bathroom Design.

Section 3.2 describes the baseline analysis of key success factors of the product category based on the customer perspective. According to the 10 selected innovative products, there are three product categories, i.e. Toy, Furniture and Sanitary Ware.

Section 3.3 describes the analysis of key success factors of the 10 selected innovative products in comparison with the average baseline analysis, based on the customer perspective. The innovative product analysis is divided into two main groups, i.e. the successful innovative products and the unsuccessful innovative products.

Section 3.4 describes the comparative analysis of three value curve groups: the average baseline pattern, the average pattern of the successful innovation products group, and the average pattern of the un/less successful innovative products group.

3.1 The Company Perspective

3.1.1 Company Introduction

According to the 10 selected innovative products, there are four interviewed companies. This section will introduce company overview, the innovative product background and the management of the development of the innovative product within each company.

3.1.1.1 PlanToys

Interviewee: Pichade Ravipong, Creative Director

Established in 1981, PlayToys is acknowledged as one of the top rubber-wooden design toys in the world. Its toys are mainly made from too-mature rubber woods which have not normally been utilised. Its vision is to 'inspire children' imagination and promote their physical and intellectual development' (www.plantoys.com, 2010). It practices 'the Four R' of eco-friendly living, Rethink, Reduce, Reuse and Recycle. This 4R principle has been implemented in 3 main business areas, i.e. product material, manufacturing process and green responsibility.

Regarding the characteristics of the company's innovative products, the toys are open-ended type. This toys type helps kids develop their skills and imagination, and simultaneously require safety while playing. The toys represent fun, bright, surprise without creating scary or fear. As an international company, product ethics is also a critical aspect. Although, this product type requires high standards, the affordable price is considered still. Popular culture will be considered if only it matches the company's product conception.

3.1.1.2 Osisu

Interviewee: Assist Prof Singha Intrachotoo, CEO

Established in 2006, OSISU has an intention to 'get rid of waste by design'. He said, "When we were talking about waste elimination, people always rely on scientist, engineer or technologist as a savior to solve environmental problems, which nobody talks about designer. I want people to recognize waste elimination by designer too." The company has a separate idea from the western world, where the waste reduction or green products is on technology-oriented direction. It is interested in

turning construction, manufacturing and household waste, such as small pieces of wood, sand papers, milk cartons and steel pipes, into creative/innovative products.

Regarding the characteristics of Osisu's innovative products, they are produced from the wastes. The transformation process, from left-over waste to useable materials is innovative. How to apply the materials to everyday used products is also an innovative way for commercialized products. There are 3 main concerned aspects on the Osisu's design, i.e. aesthetics, functional and made out of the new mixed material. For instance, the indoor and outdoor products will have proportion or aesthetics and function differently. However, they share the same material type. The aesthetics will consider not only the beauty of product, but also its proportion.

3.1.1.3 Yothaka

Interviewee: Suwan Kongkhunthian, CEO

Started with research funding by the Canadian government on Water Hyacinth, Yothaka has continued as business after the research finished. The aim of the research was conducted to alleviate locals' poverty and seek additional jobs after the cultivation was done. Suwan commented this is also a social innovation. However, the research did not include how to commercialise the products. That was how Yothaka had started with a good sense of success because of the innovation application of the research. The company commercialises the products done by the locals. Regarding the design part, there are three main directions, i.e. received design orders by external clients, created original design by both in-house and outsource designers. The company has been famous for its fine details and known what the design aesthetics is. It is run by Marketing Team, In-House Production Team, and some design freelances.

Regarding the characteristics of Yothaka's innovative products, the company first implemented water hyacinth on the big scale products. Oriental feeling is the key character of Yothaka's products. The feeling comes from natural materials, such as Water Hyacinth, Rattan and Lygodium. These natural materials are presented in a less conservative means. The Yothaka products are a choice of buyers, which is trendy and comfortable, not design concept. They can easily be blended into different decorative styles, as Suwan mentioned.

3.1.1.4 Bathroom Design

Interviewee: Watcharamongkol Benjathanachat, CEO

Established in 1995, the company was an imported bathroom sanitary company. Since 1998, the company has used 'Bahtroom Design' as its brand. To set up its own brand is to decrease the imported business portion and increase domestic activities. The business paradigm is based on the King's self-sufficiency philosophy. The business is run on two key aspects: Knowledge and Morality. It employs an in-house designer and an external product design advisor as the design team. At the beginning, It worked on product design part and outsourced manufacturing part. The products were small simple bathroom accessories, such as acrylic bathroom shelf. Design was used for the minor changes of products' shape, form and material. New functions were added on the next generation of the product as the next step. After that, the company started new production line, i.e. shower room and bathtub respectively. Because the external manufacturing supplier had copied the company products and sold them in a cheaper price, this has forced the company to establish its own factory. The factory started producing simple bathtub. Then, it moved to produce more advanced models and their modified models. Until 2003, the cheaper products from China have spread all over the world. The company has initiated its innovation strategy in order to establish a unique market position, which Chinese and European competitors cannot compete in the market, i.e. stylish design, intelligent technology and health conscious. It has also set a vision, to be one of the top 5 global leading bathroom companies in the next 20 years.

Bathroom Design is a specialist in bathroom products. Regarding the characteristics of Bathroom Design's innovative products, these four aspects are the heart of its products, i.e. Design, Function, Material and Technology. Design must be New-to-the-world. It will not be reproduced or duplicated the same product category in the market. Function of the products should be new, different and/or new functional integration. New materials are implemented, used for some parts or a whole of product, e.g. i-Crylic. The company attempts to apply new or integrated, available technology which is never applied to bathroom. At the beginning, it starts with a simple technology and moves to more complex one, e.g. systems linkage.

3.1.2 Analysis of General Questions

This section describes the analysis of the research questions by each company's answer and also comparing all companies' answers.

3.1.2.1 Question: How your company manages the development of innovative products internally? The answers of the four companies are shown in Table 3.1:

Table 3.1: Management of the Development of Innovative Products

Company	Answer
PlanToys	1. Product Team consists of child development expert, designer, marketer, and engineer. They are working together in this section. 2. This team will be responsible for the whole product development process, such as product brief, product sketch and product management. The process is controlled by the ISO system. 3. Product Team will run under the Marketing department 4. Product approval is done by Top Management.
Osisu	1. New material (Waste) acknowledgement 2. Store waste as raw material for new design at the site. 3. Design has been done by Osisu. Looking at the source of waste is design inspiration and transforming it into design. 4. Then produce the designed product at the site, working between OSISU technician and the site worker 5. The product will not be dyed or glued, except in case of product was dyed or glued in the primary product process. 6. If the material waste is run out, the production of that designed product will be stopped. 7. Quality Control into the deep details of product design will be done by the rules set by the OSISU's owner. 8. All designed products are commercialised. No design approval before launch.
Yothaka	1. Decision is fully made by the owner. It is important that the product is beautiful and salable, not outrageous, self-satisfactory, showy 2. The important aspects of the product are beauty, proportion, texture and colour. 3. There are three parties working for the business: design, marketing and production. 4. Design is done by in-house and freelance designers. However, freelance designers is not a significant part.
Bathroom Design	1. Regularly New Knowledge Input. (Training, Attending Exhibition/Seminar, Accessing Magazines/Books). 2. Young, Less Ego, Hard-working, creative staff 3. Routine Idea Generation Session, i.e. Creative Saturday -This process starts by dividing the working team into 2 groups: (1) three Designer Groups (product, interior and graphic design group) and Two Engineer Groups (mechanical and technical) - Each group discusses their topics and shares their knowledge

	to the other. 4. Product approval is done by the owner. 5. The design team is involving 3 product aspects, i.e. 3-5 years visionary product, new launching product, after-launched product. 6. There is ISO 1901/2000 for design
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3.1.2.2 Question: Have critical success factors of innovative products been clearly identified within the company? if yes, What?, and How to achieve each critical success factor with the company's new product development practice? The answers of the four companies are shown in Table 3.2:

Table 3.2: Pre-Identification of Critical Success Factors of Innovative Products

Company	Answer
PlanToys	○ Not really (The followings are success factors: Individual and Team Potential, Big Ideas, Integrative Development by Team, Good Flow of Working Process, Good Team Relationship (generating positive energy), Working until Deadline)
Osisu	○ Good Proportion and Aesthetics ○ New Mixed Material ○ Functional
Yothaka	○ No (On the first 12 – 13 years, the company tried to provide a variety of product choices, 6-7 developed products per year. Buyers' comment and feedback on a variety of product choices push the company develop more products at the product category level. Another key issue is the company had experienced and learnt when working with foreign designers. As a result, it pays attention to small details in not only product aspects, but also communication materials. According to the customers' feedback, <i>Yothaka's products are delicate, feel comfortable. To sum up, the company uses customers' feedback and orders as indicators</i>)
Bathroom Design	○ Design meets the brand principles: innovative design, function, material and technology ○ Key Performance Indicator (KPI), i.e. ISO standard (Timing, Efficient Design and New Ideas) ○ Innovative solution approval from all teams, such as design team, production team, QC team, Purchasing team and Marketing team. ○ However, the innovation condition has to be applied in decision making

3.1.2.3 Question: How you define the success of innovative products in the company? The answers of the four companies are shown in Table 3.3:

Table 3.3: The Indicator of Innovative Product Success

Company	Answer
PlanToys	- o Both Internal (different, not duplicated, better design) and External Factors (sale record and recognised award) - o Price - o Customer Satisfactory - o Functional Benefits
Osisu	o Useful Product Applications and users use them, not all about sale records because eco-consumers are about 5% of world population
Yothaka	- o Sale Record per Annum (By Number of Products, By Total Revenue) - o Market demands on best selling products
Bathroom Design	- o Sale Record - o Awards (Some innovative products cannot be measured their success by sale target. The innovative design, received awards, mostly have low sale rate. These products will be served as prototype for next product generation, which might have same functions or less, but salable price.)

3.1.2.4 Question: What factors make successful differ from un/less successful innovative products? The answers of the four companies are shown in Table 3.4:

Table 3.4: Distinctive Factors between successful and un/less successful innovative products

Company	Answer
PlanToys	- o Product Functions - o Individual Skills - o Working Process (Lack of the understanding of the systematic process) - o Top Management Vision - o Setting up the right question/direction - o Employing Toy Designers, not other design disciplines
Osisu	- o Consumer Taste - o Material Application - o Design Style (Simple design can sell very well, not flamboyant design) - o New-Mixed Materials cannot sell well. However, some products sold well in one market, but not the other.
Yothaka	- o Design Product is un/less successful - o The company does not count un/less successful products by the number of product sale and how long products have been

	in the market. Almost all products can be sold since the business has run for 20 years. ○ Lack of product differentiation and excitement can cause failure. ○ Lack of support in material production
Bathroom Design	○ Un/less successful innovative products can't be judged by both sale records and awards because highly innovative product is sold less, but high margin. ○ A Variety of Products (more is not always success) ○ Competitive Price (middle range price will make the company's innovative product success) ○ Affordable Innovation

3.1.3 Analysis of Innovative Product Value

This section describes the value analysis of the innovative products of the four selected companies. The results are shown in Table 3.5.

3.1.3.1 Question: Please identify the following innovative product values, in which factors/aspects do you put in your innovative products. The answers of the four companies are shown in Table 3.5:

Table 3.5: Value analysis of the innovative products of the four companies

Product Value	PlanToys	Osisu	Yothaka	Bathroom Design
Physical	(3) Appropriate to Kid Development & Behaviour; and Appropriate to Cultural Reference	(4) Brand Recognition, Aesthetics, Good Proportion	(3) Timeless (some products), Beautiful, Lifestyle-Fit,	(4) Aesthetic, Distinctive Appearance, Form and Material,
Functional	(4) Size, Safety, Ergonomics, Selected Material Appropriateness, Imaginative Play	(3) Comfortable (Chair), Functional	(3) Warm and Cosy, Friendly, Casual	(4) Multi-Functions
Emotional	(4) Fun, Lively, Cute, Surprise	(4) Amusement, Completely Forget the Negative Feeling on Waste	(4) Friendly, Relax	(4) Happiness in use, Emotional Experience

Brand	(3) Straightforward, Committed, Less Serious, Eco-Conscious	(4) Trust, Brand Recognition as Osisu, Innovative Material	(3) Product Differentiation	(3) Difference, Theme Series, Universal Design
Cultural	(1) Ethnic Minority Concern	(1) Not Concern on Thai Style	(4) Keeping Cottage Industrial Culture, Acclaimed Thai Product, Weaving Process Knowledge, Direct and Indirect Social and Eco Responsibility	(3) Thai Creativity, Made-in-Thailand
Social	(4) Staff Welfare, Social Mind, Eco-Responsibility, Alternative Energy	(1) Social Development (In the future), Social Awareness on this Business Type	(3) Poverty Alleviation in the Local and South East Asia	(2), Human Safety
User	(3) Good Quality, Reasonable Price, Efficient Use, Durability, Joint Play with other Toys	(2) User Testing	(3) Eco Responsibility and Awareness, Emotional Response	(4) Good Well-Being,
Trend	(4) Eco Material, Beneficial for the Company	(1) Not pay attention	(3) Market Trend Follower (Colour and Form), Trend Setter Wannabe in Handicraft	(2) Implemented Global Trend
Environmental	(4) A Core of Business	(4) Left-Over Waste, Less Harmful Chemical, New Generation Training, Recycle of the Product	(4) Green is Business Conscious	(2) Water Resource Saving

Knowledge of the Company's Brand	(2) Implied in Design and Design Finalisation	(4) Modern Design by Left-over Materials	(4) The Leader in Handmade Weaving, Eco-Responsible Product	(4) Self-Sufficiency, Bathroom Specialist, Risk Conscious, Use Resource efficiently
Knowledge of Product Competitors	(3) Learn how They Think, Learn Product Creation Methods	(1) None	(3) Follow the Emerging Direct Product Competitor, especially Southeast Asia	(4) Learning competitive success
Supportive Product/Service System	(2) Product Standards in the Market	(1) None	(1) Instruction (Paper Furniture)	(3) Safety Standards (CE), ISO, Industry Standard (TISI)

Remark:

(1) none/less, (2) Start Implementing/In a few cases, (3) Carrying on working, (4) As key principle

3.1.3.2 Question: Please rank 5 key innovative product values in order, to make your innovative product success. The ranked values of the four companies are shown in Table 3.6

Table 3.6: Rank of 5 Key Values for Innovative Product Success

Value Rank	PlanToys	Osisu	Yothaka	Bathroom Design
1	Functional Value	Eco Value	Brand Value	Physical and Functional Value
2	User Value	Brand Value	Eco Value	User Value
3	Emotional Value	Knowledge of the Company's Brand	Social and Cultural Value	Trend Value
4	Competitive Product Value	Physical and Functional Value	Emotional Value	Knowledge of Competitive Products
5	Brand Value	Emotional Value	Physical and Functional Value	Brand Value

3.1.3.3 Question: Please rank 5 key innovative product values in order, to make your un/less successful innovative products. The ranked values of the four companies are shown in Table 3.7.

Table 3.7: Rank of 5 Values for Unsuccessful Innovative Products

Value Rank	PlanToys	Osisu	Yothaka	Bahrtoom Design
1	Functional Value	Economic Value*	Brand Value	Physical and Functional Value
2	User Value	User Value	Eco Value	User Value
3	Emotional Value	Knowledge of Competitive Products	Social and Cultural Value	Trend Value
4	Competitive Product Value	Physical and Functional Value	Emotional Value	Knowledge of Competitive Products
5	Cultural Value	Emotional Value	Physical and Functional Value	Brand Value

Remark: * Economic Value is not the research's innovative product value

3.1.3.4 Question: In your opinion, please suggest how to increase the rate of innovative product success in the company. The suggestions of the four companies are shown in Table 3.8.

Table 3.8: Suggestions on how to increase the rate of innovative product success

Company	Answer
PlanToys	○ None
Osisu	○ Reduce a number of the new mixed, unusual materials, one or two per year
Yothaka	○ Market and Buyer Expansion ○ Production Capacity Increase
Bathroom Design	○ Learn from the innovative product failures and develop them further ○ Further development on the success of the innovative products ○ Simplify the design in order to make it cheaper, but keep design appearance and quality

3.2 Consumer Perspective: The Baseline Analysis

According to the 10 selected innovative products, there are three product categories, i.e. Toys, (seating) Furniture and Sanitary ware. This section will show the result of the baseline analysis of key success factors of the product category based on the customer perspective.

The standard questionnaire 1, as shown in Appendix 2-C, was used as the tool for this part of research for all categories. One hundred random samples completed the questionnaire in each category. In total, there are 300 samples. The results of this research are shown in the sections below.

3.2.1 General Information

As shown in Table 3.9 – 3.13, the number of the female samples is higher than the number of the male samples about 1.8 times. Regarding the toy category, the female samples are higher than the male samples around 5 times. The majority of the age range of the samples is 26 – 50 years old, 267 samples (89%). The majority of the samples, 187 were married, in particular the toy category. The educational level of the samples is mainly achieved Bachelor Degree, 204 samples (68%), in the three product categories. The majority of the samples earn in the range of 15,000 – 25,000 Baht per Month (around 31%).

Table 3.9: Gender of the samples in each product category

Gender	Total (Percent)	Toy	Furniture	Sanitary Ware
Male	108 (36%)	18	50	40
Female	192 (64%)	82	50	60

N = 300

Table 3.10: Age range of the samples in each product category

Age (Years)	Total (Percent)	Toy	Furniture	Sanitary Ware
less than 25	18 (6%)	0	9	9
26-30	79 (26.33%)	1	37	41
31-35	54 (18%)	11	25	18
36-40	67 (22.33%)	30	21	16
41-50	67 (22.33%)	49	8	10
more than 51	15 (5%)	9	0	6

N = 300

Table 3.11: Status of the samples in each product category

Status	Total (Percent)	Toy	Furniture	Sanitary Ware
Single	116 (38.67%)	1	58	57
Married	180 (60%)	97	42	41
Others	4 (1.33%)	2	0	2

N = 300

Table 3.12: Educational level of sample in each product category

Education level	Total (Percent)	Toy	Furniture	Sanitary Ware
High school	25 (8.33%)	8	12	5
Vocational school	16 (5.3%)	8	6	2
Bachelor	204 (68%)	68	61	75
Master	51 (17%)	15	19	17
PhD	1 (0.33%)	0	0	1
Others	3 (1%)	1	2	0

N = 300

Table 3.13: Income range of the samples in each product category

Income (Bht.)	Total (Percent)	Toy	Furniture	Sanitary Ware
Less than 15k	73 (24.33%)	15	36	22
15k-25k	94 (31.33%)	23	29	42
25k-35k	43 (14.33%)	10	18	15
35k-45k	26 (8.67%)	14	7	5
45k-55k	13 (4.33%)	9	1	3
More than 55k	51 (17%)	29	9	13

N = 300

3.2.2 Baseline Analysis of 3 Product Categories

The results of the baseline analysis of the three product categories are shown in the figures below. The analysis shows the value curve of each product category and the average value curve. It also illustrates the value curve of each value factor.

3.2.2.1 All Values Assessment

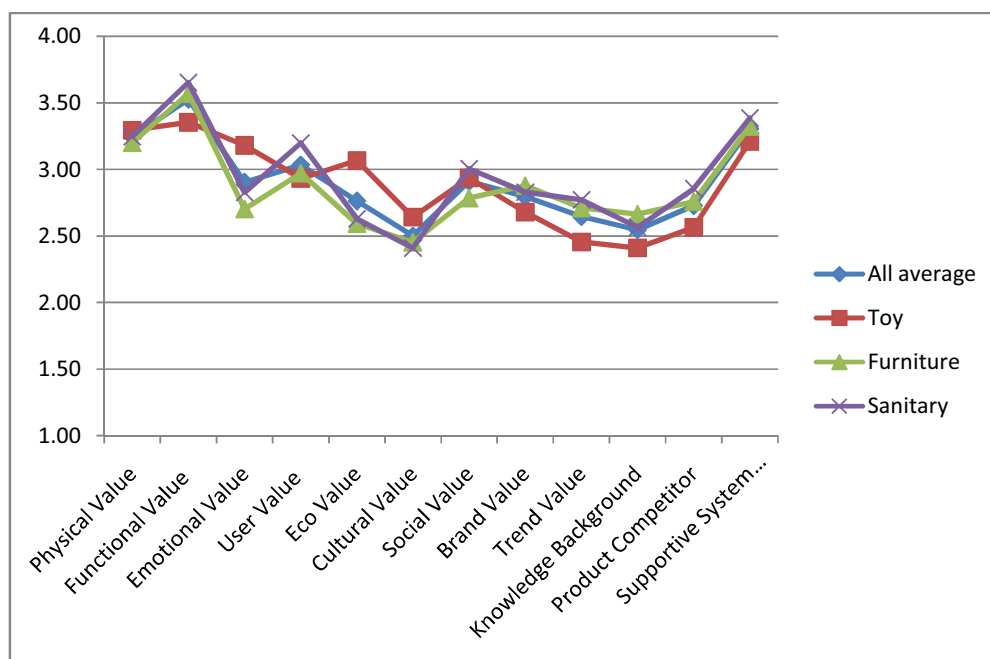


Figure 3.1: The value curve of three product categories and its average

As shown in Figure 3.1, it reveals Functional Value is the most significant product value when Thai consumers assess the products' values. Physical and Supportive System Values are in the second tier priority. User, Social and Emotional Values are in the third tier. Eco and Brand Values are the forth tier. In the contrary, Cultural Value is the least significant product value when consumers assess. The product value assessment patterns (value curve) of the seating furniture and sanitary ware categories are very close to the average pattern. Regarding the toy category, two product values are evaluated much higher than the average score: Emotional Value and Eco Value, and Functional, Brand, Trend Values and Knowledge Background are assessed less than the average score. The product value assessment pattern (as shown in the red line) of the toy category is fairly different from the average pattern. Regarding the toy category, the top priority is Functional Value. Physical, Support System and Emotional Values are the second tier priority. Eco, Social and User Values are the third tier.

3.2.2.2 Each Product Value Assessment

Figure 3.2 – 3.13 show the details of each product value assessment and their average value curve. Twelve selected product values have been assessed. In each value, there is a list of key components as described in Table 2.4 in Section 2.6.

3.2.2.2.1 Physical Value

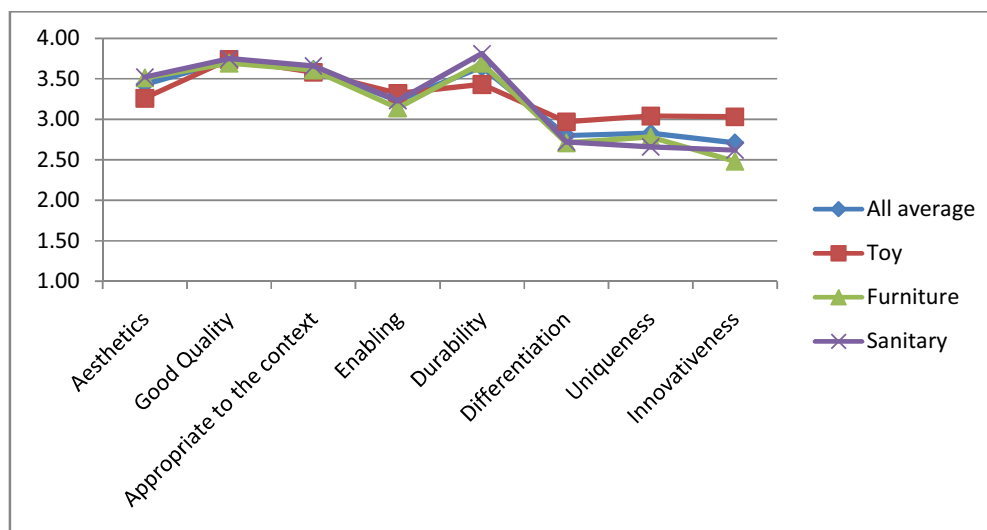


Figure 3.2: Physical value assessment of all product categories and its average value curve

Regarding the Physical Value as shown in Figure 3.2, in average, Thai Consumers value Good Quality, Durability and Appropriate to the Context as highly significant. *Differentiation, Uniqueness and Innovativeness* are quite significant. In particular, Innovativeness is averagely scored the least in comparison with the others. Innovativeness is scored the least in the seating furniture and sanitary ware categories. Differentiation is scored the least in the toy category. The graph patterns of the seating furniture and sanitary ware product categories are very close to the average pattern. However, the graph pattern of the toy category is slightly different from the overall average. The average scores of the eight factors in each of the product category are more or less close to the overall average scores.

3.2.2.2.2 Functional Value

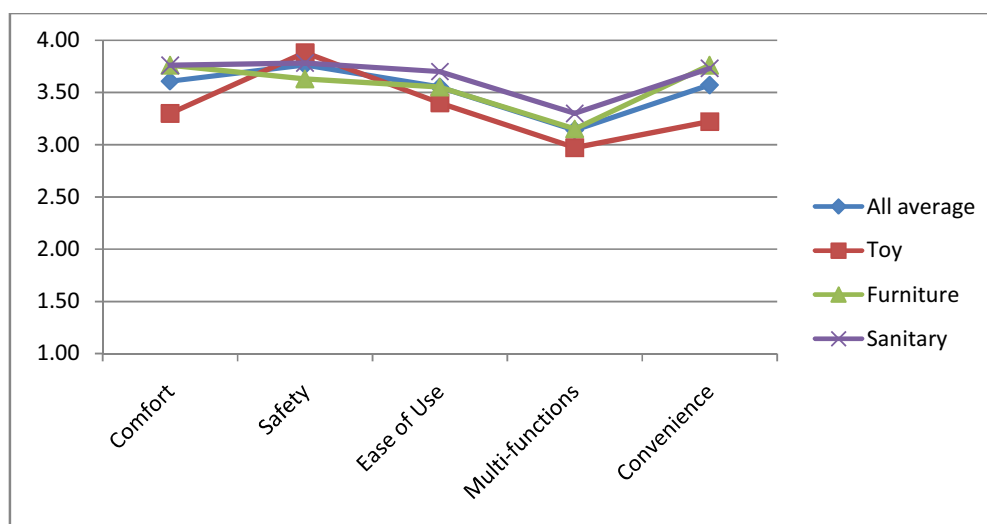


Figure 3.3: Functional value assessment of all product categories and its average value curve

Regarding the Functional Value as shown in Figure 3.3, in general, Thai Consumers value Safety as the top priority. Comfort, Safety, Ease of Use and Convenience are valued as highly significant. The factor, Multi-functions is averagely scored the least. The graph patterns of the furniture and sanitary ware categories are very close to the overall average pattern. The graph pattern of the toy category is mainly lower than the overall average pattern.

3.2.2.2.3 Emotional Value

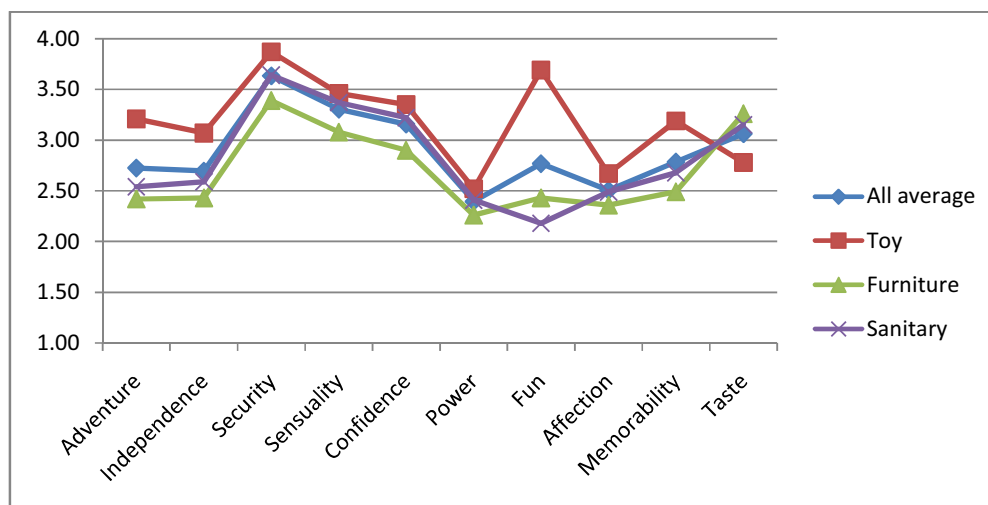


Figure 3.4: Emotional value assessment of all product categories and its average value curve

Regarding the Emotional Value as shown in Figure 3.4, in average, Thai Consumers value Security as highly significant. In the toy category, not only is Security highly significant, but also Fun factor is. The factor, *Power* is less significant. In particular, *Power* is the least significant in comparison with the others. *Power* is averagely scored the least in the seating furniture and toy categories. Fun is averagely scored the least in the sanitary ware category. The graph pattern of the sanitary ware category is very close to the overall average pattern. However, the graph pattern of the toy category is mainly arisen higher than the overall average pattern. In particular, the factors of Fun, Adventure, Memorability and independence are evaluated higher scores than the overall average. The graph pattern of the furniture category is lower than the overall average pattern. The factors, Adventure, Independence, Confidence, Fun, Affection and Memorability are averagely scored less than the overall average.

3.2.2.2.4 Brand Value

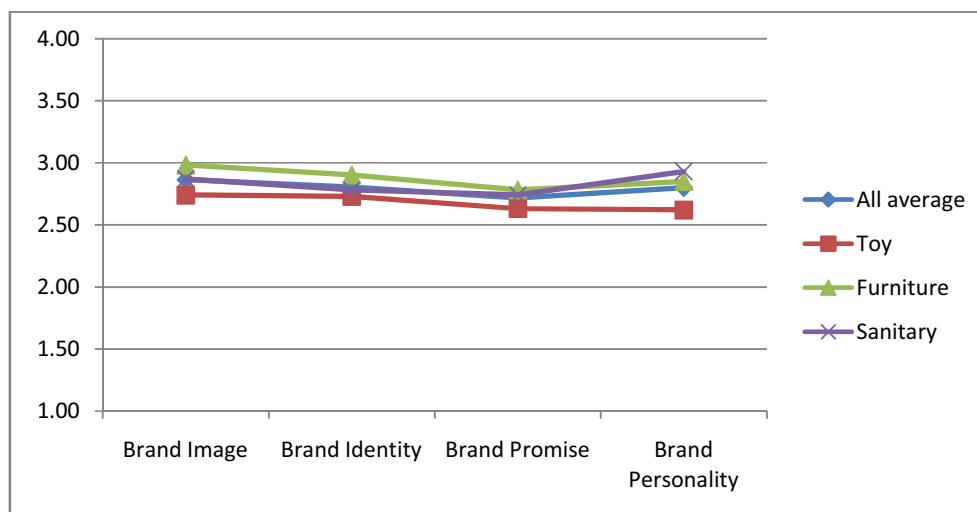


Figure 3.5: Brand value assessment of all product categories and its average value curve

Regarding the Brand Value as shown in Figure 3.5, in average, all factors (Brand Image, Identity, Promise and Personality) are quite significant. The graph patterns of all product categories are very close to the overall average pattern.

3.2.2.2.5 Cultural Value

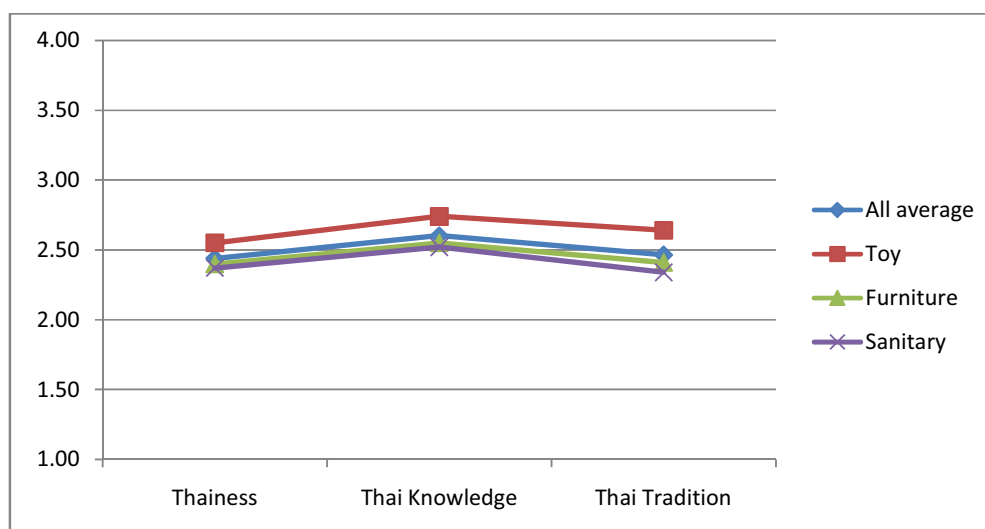


Figure 3.6: Cultural value assessment of all product categories and its average value curve

Regarding the Cultural Value as shown in Figure 3.6, in average, the factor, Thai Knowledge is quite significant. Thainess and Thai Tradition are less significant. The graph patterns of the seating furniture and sanitary ware categories are very close to the overall average pattern. The graph pattern of the toy category is higher than the overall average pattern.

3.2.2.2.6 Social Value

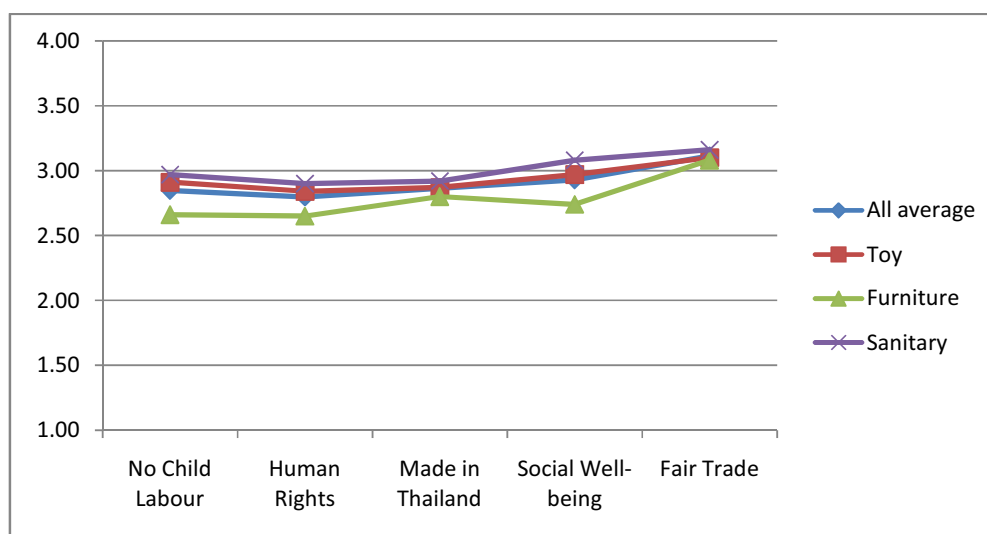


Figure 3.7: Social value assessment of all product categories and its average value curve

Regarding the Social Value as shown in Figure 3.7, in average, four factors (No Child Labour, Human Rights, Made-in-Thailand and Social Well-being) are significant. Fair Trade is valued as highly significant. The graph patterns of all product categories are very close to the overall average pattern.

3.2.2.2.7 User Value

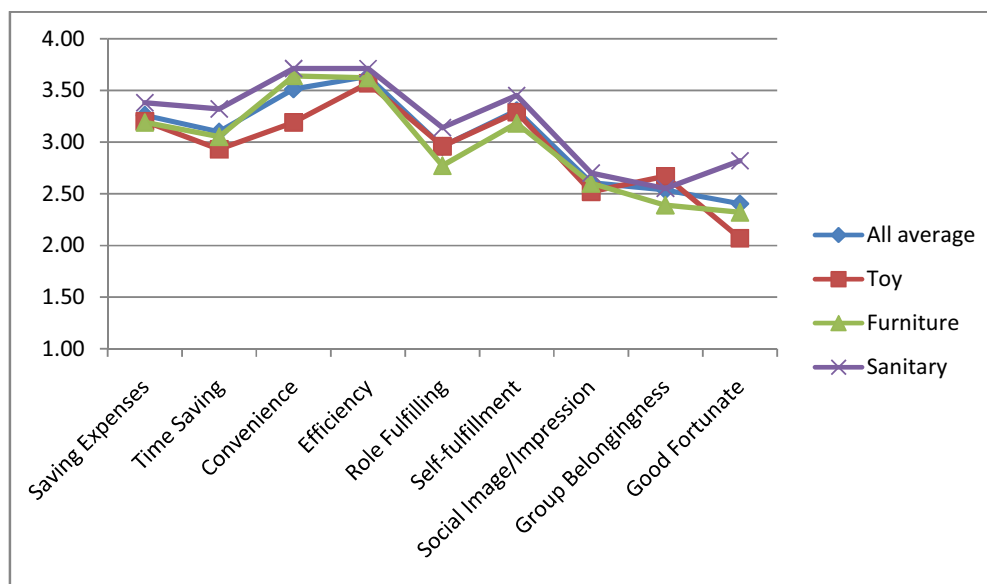


Figure 3.8: User value assessment of all product categories and its average value curve

Regarding the User Value as shown in Figure 3.8, in average, Thai Consumers value Efficiency and Convenience as highly significant. In the toy category, Efficiency is highly significant, not convenience. The factor, Good Fortunate is less significant. In particular, Good Fortunate is the least significant in comparison with the others in the seating furniture and toy categories. The graph patterns of all product categories are very close to the average pattern, except for the Convenience, Role Fulfilling and Good Fortunate factors. In the toy category, the average score of the factor, Convenience is lower than the overall average. In the sanitary ware category, the average score of the factors, Good Fortunate and Role Fulfilling is higher than the overall average.

3.2.2.2.8 Trend Value

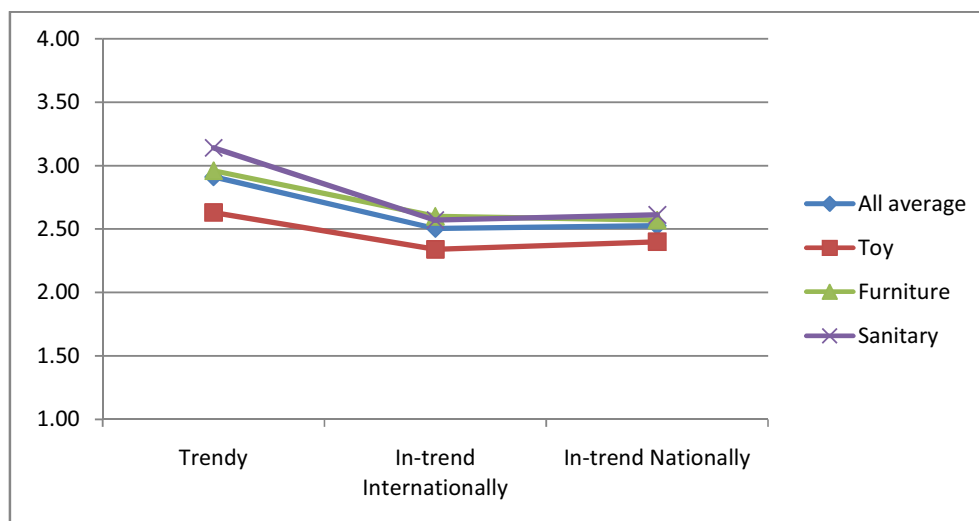


Figure 3.9: Trend value assessment of all product categories and its average value curve

Regarding the Trend Value as shown in Figure 3.9, in average, all factors are quite significant. The graph patterns of the seating furniture and sanitary ware categories are very close to the overall average pattern. The graph pattern of the toy category is lower than the overall average pattern.

3.2.2.2.9 Environmental Value

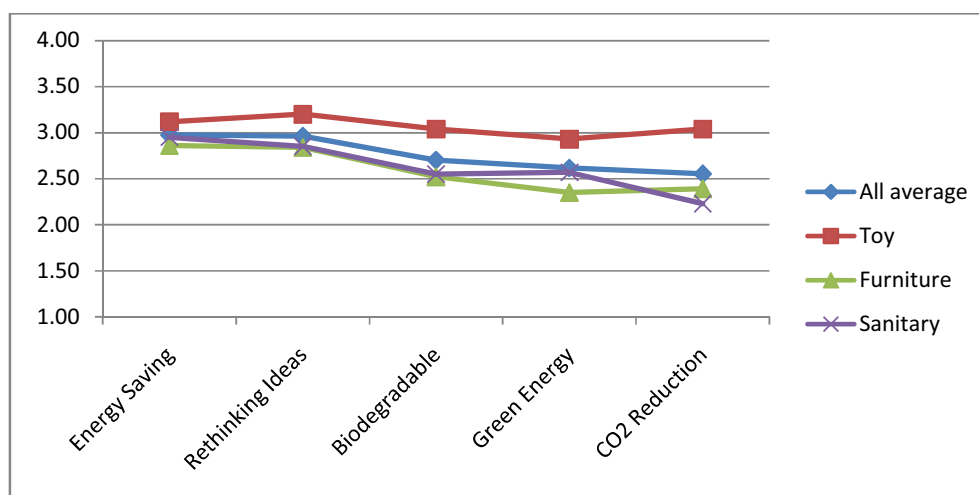


Figure 3.10: Eco value assessment of all product categories and its average value curve

Regarding the Eco Value as shown in Figure 3.10, in average, Thai Consumers value all factors (Energy Saving, Rethinking Ideas, Biodegradable, Green Energy and CO2 Production) in the Eco Value as significant. In particular, the factor, CO2 Reduction is averagely scored the least. In the toy category, the assessment of almost all eco factors is higher than the overall average. The CO2 Reduction factor is averagely scored the least in the sanitary ware category. The factor, Green Energy is averagely scored the least in the toy and seating furniture categories. The graph patterns of the seating furniture and sanitary ware product categories are quite close to the overall average pattern. However, the graph pattern of the toy category is higher than the overall average. Four eco factors are in the highly significant level in the toy industry.

3.2.2.2.10 Knowledge of the Company's Brand

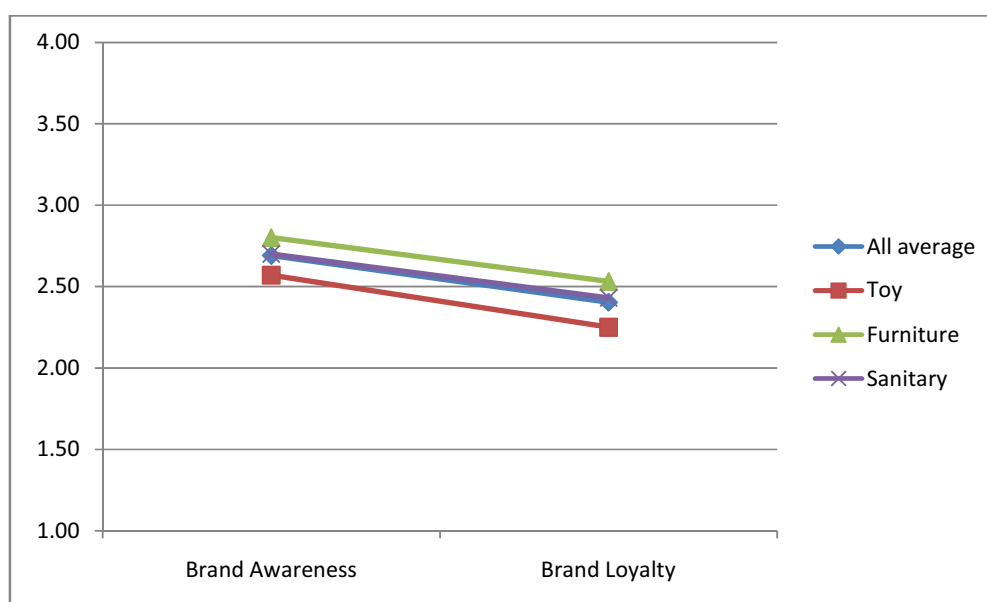


Figure 3.11: The assessment of knowledge of the company's brand of all product categories and its average value curve

Regarding the value of Knowledge Background of Brand as shown in Figure 3.11, in average, Brand Awareness is quite significant. Brand Loyalty is less significant. The graph patterns of all product categories are very close to the overall average pattern.

3.2.2.2.11 Knowledge of Product Competitors

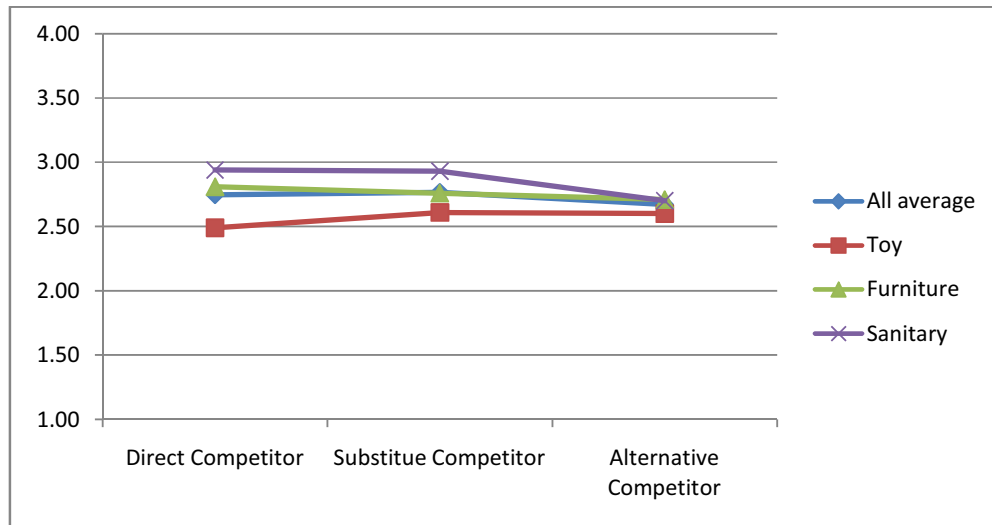


Figure 3.12: The assessment of knowledge of the product competitors of all product categories and its average value curve

Regarding the Value, Product Competitor Knowledge as shown in Figure 3.12, in average, all factors are quite significant. The graph patterns of all product categories are very close to the overall average pattern.

3.2.2.2.12 Supportive Product/Service System

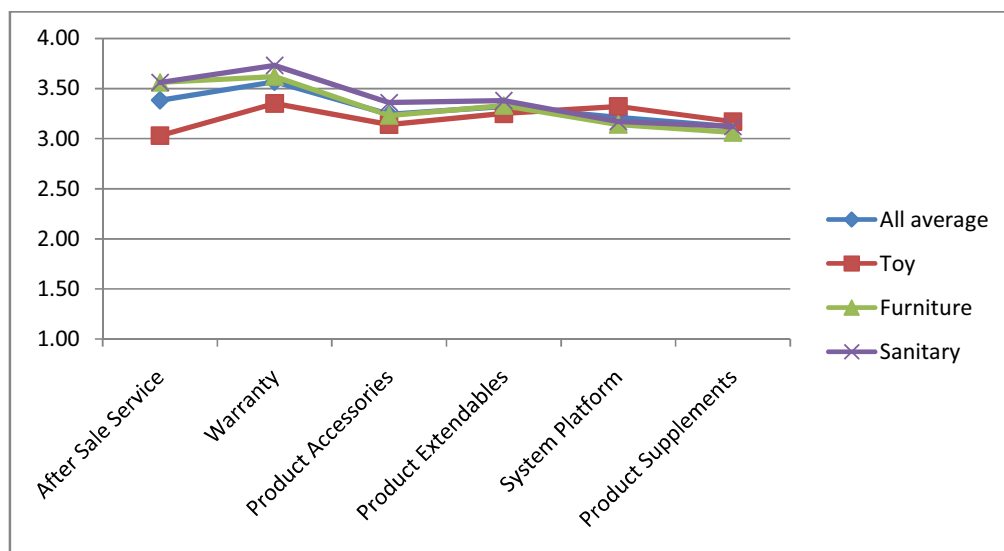


Figure 3.13: The assessment of supportive product/service system of all product categories and its average value curve.

Regarding the Value, Product Supportive System as shown in Figure 3.13, in average, the factors, Warranty are highly significant. The other factors, After Sale Service, Product Accessories, Product Extendable, System Platform and Product Supplements are all significant. In the toy category, the factor, Warranty is scored less than the overall average. The graph patterns of all product categories are close to the overall average pattern.

3.2.2.3 Product Value Prioritisation

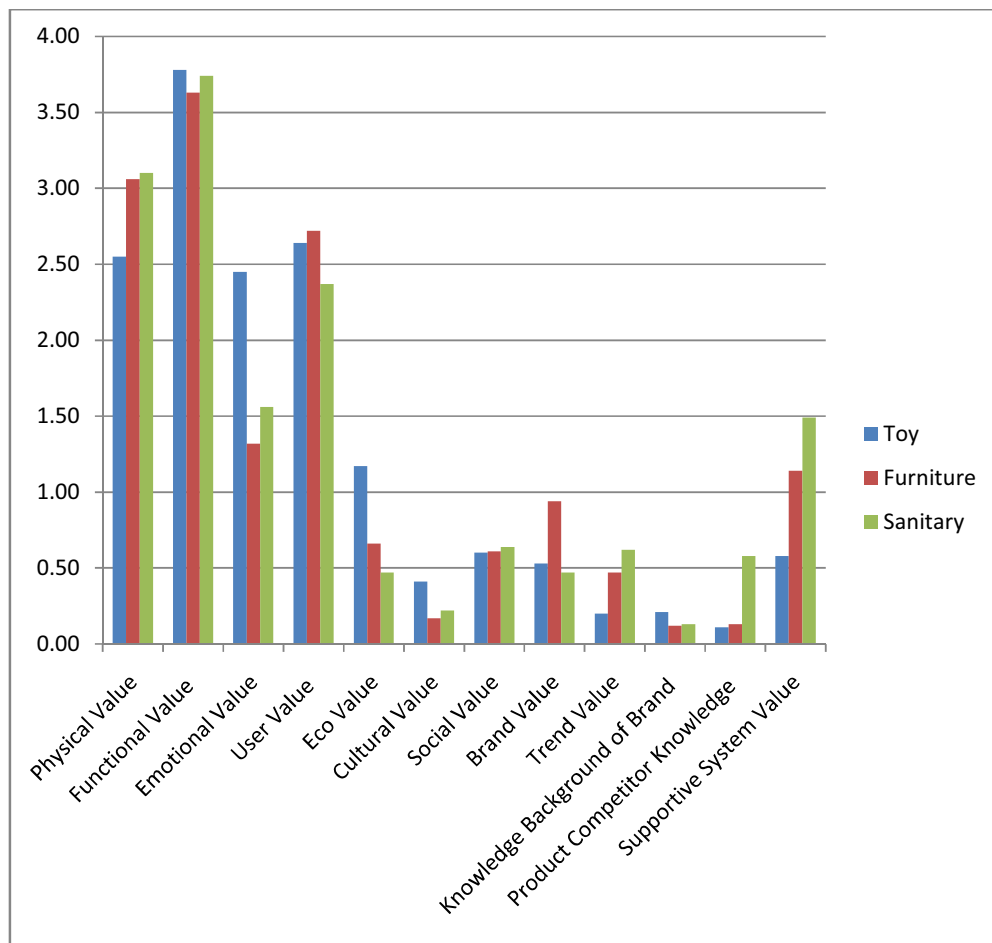


Figure 3.14: Product value prioritisation of three product categories

Regarding the prioritization of all twelve values in all product categories as shown in Figure 3.14, five key values are identified in priority:

- (1) Functional Value
- (2) Physical value
- (3) User Value
- (4) Emotional Value
- (5) Supportive System Value

Nevertheless, the prioritization of the five values in the toy category is different from the overall prioritization. The Support System Value is not in the top five. The prioritized five values are:

- (1) Functional Value
- (2) User value
- (3) Physical Value
- (4) Emotional Value
- (5) Eco Value

3.2.2.4 Buying Decision Model

In the questionnaire, Thai consumers were asked about their buying decision process. The aim of this question is to understand on how they make decision when buying products. It is also to affirm the significance of the value curve, the relations of all related factors. The result of the buying decision model analysis is shown in Table 3.14.

Table 3.14: Buying Design Model

Buying Decision Process	Total	Toy	Furniture	Sanitary Ware
Prioritizing from top to toe	118	37	35	46
Focusing on significant factors in details	102	27	33	42
Thinking of other competitive products in parallel	98	27	28	43
Assessing the relations of various factors	57	16	23	18
Considering overall related factors	212	62	70	80
Comparing all details thoroughly	141	39	52	50
Fitting with all sequential criteria	100	25	35	40
Other	8	5	3	0

N = 300

As shown in Table 3.14, when consumers decide to buy products in the three categories, they would follow:

1. the consumers will consider overall related factors (212)
2. they will compare all product details thoroughly (141)
3. After the comparison, they will prioritise the factors from the most significant to the least (118)
4. Then, they will focus on significant factors in details (102)
5. Finally, they will buy product fitting with all sequential criteria (100)

3.3 Consumer Perspective: 10 Innovative Products

The results of the 10 selected innovative products analysis are shown in the figures below. The analysis shows the value curve of both successful (T1, T2, F2, F2, S1) and un/less successful innovative products (highlighted in Grey in Table 3.15) as described in Table 2.2 in Section 2.4.

3.3.1 General Information

There are 500 samples participating in this study, 50 Samples in each innovative product. One sample can answer only one product. The general information analysis is shown in Table 3.15 – 3.19. The female sample is about 60%. The majority of the age range of the sample is 26 – 40 years old, 456 samples (91.2%). The majority of the samples, 294 samples (around 60%) were married. The educational level of the samples is mainly achieved Bachelor Degree, 424 samples (around 85%), in all selected products. The majority of the samples, 223 Samples (around 45%) earn in the range of 25,000 – 35,000 Baht per Month.

Table 3.15: Gender of the samples of all innovative products

Gender	Total (Percent)	T1	T2	T3	T4	F1	F2	F3	F4	S1	S2
Male	211	18	19	20	23	24	17	20	15	30	25
Female	289	32	31	30	27	26	33	30	35	20	25

N = 500

Table 3.16: Age Range of the samples of all innovative products

Age	Total (Percent)	T1	T2	T3	T4	F1	F2	F3	F4	S1	S2
less than 25	3	0	0	0	2	1	0	0	0	0	0
26-30	179	17	23	26	24	23	19	11	25	4	7
31-35	164	14	15	14	11	19	15	27	17	11	21
36-40	113	16	8	10	12	4	15	10	5	16	17
41-50	31	0	3	0	1	1	1	2	2	17	4
More than 50	10	3	1	0	0	2	0	0	1	2	1

N = 500

Table 3.17: Status of the samples of all innovative products

Status	Total (Percent)	T1	T2	T3	T4	F1	F2	F3	F4	S1	S2
Single	205	15	19	25	21	28	25	22	27	9	14
Married	294	35	31	25	29	22	25	28	22	41	36
Others	1	0	0	0	0	0	0	0	1	0	0

N = 500

Table 3.18: Educational Level of the samples of all innovative products

Education	Total (Percent)	T1	T2	T3	T4	F1	F2	F3	F4	S1	S2
High school	14	2	2	2	2	1	0	0	1	2	2
Vacational	11	1	0	2	2	1	2	1	1	0	1
Bachelor	424	38	41	41	42	45	40	47	46	38	46
Master	51	9	7	5	4	3	8	2	2	10	1
PhD	0	0	0	0	0	0	0	0	0	0	0
others	0	0	0	0	0	0	0	0	0	0	0

N = 500

Table 3.19: Income of the samples of all innovative products

Income (Baht)	OVERALL	T1	T2	T3	T4	F1	F2	F3	F4	S1	S2
< 15k	22	0	0	5	2	5	1	4	3	0	2
15k-25k	148	20	27	22	26	10	14	10	15	3	1
25k-35k	223	17	15	17	18	28	25	30	28	15	30
35k-45k	62	11	5	5	2	4	6	4	3	12	10
45k-55k	20	1	2	1	2	2	0	1	0	6	5
> 55k	25	1	1	0	0	1	4	1	1	14	2

N = 500

3.3.2 Comparative Analysis

This section describes the analysis of key success factors of the 10 innovative products in comparison with the average baseline analysis, based on the customer perspective.

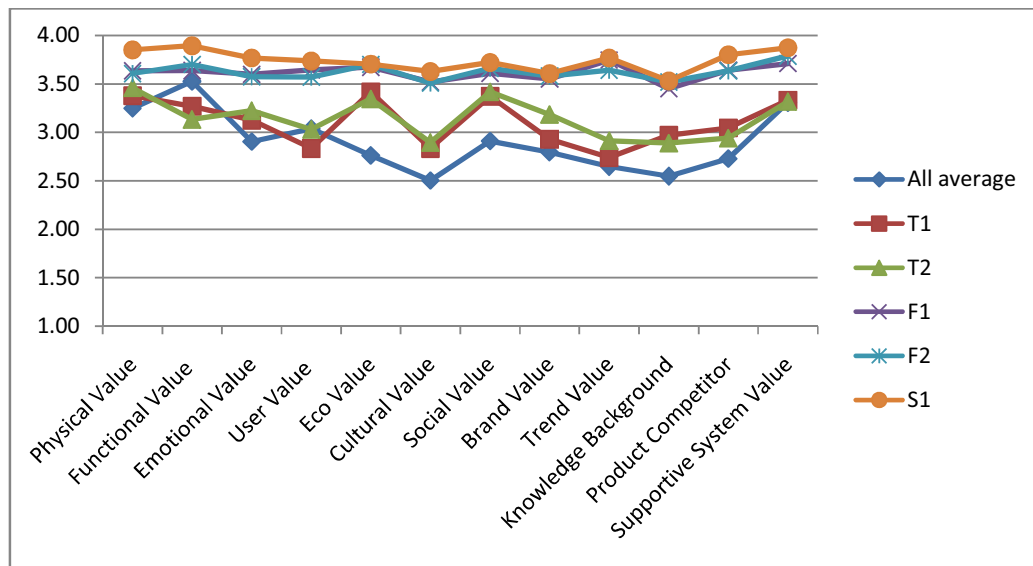


Figure 3.15: Successful innovative product value assessment in comparison with the average baseline analysis

As shown in Figure 3.15, on the one hand, twelve product values assessment of the five successful innovative products are mainly averaged higher than the overall baseline averages, in particular the products, F1, F2 and S1. Functional and User Values of the products, T1 and T2 are averaged lower than their overall baseline averages. All of twelve product values of F1, F2 and S1 are assessed highly significant and their product values averages are much higher than the overall baseline averages.

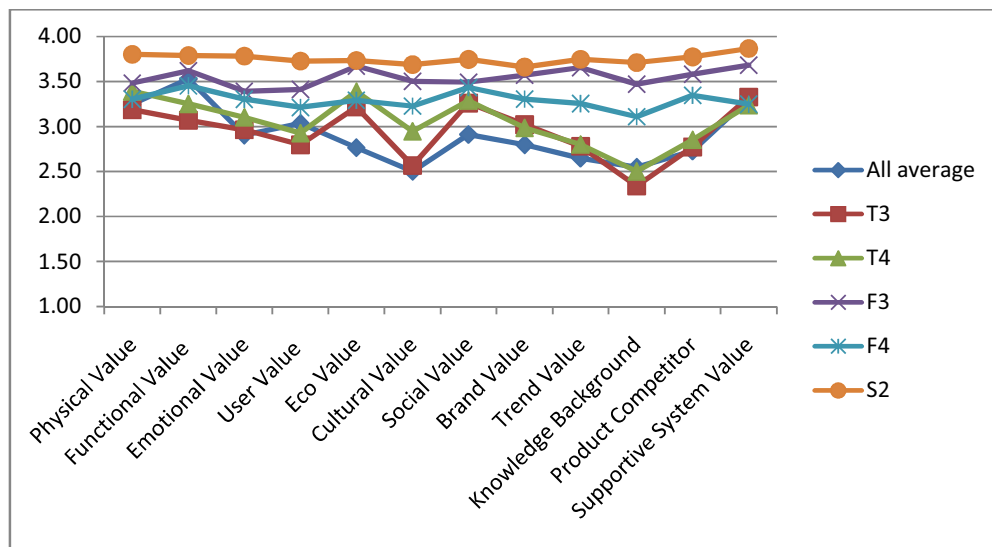


Figure 3.16: Un/less successful Innovative product value assessment in comparison with the average baseline analysis

As shown in Figure 3.16, on the other hand, twelve product values assessment of the five un/less successful innovative products are mainly averaged higher than the overall baseline averages, in particular the products, F3, F4 and S2. Functional, User and Brand Knowledge values of the products, T3 and T4 are averaged lower than their overall baseline averages. All of the twelve product values of S2 are assessed as highly significant and its product values averages are much higher than the overall baseline averages. Regarding the product, F4 twelve product values are assessed as significant, higher than the overall baseline averages.

The study analysed the successful and un/less successful innovative products on the same product category in comparison with the average baseline analysis. The result of both types of innovative products in the toy category is shown in Figure 3.17.

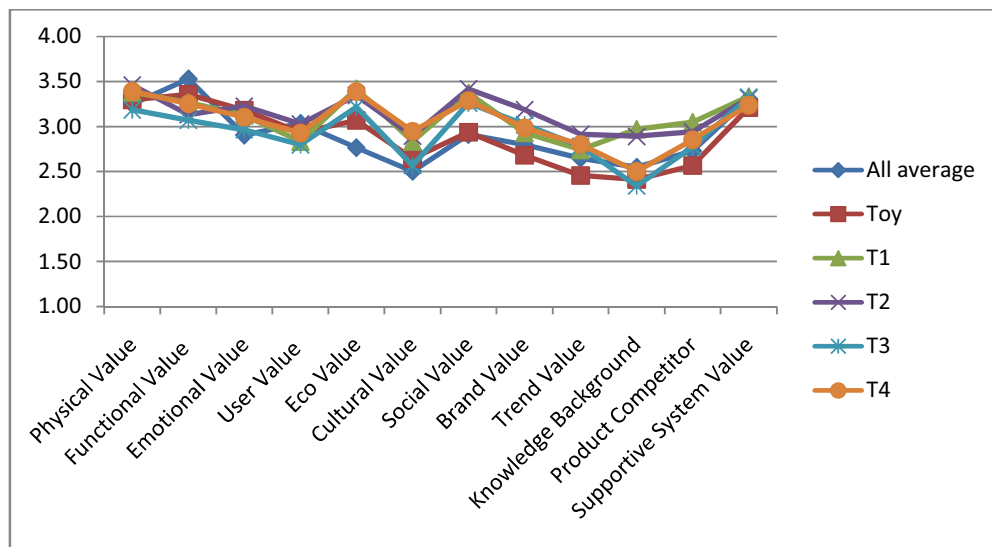


Figure 3.17: Comparison both types of innovative products with the average baseline analysis in the toy category

The assessment of twelve product values compared between the successful and un/less successful products is analysed with the average baseline pattern. The average patterns of all product values of the successful and un/less successful innovative products are unlikely to be different. A majority of the assessed product values are higher than the overall baseline averages and the baseline averages in the toy category. Functional and User Values are averaged lower than their baseline averages in all selected products (T1, T2, T3, T4). Regarding the toy category, to sum up, the product values assessment of the successful and un/less successful innovative products are all in the similar significant level.

Regarding the furniture category, the result of both types of innovative products is shown in Figure 3.18.

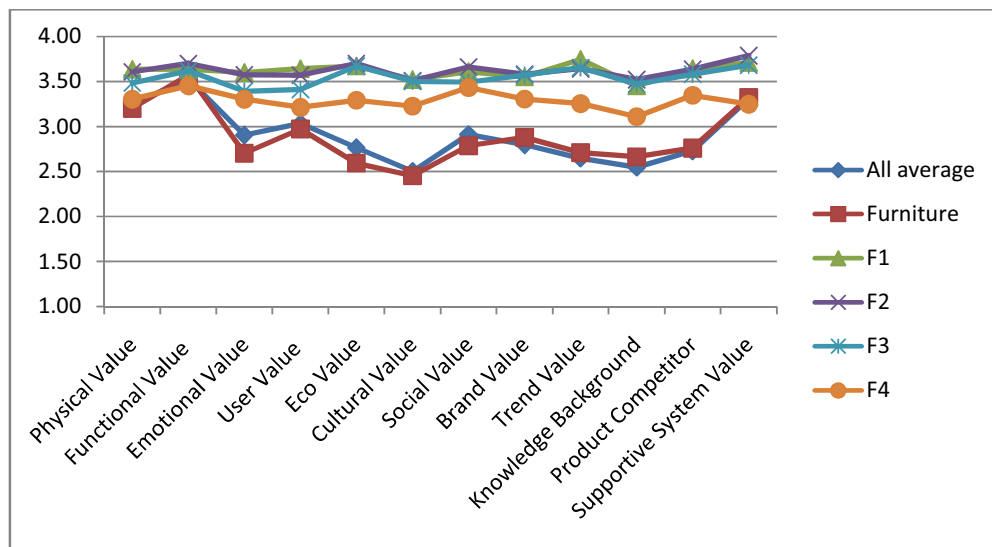


Figure 3.18: Comparison both types of innovative products in the furniture category with the average baseline analysis

The assessment of twelve product values compared between the successful (F1, F2) and un/less successful (F3, F4) furniture is analysed with the overall baseline averages. The average patterns of all product values of the successful and un/less successful innovative products are to be quite different. The evaluation of the products, F1 and F2 are higher than the average baseline pattern (Blue Line) and the average value curve of the furniture category (Red Line). All product values of F1 and F2 are valued as highly significant. On the contrary, all product values of F4 are assessed as significant and some product values of F3 are assessed as significant, i.e. Physical Value, Emotional Value, User Value and Social Value. In this product category, to sum up, all product values of the successful innovative furniture are higher than the unsuccessful innovative products

Regarding the sanitary ware category, the result of both types of innovative products is shown in Figure 3.19.

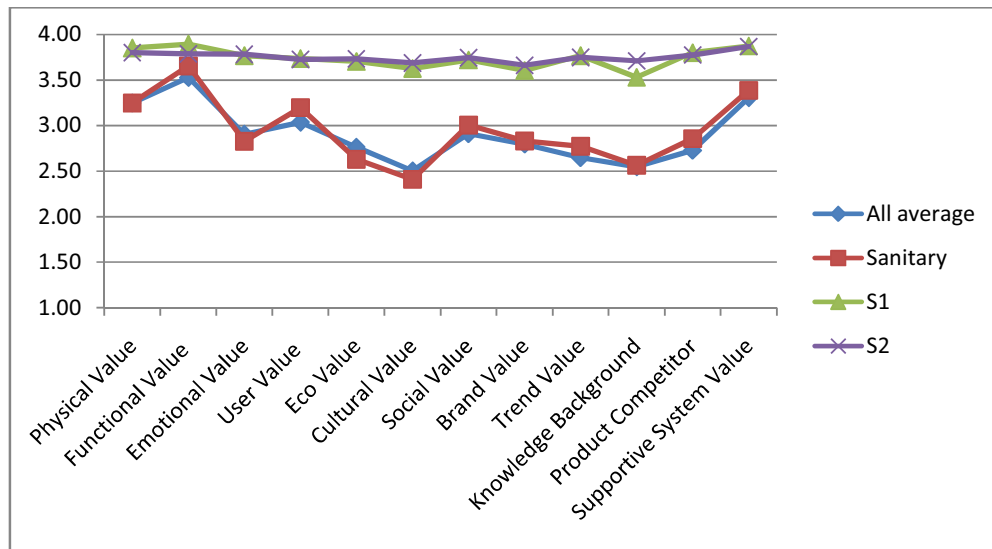


Figure 3.19: Comparison both types of innovative products in the sanitary ware category with the average baseline analysis

Focusing on the Sanitaryware category, the assessment of twelve product values compared between S1 and S2 is analysed with the average baseline pattern. The average patterns of all product values of both are unlikely to be different. All of the assessed product values are higher than the overall baseline averages and the baseline averages. All product values of S1 and S2 are valued as highly significant. To sum up, the product values assessment of the successful and un/less successful innovative products are all in the similar significant level.

3.3.3 Comparative Analysis in Each Product Value

This section describes the analysis of each product value. It shows the assessment results of the 10 successful and un/less successful innovative products in comparison with the average baseline pattern.

3.3.3.1 Physical Value

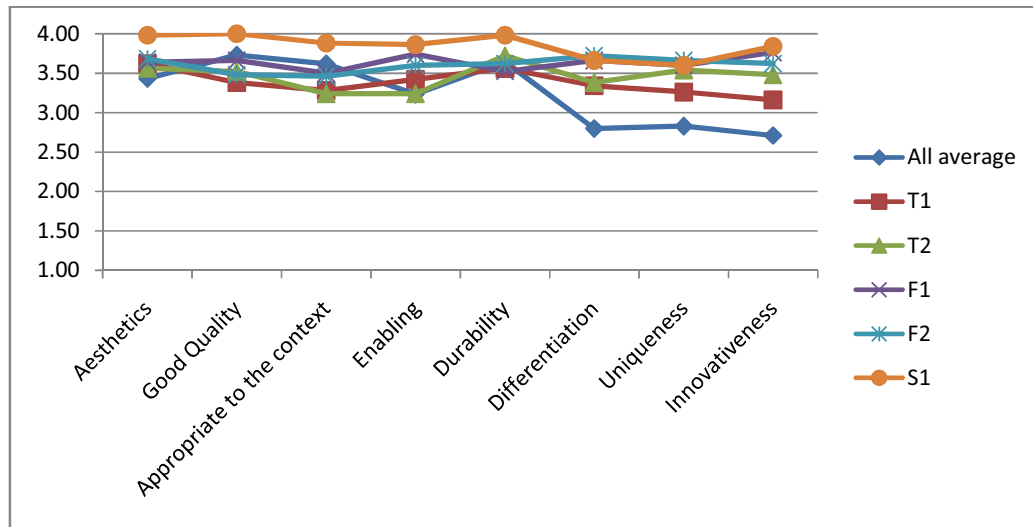


Figure 3.20: Comparison the successful innovative products with the average baseline pattern, in the physical value

As shown in Figure 3.20, on the one hand, the significant level of eight factors of the Physical Value of the selected successful innovative products is measured. The assessed factors, Good Quality and Appropriate to the Context of T1, T2, F1 and F2 reveal that the factors' averaged score is below the average baseline pattern. The factors, Aesthetics, Differentiation, Uniqueness and Innovativeness assessed are valued as higher than the average baseline pattern in all successful products. In particular, the physical value of the product, S1 is evaluated as highly significant in all factors.

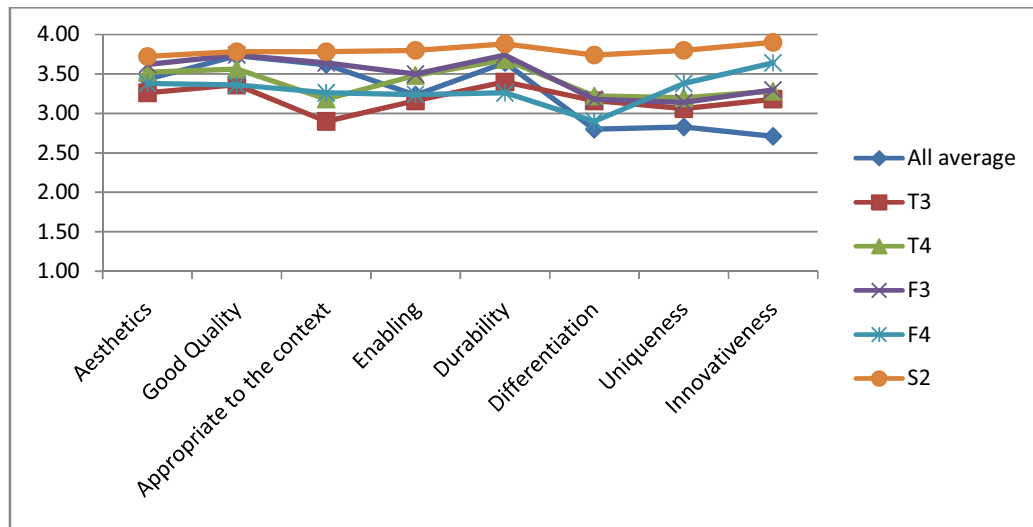


Figure 3.21: Comparison the un/less successful innovative products with the average baseline pattern, in the physical value

As shown in Figure 3.21, on the other hand, the significant level of eight factors of the Physical Value of the selected unsuccessful innovative products is measured. The assessed factors, Good Quality and Appropriate to the Context of T3, T4 and F4 reveal that the factors' averaged score is below the overall baseline averages. The factors, Differentiation, Uniqueness and Innovativeness assessed are valued as higher than the overall baseline averages in all unsuccessful products. In particular, the physical value of the product, S2 is evaluated as highly significant in all factors.

3.3.3.2 Functional Value

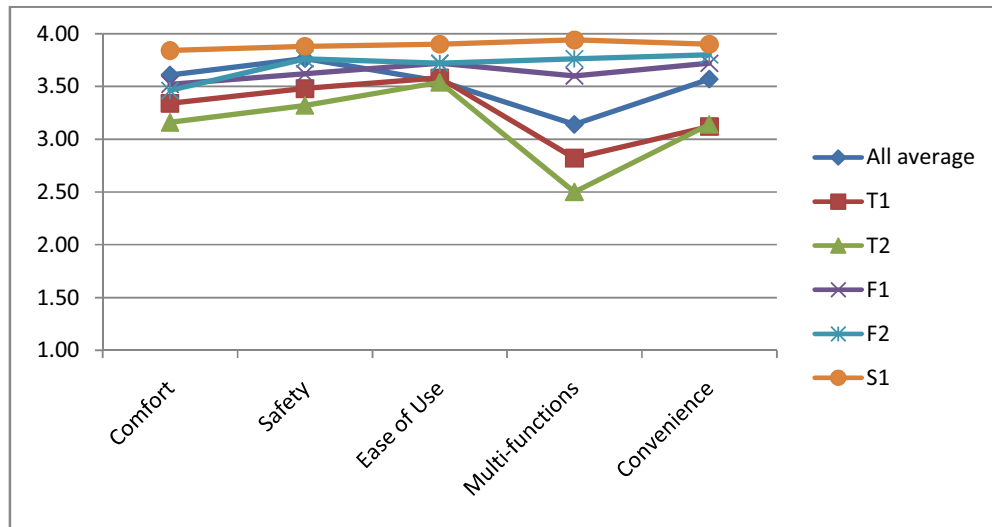


Figure 3.22: Comparison successful innovative products with the average baseline pattern, in the functional value

As shown in Figure 3.22, on the one hand, the significant level of five factors of the Functional Value of the selected successful innovative products is measured. Regarding the products, T1 and T2, all assessed factors are below the overall baseline averages. In particular, the Functional Value of the product, S1 is evaluated as highly significant in all factors. The factors, Easy to Use, Multi-Functions, and Convenience are valued higher than the overall baseline averages of F1, F2 and S1.

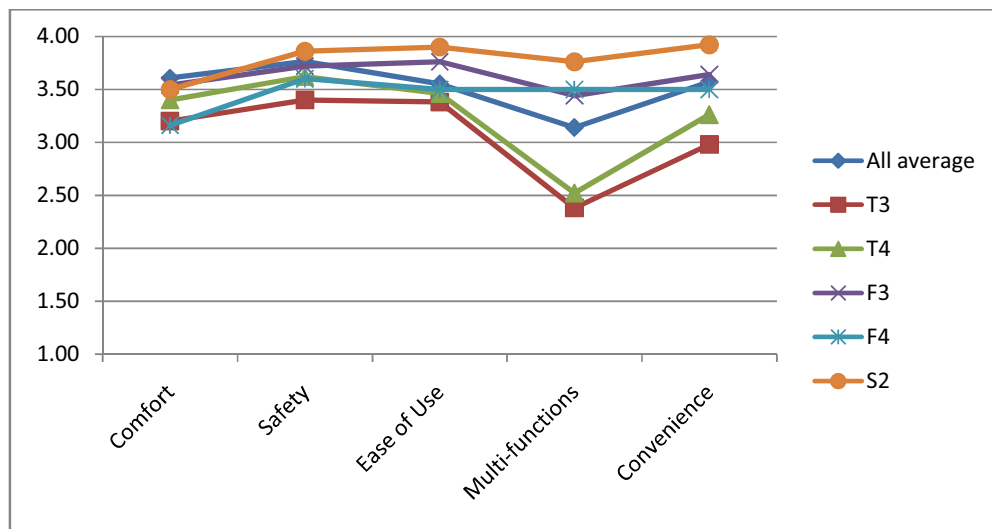


Figure 3.23: Comparison un/less successful innovative products with the average baseline pattern, in the functional value

As shown in Figure 3.23, on the other hand, the significant level of five factors of the Functional Value of the selected unsuccessful innovative products is measured. All assessed factors of the products, T3 and T4 are valued below the overall baseline averages. The factor, Comfort, of the unsuccessful product group is evaluated as significant, lower than the overall baseline averages. The assessed factor, Multi-Functions, of F3, F4 and S2 is valued higher than the overall baseline average. None of the innovative products is evaluated in all of the factors values higher than the overall baseline averages. The factors, Ease of Use, Multi-Functions and Convenience of F3 and S2 are evaluated higher than the overall baseline averages.

3.3.3.3 Emotional Value

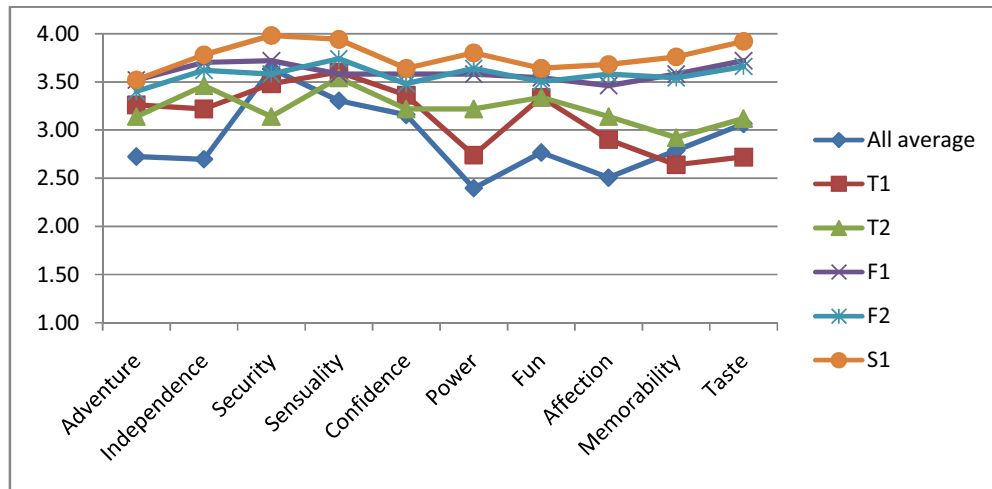


Figure 3.24: Comparison successful innovative products with the average baseline pattern, in the emotional value

As shown in Figure 3.24, on the one hand, the significant level of ten factors of the Emotional Value of the selected successful innovative products is measured. Regarding the products, F1 and S1, all assessed factors are higher than the overall baseline averages. In particular, S1 is evaluated as highly significant in all factors. The factor, Security (the most significant factor in the Emotional Value) is valued lower than the overall baseline average of T1, T2 and F2.

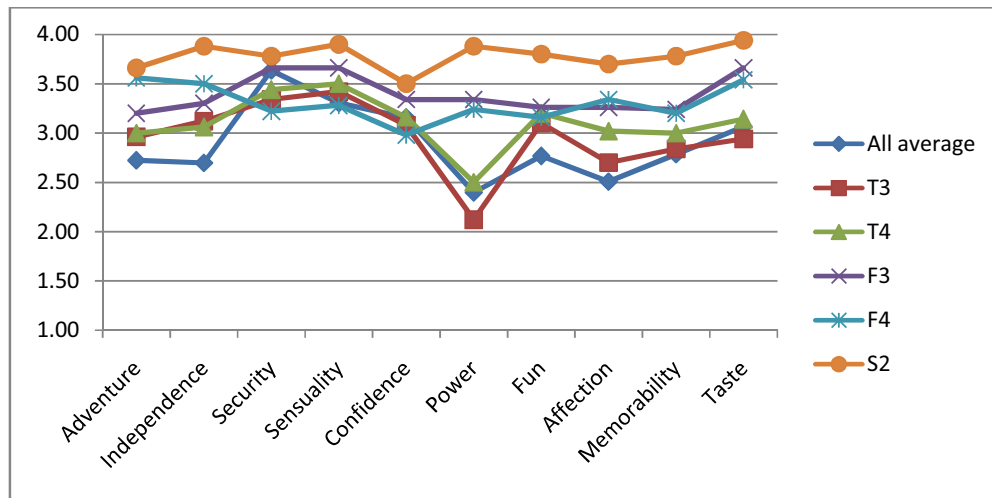


Figure 3.25: Comparison un/less successful innovative products with the average baseline pattern, in the emotional value

As shown in Figure 3.25, on the other hand, the significant level of ten factors of the Emotional Value of the selected unsuccessful innovative products is measured. All assessed factors of the products, F3 and S2 are valued higher than the average baseline pattern. The factor, Security, of the unsuccessful product group is evaluated as significant, lower than the overall baseline average. The assessed factors: Power, Fun, Affection, Memorability and Taste of F3, F4 and S2 are valued much higher than the average baseline pattern.

3.3.3.4 Brand Value

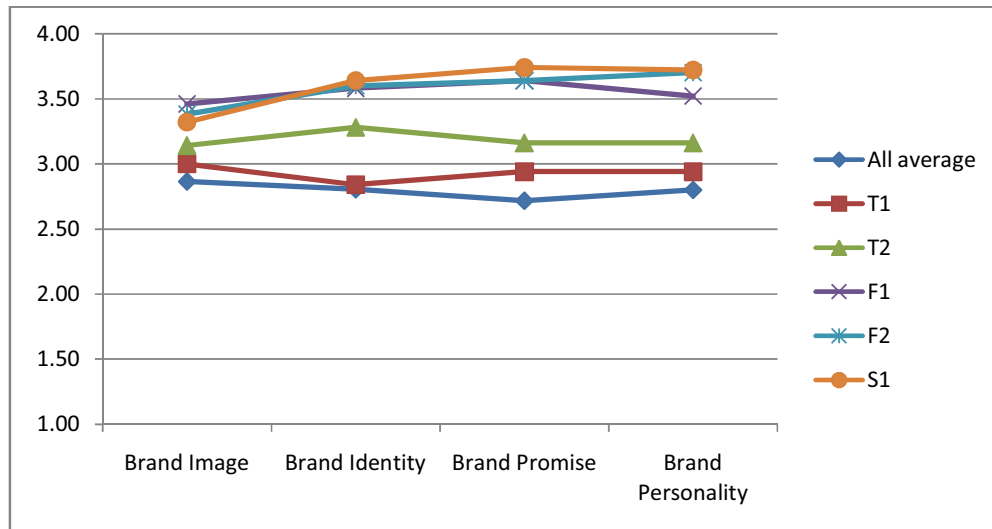


Figure 3.26: Comparison successful innovative products with the average baseline pattern, in the brand value

As shown in Figure 3.26, on the one hand, the significant level of the Brand Value factors of the selected successful innovative products is measured. Regarding all successful products, the averages of all assessed factors are higher than the average baseline pattern.

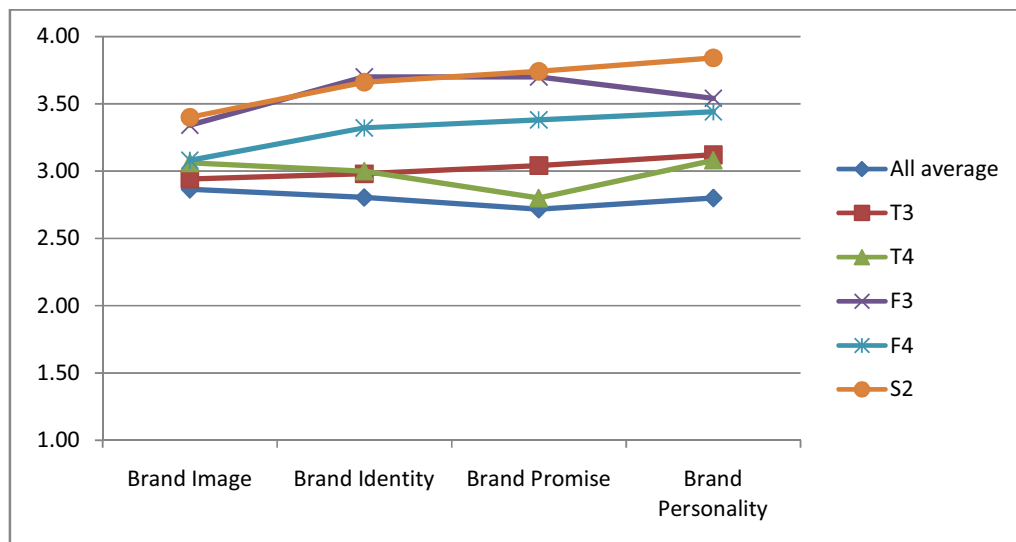


Figure 3.27: Comparison un/less successful innovative products with the average baseline pattern, in the brand value.

As shown in Figure 3.27, on the other hand, the significant level of the Brand Value factors of the selected unsuccessful innovative products is measured. The averages of all assessed factors of all unsuccessful products are valued higher than the average baseline pattern.

3.3.3.5 Cultural Value

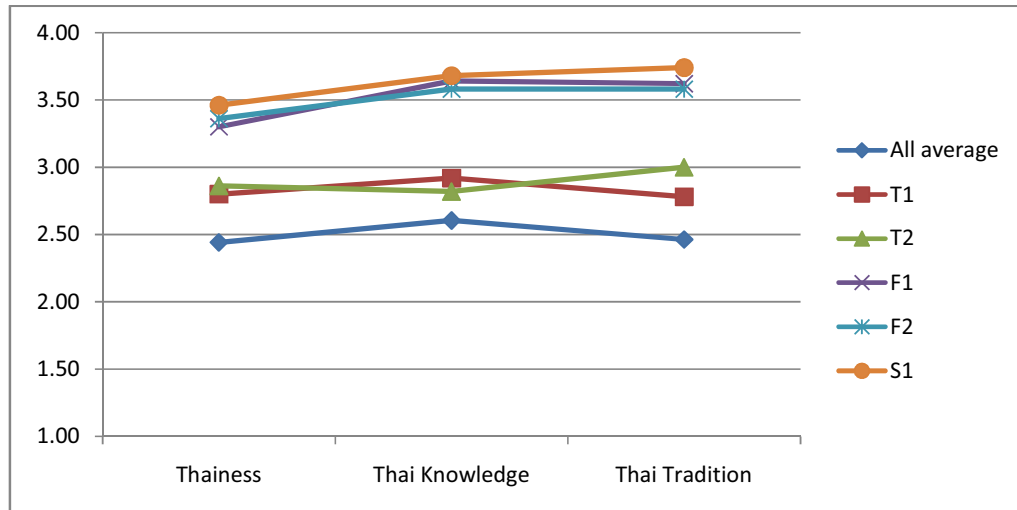


Figure 3.28: Comparison successful innovative products with the average baseline pattern, in the cultural value

As shown in Figure 3.28, on the one hand, the significant level of three factors of the Cultural Value of the selected successful innovative products is measured. Regarding all successful products, the averages of all assessed factors are higher than the average baseline pattern.

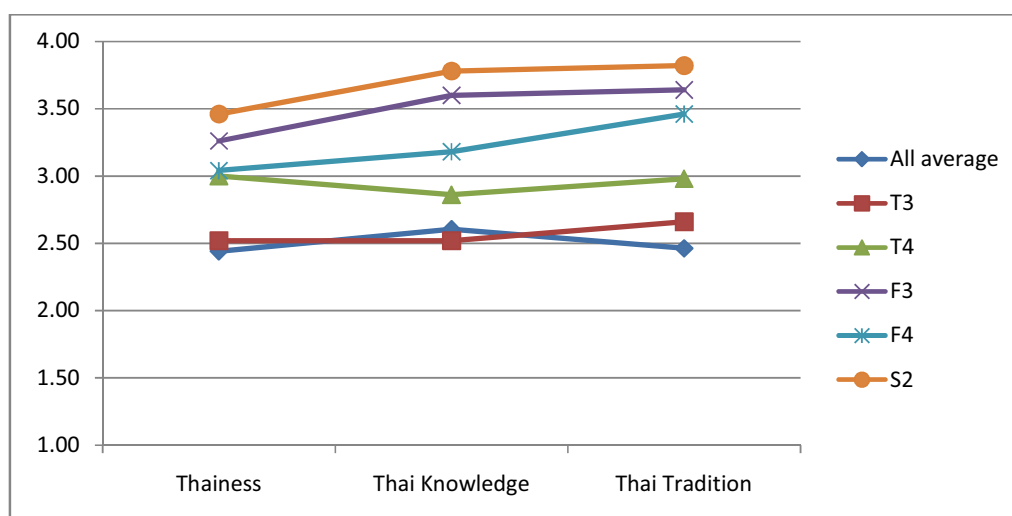


Figure 3.29: Comparison un/less successful innovative products with the average baseline pattern, in the cultural value

As shown in Figure 3.29, on the other hand, the significant level of three factors of the Cultural Value of the selected unsuccessful innovative products is measured. The averages of all assessed factors of four unsuccessful products, except T3 are valued higher than the average baseline pattern.

3.3.3.6 Social Value

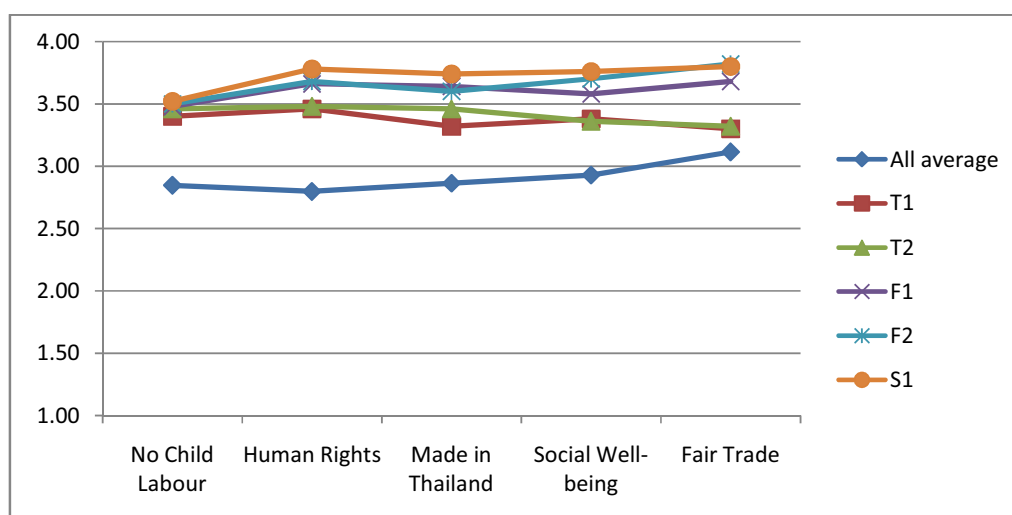


Figure 3.30: Comparison successful innovative products with the average baseline pattern, in the social value

As shown in Figure 3.30, on the one hand, the significant level of five factors of the Social Value of the selected successful innovative products is measured. Regarding all successful products, the averages of all assessed factors are higher than the average baseline pattern.

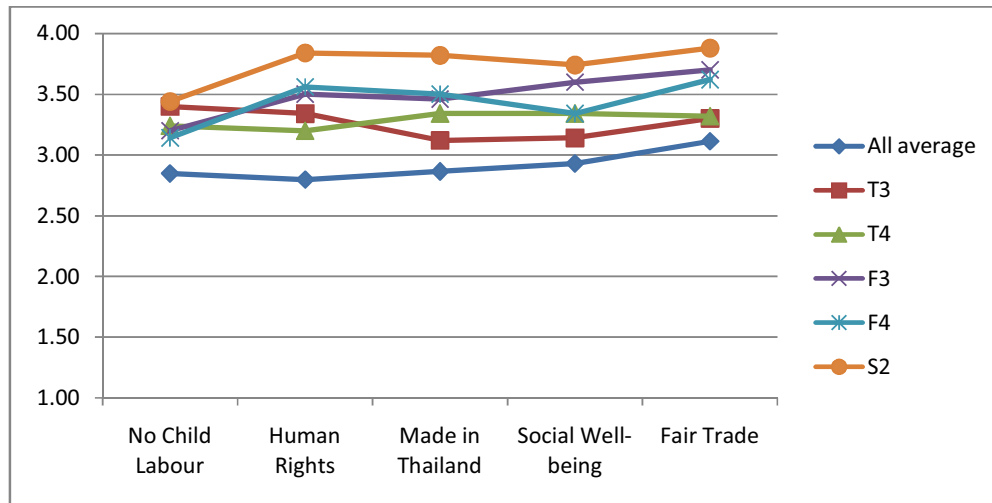


Figure 3.31: Comparison un/less successful innovative products with the average baseline pattern, in the social value.

As shown in Figure 3.31, on the other hand, the significant level of five factors of the Social Value of the selected unsuccessful innovative products is measured. The averages of all assessed factors of all unsuccessful products are valued higher than the average baseline pattern.

3.3.3.7 User Value

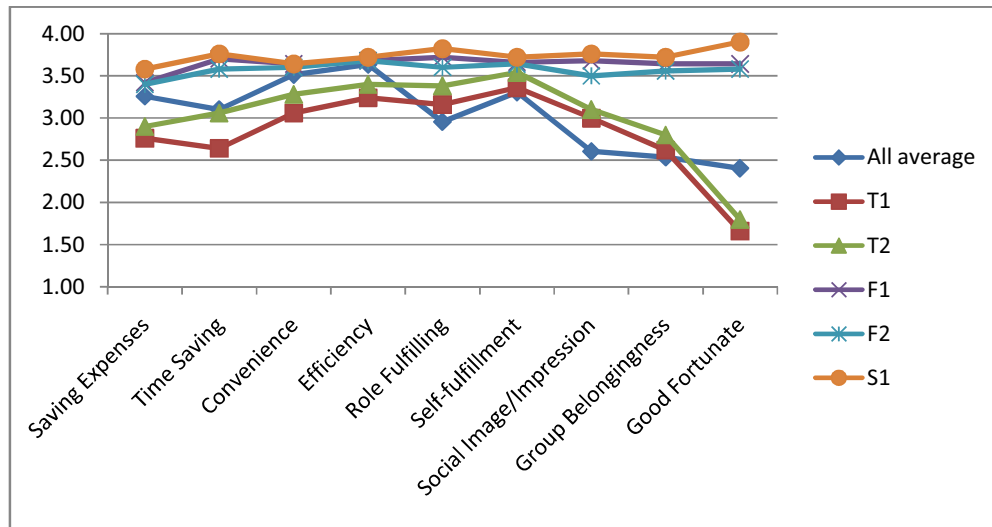


Figure 3.32: Comparison successful innovative products with the average baseline pattern, in the user value

As shown in Figure 3.32, on the one hand, the significant level of nine factors of the User Value of the selected successful innovative products is measured. Regarding the products, F1, F2 and S1, all assessed factors are higher than the average baseline pattern. In particular, S1 is evaluated as highly significant in all factors. The factors, Convenience and Efficiency (the most significant factors in the User Value) of the products, T1 and T2, are valued lower than the average baseline pattern. The factor, Good Fortunate is the least significant factor in the success of the toy products.

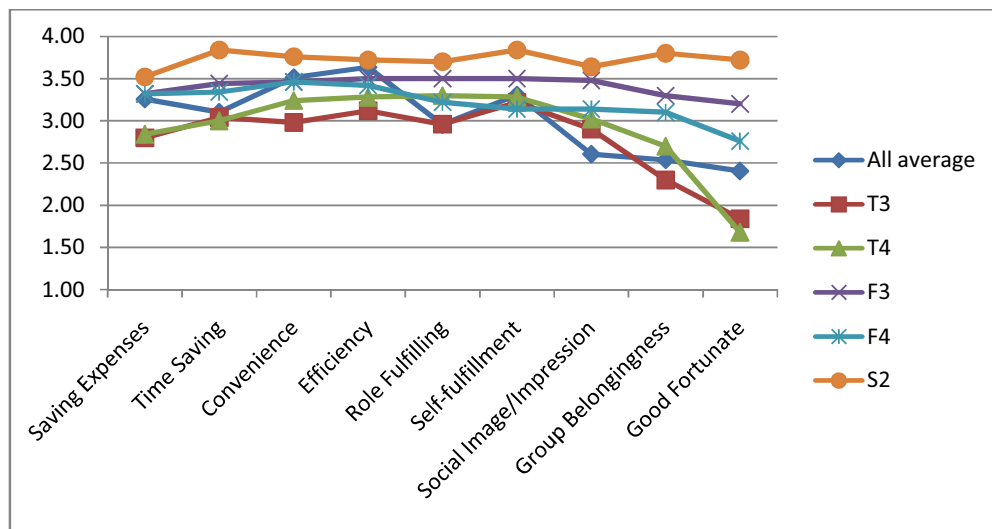


Figure 3.33: Comparison un/less successful innovative products with the average baseline pattern, in the user value

As shown in Figure 3.33, on the other hand, the significant level of nine factors of the User Value of the selected unsuccessful innovative products is measured. All assessed factors of the products, S2 are valued higher than the average baseline pattern. The factors, Convenience and Efficiency of the unsuccessful products, T3, T4, F3 and F4 is evaluated as significant, lower than the average baseline pattern. The assessed factors: Role Fulfilling, Social Image/Impression and Group Belongingness of T4, F3, F4

3.3.3.8 Trend Value

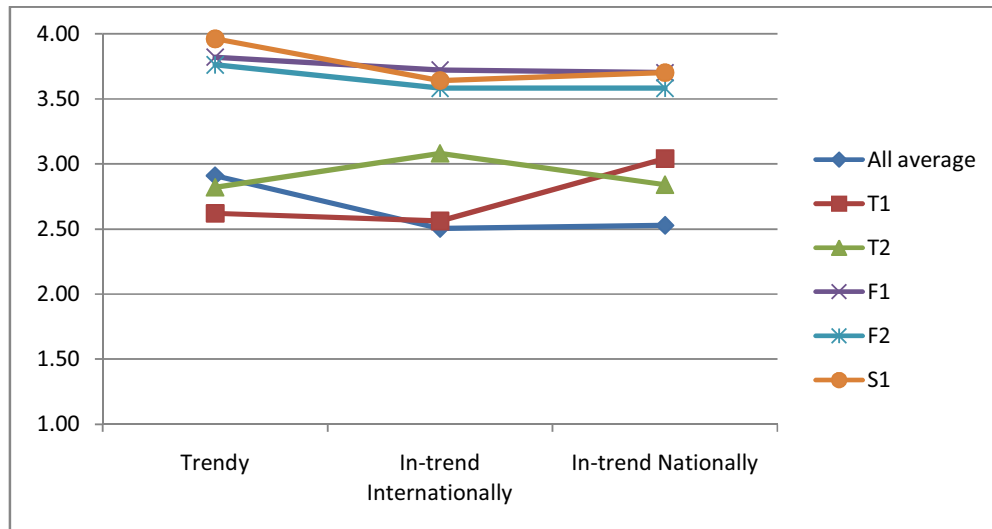


Figure 3.34: Comparison successful innovative products with the average baseline pattern, in the trend value

As shown in Figure 3.34, on the one hand, the significant level of three factors of the Trend Value of the selected successful innovative products is measured. Regarding the successful products, F1, F2 and S1, the averages of all assessed factors are higher than the average baseline pattern. In particular, F1, F2 and S1 are evaluated as highly significant in all factors.

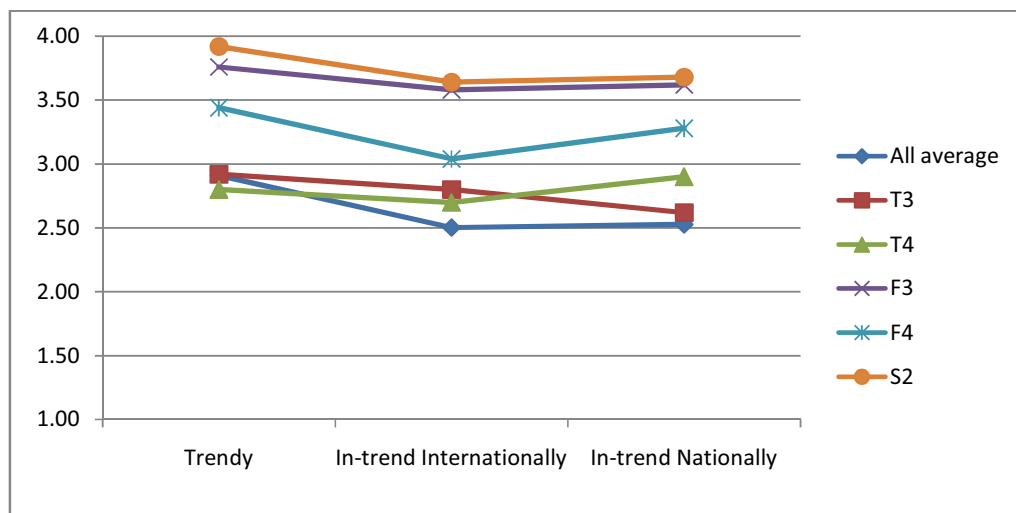


Figure 3.35: Comparison un/less successful innovative products with the average baseline pattern, in the trend value

As shown in Figure 3.35, on the other hand, the significant level of three factors of the Trend Value of the selected unsuccessful innovative products is measured. The averages of all assessed factors of four unsuccessful products, except T4 are valued higher than the average baseline pattern. F3 and S2 are evaluated as highly significant in all factors.

3.3.3.9 Environmental Value

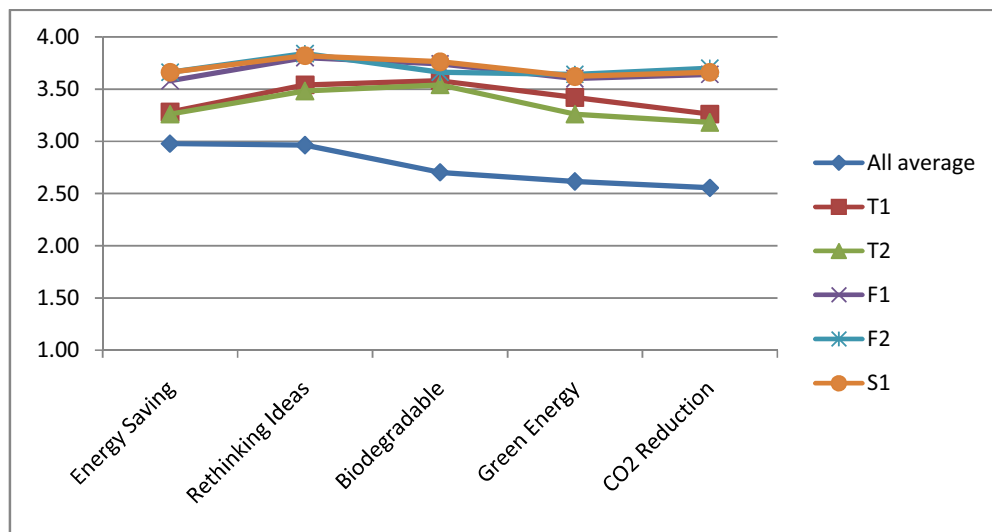


Figure 3.36: Comparison successful innovative products with the average baseline pattern, in the environmental value

As shown in Figure 3.36, on the one hand, the significant level of five factors of the Eco Value of the selected successful innovative products is measured. Regarding all successful products, all assessed factors are higher than the average baseline pattern. In particular, F1, F2 and S1 are evaluated as highly significant in all factors.

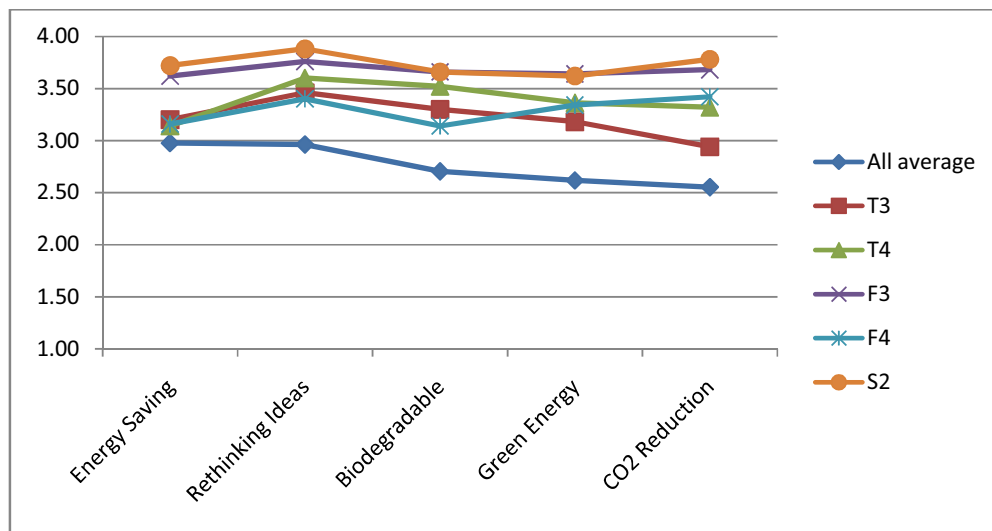


Figure 3.37: Comparison un/less successful innovative products with the average baseline pattern, in the environmental value

As shown in Figure 3.37, on the other hand, the significant level of five factors of the Eco Value of the selected unsuccessful innovative products is measured. All assessed factors of all unsuccessful products are valued higher than the average baseline pattern. In particular, F3 and S2 are evaluated as highly significant in all factors.

3.3.3.10 Knowledge of the Company's Brand

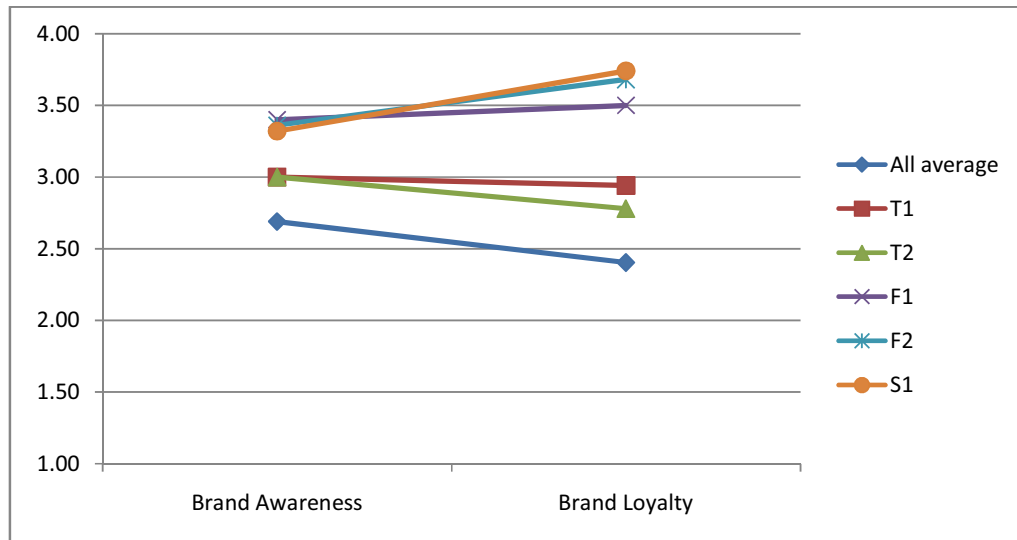


Figure 3.38: Comparison successful innovative products with the average baseline pattern, in the value, knowledge of the company's brand

As shown in Figure 3.38, on the one hand, the significant level of two factors of the Knowledge Background of Brand of the selected successful innovative products is measured. Regarding all successful products, the averages of all assessed factors are higher than the average baseline pattern.

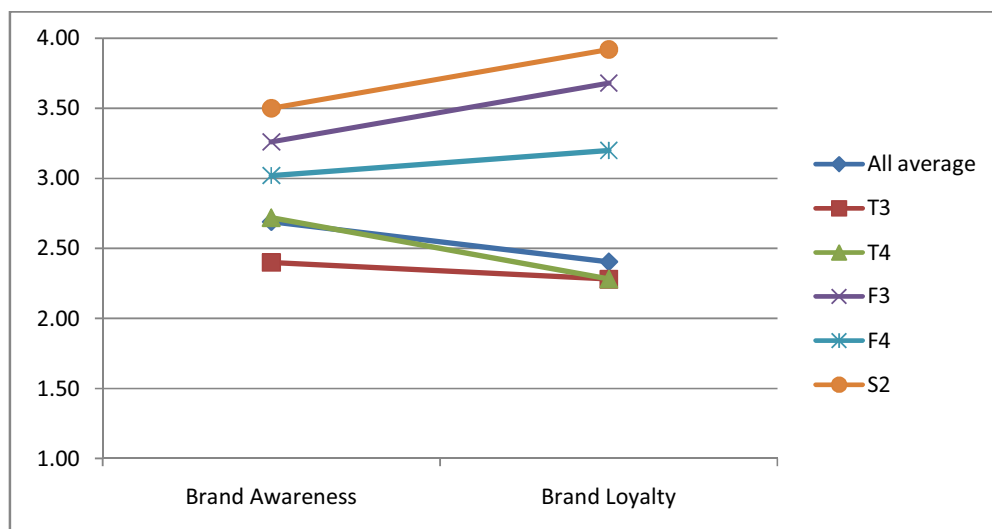


Figure 3.39: Comparison un/less successful innovative products with the average baseline pattern, in the value, knowledge of the company's brand.

As shown in Figure 3.39, on the other hand, the significant level of two factors of the Knowledge Background of Brand of the selected unsuccessful innovative products is measured. The averages of all assessed factors of three unsuccessful products, except T3 are valued higher than the average baseline pattern. T3 are evaluated as less significant in all factors.

3.3.3.11 Knowledge of Product Competitors

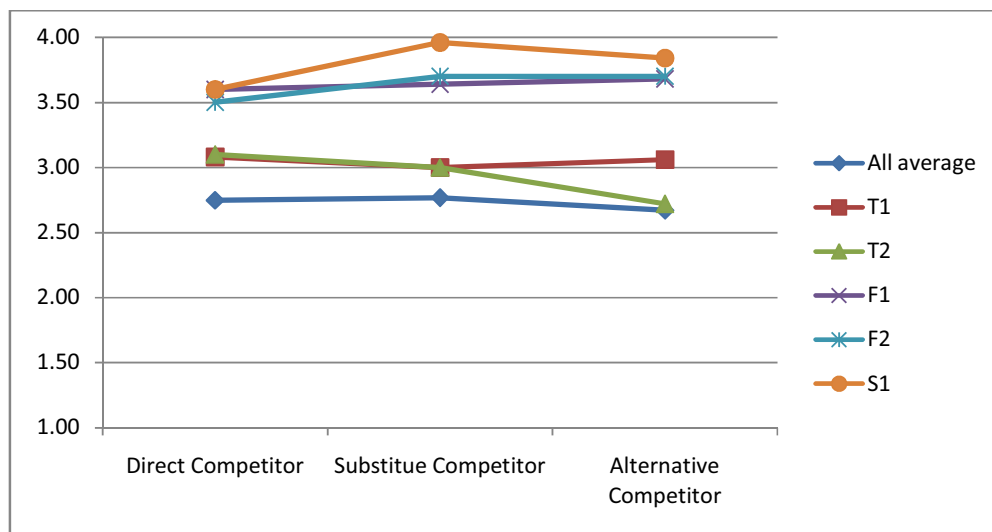


Figure 3.40: Comparison successful innovative products with the average baseline pattern, in the value, knowledge of product competitors

As shown in Figure 3.40, on the one hand, the significant level of three factors of the Product Competitor Knowledge of the selected successful innovative products is measured. Regarding all successful products, the averages of all assessed factors are higher than the average baseline pattern. F1, F2 and S1 are valued as highly significant in all factors.

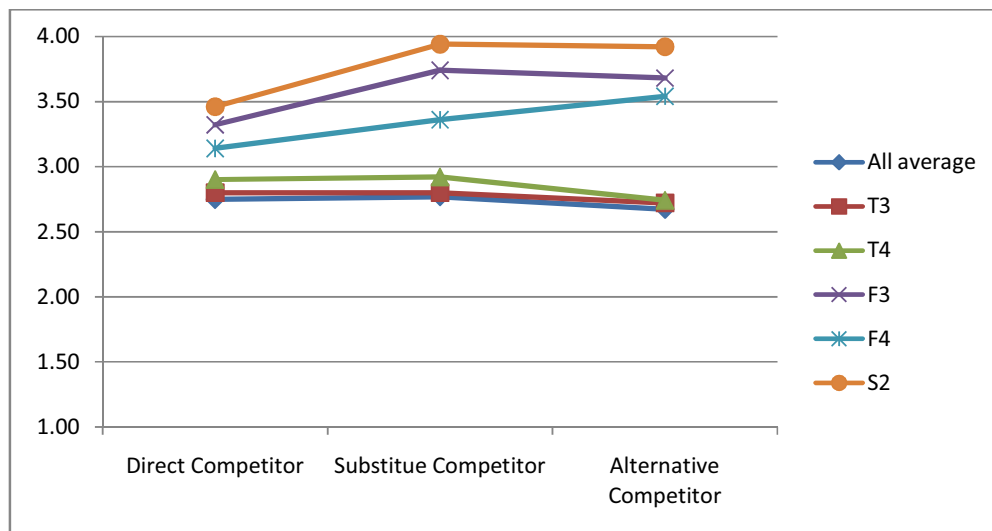


Figure 3.41: Comparison un/less successful innovative products with the average baseline pattern, in the value, knowledge of product competitors

As shown in Figure 3.41, on the other hand, the significant level of two factors of the Product Competitor Knowledge of the selected unsuccessful innovative products is measured. The averages of all assessed factors of all unsuccessful products are valued higher than the average baseline pattern.

3.3.3.12 Supportive Product/Service System

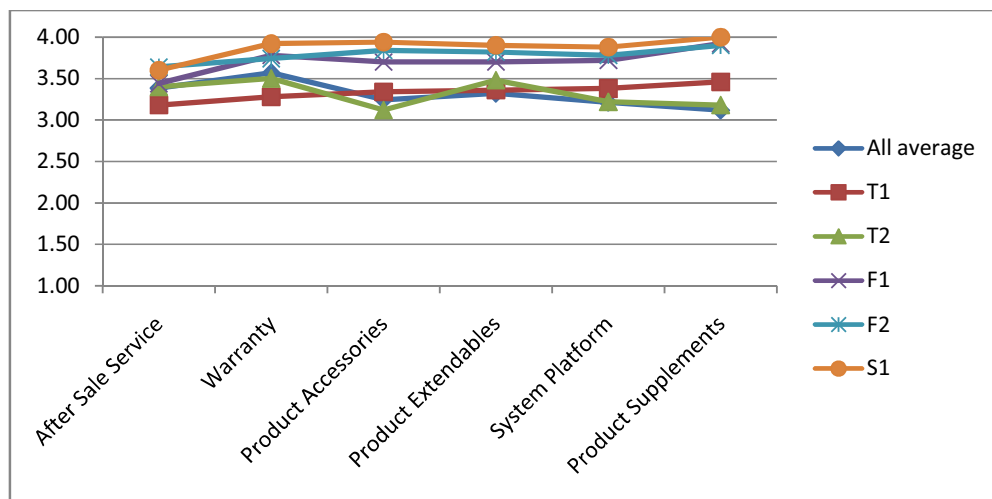


Figure 3.42: Comparison successful innovative products with the average baseline pattern, in the value, supportive product/service system.

As shown in Figure 3.42, on the one hand, the significant level of six factors of the Supportive System Value of the selected successful innovative products is measured. Regarding the successful products, F1, F2 and S1, the averages of all assessed factors are higher than the average baseline pattern. F2 and S1 are valued as highly significant in all factors.

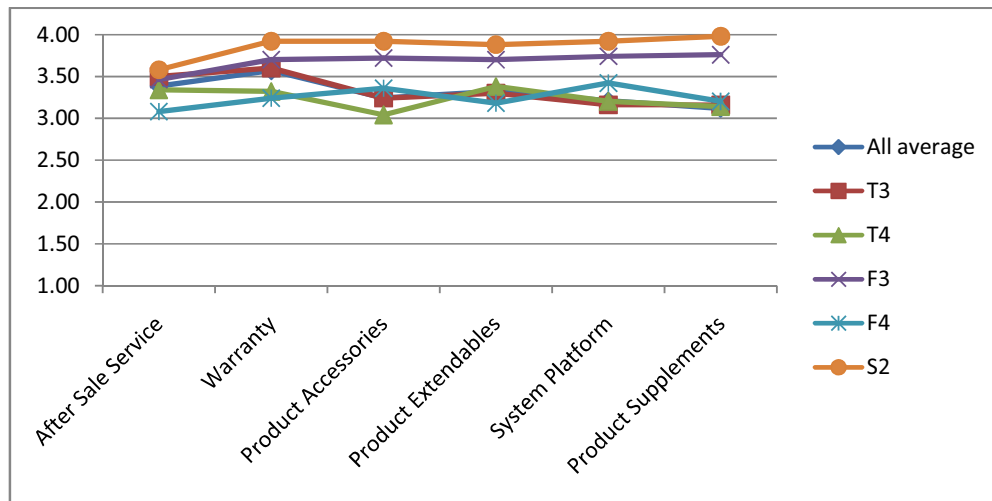


Figure 3.43: Comparison un/less successful innovative products with the average baseline pattern, in the value, supportive product/service system

As shown in Figure 3.43, on the other hand, the significant level of six factors of the Supportive System Value of the selected unsuccessful innovative products is measured. The average of all assessed factors of the unsuccessful product, S2 is valued higher than the average baseline pattern. S2 is valued as highly significant in all factors.

3.3.4 Product Value Prioritisation

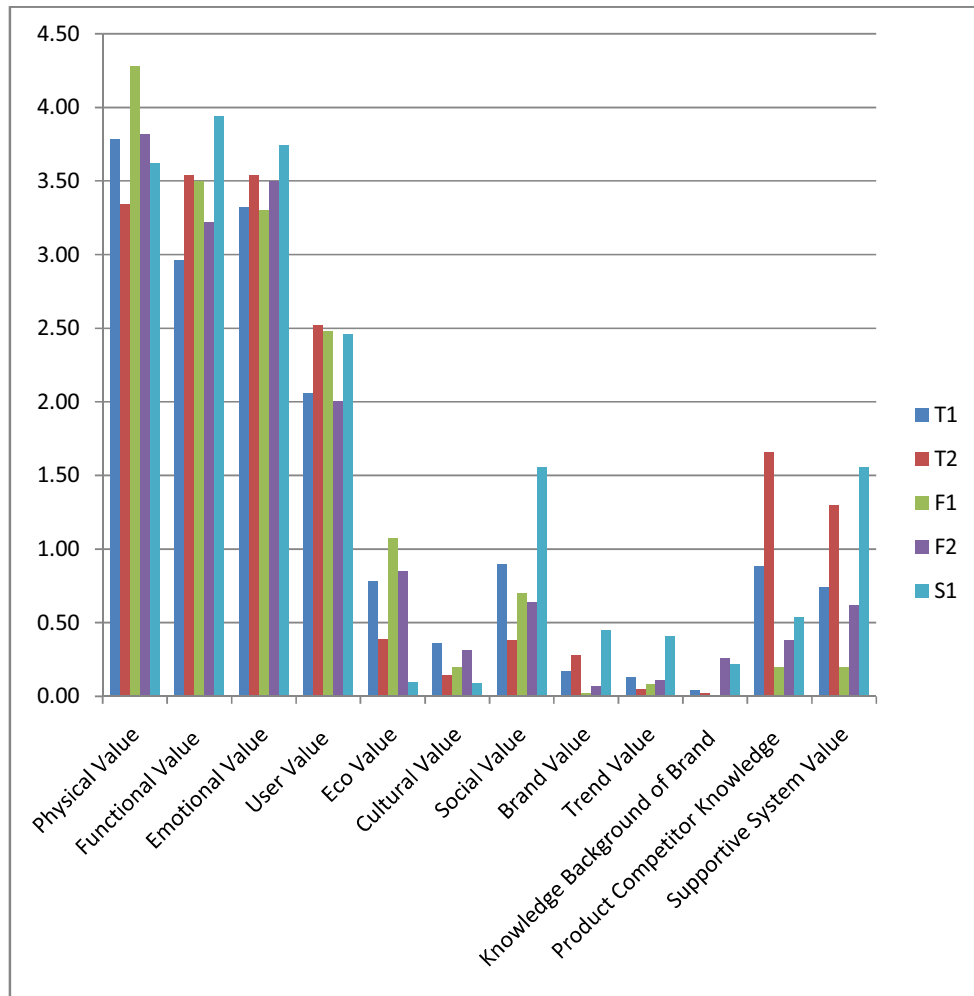


Figure 3.44: Product value prioritization of the successful innovative products

Regarding the prioritization of the successful innovative products as shown in Figure 3.44, the prioritization of the products is varied. The first top four factors are similar in all products (not in order): Physical Value, Functional Value, Emotional Value and User Value. In the first four factors, T1 is similar to F2 and the same to T2 and S1. In average, five key values are identified in priority:

- (1) Physical value
- (2) Functional value
- (3) Emotional value
- (4) User value
- (5) Support Product/Service System

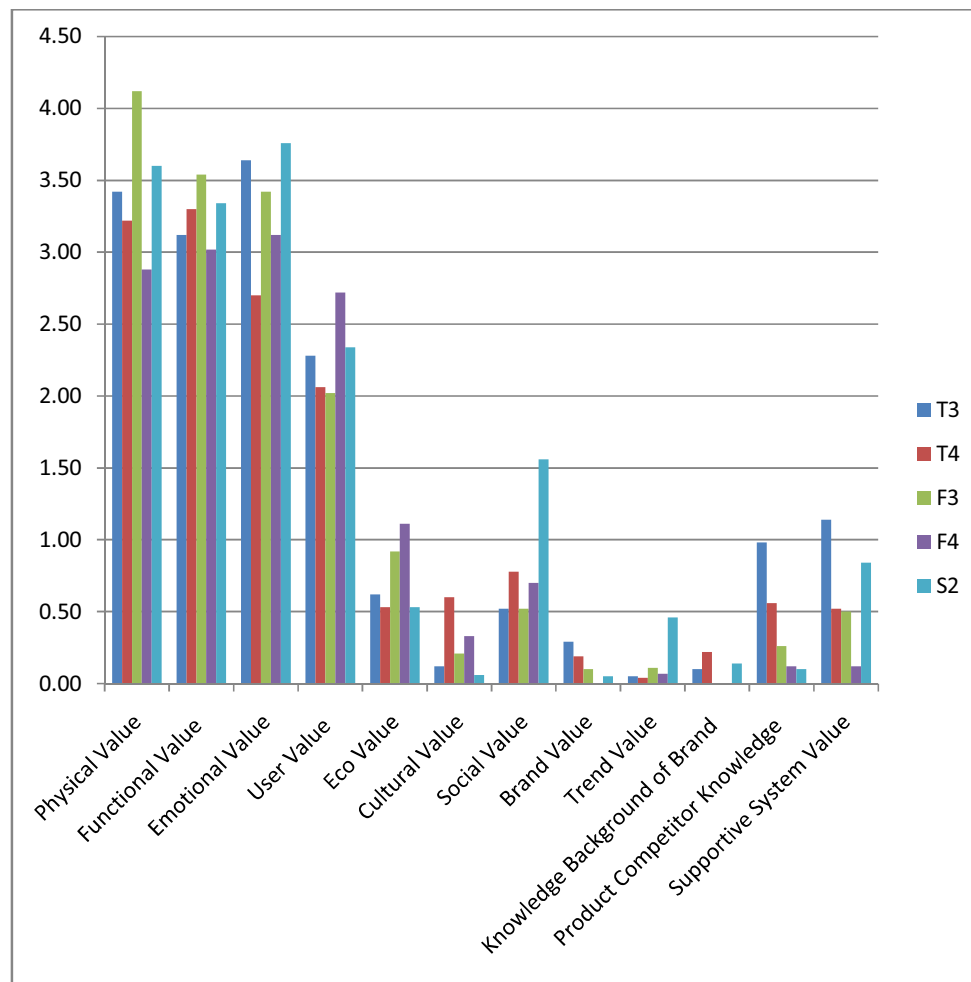


Figure 3.45: Product value prioritization of the un/less successful innovative products

Regarding the prioritization of the un/less successful innovative products as shown in Figure 3.45, the prioritization of the products is varied. The first four values are similar in all products (not in order): Physical Value, Functional Value, Emotional Value and User Value. In the first four factors, F4 is similar to S2. In average, five key values are identified in priority:

- (1) Physical value
- (2) Functional value
- (3) Emotional value
- (4) User value
- (5) Social value

3.3.5 Buying Decision Model

In the questionnaire, the participants were asked about their buying decision process on the innovative products. The results are shown in Table 3.15 and 3.16.

Table 3.15: Buying decision model of the successful innovative products

Factors/Products	T1	T2	F1	F2	S1	Total
Prioritizing from top to toe	32	27	46	33	40	178
Focusing on significant factors in details	30	35	47	41	49	202
Thinking of other competitive products in parallel	23	29	14	18	31	115
Assessing the relations of various factors	3	9	2	2	11	27
Considering overall related factors	35	42	39	39	47	202
Comparing all details thoroughly	25	22	39	33	48	167
Fitting with all sequential criteria	9	12	8	17	19	65
Other	0	0	0	0	0	0

N = 250

As shown in Table 3.15, when consumers decide to buy the group of the successful innovative products, they would do the following:

1. Consider overall related factors (202) and Focusing on significant factors in details (202)
2. Prioritizing from top one to the bottom (178)
3. Comparing all details thoroughly (167)

Interestingly, consumers are unlikely to assess the relations of various factors (27) and set their sequentially required criteria on the products (65).

Table 3.16: Buying decision model of the un/less successful innovative products

Factors/Products	T3	T4	F3	F4	S2	Total
Prioritizing from top to toe	16	33	33	44	36	162
Focusing on significant factors in details	29	21	43	47	44	184
Thinking of other competitive products in parallel	33	27	30	9	20	119
Assessing the relations of various factors	11	9	6	9	5	40
Considering overall related factors	36	37	41	33	46	193
Comparing all details thoroughly	18	25	41	39	48	171
Fitting with all sequential criteria	18	12	11	5	12	58
Other	0	0	0	0	0	0

N = 250

As shown in Table 3.16, the buying decision model of the un/less successful innovative products is very similar to the successful one. When consumers decide to buy the group of the un/less successful innovative products, they would do the following:

1. Consider overall related factors (193)
2. Focus on significant factors in details (184)
3. Compare all details thoroughly (171)
4. Prioritizing from top one to the bottom (162)

Interestingly, consumers are unlikely to assess the relations of various factors (40) and set their sequentially required criteria on the products (58).

3.4 Comparative Analysis of Value Curves

This section describes the comparative analysis of three value curves on the twelve values: the average baseline pattern, the average pattern of the successful innovation products, and the average pattern of the un/less successful innovative products.

3.4.1 All Values

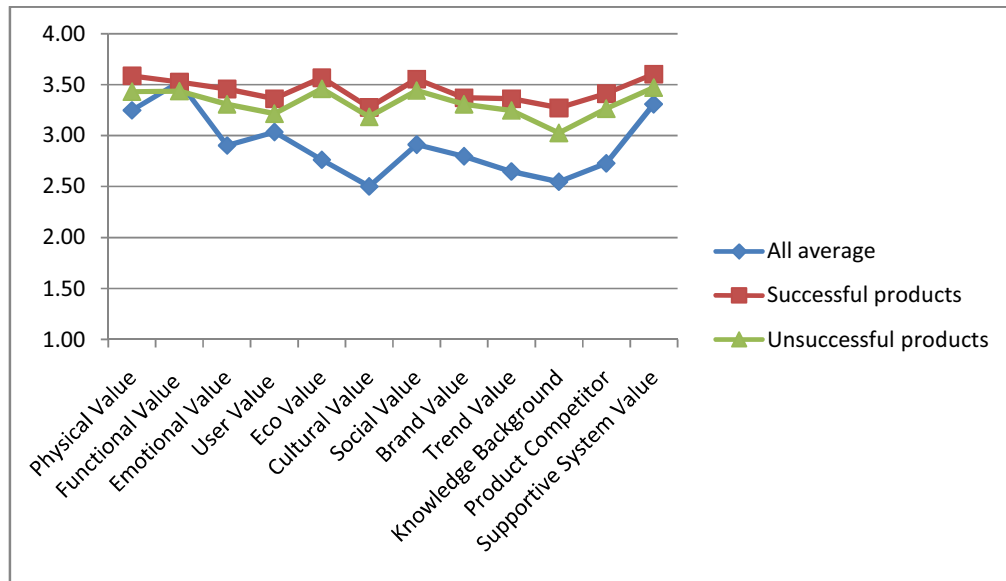


Figure 3.46: Comparative analysis of three key value curves on twelve values

As shown in Figure 3.46, the successful innovative products tend to have equal or higher product value curve than the baseline consumer expectation. As demonstrated on the baseline customer value curve, the highly significant level is Functional Value. As observed, the significant level of the functional value of the successful innovative products tends to be higher than the baseline customer level. On the contrary, the significant level of the functional value of the un/less successful innovative products tends to be lower than the baseline customer level. The value curves of both successful and un/less successful innovative products are more or less the same significant level.

3.4.2 Physical Value

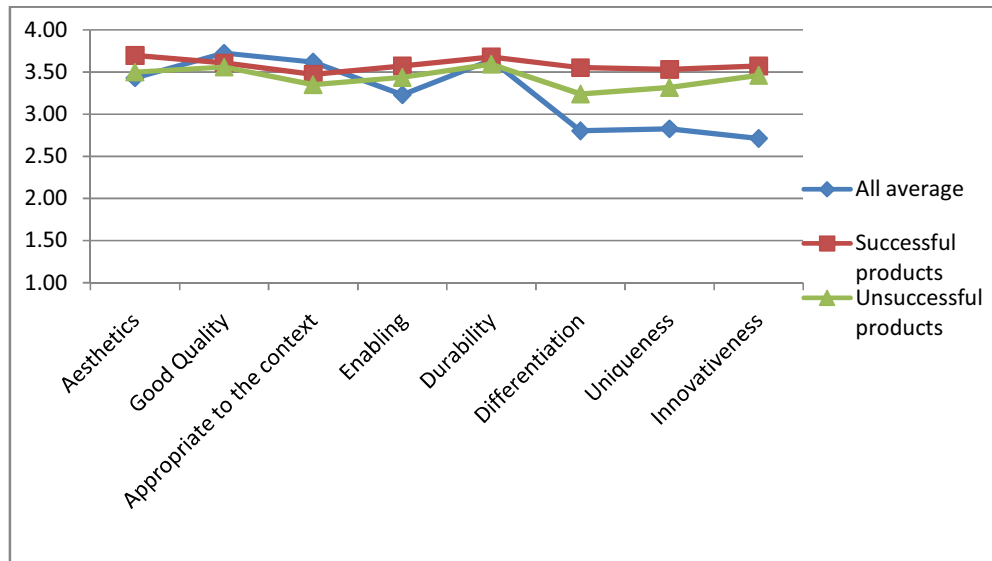


Figure 3.47: Comparative analysis of three key value curves of the physical value

Regarding the sub-aspects in Physical Value as shown in Figure 3.47, Good Quality and Appropriate to the context are two key aspects which are highly expected by customers. Two innovative product groups could not maintain the significant level of the consumer's expectation.

3.4.3 Functional Value

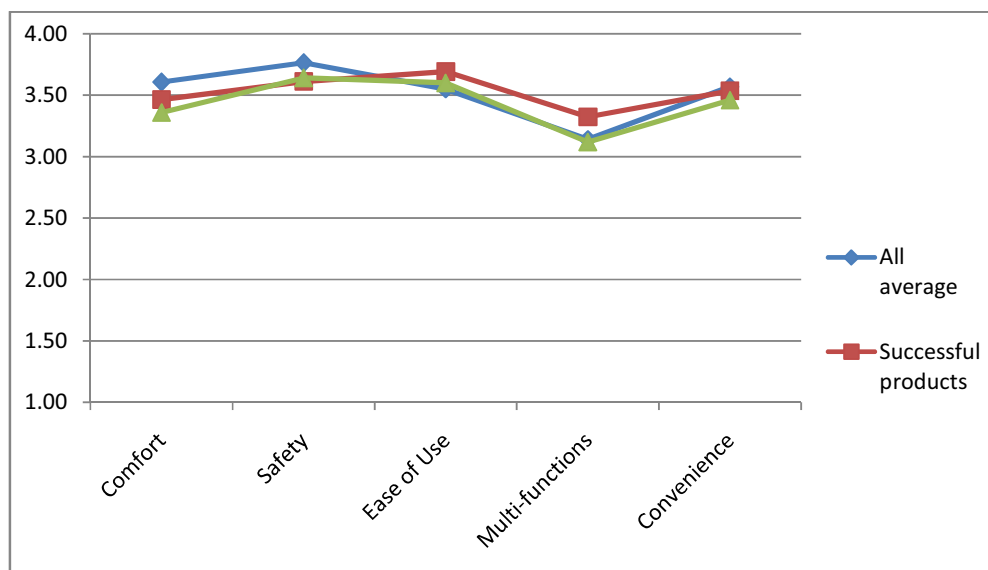


Figure 3.48: Comparative analysis of three key value curves of the functional value

Regarding the top priority of the Physical Value, the innovative products of both groups are evaluated below the significant level of the average customer baseline, on Comfort and Safety.

3.4.4 Emotional Value

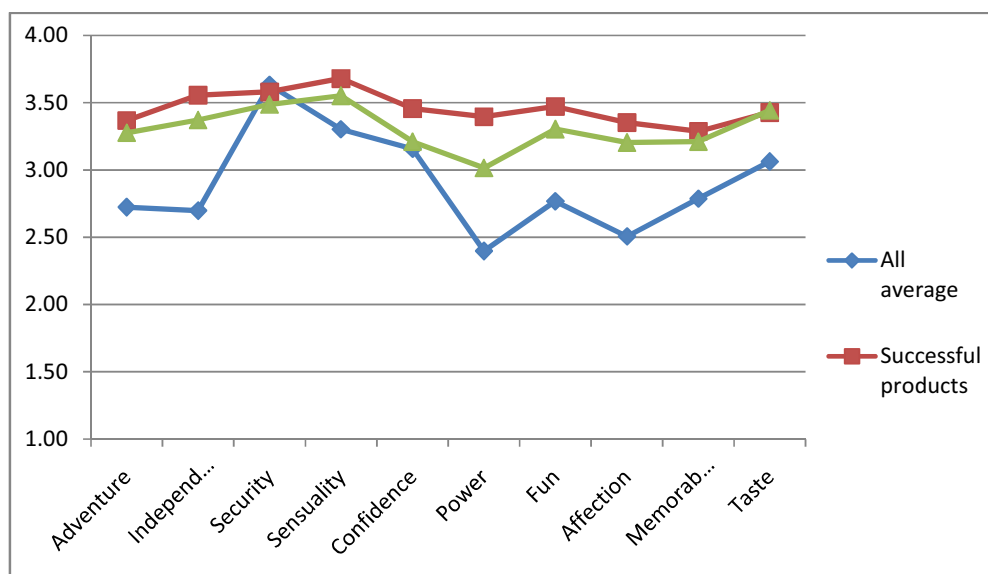


Figure 3.49: Comparative analysis of three key value curves of the emotional value

Regarding the top priority of Emotional Value, the innovative products in both groups are evaluated below the significant level of the average customer baseline, on Security.

3.4.5 Brand Value

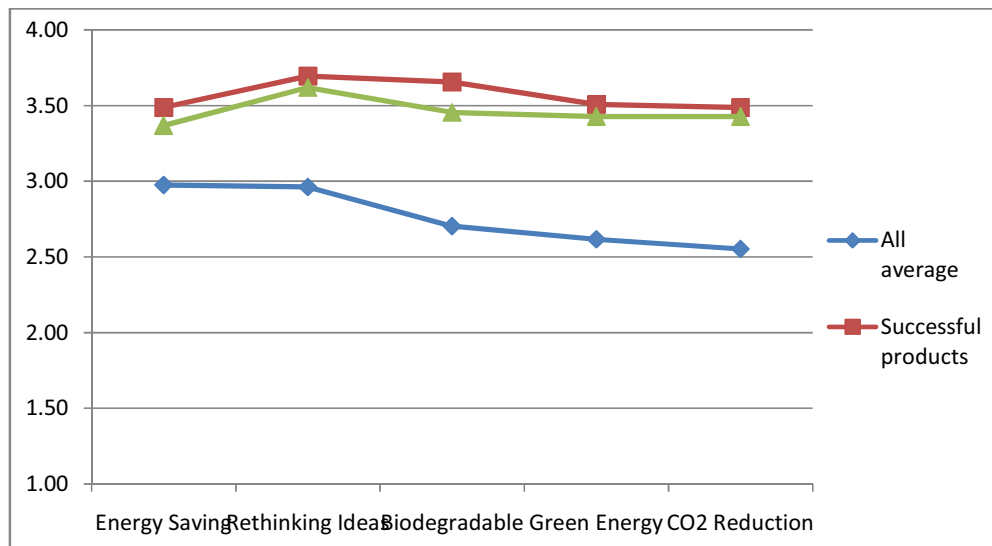


Figure 3.50: Comparative analysis of three key value curves of the brand value

As shown in Figure 3.50, the significant level of all factors of both groups of innovative products is evaluated much higher than the level of the average customer baseline.

3.4.6 Cultural Value

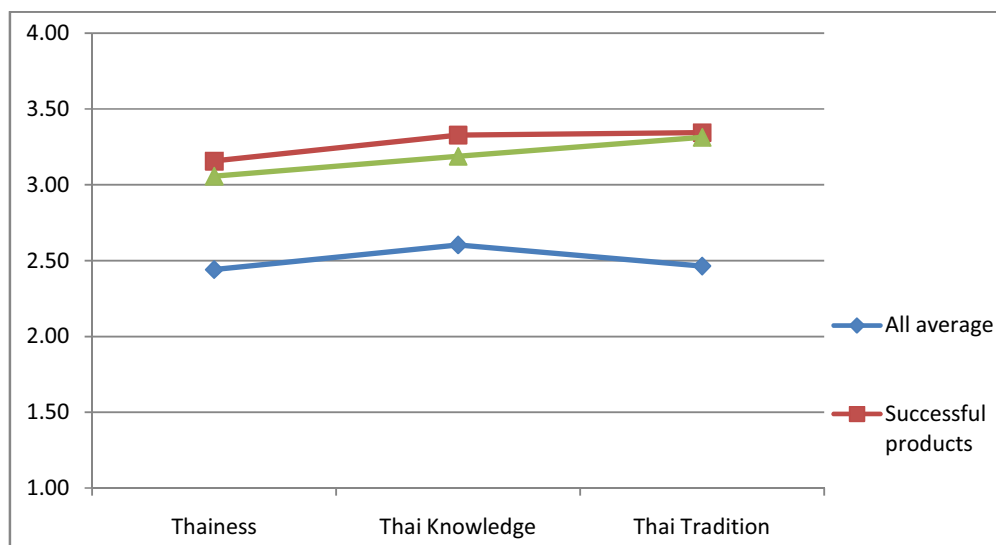


Figure 3.51: Comparative analysis of three key value curves of the cultural value

As shown in Figure 3.51, the significant level of all factors of both groups of innovative products is evaluated much higher than the level of the average customer baseline.

3.4.7 Social Value

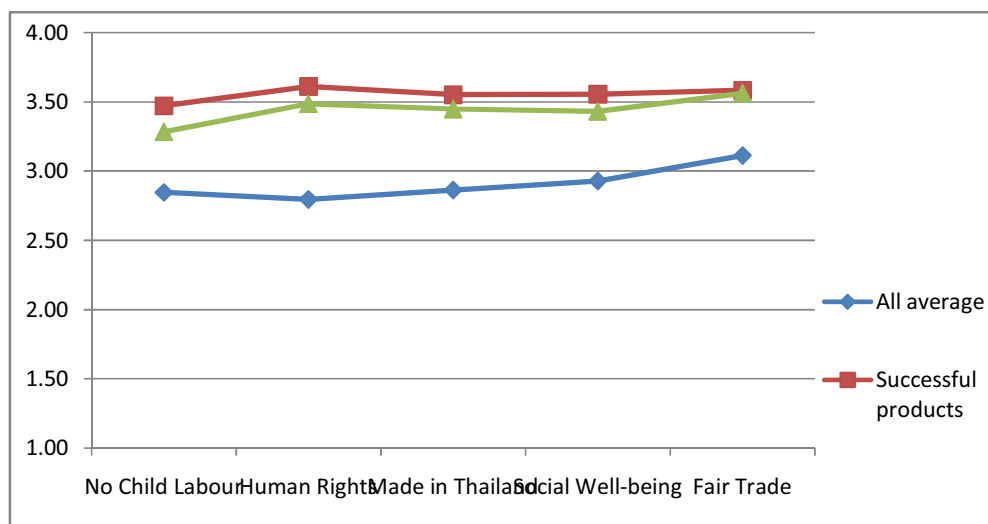


Figure 3.52: Comparative analysis of three key value curves of the social value

As shown in Figure 3.52, the significant level of all factors of both groups of innovative products is evaluated much higher than the level of the average customer baseline.

3.4.8 User Value

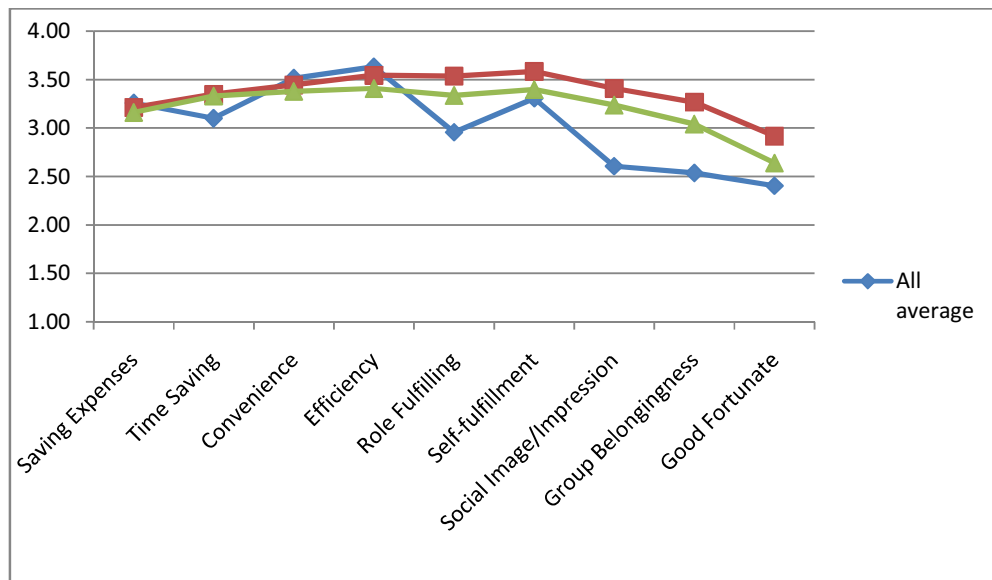


Figure 3.53: Comparative analysis of three key value curves of the user value

Regarding the highly significant-leveled factor of User Value, the innovative products in both groups are evaluated below the significant level of the average customer baseline, on Convenience and Efficiency.

3.4.9 Trend Value

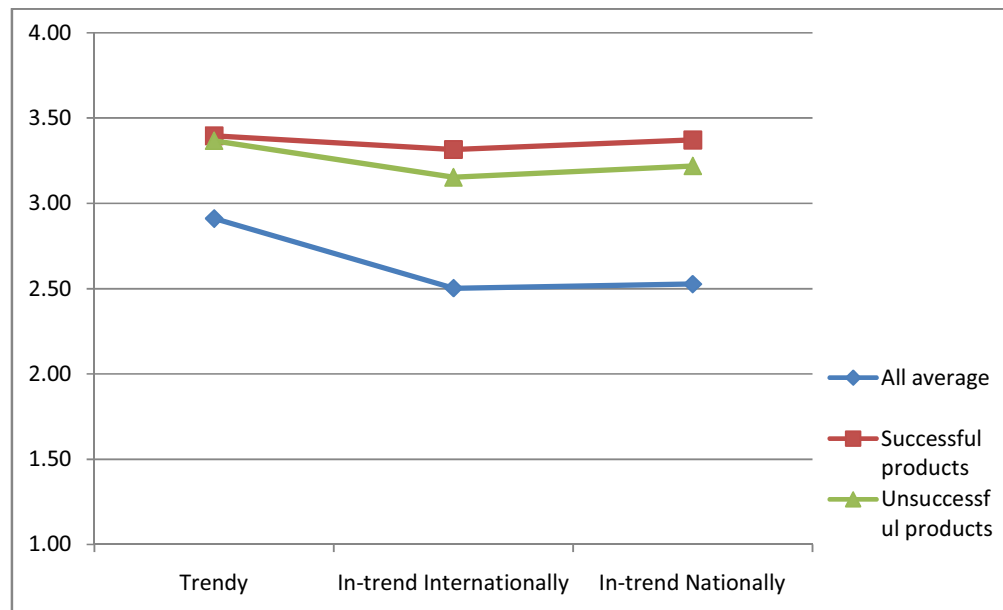


Figure 3.54: Comparative analysis of three key value curves of the trend value

As shown in Figure 3.54, the significant level of all factors of both groups of innovative products is evaluated much higher than the level of the average customer baseline.

3.4.10 Eco Value

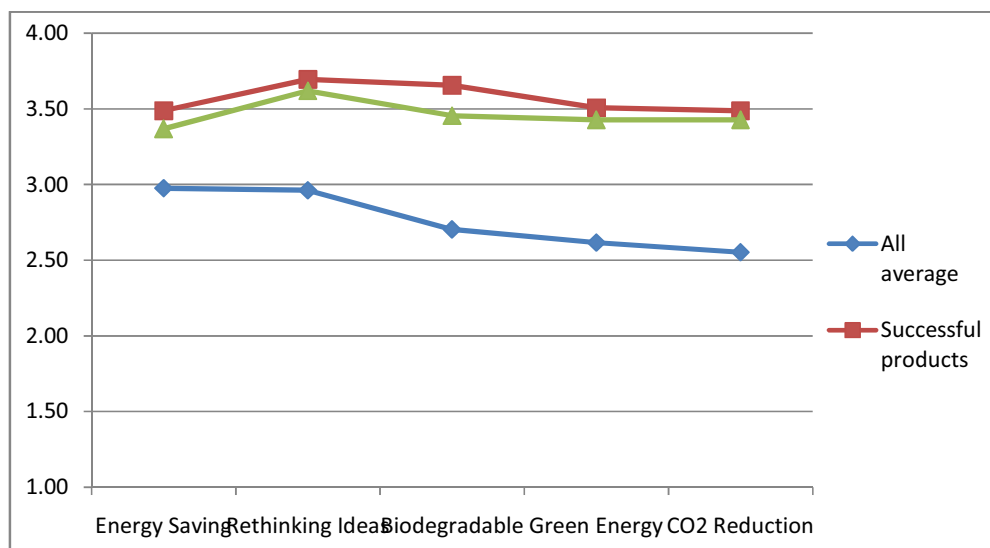


Figure 3.55: Comparative analysis of three key value curves of the eco value

As shown in Figure 3.55, the significant level of all factors of both groups of innovative products is evaluated much higher than the level of the average customer baseline.

3.4.11 Knowledge of the Company's Brand

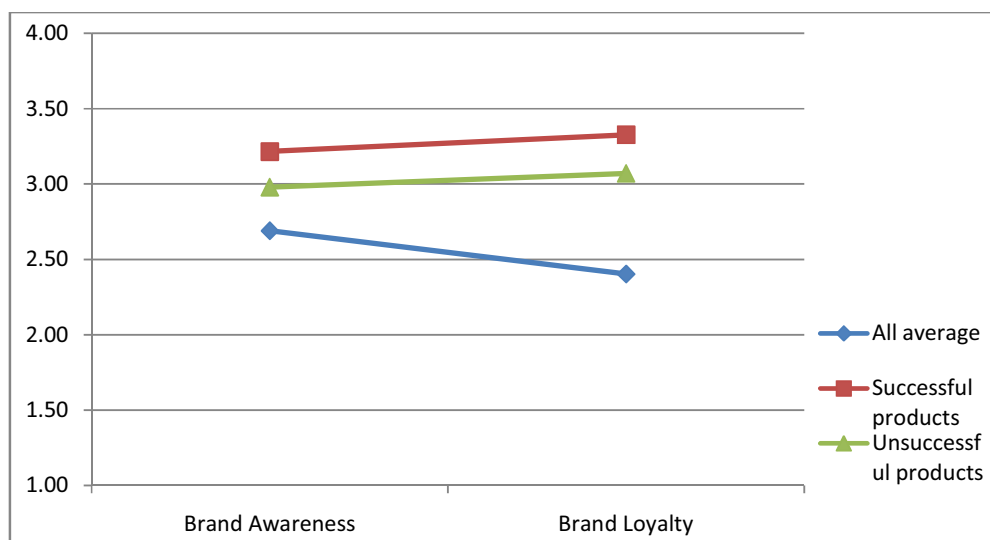


Figure 3.56: Comparative analysis of three key value curves of the value, knowledge of the company's brand

As shown in Figure 3.56, the significant level of all factors of both groups of innovative products is evaluated much higher than the level of the average customer baseline.

3.4.12 Knowledge of Product Competitors

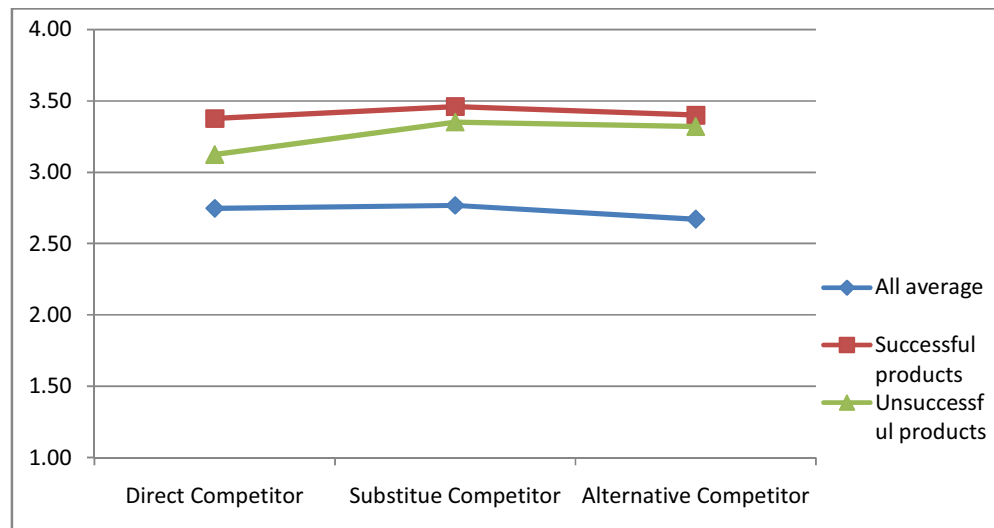


Figure 3.57: Comparative analysis of three key value curves of the value, knowledge of product competitors

As shown in Figure 3.57, the significant level of all factors of both groups of innovative products is evaluated much higher than the level of the average customer baseline. All factors of both innovative product groups are in the highly significant level.

3.4.13 Supportive Product/Service System

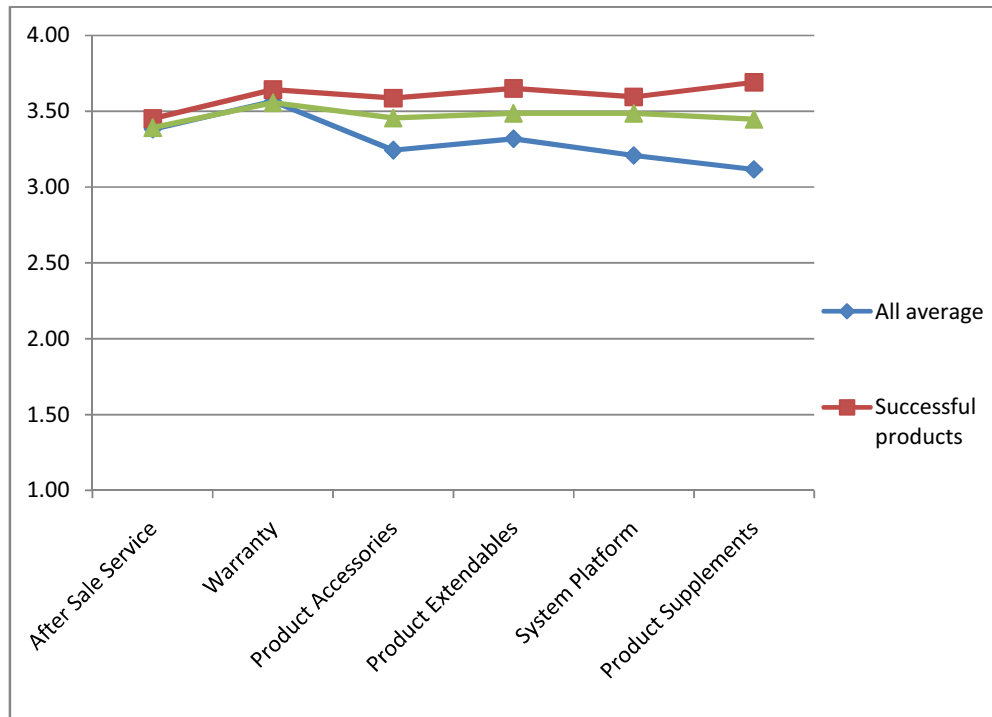


Figure 3.58: Comparative analysis of three key value curves of the value, supportive product/service system

As shown in Figure 3.58, the significant level of a majority of the factors of both groups of innovative products is evaluated higher than the level of the average customer baseline. The value curves of the customer baseline and the un/less successful innovative products are in the similar level. However, the value curve of the product success group is mainly in the most significant level, in particular Warranty, Product Accessories, Product Extendables, System Platform and Product Supplements.

3.4.14 Product Value Prioritisation

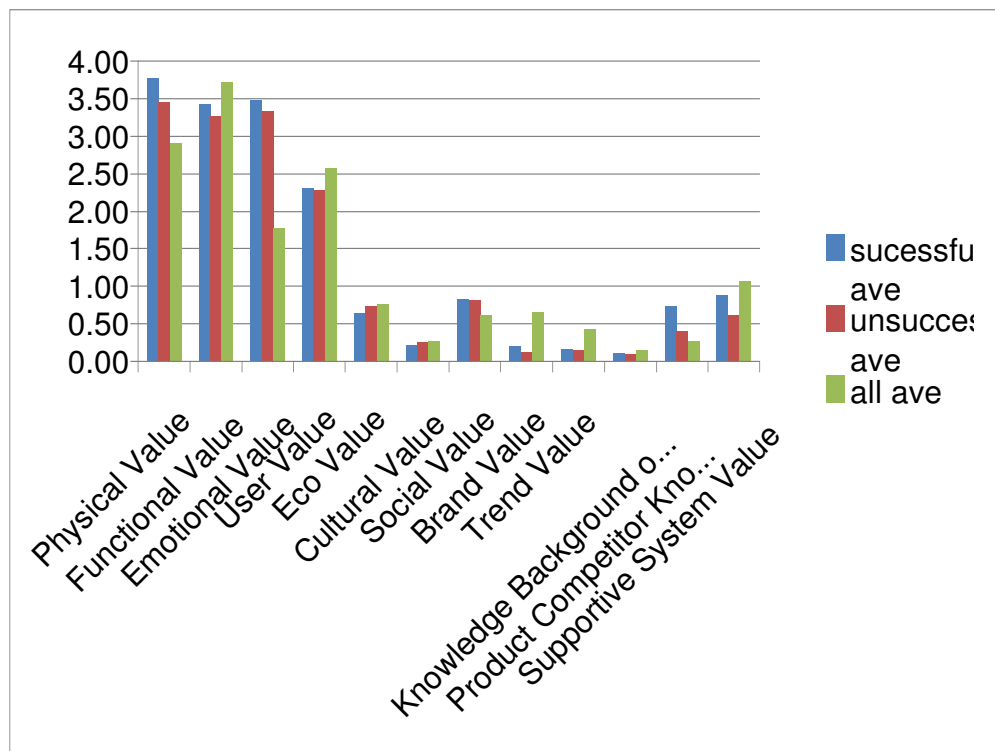


Figure 3.59: Comparative analysis of product value prioritization

Regarding the product value prioritization of three average groups, the consumers' baseline value, the successful innovative products, and the un/less successful innovative products, the comparative results are shown in Table 3.17.

Table 3.17: Product value prioritization of the consumers' perspectives on three groups

Priority	Baseline	Successful	Un/less Successful
1	Functional Value	Physical Value	Physical Value
2	Physical Value	Emotional Value	Emotional Value
3	User Value	Functional Value	Functional Value
4	Emotional Value	User Value	User Value
5	Support Product/Service System	Support Product/Service System	Social Value

The five values in the prioritised list are similar to the consumer's baseline prioritization, but not in the same order. The group of the un/less successful one is lack of one value in the prioritisation list, i.e. Support Product/Service System. The consumers exactly prioritised the product values of both innovative product groups in particular order from 1 to 4, i.e. Physical Value, Emotional Value, Functional Value and User Value.

APPENDIX 3

1: The value of three product categories and its average

Product Value (overall)	All average	Toy	Furniture	Sanitary
Physical Value	3.25	3.30	3.20	3.25
Functional Value	3.53	3.35	3.57	3.65
Emotional Value	2.90	3.18	2.70	2.83
User Value	3.03	2.93	2.97	3.20
Eco Value	2.76	3.07	2.59	2.63
Cultural Value	2.50	2.64	2.45	2.41
Social Value	2.91	2.94	2.79	3.01
Brand Value	2.80	2.68	2.88	2.83
Trend Value	2.65	2.46	2.71	2.77
Knowledge Background	2.55	2.41	2.67	2.57
Product Competitor	2.73	2.57	2.76	2.86
Supportive System Value	3.31	3.21	3.32	3.39

2: Physical value assessment of all product categories and its average value

Physical Value	All average	Toy	Furniture	Sanitary
Aesthetics	3.43	3.26	3.51	3.52
Good Quality	3.73	3.74	3.69	3.75
Appropriate to the context	3.62	3.58	3.61	3.66
Enabling	3.23	3.32	3.14	3.23
Durability	3.64	3.43	3.69	3.81
Differentiation	2.80	2.97	2.71	2.72
Uniqueness	2.83	3.04	2.78	2.66
Innovativeness	2.71	3.03	2.48	2.62

3: Functional value assessment of all product categories and its average value

Functional Value	All average	Toy	Furniture	Sanitary
Comfort	3.61	3.30	3.76	3.76
Safety	3.76	3.88	3.63	3.78
Ease of Use	3.55	3.40	3.55	3.70
Multi-functions	3.14	2.97	3.15	3.30
Convenience	3.57	3.22	3.76	3.73

4: Emotional value assessment of all product categories and its average value

Emotional Value	All average	Toy	Furniture	Sanitary
Adventure	2.72	3.21	2.42	2.54
Independence	2.70	3.07	2.43	2.59
Security	3.63	3.87	3.39	3.64
Sensuality	3.30	3.46	3.08	3.37
Confidence	3.16	3.35	2.90	3.22
Power	2.40	2.52	2.26	2.41
Fun	2.77	3.69	2.43	2.18
Affection	2.51	2.67	2.36	2.49
Memorability	2.79	3.19	2.49	2.68
Taste	3.06	2.78	3.26	3.15

5: Brand value assessment of all product categories and its average value

Brand Value	All average	Toy	Furniture	Sanitary
Brand Image	2.86	2.74	2.98	2.87
Brand Identity	2.80	2.73	2.90	2.78
Brand Promise	2.72	2.63	2.78	2.74
Brand Personality	2.80	2.62	2.85	2.93

6: Cultural value assessment of all product categories and its average value

Cultural Value	All average	Toy	Furniture	Sanitary
Thainess	2.44	2.55	2.40	2.37
Thai Knowledge	2.60	2.74	2.55	2.52
Thai Tradition	2.46	2.64	2.41	2.34

7: Social value assessment of all product categories and its average value

Social Value	All average	Toy	Furniture	Sanitary
No Child Labour	2.85	2.91	2.66	2.97
Human Rights	2.80	2.84	2.65	2.90
Made in Thailand	2.86	2.87	2.80	2.92
Social Well-being	2.93	2.97	2.74	3.08
Fair Trade	3.11	3.10	3.08	3.16

8: User value assessment of all product categories and its average value curve

User Value	All average	Toy	Furniture	Sanitary
Saving Expenses	3.26	3.20	3.19	3.38
Time Saving	3.10	2.93	3.05	3.32
Convenience	3.51	3.19	3.64	3.71
Efficiency	3.63	3.57	3.62	3.71
Role Fulfilling	2.96	2.96	2.77	3.14
Self-fulfillment	3.31	3.29	3.18	3.45
Social Image/Impression	2.61	2.52	2.60	2.70
Group Belongingness	2.54	2.67	2.39	2.55
Good Fortunate	2.40	2.07	2.32	2.82

9: Trend value assessment of all product categories and its average value curve

Trend Value	All average	Toy	Furniture	Sanitary
Trendy	2.91	2.63	2.96	3.14
In-trend Internationally	2.50	2.34	2.60	2.57
In-trend Nationally	2.53	2.40	2.57	2.61

10: Eco value assessment of all product categories and its average value

Eco Value	All average	Toy	Furniture	Sanitary
Energy Saving	2.98	3.12	2.86	2.95
Rethinking Ideas	2.96	3.20	2.84	2.85
Biodegradable	2.70	3.04	2.52	2.55
Green Energy	2.62	2.93	2.35	2.57
CO2 Reduction	2.55	3.04	2.39	2.23

11: The assessment of knowledge of the company's brand of all product categories and its average value

Knowledge Background of Brand	All average	Toy	Furniture	Sanitary
Brand Awareness	2.69	2.57	2.80	2.70
Brand Loyalty	2.40	2.25	2.53	2.43

12: The assessment of knowledge of the product competitors of all product categories and its average value

Product Competitor Knowledge	All average	Toy	Furniture	Sanitary
Direct Competitor	2.75	2.49	2.81	2.94
Substitutue Competitor	2.77	2.61	2.76	2.93
Alternative Competitor	2.67	2.60	2.71	2.70

13: The assessment of supportive product/service system of all product categories and its average value

Supportive System Value	All average	Toy	Furniture	Sanitary
After Sale Service	3.38	3.03	3.56	3.56
Warranty	3.57	3.35	3.62	3.73
Product Accessories	3.24	3.14	3.23	3.36
Product Extendables	3.32	3.25	3.33	3.38
System Platform	3.21	3.32	3.14	3.17
Product Supplements	3.12	3.17	3.06	3.12

14: Product value prioritisation of three product categories

Value	Toy	Furniture	Sanitary
Physical Value	2.55	3.06	3.10
Functional Value	3.78	3.63	3.74
Emotional Value	2.45	1.32	1.56
User Value	2.64	2.72	2.37
Eco Value	1.17	0.66	0.47
Cultural Value	0.41	0.17	0.22
Social Value	0.60	0.61	0.64
Brand Value	0.53	0.94	0.47
Trend Value	0.20	0.47	0.62
Knowledge Background of Brand	0.21	0.12	0.13
Product Competitor Knowledge	0.11	0.13	0.58
Supportive System Value	0.58	1.14	1.49

15: Successful innovative product value assessment in comparison with the average baseline analysis

Product Value (overall)	All average	T1	T2	F1	F2	S1
Physical Value	3.25	3.38	3.46	3.64	3.61	3.85
Functional Value	3.53	3.27	3.13	3.64	3.70	3.89
Emotional Value	2.90	3.13	3.22	3.60	3.57	3.77
User Value	3.03	2.83	3.03	3.64	3.57	3.74
Eco Value	2.76	3.42	3.34	3.67	3.70	3.70
Cultural Value	2.50	2.83	2.89	3.52	3.51	3.63
Social Value	2.91	3.37	3.42	3.61	3.66	3.72
Brand Value	2.80	2.93	3.19	3.55	3.58	3.61
Trend Value	2.65	2.74	2.91	3.75	3.64	3.77
Knowledge Background	2.55	2.97	2.89	3.45	3.52	3.53
Product Competitor	2.73	3.05	2.94	3.64	3.63	3.80
Supportive System Value	3.31	3.33	3.32	3.71	3.79	3.87

16: Un/less successful Innovative product value assessment in comparison with the average baseline analysis

Value (overall)	All average	T3	T4	F3	F4	S2
Physical Value	3.25	3.19	3.39	3.48	3.30	3.80
Functional Value	3.53	3.07	3.25	3.62	3.45	3.79
Emotional Value	2.90	2.96	3.10	3.39	3.30	3.78
User Value	3.03	2.80	2.93	3.41	3.21	3.73
Eco Value	2.76	3.22	3.39	3.67	3.29	3.73
Cultural Value	2.50	2.57	2.95	3.50	3.23	3.69
Social Value	2.91	3.26	3.29	3.49	3.43	3.74
Brand Value	2.80	3.02	2.99	3.57	3.31	3.66
Trend Value	2.65	2.78	2.80	3.65	3.25	3.75
Knowledge Background	2.55	2.34	2.50	3.47	3.11	3.71
Product Competitor	2.73	2.77	2.85	3.58	3.35	3.77
Supportive System Value	3.31	3.33	3.24	3.68	3.25	3.87

17: Comparison both types of innovative products with the average baseline analysis in the toy category

Value (overall)	All average	Toy	T1	T2	T3	T4
Physical Value	3.25	3.30	3.38	3.46	3.19	3.39
Functional Value	3.53	3.35	3.27	3.13	3.07	3.25
Emotional Value	2.90	3.18	3.13	3.22	2.96	3.10
User Value	3.03	2.93	2.83	3.03	2.80	2.93
Eco Value	2.76	3.07	3.42	3.34	3.22	3.39
Cultural Value	2.50	2.64	2.83	2.89	2.57	2.95
Social Value	2.91	2.94	3.37	3.42	3.26	3.29
Brand Value	2.80	2.68	2.93	3.19	3.02	2.99
Trend Value	2.65	2.46	2.74	2.91	2.78	2.80
Knowledge Background	2.55	2.41	2.97	2.89	2.34	2.50
Product Competitor	2.73	2.57	3.05	2.94	2.77	2.85
Supportive System Value	3.31	3.21	3.33	3.32	3.33	3.24

18: Comparison both types of innovative products in the furniture category with the average baseline analysis

Value (overall)	All average	Furniture	F1	F2	F3	F4
Physical Value	3.25	3.20	3.64	3.61	3.48	3.30
Functional Value	3.53	3.57	3.64	3.70	3.62	3.45
Emotional Value	2.90	2.70	3.60	3.57	3.39	3.30
User Value	3.03	2.97	3.64	3.57	3.41	3.21
Eco Value	2.76	2.59	3.67	3.70	3.67	3.29
Cultural Value	2.50	2.45	3.52	3.51	3.50	3.23
Social Value	2.91	2.79	3.61	3.66	3.49	3.43
Brand Value	2.80	2.88	3.55	3.58	3.57	3.31
Trend Value	2.65	2.71	3.75	3.64	3.65	3.25
Knowledge Background	2.55	2.67	3.45	3.52	3.47	3.11
Product Competitor	2.73	2.76	3.64	3.63	3.58	3.35
Supportive System Value	3.31	3.32	3.71	3.79	3.68	3.25

19: Comparison both types of innovative products in the sanitary ware category with the average baseline analysis

Value (overall)	All average	Sanitary	S1	S2
Physical Value	3.25	3.25	3.85	3.80
Functional Value	3.53	3.65	3.89	3.79
Emotional Value	2.90	2.83	3.77	3.78
User Value	3.03	3.20	3.74	3.73
Eco Value	2.76	2.63	3.70	3.73
Cultural Value	2.50	2.41	3.63	3.69
Social Value	2.91	3.01	3.72	3.74
Brand Value	2.80	2.83	3.61	3.66
Trend Value	2.65	2.77	3.77	3.75
Knowledge Background	2.55	2.57	3.53	3.71
Product Competitor	2.73	2.86	3.80	3.77
Supportive System Value	3.31	3.39	3.87	3.87

20: Comparison the successful innovative products with the average baseline pattern, in the physical value

Physical Value	All average	T1	T2	F1	F2	S1
Aesthetics	3.43	3.62	3.56	3.64	3.68	3.98
Good Quality	3.73	3.38	3.52	3.66	3.48	4.00
Appropriate to the context	3.62	3.28	3.24	3.50	3.46	3.88
Enabling	3.23	3.42	3.24	3.74	3.60	3.86
Durability	3.64	3.56	3.72	3.52	3.62	3.98
Differentiation	2.80	3.34	3.38	3.66	3.72	3.66
Uniqueness	2.83	3.26	3.54	3.60	3.66	3.60
Innovativeness	2.71	3.16	3.48	3.76	3.62	3.84

21: Comparison the un/less successful innovative products with the average baseline pattern, in the physical value

Physical Value	All average	T3	T4	F3	F4	S2
Aesthetics	3.43	3.26	3.52	3.62	3.38	3.72
Good Quality	3.73	3.36	3.56	3.74	3.36	3.78
Appropriate to the context	3.62	2.90	3.18	3.64	3.26	3.78
Enabling	3.23	3.16	3.48	3.50	3.24	3.80
Durability	3.64	3.40	3.68	3.74	3.26	3.88
Differentiation	2.80	3.16	3.22	3.18	2.90	3.74
Uniqueness	2.83	3.06	3.20	3.14	3.38	3.80
Innovativeness	2.71	3.18	3.28	3.30	3.64	3.90

22: Comparison successful innovative products with the average baseline pattern, in the functional value

Functional Value	All average	T1	T2	F1	F2	S1
Comfort	3.61	3.34	3.16	3.52	3.46	3.84
Safety	3.76	3.48	3.32	3.62	3.76	3.88
Ease of Use	3.55	3.58	3.54	3.72	3.72	3.90
Multi-functions	3.14	2.82	2.50	3.60	3.76	3.94
Convenience	3.57	3.12	3.14	3.72	3.80	3.90

23: Comparison un/less successful innovative products with the average baseline pattern, in the functional value

Functional Value	All average	T3	T4	F3	F4	S2
Comfort	3.61	3.20	3.40	3.54	3.16	3.50
Safety	3.76	3.40	3.62	3.72	3.60	3.86
Ease of Use	3.55	3.38	3.46	3.76	3.50	3.90
Multi-functions	3.14	2.38	2.52	3.44	3.50	3.76
Convenience	3.57	2.98	3.26	3.64	3.50	3.92

24: Comparison successful innovative products with the average baseline pattern, in the emotional value

Emotional Value	All average	T1	T2	F1	F2	S1
Adventure	2.72	3.26	3.14	3.52	3.40	3.52
Independence	2.70	3.22	3.46	3.70	3.62	3.78
Security	3.63	3.48	3.14	3.72	3.58	3.98
Sensuality	3.30	3.60	3.54	3.58	3.74	3.94
Confidence	3.16	3.36	3.22	3.58	3.48	3.64
Power	2.40	2.74	3.22	3.58	3.64	3.80
Fun	2.77	3.34	3.34	3.54	3.50	3.64
Affection	2.51	2.90	3.14	3.46	3.58	3.68
Memorability	2.79	2.64	2.92	3.58	3.54	3.76
Taste	3.06	2.72	3.12	3.72	3.66	3.92

25: Comparison un/less successful innovative products with the average baseline pattern, in the emotional value

Emotional Value	All average	T3	T4	F3	F4	S2
Adventure	2.72	2.96	3.00	3.20	3.56	3.66
Independence	2.70	3.12	3.06	3.30	3.50	3.88
Security	3.63	3.34	3.44	3.66	3.22	3.78
Sensuality	3.30	3.42	3.50	3.66	3.28	3.90
Confidence	3.16	3.08	3.16	3.34	2.98	3.50
Power	2.40	2.12	2.50	3.34	3.24	3.88
Fun	2.77	3.10	3.20	3.26	3.16	3.80
Affection	2.51	2.70	3.02	3.26	3.34	3.70
Memorability	2.79	2.84	3.00	3.24	3.20	3.78
Taste	3.06	2.94	3.14	3.66	3.54	3.94

26: Comparison successful innovative products with the average baseline pattern, in the brand value

Brand Value	All average	T1	T2	F1	F2	S1
Brand Image	2.86	3.00	3.14	3.46	3.38	3.32
Brand Identity	2.80	2.84	3.28	3.58	3.60	3.64
Brand Promise	2.72	2.94	3.16	3.64	3.64	3.74
Brand Personality	2.80	2.94	3.16	3.52	3.70	3.72

27: Comparison un/less successful innovative products with the average baseline pattern, in the brand value

Brand Value	All average	T3	T4	F3	F4	S2
Brand Image	2.86	2.94	3.06	3.34	3.08	3.40
Brand Identity	2.80	2.98	3.00	3.70	3.32	3.66
Brand Promise	2.72	3.04	2.80	3.70	3.38	3.74
Brand Personality	2.80	3.12	3.08	3.54	3.44	3.84

28: Comparison successful innovative products with the average baseline pattern, in the cultural value

Cultural Value	All average	T1	T2	F1	F2	S1
Thainess	2.44	2.80	2.86	3.30	3.36	3.46
Thai Knowledge	2.60	2.92	2.82	3.64	3.58	3.68
Thai Tradition	2.46	2.78	3.00	3.62	3.58	3.74

29: Comparison un/less successful innovative products with the average baseline pattern, in the cultural value

Cultural Value	All average	T3	T4	F3	F4	S2
Thainess	2.44	2.52	3.00	3.26	3.04	3.46
Thai Knowledge	2.60	2.52	2.86	3.60	3.18	3.78
Thai Tradition	2.46	2.66	2.98	3.64	3.46	3.82

30: Comparison successful innovative products with the average baseline pattern, in the social value

Social Value	All average	T1	T2	F1	F2	S1
No Child Labour	2.85	3.40	3.46	3.48	3.50	3.52
Human Rights	2.80	3.46	3.48	3.66	3.68	3.78
Made in Thailand	2.86	3.32	3.46	3.64	3.60	3.74
Social Well-being	2.93	3.38	3.36	3.58	3.70	3.76
Fair Trade	3.11	3.30	3.32	3.68	3.82	3.80

31: Comparison un/less successful innovative products with the average baseline pattern, in the social value

Social Value	All average	T3	T4	F3	F4	S2
No Child Labour	2.85	3.40	3.24	3.20	3.14	3.44
Human Rights	2.80	3.34	3.20	3.50	3.56	3.84
Made in Thailand	2.86	3.12	3.34	3.46	3.50	3.82
Social Well-being	2.93	3.14	3.34	3.60	3.34	3.74
Fair Trade	3.11	3.30	3.32	3.70	3.62	3.88

32: Comparison successful innovative products with the average baseline pattern, in the user value

User Value	All average	T1	T2	F1	F2	S1
Saving Expenses	3.26	2.76	2.90	3.42	3.40	3.58
Time Saving	3.10	2.64	3.06	3.70	3.58	3.76
Convenience	3.51	3.06	3.28	3.64	3.60	3.64
Efficiency	3.63	3.24	3.40	3.68	3.68	3.72
Role Fulfilling	2.96	3.16	3.38	3.72	3.60	3.82
Self-fulfillment	3.31	3.36	3.54	3.66	3.64	3.72
Social Image/Impression	2.61	3.00	3.10	3.68	3.50	3.76
Group Belongingness	2.54	2.62	2.80	3.64	3.56	3.72
Good Fortunate	2.40	1.66	1.80	3.64	3.58	3.9

33: Comparison un/less successful innovative products with the average baseline pattern, in the user value

User Value	All average	T3	T4	F3	F4	S2
Saving Expenses	3.26	2.80	2.84	3.32	3.32	3.52
Time Saving	3.10	3.04	3.00	3.44	3.34	3.84
Convenience	3.51	2.98	3.24	3.46	3.46	3.76
Efficiency	3.63	3.12	3.28	3.5	3.42	3.72
Role Fulfilling	2.96	2.96	3.30	3.5	3.22	3.70
Self-fulfillment	3.31	3.22	3.28	3.5	3.14	3.84
Social Image/Impression	2.61	2.90	3.02	3.48	3.14	3.64
Group Belongingness	2.54	2.30	2.70	3.3	3.10	3.80
Good Fortunate	2.40	1.84	1.68	3.2	2.76	3.72

34: Comparison successful innovative products with the average baseline pattern, in the trend value

Trend Value	All average	T1	T2	F1	F2	S1
Trendy	2.91	2.62	2.82	3.82	3.76	3.96
In-trend Internationally	2.50	2.56	3.08	3.72	3.58	3.64
In-trend Nationally	2.53	3.04	2.84	3.70	3.58	3.70

35: Comparison un/less successful innovative products with the average baseline pattern, in the trend value

Trend Value	All average	T3	T4	F3	F4	S2
Trendy	2.91	2.92	2.80	3.76	3.44	3.92
In-trend Internationally	2.50	2.80	2.70	3.58	3.04	3.64
In-trend Nationally	2.53	2.62	2.90	3.62	3.28	3.68

36: Comparison successful innovative products with the average baseline pattern, in the environmental value

Eco Value	All average	T1	T2	F1	F2	S1
Energy Saving	2.98	3.28	3.26	3.58	3.66	3.66
Rethinking Ideas	2.96	3.54	3.48	3.80	3.84	3.82
Biodegradable	2.70	3.58	3.54	3.74	3.66	3.76
Green Energy	2.62	3.42	3.26	3.60	3.64	3.62
CO2 Reduction	2.55	3.26	3.18	3.64	3.70	3.66

37: Comparison un/less successful innovative products with the average baseline pattern, in the environmental value

Eco Value	All average	T3	T4	F3	F4	S2
Energy Saving	2.98	3.20	3.14	3.62	3.16	3.72
Rethinking Ideas	2.96	3.46	3.60	3.76	3.40	3.88
Biodegradable	2.70	3.30	3.52	3.66	3.14	3.66
Green Energy	2.62	3.18	3.36	3.64	3.34	3.62
CO2 Reduction	2.55	2.94	3.32	3.68	3.42	3.78

38: Comparison successful innovative products with the average baseline pattern, in the value, knowledge of the company's brand

Knowledge Background of Brand	All average	T1	T2	F1	F2	S1
Brand Awareness	2.69	3.00	3.00	3.40	3.36	3.32
Brand Loyalty	2.40	2.94	2.78	3.50	3.68	3.74

39: Comparison un/less successful innovative products with the average baseline pattern, in the value, knowledge of the company's brand

Knowledge Background of Brand	All average	T3	T4	F3	F4	S2
Brand Awareness	2.69	2.40	2.72	3.26	3.02	3.50
Brand Loyalty	2.40	2.28	2.28	3.68	3.20	3.92

40: Comparison successful innovative products with the average baseline pattern, in the value, knowledge of product competitors

Product Competitor Knowledge	All average	T1	T2	F1	F2	S1
Direct Competitor	2.75	3.08	3.10	3.60	3.50	3.60
Substitute Competitor	2.77	3.00	3.00	3.64	3.70	3.96
Alternative Competitor	2.67	3.06	2.72	3.68	3.70	3.84

41: Comparison un/less successful innovative products with the average baseline pattern, in the value, knowledge of product competitors

Product Competitor Knowledge	All average	T3	T4	F3	F4	S2
Direct Competitor	2.75	2.80	2.90	3.32	3.14	3.46
Substitute Competitor	2.77	2.80	2.92	3.74	3.36	3.94
Alternative Competitor	2.67	2.72	2.74	3.68	3.54	3.92

42: Comparison successful innovative products with the average baseline pattern, in the value, supportive product/service system

Supportive System Value	All average	T1	T2	F1	F2	S1
After Sale Service	3.38	3.18	3.40	3.44	3.64	3.60
Warranty	3.57	3.28	3.50	3.78	3.74	3.92
Product Accessories	3.24	3.34	3.12	3.70	3.84	3.94
Product Extendables	3.32	3.36	3.48	3.70	3.82	3.90
System Platform	3.21	3.38	3.22	3.72	3.78	3.88
Product Supplements	3.12	3.46	3.18	3.92	3.90	4.00

43: Comparison un/less successful innovative products with the average baseline pattern, in the value, supportive product/service syst

Supportive System Value	All average	T3	T4	F3	F4	S2
After Sale Service	3.38	3.50	3.34	3.46	3.08	3.58
Warranty	3.57	3.60	3.32	3.70	3.24	3.92
Product Accessories	3.24	3.24	3.04	3.72	3.36	3.92
Product Extendables	3.32	3.30	3.38	3.70	3.18	3.88
System Platform	3.21	3.16	3.20	3.74	3.42	3.92
Product Supplements	3.12	3.16	3.14	3.76	3.20	3.98

44: Product value prioritization of the successful innovative products

Product Value	T1	T2	F1	F2	S1
Physical Value	3.78	3.34	4.28	3.82	3.62
Functional Value	2.96	3.54	3.50	3.22	3.94
Emotional Value	3.32	3.54	3.30	3.50	3.74
User Value	2.06	2.52	2.48	2.00	2.46
Eco Value	0.78	0.39	1.07	0.85	0.10
Cultural Value	0.36	0.14	0.20	0.31	0.09
Social Value	0.90	0.38	0.70	0.64	1.56
Brand Value	0.17	0.28	0.02	0.07	0.45
Trend Value	0.13	0.05	0.08	0.11	0.41
Knowledge Background of Brand	0.04	0.02	0.00	0.26	0.22
Product Competitor Knowledge	0.88	1.66	0.20	0.38	0.54
Supportive System Value	0.74	1.30	0.20	0.62	1.56

45: Product value prioritization of the un/less successful innovative products

Product Value	T3	T4	F3	F4	S2
Physical Value	3.42	3.22	4.12	2.88	3.60
Functional Value	3.12	3.30	3.54	3.02	3.34
Emotional Value	3.64	2.70	3.42	3.12	3.76
User Value	2.28	2.06	2.02	2.72	2.34
Eco Value	0.62	0.53	0.92	1.11	0.53
Cultural Value	0.12	0.60	0.21	0.33	0.06
Social Value	0.52	0.78	0.52	0.70	1.56
Brand Value	0.29	0.19	0.10	0.00	0.05
Trend Value	0.05	0.04	0.11	0.07	0.46
Knowledge Background of Brand	0.10	0.22	0.00	0.00	0.14
Product Competitor Knowledge	0.98	0.56	0.26	0.12	0.10
Supportive System Value	1.14	0.52	0.50	0.12	0.84

46: Comparative analysis of three key value on twelve values

Value (overall)	All average	Successful products	Unsuccessful products
Physical Value	3.25	3.59	3.43
Functional Value	3.53	3.53	3.44
Emotional Value	2.90	3.46	3.31
User Value	3.03	3.36	3.21
Eco Value	2.76	3.57	3.46
Cultural Value	2.50	3.28	3.19
Social Value	2.91	3.56	3.44
Brand Value	2.80	3.37	3.31
Trend Value	2.65	3.36	3.25
Knowledge Background	2.55	3.27	3.03
Product Competitor	2.73	3.41	3.27
Supportive System Value	3.31	3.60	3.47

47: Comparative analysis of three key value of the physical value

Physical Value	All average	Successful products	Unsuccessful products
Aesthetics	3.43	3.70	3.50
Good Quality	3.73	3.61	3.56
Appropriate to the context	3.62	3.47	3.35
Enabling	3.23	3.57	3.44
Durability	3.64	3.68	3.59
Differentiation	2.80	3.55	3.24
Uniqueness	2.83	3.53	3.32
Innovativeness	2.71	3.57	3.46

48: Comparative analysis of three key value of the functional value

Functional Value	All average	Successful products	Unsuccessful products
Comfort	3.61	3.46	3.36
Safety	3.76	3.61	3.64
Ease of Use	3.55	3.69	3.60
Multi-functions	3.14	3.32	3.12
Convenience	3.57	3.54	3.46

49: Comparative analysis of three key value of the emotional value

Emotional Value	All average	Successful products	Unsuccessful products
Adventure	2.72	3.37	3.28
Independence	2.70	3.56	3.37
Security	3.63	3.58	3.49
Sensuality	3.30	3.68	3.55
Confidence	3.16	3.46	3.21
Power	2.40	3.40	3.02
Fun	2.77	3.47	3.30
Affection	2.51	3.35	3.20
Memorability	2.79	3.29	3.21
Taste	3.06	3.43	3.44

50: Comparative analysis of three key value of the brand value

Brand Value	All average	Successful products	Unsuccessful products
Brand Image	2.86	3.26	3.16
Brand Identity	2.80	3.39	3.33
Brand Promise	2.72	3.42	3.33
Brand Personality	2.80	3.41	3.40

51: Comparative analysis of three key value of the cultural value

Cultural Value	All average	Successful products	Unsuccessful products
Thainess	2.44	3.16	3.06
Thai Knowledge	2.60	3.33	3.19
Thai Tradition	2.46	3.34	3.31

52: Comparative analysis of three key value of the social value

Social Value	All average	Successful products	Unsuccessful products
No Child Labour	2.85	3.47	3.28
Human Rights	2.80	3.61	3.49
Made in Thailand	2.86	3.55	3.45
Social Well-being	2.93	3.56	3.43
Fair Trade	3.11	3.58	3.56

53: Comparative analysis of three key value of the user value

User Value	All average	Successful products	Unsuccessful products
Saving Expenses	3.26	3.21	3.16
Time Saving	3.10	3.35	3.33
Convenience	3.51	3.44	3.38
Efficiency	3.63	3.54	3.41
Role Fulfilling	2.96	3.54	3.34
Self-fulfillment	3.31	3.58	3.40
Social Image/Impression	2.61	3.41	3.24
Group Belongingness	2.54	3.27	3.04
Good Fortunate	2.40	2.92	2.64

54: Comparative analysis of three key value curves of the trend value

Trend Value	All average	Successful products	Unsuccessful products
Trendy	2.91	3.40	3.37
In-trend Internationally	2.50	3.32	3.15
In-trend Nationally	2.53	3.37	3.22

55: Comparative analysis of three key value curves of the eco value

Eco Value	All average	Successful products	Unsuccessful products
Energy Saving	2.98	3.49	3.37
Rethinking Ideas	2.96	3.70	3.62
Biodegradable	2.70	3.66	3.46
Green Energy	2.62	3.51	3.43
CO2 Reduction	2.55	3.49	3.43

56: Comparative analysis of three key value curves of the value, knowledge of the company's brand

Knowledge Background of Brand	All average	Successful products	Unsuccessful products
Brand Awareness	2.69	3.22	2.98
Brand Loyalty	2.40	3.33	3.07

57: Comparative analysis of three key value curves of the value, knowledge of product competitors

Product Competitor Knowledge	All average	Successful products	Unsuccessful products
Direct Competitor	2.75	3.38	3.12
Substitutue Competitor	2.77	3.46	3.35
Alternative Competitor	2.67	3.40	3.32

58: Comparative analysis of three key value curves of the value, supportive product/service system

Supportive System Value	All average	Successful products	Unsuccessful products
After Sale Service	3.38	3.45	3.39
Warranty	3.57	3.64	3.56
Product Accessories	3.24	3.59	3.46
Product Extendables	3.32	3.65	3.49
System Platform	3.21	3.60	3.49
Product Supplements	3.12	3.69	3.45

59: Comparative analysis of product value prioritization

Value	Successful average	Unsuccessful average	All average
Physical Value	3.77	3.45	2.90
Functional Value	3.43	3.26	3.72
Emotional Value	3.48	3.33	1.78
User Value	2.30	2.28	2.58
Eco Value	0.64	0.74	0.77
Cultural Value	0.22	0.26	0.27
Social Value	0.84	0.82	0.62
Brand Value	0.20	0.13	0.65
Trend Value	0.16	0.15	0.43
Knowledge Background of Brand	0.11	0.09	0.15
Product Competitor Knowledge	0.73	0.40	0.27
Supportive System Value	0.88	0.62	1.07

CHAPTER 4: DISCUSSION AND CONCLUSION

Introduction to Chapter 4

Chapter 3 describes the results of the fieldwork research on both the company and customer perspectives. It is particularly focusing on the identification of key success factors of the innovative products at the product level.

Chapter 4 illustrates the discussion and conclusion of the research results. The following sections are:

Section 4.1 describes the discussion of the research results on key success factors of the innovative products on both company and customer perspectives.

Section 4.2 concludes the whole research results according to the research objectives.

Section 4.3 describes the recommendations for future research

4.1 Research Discussion

Product Innovation Approach

According to the histories of the four selected companies as shown in Section 3.1, they have different approaches on their innovative products. Bathroom Design visions their products on the global market in the future. It implements innovation policies, not only focusing on design, but also technology, function and new material, to become one of the five global leading bathroom companies. PlanToys, Osisu and Yothaka have adopted 'design' as the key business strategy for their product innovation.

Regarding the innovative product characteristics, PlanToys focuses on kids as the first priority in the development of its products. Product-oriented approach is the key product characteristics of Bathroom Design, Osisu and Yothaka.

Regarding the management of new product development as shown in Table 3.1, each company has different approach in new product development process. Bathroom Design and Plan Toys implement multidisciplinary design team in the design and development process. Osisu and Yothaka implement designer approach. Designers are leading the design and development of innovative products. In all companies, product approval is done by the business owner or Top Management team.

As shown in Table 3.2, PlanToys and Yothaka have not set the pre-identified critical success factors. They reflected their experience at the business and process level. PlanToys mentioned on the issues of individual/team potential, ideas and working process. Yothaka focuses on a variety of product choices, customers' feedback and orders, and pay attentions to commercial and product details. Bathroom Design implemented four practices to identify the success: fitting with the brand principles (innovative design, function, material and technology), key performance indicators (i.e. ISO standard), innovative solutions approval by all teams and the decision

making based on innovation condition only. Osisu reflected the success at the product level, i.e. good proportion, aesthetics, material type and function.

As shown in Table 3.3, two key indicators are commonly used to identify the success of innovative products driven by design, i.e. market sales and good design awards. According to Osisu, the success of innovative products is based on their useful applications of waste material and the consumers' usage. Bathroom Design points out opposite view on these indicators that the nature of innovative products cannot sell well. The innovative products are seen as prototype in this company. Therefore, sale record and received awards cannot be the good indicators.

As shown in Table 3.4, two main factors make successful differ from un/less successful innovative products, i.e. product and business. Regarding the product factor, Osisu mentioned material applications and design style. Yothaka mentioned design product and lack of product differentiation, excitement and material production could cause un/less successful innovative products. Regarding the business factor, product management aspect is significant in the success of innovative products for PlanToys, i.e. individual/designer skills, working process, Top Management vision and right direction/question. Bathroom Design focuses on the marketing aspect, such as competitive price, affordable innovation and the nature of innovative products.

Company Perspective: Innovative Product Value

Regarding each product value, all companies have a clear view on Emotional Value (4). They define it as key principle when designing and developing innovative products. For example, Osisu mentioned that to make customers forget the negative feeling of waste is one of the key aspects in Emotional Value. Other companies can clearly identify the aspects of the emotional value in their products. Cultural Value, Social Value and Trend Value are varied in all significant levels, ranging from not/less important to highly significant. (1-4).

The value curve of the selected innovative products of four companies is assessed by the researcher, based on face-to-face interview. The details of the value analysis

and their evaluation criteria of all companies are shown in Table 3.5. Regarding the value curve of the products of the companies' perspectives, five values are in the most significant level (3.5 – 4.0), i.e. Emotional Value (4.0), Knowledge of the company's brand (3.75), Physical Value (3.5), Functional Value (3.5), and Eco Value (3.5). Two product values are averagely evaluated lower than 2.5, i.e. Cultural Value and Support Product/Service System.

The ranking of the five product values to make the success of innovative products in the companies depends on their business directions. For example, the first priority of Osisu is Eco Value. Functional Value is the top priority of PlanToys and Bathroom Design. Yothaka values its brand as the most significant. On the contrary, the ranking of the five product values to make innovative products less success is more or less similar to the successful ones, as shown in Table 3.7. To increase the rate of innovative product success, it is based on each company's experience and business direction. For instance, Osisu reflected on its experience that a decreasing number of new-mixed materials could increase the rate of success. Yothaka reflected on both internal and external factors. The internal factor is production capability and the external factor is market and buyer expansion. Bathroom Design reflected on continuous development practice, 'Kaizen', i.e. learn from failures, further develop on design success and simply it.

Consumer Perspective: Baseline Analysis

According to the evaluation of three product categories to understand the baseline value curve of the consumer perspective (based on 300 random samples) as shown in Figure 3.1, the study suggested that Thai consumers are more rational and less emotional in selecting the products in the three categories. User, Emotional, Eco and Brand Values are less distinctive in comparison with Functional, Physical and Supportive System Values. They concern much less on Cultural Value. This means the cultural value is less likely to embed in the consumers' mind. This may surmise that the unpopularity of the cultural product categories in the local market is caused by the consumers' value perception on their own culture. Regarding the baseline value curve of the three product categories, the value curve of two product categories, Furniture and Sanitary Ware are very close to the baseline value curve. This may surmise two product categories share the similar value curve in all twelve

values. On the other hand, the value curve of the toy category is slightly different from the baseline value curve, especially on three values, i.e. Functional Value, Emotional Value and Eco Value. All in all, the functional value is the most significant value in all product categories.

According to the result of each product value assessment as shown in Figure 3.2 – 3.13 on three product categories, the discussion of the results will base on the reference level, valued 2.5. This reference level is used as the means to compare the assessed value perception in all product value variables. The discussion will be based on the baseline value curve (all average value curve as shown in the blue line in the Figures) of all product value components and their components. The following value curves of all value components are higher than the reference level, i.e. Physical Value, Functional Value, Brand Value, Social Value, Trend Value, Eco Value, Knowledge of Product Competitors, Supportive Product/Service System. These five value curves are very close to the reference level: Brand Value, Social Value, Trend Value, Eco Value, and Knowledge of Product Competitors (2.5 – 3). The value curves of Functional Value and Supportive Product/Service System are assessed as highly significant (3.0 – 3.5), The value curves of Physical Value, Emotional Value and User Value are ranged from 2.0 – 4.0. The analysis of each value components in all product values is identified in Table 4.1.

Table 4.1: The results of the product value components in different significant levels

Each Product Value	Levels of Value Components			
	(> 3.5)	(3.0 – 3.5)	(2.5 – 3.0)	(2.0 – 2.5)
Physical Value	Good Quality, Durability, Appropriate to the Context	Aesthetics, Enabling	Differentiation, Uniqueness, Innovativeness	-
Functional Value	Comfort, Safety, Ease of Use, Convenience	Multiple Functions	-	-

Emotional Value	Security	Sensuality, Confidence, Taste	Adventure, Independence, Fun, Affection, Memorability	Power
Brand Value	-	-	Brand Image, Identity, Promise and Personality	-
Cultural Value	-	-	Thai Knowledge	Thainess, Thai Tradition
Social Value	-	Fair Trade	No Child Labour, Human Rights, Made-in- Thailand, Social Well- Being	-
User Value	Convenience, Efficiency	Expense and Time Saving, Self- Fulfillment,	Role-Fulfilling, Social Image/ Impression, Group Belongings	Good Fortunate
Trend Value	-	-	Trendy, In- Trend Internationally and Nationally	-
Eco Value	-	Energy Saving,	Rethinking Ideas, Biodegradable, Green Energy, CO2 Reduction	-
Knowledge of the Company's Brand	-	-	Brand Awareness	Brand Loyalty

Knowledge of Product Competitors	-	-	Direct, Substitute and Alternative Competitor	-
Supportive Product/Service System	Warranty	After Sale Service, Product Accessories and Extendables, System Platform, Product Supplements	-	-

The following are key baseline factors of product requirements in consumers' perception: Good Quality, Appropriate to the Context, Durability, Comfort, Safety, Ease of Use, Convenience, Security, Efficiency and Warranty. The following factors are the least product requirements: Power, Thainess, Thai Tradition and Brand Loyalty. This reflects Thai consumers' perception on products, i.e. they are less concern on local culture and loyalty in product/company brand.

According to this research, the samples were asked to prioritise the product values in five orders. Five key values are identified: Functional Value, Physical Value, User Value, Emotional Value and Supportive Product/Service System. This prioritized product value result is mapped with the identification of the key baseline factors as mentioned above. The prioritized key baseline factors are:

- (1) Functional Value, i.e. Good Quality, Appropriate To the Context and Durability
- (2) Physical Value, i.e. Comfort, Safety, Ease of Use and Convenience
- (3) User Value, i.e. Convenience and Efficiency
- (4) Emotional Value, i.e. Security
- (5) Supportive Product/Service System, i.e. Warranty

According to the buying decision model as shown in Table 3.14, a majority of Thai consumers focus on overall related product factors when making buying decision. This means they look at the overall product value. The second majority is they compare all product details thoroughly. The third majority is they prioritise the factors from the most significant to the least one. These results reflect consumers' information process regarding the product value when they make buying selection.

Consumer Perspective: 10 Innovative Products

In this research, two groups of innovative products are selected, i.e. the successful and un/less successful innovative products. According to the twelve product values assessment on both innovative product types in comparison with the baseline customer/consumer value curve, a majority of the product values level on both innovative product types are higher than the baseline consumer level. Both innovative product groups provide product values more than Thai consumers' expectations. The value curve of the successful innovative products is a bit higher than the un/less successful one. The question is why the group of the un/less successful innovative products is failure. It may be assumed that the un/less successful products are caused by other factors which the research is not measured, such as product price, product accessibility and product stimulations.

The research result is unlikely to be expected. In theory, the value curve of product values of the un/less successful innovative products group should be lower than the baseline consumer value curve on the critical product value, or should be higher on the least critical product value on the baseline consumer perception. This theory is based on ERRC Grid principle as mentioned in Chapter 2. As shown in Figure 3.46, all product values in the group of the un/less successful innovative products are evaluated in the highly significant level (3.0 – 3.5). Regarding the group of the successful innovative products, the product values are evaluated in both the highly and most significant levels. According to the consumers' baseline value curve, Functional Value is the most significant value. The group of the successful innovative products indicates higher value level in twelve product values than another group. This suggests that the most significant product value in the consumer's baseline value curve is critical.

Physical Value and Support Product/Service System are evaluated in the highly significant level in the customer's baseline value curve. These two values are evaluated in the highly significant level in the group of the un/less successful innovative products. These values are evaluated at the same level in both the consumers' baseline and the un/less successful innovative product value curve. Regarding the group of the successful innovative products, these values are evaluated at the most significant level, which is higher than the consumers' expectation. This suggests that Physical Value and Support Product/Service System are also the most significant value.

According to the comparative analysis of both successful and un/less successful innovative products on the predefined value elements of each product value as well as the consumer's baseline value curve, the comparative results of the most significant value elements in each product value are shown in Table 4.2.

Table 4.2: Comparison of the most significant level of value elements in all product values

Each Product Value	The most significant level of value components (3.5 – 4.0)		
	Consumer Baseline	Successful Product	Un/less Successful
Physical Value	Good Quality, Durability, Appropriate to the Context	Aesthetics, Good Quality, Appropriate to the Context, Enabling, Durability, Differentiation, Uniqueness, Innovativeness	Good Quality, Durability
Functional Value	Comfort, Safety, Ease of Use, Convenience	Comfort, Safety, Ease of Use, Convenience	Safety, Ease of Use

Emotional Value	Security	Independence, Security, Sensuality	Sensuality
Brand Value	-	-	-
Cultural Value	-	-	-
Social Value	-	Human Rights, Made-in-Thailand, Social Well-being, Fair Trade	Fair Trade
User Value	Convenience, Efficiency	Efficiency, Role- Fulfilling, Self- Fulfilling	-
Trend Value	-	-	-
Eco Value	-	Energy Saving, Rethinking Ideas, Biodegradable, Green Energy, CO2 Reduction	Rethinking Ideas
Knowledge of the Brand	-	-	-
Product Competitors Knowledge	-	-	-
Supportive Product/Service System	Warranty	Warranty, Product Accessories, Product Extendables, System Platform, Product Supplements	Warranty

According to the comparative results as shown in Table 4.2, the group of the successful innovative products offers more value elements in the most significant level in comparison with the un/less successful group, based on the consumer perspective. Regarding twelve product values, the following product values contains value elements which are evaluated in the most significant level in the baseline

consumer's perception: Physical Value, Functional Value, Emotional Value, User Value and Support Product/Service System. The number of value elements in these product values is increasing. The consumers perceive more value elements related to design in the physical value in the group of the successful innovative products than the consumers' baseline analysis, i.e. Aesthetics, Differentiation, Uniqueness and Innovation. They can also recognise the additional value elements of Emotional Value, i.e. Independence and Sensuality. Regarding User Value, they can discern Role-Fulfilling and Self-Fulfilling more in the innovative products. Moreover, they recognise the importance of Product Accessories, Product Extendables, System Platforms and Product Supplements in the value of Support Product/Service System. The value elements of two product values are raised in the success group, i.e. Social and Eco Values. Regarding the un/less success group, the number of value elements is less or lower than the number of value elements in the success group and the baseline consumer perception.

According to this part of research, the samples (in total 500) were asked to prioritise the product values in five orders in both innovative product groups. The product values of the success group in the prioritized list is similar to the baseline consumer prioritization, but not in the same order. The product value prioritisation of the successful innovative products is: 1) Physical Value, 2) Emotional Value, 3) Functional Value, 4) User Value and 5) Support Product/Service System. This prioritized product value result is mapped with the identification of the identified value elements as mentioned in Table 4.2. The prioritized key value elements are:

- (1) Physical Value, i.e. Aesthetics, Good Quality, Appropriate to the Context, Enabling, Durability, Differentiation, Uniqueness, Innovativeness
- (2) Emotional Value, i.e. Independence, Security, Sensuality
- (3) Functional Value, i.e. Comfort, Safety, Ease of Use, Convenience
- (4) User Value, i.e. Efficiency, Role-Fulfilling, Self-Fulfilling
- (5) Supportive Product/Service System, i.e. Warranty, Product Accessories, Product Extendables, System Platform, Product Supplements

The consumers exactly prioritised the product values of both innovative product groups in particular order from 1 to 4, i.e. Physical Value, Emotional Value, Functional Value and User Value.

According to the buying decision model as shown in Table 3.15 and 3.16, this can summarise the patterns of the consumer's information processing when making buying decision:

- Considering overall related factors
- Focusing on significant factors in details
- Comparing all details thoroughly
- Prioritising from top to toe

It is also interesting to analyse buying decision model which is not a common representation for Thai consumers. The following models are not the main buying decision pattern: 1) Assessing the relations of various factors and 2) Fitting with all sequential criteria. This result suggests that the consumers have less set product criteria in their minds. To sum up, Thai consumers are inclusive and analytic, not structured and systemic when making buying decision.

4.2 Research Conclusion

This research focuses on the evaluation of critical success factors of innovative products at the product Level. It studied both company and consumer perspectives in Thailand. The results suggest the value curve and the level of the twelve product values of both perspectives on the groups of ten selected successful and un/less successful innovative products. The research also suggests the product value prioritization on both perspectives and the buying decision model on the consumer/customer perspective.

Regarding the analysis of the companies' interview, the following five values are the most significant, i.e. Emotional Value, Knowledge of the Company's Brand, Physical Value, Functional Value and Eco Value. Regarding the analysis of the consumer's baseline value curve in comparison with two groups of the innovative products, Functional Value, Physical Value and Support Product/Service System are critical success factors of the innovative product value curve. This suggests that to design value curve of twelve product values for new development of innovative products, these three values must be in the level of the most significant level (3.5 – 4). It is unlikely to be un/less successful if these values do not reach the highest level. Any of product values could not be eliminated or reduced lower than the consumer's baseline value curve. According to the research result, the value curve of the un/less

successful innovative products are higher than the consumer's baseline value curve, but not higher than the value curve of the successful innovative product group in all product values. Apart from the three critical product values, the other values could be reduced in the range, not lower than the consumer's baseline value curve; or raised, higher than the successful innovative product value curve. The value curve of innovative products should have twelve product values. New product value could be added on the twelve-variables value curve to create the distinctive value. To sum up, the success of innovative products need to balance between the companies' identity and the consumer's required critical product value. In this research, companies must promise the critical three product values for their customers, i.e. Physical Value, Functional Value and Support Product/Service System. If these values do not reach consumers' expectations, it is unlikely that innovative products will be successful, in particular in Thai consumer market. Apart from these product values, companies can add other product values to build product recognition and brand royalty, such as Emotional Value, Brand Recognition and Eco Value.

As summarised on the previous paragraph, three product values are critical success factors. These values need to be maintained at the most significant level. The research identifies the value elements of each critical product value by the identification of their significant level, in particular on the consumer perspective. It identifies significant levels on both 300 consumers' baseline analysis and 500 consumers' perspectives on both innovative product groups. The result suggests that the most significant level of value components evaluated by the consumers. As the analysis shown in Table 4.2, it suggests that the group of the successful innovative products tends to provide much more value elements/components than the baseline consumer's expectations. The group of the un/less successful innovative products tends to offer by far much less value components than the baseline consumer's expectations. Focusing on the critical product values, i.e. Functional Value, Physical Value and Support Product/Service System, the value components of the group of the innovative product success have equal to or much more than the baseline consumers' expectation. To sum up, companies need to evaluate all value components, in particular on the critical product values when evaluating innovative products along new product development process. These value elements are critical as the research result clearly shows.

According to value prioritisation on both companies' and consumers' perspectives, five prioritized product values are varied as shown in Table 4.3

Table 4.3: Value prioritisation on four views, from 1 to 5

Priority	Company View		Consumer View		
	Success	Failure	Baseline	Success	Failure
1	Functional	Functional	Functional	Physical	Physical
2	Brand	User	Physical	Functional	Functional
3	Eco	Physical	User	Emotional	Emotional
4	Physical, User	Competitive product	Emotional	User	User
5	Emotional	Emotion, Brand	Support System	Support System	Social

Remark: 1 = The first priority – 5 = The fifth priority

The prioritization of five product values on both perspectives is not in the same sequence. The following product values are present in both perspectives, not in particular order, i.e. Functional Value, Physical Value, User Value and Emotional Value. The following prioritization of both perspectives in a particular order, from 1 – 5, is

- (1) Functional Value
- (2) Physical Value
- (3) User Value
- (4) Emotional Value
- (5) Brand Value, Eco Value, Competitive Product, Support System or Social Value

This prioritization suggests that product-focused approach is the first priority. The second priority is user-focused approach. The third priority is the context-focused approach.

According to the research of the buying decision model on the consumer's perspective, the result suggests that Thai consumers tend to be inclusive and analytic. When they make buying selection, a majority of them consider overall related factors and focus on significant factors in details. They tend not to be

structured and systemic. They do not have sequential criteria in their mind and assess the relations of various product factors.

4.3 Recommendation

For future research, it would be very interesting to bring this twelve product value framework and research methodology to evaluate the baseline customer's product value in different countries. This will help understand value curve of consumers' expectation in product values around the world. The applications of this understanding will help transnational and local companies to create innovative products that will locally fit with a diversity of consumers' values around the world. They will also help create innovative product value evaluation framework for new projects in order to measure the possibilities of their success. This framework might be used as innovative product prediction model. Moreover, if innovative products tend to be introduced new value curve or emphasized on new significant product value, different from consumers' baseline perception, they must be carefully planned change and communication implementation programmes in parallel with the development of new one. According to this research, there are possibilities to manipulate some evaluated product values, especially at the significant level.

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