Evaluation Differences Between Goods and Services:

The Role of Product Intangibility

by

Einar Breivik

Dissertation submitted to the Institute of Marketing at the Norwegian School of Economics and Business Administration in partial fulfilment of requirements for the degree of dr. oecon.

November 1995

Abstract

This work considers services marketing theory regarding consumer evaluations. A common assertion within the services marketing literature is that services are more difficult to evaluate than goods. Part of this work examines this assertion by theoretical and empirical means. Several evaluative dimensions are examined (perceived evaluation difficulty, perceived processing effort, certainty of evaluation, predictive ability and the use of information sources). The results suggest that consumers do not find services more difficult to evaluate than goods.

A second purpose of this study was to investigate evaluative effects of product intangibility. Product intangibility is conceptulised as a three-dimensional construct. The three dimensions are: abstractness, generality and lack of pre-purchase inspection possibilities. The results support this multi-dimensional conceptualisation of the product intangibility construct. Also, the results suggest that the different intangibility dimensions give rise to different effects with respect to consumers product evaluation. Abstractness has a negative influence over perceived evaluation difficulty, whilst generality has a positive influence over perceived evaluation difficulty. The effects regarding the use of information sources exhibited an opposite pattern, where the abstractness dimension supported predictions made in the services marketing literature, whilst the generality dimension opposed these. No effects related to the evaluative dimensions are found with respect to lack of pre-purchase inspection possibilities except for the use of a couple information sources.

In view of the observed results a distinction between goods and services based on consumer evaluations is questionable.

Acknowledgement

I wish to acknowledge my supervisor, professor Sigurd Villads Troye, for help, guidance and his always interesting and stimulating arguments throughout this work. Additionally, his friendship has been greatly appreciated.

I am grateful to professor Kjell Grønhaug and professor Roy Howell for numerous comments, suggestions and discussions as well as their continuous encouragement.

A special thanks to Ansgar Pedersen who greatly influenced the decision of proceeding with this work. It has been several interesting years.

I appreciate the encouragement, support and guidance offered by people at the institute of marketing. Special thanks are due to Alhassan G. Abdul-Muhmin, Rune Lines, Olav Kvitastein, Aksel Rokkan and Inge Jan Henjesand for interesting discussions, advice and suggestions.

A number of individuals have assisted me in several stages of writing this dissertation. Stein Tingstad assisted in the data gathering process. Alhassan and Leif Hem have done a tremendous job in coding the data. Alhassan and my brother, Lars Breivik, have assisted in proof-reading the manuscript. None of the above are responsible for errors and mistakes found in this dissertation. The responsibility is mine, and mine alone.

Finally, very special thanks are due to my family. Without their support the work with this dissertation would have been impossible. My father, brother and Hanna have been a great support throughout the work with this dissertation. Most importantly, Hanna and Lise have been a constant reminder of a life away from that of writing a dissertation. For this I am very grateful.

Bergen, November 1995 Einar Breivik

To the memory of my late mother, Edny Asbjørg Breivik (1942 - 1992)

TABLE OF CONTENTS

List of Tables

List of Figures

Chapter 1. Introduction

The objective of this dissertation is to examine differences in consumer's evaluations of services as compared to goods. The services marketing literature suggests that services are perceived as more difficult to evaluate and riskier to purchase compared to goods (McDougall & Snetsinger 1990), and consequently consumers respond in several ways. These responses include avoiding brand switching, relying on personal information sources, and assessing quality based on price and physical facilities. However, there are only a few empirical and theoretical contributions that have thoroughly addressed the issue of evaluation differences between services and goods.

1.1. Background

Services marketing has become an important research area within the marketing discipline. A substantial part of the work in services marketing has been concerned with the development of conceptual models emphasising managerial implications. The managerial emphasis in the services marketing literature is evident in studies of service quality control (Parasuraman, Zeithaml & Berry 1985), organisational culture (Grönroos 1984, Lovelock, Langeard, Bateson & Eiglier 1988), and human resource management (Normann 1983, Grönroos 1984). Considerably less attention has been directed towards understanding the service consumer, although some studies have also investigated aspects of consumer evaluation processes (Zeithaml 1981, McDougall & Snetsinger 1990, Murray 1991, Hartman & Lindgren, Jr. 1993). This lack of interest in the differences between how consumers evaluate physical goods compared to services is somewhat surprising, given the common assumption that the evaluations of goods and services differ due to inherent product[1] characteristics.

[1] Throughout this dissertation the term product includes both goods and services.

A substantial part of the service literature is concerned with identifying unique characteristics that distinguish services from goods. Several classification criteria have been suggested, such as intangibility, inseparability of production and consumption, and incapability of being stored and transported (Normann 1983, Uhl & Upah 1983). Furthermore, the labour intensity of services result in variability and inconsistencies (Friedman & Smith 1993). This heterogeneity of services requires special attention from service suppliers with respect to quality control (Parasuraman, Zeithaml & Berry 1985).

The central concept distinguishing services and goods is intangibility (Shostack 1977), and it has been argued that all of the other unique characteristics or problems of services stem from their intangibility (Bateson 1979). From a consumer perspective the intangibility of services reduces the possibility of inspecting relevant attributes prior to purchase, with the result that relevant information is less accessible (Bateson 1979, Zeithaml 1981). This leads directly to the conclusion that services are more difficult to evaluate than goods (Zeithaml 1981, McDougall & Snetsinger 1990, McDougall 1987, Murray & Schlacter 1990, Murray 1991), with accompanying consequences with respect to evaluation processes, such as differences in the use of information sources, the use of cues, perceived risk and brand loyalty.

1.2. Research Objective

The services marketing literature reasons that the evaluation of services is more difficult than the evaluation of goods. The main purpose of this dissertation is to examine the validity of this assertion, including the theoretic foundations of propositions, which have been derived with this fundamental assertion as a basis. Based on theories from consumer behaviour and cognitive psychology the rationale for the hypotheses is developed and evaluated.

A general illustration of the approach underlying this dissertation is presented in figure 1.1, where goods and services are expected to produce differences with respect to aspects of evaluation.

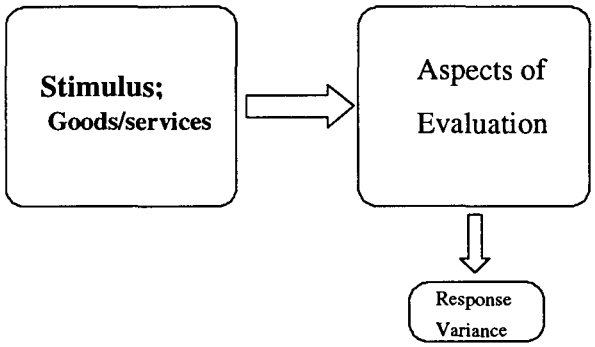


Figure 1.1. Approach of the Study

Two main research questions are addressed in this dissertation. The first research question is as follows;

RQ 1: Can the good / service typology explain differences in consumers' product evaluation?

This involves an examination of the product typology of goods and services, and the evaluative consequences implied by the service/good typology. The theoretical underpinnings of the proposed differences between goods and services with respect to evaluation are discussed and evaluated. The validity of the proposed evaluation differences are addressed, based on cognitive psychology and theories in consumer behaviour. Finally, potential evaluation differences are assessed empirically.

The second research question concerns product intangibility. The special focus on product intangibility follows from the central role this dimension has been given in the services marketing literature (Bateson 1979, Zeithaml 1981). The focus on intangibility also follows from Levitt's (1981) suggestion that marketers should focus on marketing of intangibles and tangibles instead of marketing of services and goods. Thus, the second research question is:

RQ 2: How does product intangibility affect product evaluation?

This research question implies an examination of the content and conceptualisation of product intangibility. Furthermore, consequences of product intangibility with respect to evaluative dimensions are addressed and evaluated.

1.3. Significance of the Topic

There are both theoretical and practical reasons for studying evaluation differences between goods and services. From a theoretical viewpoint there is a need to verify whether separate traditions/ perspectives on service evaluation are necessary. Since generality is acknowledged as a desirable property of a theory (Troye 1994), the differences in evaluation of services and goods should be substantial in order to justify separate treatment. A test of the assumption made in the services marketing literature is therefore both necessary and useful for further theoretical developments. Another reason for studying differences in evaluation between goods and services is the possibility of identifying more basic and general factors beyond the simple product typology that may influence product evaluations. The analysis of product characteristics underlying the good/service typology might enhance theory of consumers' product evaluations.

Practitioners would also benefit from knowing whether service evaluations present special problems with respect to marketing strategy. The services marketing literature suggests several aspects of marketing strategy that are different for services as compared to goods (Murray 1991, Zeithaml, Parasuraman & Berry 1985). The propositions in the services marketing literature regarding heightening pre-purchase uncertainty, perceived difficulty, and heterogeneity associated with services, require special service strategies focusing on risk reduction and simplification on behalf of the service consumer. Furthermore, services are thought to require special communication and production strategies. Most of these consequences are already addressed in the services marketing literature, and different practices

for services are found (Zinkhan, Johnson & Zinkhan 1992) or proposed (van Doren & Relle 1987) among practitioners.

1.4. Organisation of the Dissertation

Chapter 2, 3 and 4 are devoted to theoretical discussion and hypotheses development. A summary of the hypotheses is presented in chapter 5. The methodology and the research design are presented in chapter 6, whilst chapter 7, 8 and 9 include analysis and discussion.

Chapter 2 presents two approaches to classify goods and services, and a brief summary of the evaluative consequences produced by this typology. Chapter 3 considers product intangibility. Evaluative dimensions are presented and discussed in chapter 4. Also, chapter 4 contains a theoretical discussion of consequences of intangibility and "serviceness" on product evaluation including directional hypotheses. The hypotheses are summarised in chapter 5. Chapter 6 addresses general design and measurement considerations. The outline of the experimental design and the measurement of the included variables are presented and discussed. The analyses are presented in chapter 7. The analyses are performed using LISREL (Jöreskog & Sörbom 1989) and both measurement models, two-groups analyses and structural models are presented in this chapter. Chapter 8 contains a discussion of the results from this study and suggestions regarding managerial implications and future research. Finally, a critical assessment of the good/service typology is included in chapter 9.

Chapter 2. The Classification of Goods/Services

A substantial part of the services marketing literature has been concerned with the ways in which services differ from goods. This section addresses two classification approaches, non-empirical based classification and empirical based classification. Finally, this section includes a brief presentation of proposed evaluative consequences of the good/service typology.

2.1. The Classification of Goods/Services

The distinction between goods and services is used in several situations. The use of this distinction is evident in public statistics, marketing, production, management, etc. In the classic article, "Breaking Free from Product Marketing", Shostack (1977) claimed that services required a mirror-image view of conventional product practices. Services marketing had to develop theories different from those existing for conventional goods-focused marketing in order to be successful and effective. Since then services marketing has been established as a sub-discipline within marketing with specific service-theories and research agendas. Although several authors have been critical of this typology (Wyckham, Fitzroy & Mandry 1975, Troye 1979, Murphy & Enis 1986, Troye & Wilcox 1988), it has survived as a frequently used product typology in the marketing literature.

The following four product characteristics are regarded as most important for distinguishing services from goods; intangibility, heterogeneity, simultaneity of production and consumption and perishability (Zeithaml et al. 1985). Product intangibility is frequently used in the services marketing literature as a distinguishing characteristic of services, and has also been considered to be the most important criterion (Shostack 1977, Bateson 1979, Zeithaml et al. 1985). Based on the notion of intangibility, several implications with respect to services are derived.

It is suggested that services are more difficult to evaluate (Bateson 1979, Zeithaml 1981), that services contain simultaneous production and consumption (Bateson 1979), and that quality control is more difficult for services than goods (Bateson 1979, Zeithaml et al. 1985). Bateson (1979) argues that all the unique challenges in the managerial processes of services stem from their intangibility. Services are associated with more heterogeneity introduced by the human dimension in the service encounter. Employees cannot be managed through assembly-lines and industrial control systems, which result in inconsistencies in the service offering. This variability causes special problems for quality management. Since services do not exist at the point of purchase they have to be produced and consumed at the same time. This simultaneous consumption and production also imposes special problems with respect to quality management. Finally, the perishability of services implies that services cannot be stored, with the consequence that demand fluctuations impose special problems for services management.

In comparisons between goods and services two different approaches are used to select services and goods. In the first approach the researcher selects services and goods based on a more or less ad-hoc evaluation of whether a product is a good or a service. The included services possess a certain face validity, since the services commonly are thought of as intangible, while the goods appear to be tangible. Frequently additional arguments are made in order to demonstrate that the included service examples are more heterogeneous, perishable, and are produced and consumed at the same time, while the opposite is said to be the case for the included good examples. The conceptual contributions in the services marketing literature naturally take this approach, but also empirical studies have used this approach (see McDougall 1987, McDougall & Snetsinger 1990, Guseman 1981). The ad-hoc nature of this approach is a severe weakness, since there exists no firm logical or theoretical base for the classification.

The other approach, which is dominating in the empirical studies, is to empirically determine goods and services (e.g. Iacobucci 1992). The researcher provides respondents with instructions that will either include the classification criteria (Murray 1991) or just ask the

respondents to come up with a rating without further instruction (Iacobucci 1992). The respondents rate products according to their serviceness levels. Based on these results one good and one service sample are selected for the final study. This approach has been used by several researchers (i.e. Murray & Schlacter 1990, Murray 1991, Hartman & Lindgren, Jr. 1993), and surmounts some limitations associated with the more ad-hoc approach described above.

2.2. The Service/Good Typology and Product Evaluation

The services marketing literature has also addressed consequences of the service/good typology. Conceptual contributions concerned with the differences between goods and services in terms of consumer activities conclude that services are more difficult to evaluate compared to goods (Zeithaml 1981, Bateson 1979). Zeithaml (1981) indicated several differences in the consumers evaluation process of services regarding use of information sources, use of cues, size of evoked set, product adoption, perceived risk and brand loyalty. McDougall & Snetsinger (1990) also proposed a number of differences in the evaluation process of services, which are illustrated in figure 2.1.

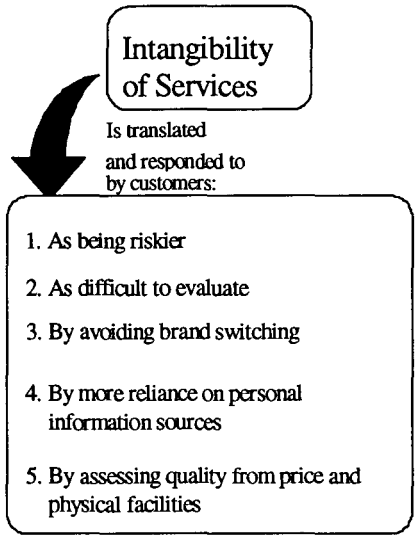


Figure 2.1. Consequences of the Intangibility of Services (after McDougall & Snetsinger 1990)

Empirical contributions concerning differences in the evaluation processes between goods and services have examined different aspects of evaluation, such as risk perception, use of information sources (Murray & Schlacter 1990, Murray 1991), and ease of evaluation (McDougall 1987). The studies on risk perception and use of information sources received empirical support (Murray & Schlacter 1990, Murray 1991), while the studies regarding ease of evaluation only received mixed support (McDougall 1987, McDougall & Snetsinger 1990). The present study focuses on a selected number of the above mentioned evaluative dimensions. The included variables are; ease of evaluation, certainty in evaluations, use of surrogate criteria, use of information sources, and predictive ability. These evaluative dimensions are presented and discussed in chapter 4.

Chapter 3. Product Intangibility

In the literature intangibility has been treated in various ways. Intangibility is often not defined explicitly (see appendix A) and in most cases a number of examples provide an intuitive understanding of the concept. Product intangibility is frequently argued to be the most important classification characteristic, and some even argue that this is the most basic classification characteristic in the service/good typology, since all the other characteristics can be derived from this characteristic (Bateson 1979). Thus, a special focus on intangibility is justified since intangibility as a product dimension may reveal more general implications for product evaluation reaching beyond the simple service/good typology.

According to the Webster Reference Dictionary (1983) tangibility is defined in two ways. First as "capability of being touched or grasped" and second as "capability of being possessed or realised by the mind". The first definition is used most frequently in services marketing, and serves frequently as the basis for defining intangibility. Hirschman's (1980) definition of tangibility where an attribute is defined as tangible when it is accessible through the senses, is an example such a definition. Other contributions within the services marketing literature, where services, which are intangible, cannot be judged using the five senses (Zeithaml et al. 1985, Shostack 1977, Rushton & Carson 1985) also follow the same basis for defining intangibility. Bateson (1979) expands the intension of the intangibility concept to also include Webster's second notion of tangibility. He suggests that intangibility in addition to the impalpable aspect referring to the physical evidence of the product, also includes a mental component. This implies that intangible products (or services) are difficult to "grasp" mentally for the consumer. This mental component produces a "fuzzy" image of the product, which in turn may lead to variability in the level of intangibility for the same product across consumers (McDougall & Snetsinger 1990).

There is a fairly high degree of consensus regarding the first definition of intangibility in the services marketing literature. However, the lack of explicit definitions and operationalisations of the concept results in the inclusion of different dimensions in the concept. Intangibility has

been defined to include aspects such as touchability (Flipo 1988), accessibility (to the senses) (McDougall & Snetsinger 1990), uniqueness or "fuzziness" of mental images (Bateson 1979), abstractness/concreteness and specificity (Dubè-Rioux, Regan & Schmitt 1990) and complexity (McDougall & Snetsinger 1990). This confusion calls for a discussion of the content of the intangibility concept, addressing aspects such as dimensionality and empirical operationalisation, where a careful demarcation of the concept in relation to other concepts, like complexity and ambiguity, is offered in order to establish discriminant validity.

3.1. The Concept of Product Intangibility

In order to define the concept of intangibility it is necessary to discuss the intension of the concept. As demonstrated in the previous discussion there are several notions of intangibility or tangibility that are discussed in the literature. Tangible information is said to be objective, verifiable (Friedmann & Lessig 1987, Darley & Smith 1993), physical (material body) (Finn 1985), object related (Finn 1985), specific (Dubè-Rioux et al. 1990, Reynolds & Gutmann 1984), simple, easily accessible (McDougall 1987), possible to be subjected to pre-purchase evaluation (Zeithaml 1981), while the opposite is said to be true for intangible information. Some of these distinctions are related to philosophical discussions on perception and objectivity/subjectivity.

The philosophical debate on the perception and "the External World" might serve as a useful starting point for understanding the concepts of tangibility and intangibility. Although not entirely undisputed, there appears to be a fairly high degree of consensus on "the External World" as something that we perceive through our senses (see Flew 1989, Ch.10). For this purpose, however, I will draw the attention to different forms of perceptions.

The passage from Locke's Essay (see Flew 1989, pp 332 - 333) quoted below suggests two different forms of perceptions.

«Whatsoever the mind perceives in itself, or is the immediate object of perception, thought, or understanding, that I call *idea*; and the power to produce any idea in our mind I call *quality* of the subject wherein that power is. Thus a snowball having the power to produce in us the ideas of white, cold and round, - the power to produce those ideas in us, as they are in the snowball, I call qualities; and as they are sensations or perceptions in our understandings, I call them ideas....

Qualities thus considered in bodies are, first, such as are utterly inseparable from the body, in what state soever it be, and such as in all the alterations and changes it suffers, all the force that can be used upon it, it constantly keeps; and such as sense constantly finds in every particle of matter which has bulk enough to be perceived; and the mind finds inseparable from every particle of matter though less than to make itself singly perceived by our senses..... These I call *original* or *primary qualities* of body, which I think we may observe to produce simple ideas in us, viz. solidity, extension, figure, motion or rest, and number.

Secondly, such qualities which in truth are nothing in the objects themselves but powers to produce various sensations in us by their primary qualities, i.e. by the bulk, figure, texture, and motion of their insensible parts, as colours, sounds, tastes, etc. These I call *secondary qualities....* »

(Passage from Locke's Essay, see Flew 1989 pp 332-333)

Locke states that an object contains some qualities which are capable of producing ideas in a subject. In our context the different qualities of the object might be translated into different attributes of a product. The important aspect here is the manner in which the qualities are tied to the object. The primary qualities correspond to attributes found in all kinds of products, while the secondary qualities refer to attributes that reflect some sort of inferences based upon the primary qualities. Primary qualities, such as figure, motion or rest, and solidity, have power to produce various sensations (secondary qualities) such as colours, sounds, tastes.

While Locke's distinction between primary and secondary qualities reflect perceptions of some objects, Berkeley proposes that all that we can perceive depends on the "perceiver". The paragraph below stresses the role of the perceiver in perception.

«But besides all that endless variety of ideas or objects of knowledge, there is likewise something which knows or perceives them, and exercises divers operations, as willing, imagining, remembering about them. This perceiving, active being is what I call *mind, spirit, soul* or *myself.* By which words I do not denote any one of my ideas, but a thing entirely distinct from them, wherein they exist, or, which is the same thing, whereby they are perceived; for the existence of an idea consists in being perceived.»

(From Berkeley's The Principles of Human Knowledge, see Flew 1989 pp 339-340)

The essence of Berkeley's argument is that it does not make sense to talk of a sensible idea existing unsensed (Flew 1989). Furthermore, Berkeley makes an interesting distinction between *real things* and *images of things* in the following paragraph:

> «... whatever power I may have over my own thoughts, I find the ideas actually perceived by sense have not a like dependence on my will. When in broad daylight I open my eyes, it is not in my power to choose whether I shall see or no, or to determine what particular objects shall present themselves to my view; and so likewise as to the hearing and other senses, the ideas imprinted on them are not creatures of my will. There is therefore some other will or spirit that produces them.
>
> The ideas of sense are more strong, lively, and distinct than those of the imagination; they have likewise a steadiness, order, and coherence, and are not excited at random, as those which are the effects of human wills often are, but in a regular train or series, the admirable connexion whereof sufficiently testifies the wisdom and benevolence of its Author. Now the set of rules or established methods, wherein the mind we depend on excites in us the ideas of sense, are called the *Laws of Nature*: and these we learn by experience, which teaches us that such and such ideas are attended with such and such other ideas, in the ordinary course of things.
>
> The ideas imprinted on the senses by the Author of Nature are called *real things*: and those excited in the imagination being less regular, vivid and constant, are more properly termed *ideas*, or *images of things*, which they copy or represent. but then our sensations, be they never so vivid and distinct, are nevertheless *ideas*, that is, they exist in the mind, or are perceived by it, as truly as the ideas of its own framing ....»
>
> (From Berkeley's The Principles of Human Knowledge, see Flew 1989 pp 341)

In the paragraph above Berkeley refers to «ideas» imprinted on the senses by the «Author of Nature» as «real things». In other words real things may be seen as analogous to physical properties that are present in an object. Images of things on the other hand occur on a less regular basis and are more dependent on the individual. Thus, although Berkeley argues that everything depends on the perceiver, the most interesting aspect of the argument in this context would be the distinction between different forms of ideas, where real things seem closely associated with some kind of object, while the association between the object and images of things is more indirect and more associated with the subject perceiving the object.

The different forms of perceiving objects are associated with different processing forms. The conception of secondary qualities proposed by Locke implies that perceptions are "brought" on to the person by an object[1]. This form of perception processing can also be referred to as bottom-up (Goldman 1986), since information flows from perceptual pieces to larger units

[1] Thus Locke's conception of perception of secondary qualities would be associated with "the Causal Theory of Perception", while the perception of primary qualities resembles "the Representative Theory of Perception", since the sensory impressions only resemble or are merely representations of the objects (Flew 1989).

that build on them (production capability)[2]. Berkeley's images of things are more dependent on human will, and thus cannot be said to be brought on by an object. This would be a case of top-down processing in the psychological literature. Top-down processing refers to a process where higher-level beliefs, or background beliefs, influence the interpretation of low-level perceptions. This view reflects for instance Kuhn's contention that scientists with different theoretical "paradigms" see things differently (Goldman 1986, Troye 1994). This point is further illustrated through our use of metaphors, which direct the attention (or in this case the perception) to different, but known, variables and processes (Einhorn & Hogarth 1982). This distinction between bottom-up and top-down processing (data-driven vs. conceptually (or theory) driven processing in psychology) can be useful in understanding evaluation differences between tangible vs. intangible stimuli. Given the physical properties of tangible attributes the former processing mode is related to tangible stimuli and the latter to intangible stimuli.

The difference between tangibility and intangibility can be argued to be one of objectivity vs. subjectivity. Tangible information is said to be physical characteristics, and thus verifiable and objective, while intangible information is not. A discussion of objectivity vs. subjectivity might shed light on whether such a distinction is justified. The concept of objectivity often reflects different meanings and content. Objectivity is discussed in relation to the researcher, the object, the context (environment) or the methodology in the social sciences (e.g. Troye 1994). Different meanings or senses of objectivity can be neutral (not value laden), assumption free, and reproducible (e.g. explicit, verifiable etc.) amongst others (Troye 1994, Bergström 1972). Also the concept of subjectivity has different meanings and in the following discussion I will contrast some senses of subjectivity with objectivity (see Sabini & Silver 1982). The first sense of subjectivity[3] infers that everyone's (anyone's) view of a specific object is subjective. This concept of subjectivity is based on the notion that we all have to observe the world through our senses, and hence our perceptions must be subjective (note the

---

[2] Glass & Holyoak (1986) suggests that the defining property of a bottom-up process (in a strict sense) is that "*the outcome of a lower step is never affected by a higher step in the process*".

[3] Both the subjective and the objective sense of point of view can be related to the philosophical discussion of the "External world". The subjective point of view is in line with the general arguement of Berkeley, while Locke's arguement opens up for both a subjective and an objective point of view.

close resemblance with Berkeley's argument). Conversely, the objectivity point of view asserts that another person will see the same from the same position[4]. The subjectivity and objectivity points of view are linked to the top-down vs. bottom-up processing forms, where both forms of processing necessarily have to be subjective according to the subjectivity point of view. However, only the data-driven processing form can be said to have an objective foundation (all people can see the same physical appearance from the same position or angle) based on the notion of objective point of view.

A third sense of subjectivity is the one of distortion of reality (Sabini & Silver 1982), where subjectivity is thought of as defective. Following this perspective on subjectivity we should aim at objectivity in evaluations, descriptions, opinions, and so forth. This perspective can be found in the services marketing literature, where evaluation of services as compared to goods is considered more difficult[5], due to the lack of objective, verifiable attributes (often physical).

The fourth and fifth sense of subjective are concerned with the subjectivity of ends and objectivity of means suiting ends (Sabini & Silver 1982). The former sense refers to the subjective meaning that is related to a person's motives, goals, ends, purpose, and the like. The same object may have different meanings for different persons depending on the interest of persons perceiving the object. A hotel may look different from the perspectives of a guest, an employer, an employee, and a designer, depending on the interest the different people have in relation to the hotel. On the other hand, the means of accomplishment may be objective given the end. This implies that claims about a subjective view are treated as objective. For example, a person could claim that spending the night at a hotel is to permit the person to sleep through the night comfortably and in quiet surroundings. These claims would be treated as objective since they fit the subjective goal of the person. Objectivity in this sense does not necessarily imply that the claims are correct, the person might be in error regarding the subjective meaning to him or her (Sabini & Silver 1982).

---

[4] The reproduceability or verification notion of objectivity previously mentioned, refer to the same form of objectivity.

[5] The lack of objective evidence is assumed to distort our evaluation and the difficulty arise since it is more difficult to make an objective evaluation.

The sixth sense of subjectivity parallels the third sense, and is the bias of subjectivity. In this sense subjective judgements are distorted, biased, or confused because of the values or goals of the actor. Conversely, objective judgements are guided by the appropriate goals or values[6].

The above listed arguments can be useful in the discussion of two central concepts; evaluation and ambiguity. People often tend to view evaluations as something subjective, while descriptions are felt to be objective. However, as the discussion above points out there exits no single contrasting sense of subjective and objective. An evaluation, just as a description, will necessarily be subjective according to the first point of view sense of subjectivity, but might as well be objective according to the objectivity of point of view. For instance, an evaluation such as «that is a poor chess move» does not mean anything to a person not familiar with chess. After teaching this person chess he/she would have the same position as we had (point of view). In obvious cases such as situations when the opponent is allowed to fork one's king and queen we would could claim that the evaluation above should be treated as objective. Furthermore, a description just as an evaluation might be distorted or biased. Clearly there exists no absolute dichotomy where we can set something to be objective and another thing as subjective, and the difference may therefore be approached more fruitfully as a matter of degree. As an example, the difference between a description (at least of a physical property) and an evaluation is that the former is based on recognition while the latter requires interpretation. Interpretation suggests that there might exist different accounts for the same act dependent on the interpreter's point of view. Furthermore, different acts may be interpreted as related to the same end. Thus, a description can be said to be objective while interpretation often is considered to be more subjective. Inherent in this subjective notion is the role of difference in perceptions, judgements and interpretations across individuals, as opposed to shared understanding. There is no unique one-to-one relationship between the object that is subjected to interpretation[7] and the accounts giving rise to this interpretation.

[6] The example used by Sabini & Silver (1982) is the case of a judge that is asked to hear a case in which the defendant is his wife's paramour. Because of the judge's likely purpose - revenge - he is likely to err in his treatment of the defendant. The conflict between the subjective purposes the judge may have, and the interest he ought to have; procedural justice, makes this a subjective bias. As can be seen from this case the objective view does not imply no personal interest in the case, but it requires the the interest to be appropriate in order to make the judgment objective.

Different people see different things (point of view), want different things (given their values), and so on.

Ambiguity leads to a failure of consensus, difference, and should thus be subjective (Sabini & Silver 1982). To say that something is ambiguous is often to say that one would not commit oneself to a judgement given the facts at hand, which implies that the evidence is inconclusive. Although this indeterminacy seems subjective[8], it might be objective since everyone given the same facts might reach the same conclusion (or absence of conclusion), and thus it would be objective according to a objectivity point of view.

Figure 3.1 presents an attempt to integrate objective and subjective points of view. The object, or product, consisting of features and attributes is one source of input to a perceptual system. These features or attributes can be verified by inspecting the product, and since different people should be able to see the same, this corresponds to an objective point of view. The subject with his/her motives, purposes, values, goals and expectations is the other main factor influencing the perceptual system. Different values, expectations, etc., filter the perception. This filter causes a perceptual bias or a subjective point of view. Thus both the object and subject are inputs into the perceptual system. The output from this perceptual system would be the perceived attributes. These attributes would then be subject to an evaluation and are labelled evaluated attributes in figure 3.1.

[7] Sometimes people might differ in their description of an object (ex. the wall is green vs. the wall is red). This disagreement does not reflect different points of view, but disagreement about the nature of the object. Most people would in this case suggest that someone has offered a wrong description. Thus, difference does not necessarily imply subjectivity from this perspective.

[8] According to most of the presented perspectives on subjectivity.

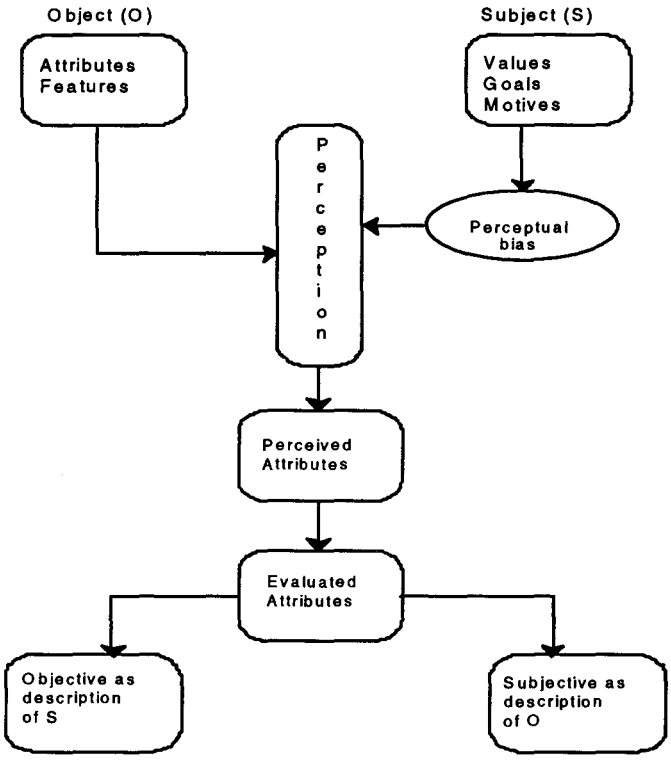


Figure 3.1. Objective and Subjective Accounts for Product Evaluation

The evaluated attributes can then be seen either as an objective description of the subject (S) or as a subjective description of a product (O). The objective description of the subject reflects the fifth sense of subjectivity, where the evaluated attributes are objective means to accomplish a subjective goal or motive of the subject. On the other hand, the evaluated attributes must necessarily be a subjective description of the object since motives, expectations, etc., are subjective and specific for the subject. The following example contains an illustration of several concepts presented in figure 3.1.

A toy, such as a lego-figure, might be used as an example to illustrate the different concepts presented in figure 3.1. A Lego-giraffe possesses the following characteristics: lego-system, mainly yellow with some black parts, image of a giraffe (including features like long neck, long legs, eyes, ears, etc.). All these characteristics are features of the object, lego-giraffe. The individual who perceive this object might not be aware of Lego, and thus his perception is filtered by a perceptual bias, lack of experience with lego. As a consequence the lego-figure is perceived as just a copy of a giraffe. The person might not like animals at all, and he or she is not at favourable to the lego-figure. The lack of liking of this lego-figure is an objective description of the person. It is not, however, an objective description of the object. Instead it is a subjective description of the object, influenced by the experience and preferences of the perceiver.

The model and the discussion show that there are both objective and subjective accounts of product evaluations. A central point stressed in the earlier discussion is the role of difference across individuals in order to understand subjectivity. A motive, goal, perceived attribute, etc., is subjective if it is unique to an individual. This implies that subjective statements or meanings differ across individuals, while objective statements/descriptions are based on common ground. Thus, observed variations in objective statements, etc., reflect either object variations or some sort of error (e.g. a person does a mistake and classify a red object as blue).

A parallel to this understanding of objectivity/subjectivity can be found in the psychological scaling literature. A central topic in the psychological scaling literature is where to attribute the variation. In psychological scaling one is interesting in measuring attributes or abstracted properties, concerning objects, subjects or responses (Garner & Creelman 1967). A simplified description of this problem would be that the observed variation is a function of the variation associated with the object and variation associated with the subject[9], with a function of the following form;

Observed variation = f(object variation (OV), subject variation (SV))

[9] There is also possible to imagine an interaction between OV and SV as a third source of variation, and the functional form is illustrated below;

Observed variation = f(OV, SV, Interaction between OV and SV ($I_{OV,SV}$))

The scaling of $I_{OV,SV}$ is referred to as response scaling, which is an intermediate form of scaling between object and subject scaling. Measurement variation can also be attributed to the context, responses, task, interviewer, and so on. For the present purpose, however, only the object and the subject are necessary.

As can be seen from the function above variation can be attributed to both the object and the subject. Individual differences will then occur as subject variation, while object variation reflects variation in stimulus. Variations with respect to tangible attributes should then be associated with object variation (OV), while variations of intangible attributes, given the same stimuli, should be reflected in the subject variation (SV).

The above has brought up several important aspects concerning the definition of tangibility and intangibility. Differences with respect to perception modes and whether attributes are object vs. subject referent are important in the discussion of intangibility. Although most contributions within the services marketing literature have touched the above issues, only a few have given these issues a thorough treatment. A review of the literature is presented in appendix A. The most frequently cited definition of tangibility, and thus of intangibility as the opposite, is based on the notion «accessibility to the senses» described earlier (e.g. Hirschman 1980). This definition is based on the discussion of object vs. subject related attributes, and seems closely associated with the previous discussion on objectivity and subjectivity with the accompanying perception modes. However, the review of the literature suggests that product intangibility may be a multi-dimensional concept. Dubè-Rioux et al. (1990) divided product intangibility into two dimensions. The first dimension is based on the «accessibility to the senses» notion presented above, and was labelled the concreteness - abstractness dimension. We will return to the rationale behind this label in the forthcoming discussion.

The second dimension of product intangibility suggested by Dubè-Rioux et al. (1990) is based on the level of specificity conceptualisation taken from the categorisation literature (Rosch 1978), where tangible attributes or products were identified as more specific than intangible attributes. This dimension is related to the first dimension (Dubè-Rioux et al. 1990). Both concrete and specific attributes will tend to be more object related than abstract and general attributes and thus these two dimensions are not independent of each other. However, the match between these two dimensions is not perfect, which is demonstrated in the manipulation check in Dubè-Rioux et al.'s study.

A third dimension of product intangibility is implied in the services marketing literature (Zeithaml 1981). This dimension classify whether products consist mainly of search, experience and credence attributes. Intangible products are proposed to contain more experience and credence attributes.

Based on the above discussion we have chosen to focus on three dimensions of intangibility. The first, and perhaps the most important, dimension of intangibility is labelled abstractness. This dimension implies that attributes (or products) may vary from concrete (tangible) to abstract (intangible). The second dimension also addressed in the literature is specificity (see Dubè-Rioux et al. (1990)), which often is treated as equivalent to the abstractness dimension (see Johnson & Fornell 1987). Tangible attributes are defined as specific, while intangible attributes are general. A third dimension, which is implied in the service literature (Zeithaml 1981), is search vs. experience (and credence) characteristics, where intangible products are more associated with experience/credence characteristics.

3.1.1. Intangibility as Abstractness

This intangibility dimension is linked directly to the "accessibility to the senses" notion of attributes. The argument behind this dimension is best described by Hirschman (1980) in her "layers of meaning" paradigm. Hirschman defines tangible attributes as accessible through the senses, they are palpable. Intangible attributes, on the other hand, exist only in the mind of the individual and are mentally rather than physically related to the product. This conceptualisation is similar to Paivio's (1965) definition of concreteness - abstractness where concreteness is defined as nouns (or attributes) referring to denotable objects, whereas abstract nouns (attributes) lack comparable objective referents. Paivio's conceptualisation of concreteness - abstractness is responsible for the labelling of this product intangibility dimension.

Hirschman's distinction between tangible and intangible attributes is discussed in terms of different perceptual processing modes similar to the ones previously discussed. Hirschman (1980) suggests that the consumer processes tangible and intangible aspects differently. She describes a model illustrating the relationship between tangible attributes and the consumer (see figure 3.2).

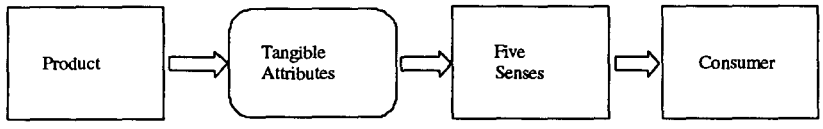


Figure 3.2. Illustration of the Relationship Between the Product, Tangible Attributes and the Consumer (after Hirschman 1980).

Tangible attributes arise directly from the product and may be detected by the individual through one or more of the five senses. Within this conceptual framework tangible attributes are defined as objective and verifiable features of the product stimulus (Friedmann & Lessig 1987), such as a car's colour, size, style and feature options. This definition also includes generally recognised service features, such as the delivery, installation, training and maintenance which all can be verified through contractual arrangements. The tangible attributes can be grouped into three categories based on Garner's (1978) conceptualisation of stimulus (Hirschman 1980). The three categories are as follows; dichotomous, multi-chotomous and multi-leveled. Dichotomous attributes are either present or absent and, if present, they have only one level of value (i.e. presence or absence of an air-bag in a car). Multichotomous attributes are always present, but assume only one of several possible values

which are not ordered, but are rather nominal of nature (ex. colour of a car). The last category, multi-level, assumes a hierarchical distribution of values. A multi-level attribute may be ranked as higher or lower than another value of the same attribute, and are interval or metric in nature and may constitute either continuous or discrete distributions (Hirschman 1980). Horsepower delivered by an automobile engine would be an example of a continuously distributed and metrically scaled attribute, while the number of cylinders in an automobile engine is an discretely distributed and metrically scaled product attribute. Hirschman (1980) notes that the distributions of such attributes often are step-like or of limited range. Although the above described classification encompasses the major forms of tangible attributes it is not exhaustive (Hirschman 1980). Possible additions are attributes which can be present or absent, and if present they take on different nominal values (e.g. perfumed vs. unperfumed deodorants). Furthermore, attributes may be present or absent, and if present take on interval or metric values (Hirschman 1980), for example automated teller machines in a bank. The evaluation of tangible attributes is stimulus driven (or "data-driven"), which implies that the information arises from the stimulus.

Intangible attributes, however, are processed in a different way, which is illustrated in figure 3.3 (Hirschman 1980). While tangible attributes are processed in a stimulus driven manner, the processing of intangible attributes is to a large extent dependent on other forms of influences and inferences made by the consumer. Intangible product attributes are projected on to the product (Hirschman 1980).

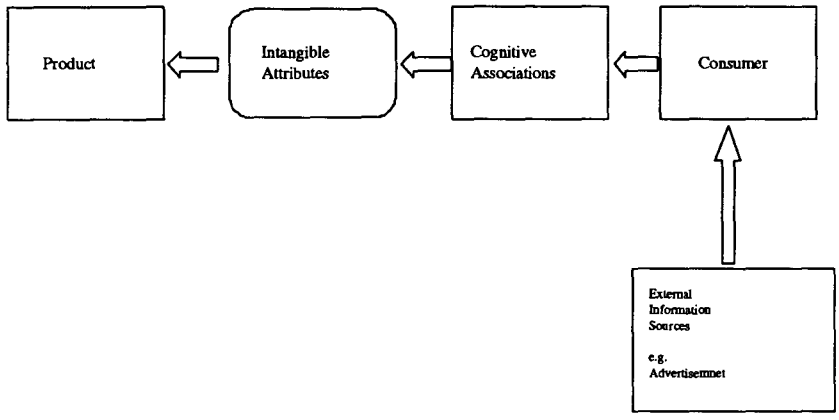


Figure 3.3. Illustration of the Relationship Between the Product, Intangible Attributes and the Consumer (after Hirschman 1980).

Through cognitive associations of intangible attributes the consumer goes through a more indirect inference process regarding product qualities, characteristics or benefits. Examples of intangible attributes can be a car's elegance, handling, stylishness and comfort. The quantity of an intangible attribute associated with a product exists only in the mind of the consumer, and is ordinal of nature (Hirschman 1980). A car can be more "sporty" than another and a hotel provides better "service" than another, but the ordering constitutes neither interval nor metric measurement.

The two different processing forms of tangible and intangible attributes are combined in the psychological meaning approach of products (Friedmann & Zimmer 1988, Friedmann & French 1989). Figure 3.4 illustrates this framework, where tangible attributes are linked to a data driven perceptual mode and intangible attributes to a concept driven perceptual mode. The basic idea of this conceptualisation is that products (stimuli) consist of a bundle of attributes, that can differ in terms of tangibility. The degree of tangibility refers to the degree of congruence between the components of psychological meaning (PM) and the objective verifiable attributes of the product stimulus being considered. The intangible attributes are subjective in nature, being a result of cognitive abstractions and associations.

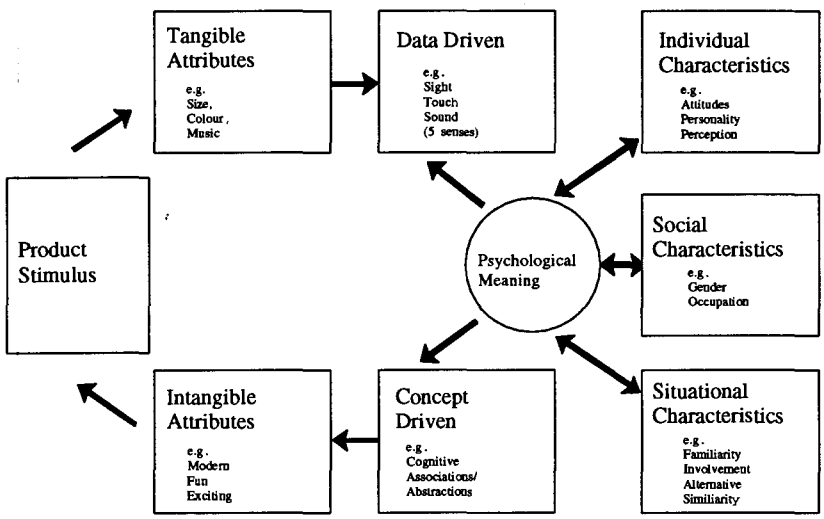


Figure 3.4. A Framework of Perceptual Meaning Linking Attributes to Perceptual Modes (after Friedmann & Lessig 1986).

In addition to the product and its attributes the PM model also includes individual, social and situation characteristics as possible influences on PM. The PM approach suggests that there might be a reciprocal relationship between these individual, social and situation characteristics and the psychological meaning of products.

3.1.2. Intangibility as Level of Generality

In order to integrate previous research Dubè-Rioux et al. (1990) distinguished between two dimensions of intangibility, concreteness and specificity. The concreteness (or abstractness) dimension relates to the abstractness dimension of product intangibility discussed in the previous subsection. The generality dimension refers to the concept of subordination in the categorisation literature[10] (Rosch 1978, Mervis & Rosch 1981, Johnson, Lehmann, Fornell & Horne 1992). Dubè-Rioux et al. (1990) suggest that representations of services can vary in specificity as well in concreteness, which should result in different specificity and concreteness levels of the salient attributes. This hypothesis is based on research carried out by Johnson & Fornell (1987)[11]. The findings did not reveal any main or interaction effects of specificity, but this could be explained by methodological artefacts (Dubè-Rioux et al. 1990).

The level of generality can be conceptualised as the vertical dimension within the categorisation literature. The vertical dimension refers to categories of different levels of abstraction, where categories of higher generality possess greater inclusiveness than lower level categories (Rosch 1978). Thus there exist category structures that include a hierarchy of categories. Rosch's distinction of category levels include super-ordinate, basic, and sub-ordinate levels of categories, with the highest discriminatory power at a basic level. At this level both the number of common attributes (within category) and distinguishing attributes (across category) are maximised. At the higher, super-ordinate, level the members share only a few common attributes, while at the sub-ordinate level the category contain many attributes that overlap with other categories.

---

[10] Johnson & Fornell (1987) distinguish between three different levels of product abstraction (brand, category and superordinate category) in their research. This implies that response variance is caused by different levels of abstraction of the same product "type". That is variations caused by "vertical" differences. Dubé-Rioux et al. (1990) examine variations caused by services at the same level of abstraction, in other words "horizontal" differences.

[11] Johnson & Fornell (1987), however, equate the concreteness - abstractian dimension with the specificity - generality dimension.

General attributes describe products in an indirect and complete way, while more specific attributes describe products more directly and specifically (Johnson et al. 1992). Several abstraction processes can be relevant for discussing this generality - specificity conceptualisation of intangibility. First, general attributes might be a result of an abstraction process where general attributes subsume more specific attributes. For example, a car's safety subsumes attributes like air-bag, ABS-brakes, size of the car, and other safety aspects about the car's construction. An interesting property of this abstraction process suggested in the literature is that attribute representations become more dimension-based and less feature-based at higher levels of abstraction (Johnson & Fornell 1987). However, it is important to note that there is a difference between the inherent feature-dimensionality and the processed feature-dimensionality of an attribute representation (Johnson et al. 1992). This means that although an attribute such as safety is inherently continuous, the consumer can based on his/her heuristics, process it as a feature (safe - not safe).

The means-end perspective (Gutman 1982) is an approach where tangible and intangible attributes are distinguished according to the specificity levels of the attributes. The basic idea of this conceptualisation is that a consumer's product representation is a hierarchically organised set of categories, where the top (and general/abstract) categories subsume categories at a lower level. The central concept in this literature is the means-end chain, which is set to be an inference process ranging from concrete/specific attributes to the terminal values of the consumer (Walker & Olson 1991). A means-end chain is defined as the connection between product attributes, consumer consequences, and personal values (Gutman 1982). Furthermore, this concept embodies the different levels of abstraction (Reynolds & Gutman 1984) where the inference process is pictured to start out with concrete attributes and then the meaning is derived and abstracted up to terminal values (Walker & Olson 1991, Zeithaml 1988). A methodical tool used to describe this process is the laddering method (Reynolds & Gutman 1988), which involves an abstraction process from a basic category level. The lower levels of the means-end chain are the most relevant for this study. The product attributes are divided into physical and abstract characteristics. The definitions of the product attributes show a high resemblance with the definitions of tangible and intangible

attributes in the psychological meaning approach. Physical attributes are defined as being measurable in physical units, such as "colour" or "miles per gallon" (Reynolds & Gutman 1984), while abstracted properties represent attribute designations that are more subjective in nature, like "smells nice" or "strong flavour" (Reynolds & Gutman 1984). Even though the means-end theory itself stresses the top down view in order to explain cognitive processing (Reynolds & Rochon 1991), the use of the laddering method itself exhibits a fair resemblance with "bottom-up" processing, where the objective and physical evidence form more abstract properties of the product[12]. This implies that a product manager has to search only for the physical foundation for forming an abstract/general property in order to identify potential for improvement. Thus, a product development process would be one of altering physical characteristics of a product in a rather straight forward manner. Conversely, a "top-down" (or concept-driven) process implies that the consumer starts out with more general properties and processes evidence according to expectations with respect to these properties. An implication of this approach is that there may be many different pieces of information which can be in accordance with a general property, and some of the information pieces might even be in conflict with each other. Attributes processed in this manner do not provide the product manager with improvement guidelines as straight forward as in the case of the "bottom-up" process. It is likely that one can find both types of processing forms with respect to product representations, as can be seen in the psychological meaning approach.

Abstraction across product categories is another form of abstraction process related to the specificity dimension. Johnson (1989) found that consumers tend to construct more abstract attributes when comparing noncomparable choice alternatives, e.g. choice between toasters, electric razors and coffee grinders, and thus abstract categories (attributes) can be relevant in describing more product categories than concrete attributes. The comparison between specific alternatives follows an attribute based information processing strategy. In contrast, product-level choices, e.g. different leisure time activities (going to the movie, museum, bowling, etc.)

[12] The method can also be used in the opposite direction, starting out with more abstract input and seek the concrete representations of these abstract input.

follow a top-down or goal driven process (Park & Smith 1989), where the consumers tend to use within-alternative processing.

Abstraction of product related experiences is a third form of abstraction, where a few general categories may subsume many specific product experiences. Consumers product experience has been conceptualised as a learning process where consumers process specific product related experiences through a four-stage process including hypothesising - exposure - encoding - integration (Hoch & Deighton 1989). The initial hypothesis depends on prior beliefs, and the actual learning from specific product related experiences is moderated by familiarity with the domain, motivation to learn and the ambiguity of information (Hoch & Deighton 1989). Confirming instances represent an abstraction of product related experiences where the different product related experiences are subsumed into a more general category, while disconfirmation may result in rejection of existing categories and/or creation of new categories.

3.1.3. Intangibility as Lack of Pre-Purchase Inspection Possibilities

In the literature it is argued that intangible attributes, unlike tangible attributes, are impossible to evaluate prior to purchase. Nelson's (1970, 1974) classification of search and experience characteristics, and Darby & Karni's (1973) extension of this classification to also include credence qualities, is used in order to support this argument, where intangible services are argued to consist of more experience and credence characteristics than tangible goods (Zeithaml 1981). While tangible attributes through their physical appearance are possible to inspect prior to purchase, the physical non-existence of intangible attributes prevents inspection prior to purchase since these attributes can be evaluated only through experiencing the product. Although simple in definition, the use of Nelson's classification is not frequently found in the marketing literature. Surprisingly little has been written about the antecedents that differentiate search from experience attributes (Wright & Lynch, Jr. 1995).

Wright & Lynch, Jr. argue that for search attributes the consumer possesses a reliable subjective inferential rule that links an observable aspect of the product with a desired attribute, benefit or outcome. For experience attributes the consumer perceives a far less reliable link between information available and the benefits or outcomes experienced later. Experience attributes can thus not be verified before use.

Although Nelson's classification of attributes has not been used as an intangibility dimension in the services marketing literature it is included as a third dimension of intangibility in this study. The reason for including this dimension is it's close association with intangibility implied in the literature. Zeithaml (1981) proposed that services contained more experience attributes compared to goods as a direct consequence of intangibility.

Chapter 4. Aspects of Evaluation

As presented in chapter 1 the objective of this dissertation is to examine differences in consumer evaluations of goods and services and evaluative consequences of product intangibility. In this chapter different aspects of evaluations are presented.

These aspects will serve as dimensions for comparisons. Based on a discussion of these dimensions several hypotheses regarding differences between goods/services and evaluative consequences of product intangibility are derived.

The literature argue that evaluation of services are more difficult than evaluation of goods. Zeithaml (1981) indicated several differences between the consumers evaluation process of goods compared to services regarding use of information sources, use of cues, size of evoked set, product adaptation, perceived risk and brand loyalty. McDougall & Snetsinger (1990) also proposed a number of differences in the evaluation process of services compared to goods with respect to ease of evaluation, perceived risk, brand loyalty, reliance on personal information sources, and use of physical facilities and price in order to assess product quality.

This study focuses on a selected number of the above mentioned evaluative dimensions, where the included variables are as follows: ease of evaluation, certainty in evaluations, use of surrogate criteria, use of information sources, and predictive ability.

In this chapter we will argue for the following hypotheses based on propositions made in the services marketing literature:

Table 4.1. Overview of Hypotheses

Constructs	Hypotheses Goods	Services	Relationship with product intangibility
Perceived evaluation difficulty	<		+
Perceived processing effort	<		+
Certainty of evaluation	>		-
Predictive ability	>		-
Use of surrogate cues	<		+
Use of information sources:			
Use of personal information sources	<		+
Use of direct observation	>		-
Reliance on personal experience	<		+
Preference for outright purchase	>		-

Test of the hypotheses regarding differences between goods and services imply testing for differences of means. The hypotheses regarding product intangibility are based on association, and thus the proposed relationships are stated as either negative or positive. We do not distinguish between the different dimensions of product intangibility in the hypotheses assuming that all dimensions relate similarly to the dependent variables.

The theoretical foundations for the hypotheses are addressed more thoroughly in this chapter. Theories from cognitive psychology, consumer behaviour and services marketing are used to explore the propositions from the services marketing literature. The forthcoming discussion is centered on the different dependent variables: ease of evaluation (or perceived evaluation difficulty), certainty of evaluation, use of surrogate criteria, use of information sources and predictive ability.

4.1. Ease of Evaluation

The services marketing literature assumes that the intangibility of services makes evaluation of services more difficult than evaluation of goods (Zeithaml 1981, McDougall 1987, McDougall & Snetsinger 1990). To a large extent the argument favouring this increase in difficulty is based on the assumption that the inherent intangibility of services provides little physical evidence of the quality of the service, making service evaluation more difficult.

The first question raises the issue as to what makes an evaluation task difficult? It is possible to distinguish at least two different dimensions; perception of goal and perception of processing effort (Waern 1982). The former dimension refers to the definition and representation of the task or problem at hand. This implies that difficulties with respect to this dimension correspond largely to ill-defined problem representations. The latter dimension is a process variable that mainly captures the level of effort needed to solve a particular problem.

A number of factors can make a task ill-defined and thus influence the degree of difficulty in evaluating a stimulus. Kaufmann (1988) identifies at least three conceptual distinct aspects of stimulus conditions which can make a task difficult. These are novelty, complexity and ambiguity. The first source of difficulty, novelty, refers to lack of familiarity in making a decision or judgement, while complexity refers to the number of information pieces (or information load) that are to be put together. The third aspect of difficulty is ambiguity. Ambiguity can occur due to competing images or goal structures.

Within the marketing field a number of theories address the difficulty imposed on the consumer facing decisions involving novel products (e.g. Carpenter & Nakamoto 1989, Ozanne, Brucks & Grewal 1992). A particularly relevant contribution can be found in the literature with respect to the adoption process, where it is suggested that the consumer goes through different phases ranging from problem awareness to product adoption. The adoption process can be thought of as containing three different stages, starting out with a cognitive stage including problem perception, awareness and some aspects of comprehension (Horton 1984). The second stage can be conceptualised as an affective stage including comprehension and attitude, while the third stage is a conative stage including trial and adoption. Furthermore, a number of theories on attention and perception are used in order to explain phenomena regarding novelty of product decisions, pointing out biases and weaknesses with respect to problem solving as a consequence of selective attention, limited problem solving capacity and so forth.

In consumer research several aspects of complexity that affect ease of evaluation have been investigated. This focus on complexity can be identified in research areas such as information load (Jacoby, Speller & Kohn 1974, Keller & Staelin 1987), task complexity (Payne 1976, Reilly & Holman 1977), task format (Bettman & Kakkar 1977, van Raaij 1977, Bettman & Zins 1979) and technical wording (Anderson & Olson 1980).

The information load paradigm suggests that decisions become more difficult if the number of alternatives and number of attributes (or both) are high, resulting in an overload of information. Jacoby et al. (1974) found a decrease in decision accuracy when the amount of information was too high, while others have found that decision accuracy increases with more information (Russo 1974) or there is no relationship at all (see Best & Ursic 1987).

Within alternative variance[1] and the similarity of alternatives are also found to be significant factors explaining decision accuracy (Best & Ursic 1987). Best & Ursic (1987) found that high within alternative variance and high degree of similarity between alternatives had more negative influence on decision accuracy (decreasing) than number of attributes and

[1] Defined as the extent of agreement between all the information pieces of a brand.

alternatives. Keller & Staelin (1987) found decision accuracy to increase with higher information quality and to decrease with increasing information quantity. Information quantity refers to the number of alternatives and attributes, while information quality refers to the information's inherent usefulness (measured through an importance rating). Other research areas such as task complexity and information format identify different processing strategies as a result of differences in the stimuli[2]. Although some of the above listed contributions also claim to look at the quality of the information (Keller & Staelin 1987), most of the studies are concerned with quantitative aspects of information and/or the valuation aspects of the attribute bundle (attribute variability within an alternative or attribute variability between alternatives).

In advertising the use of technical wordings is assumed to add to processing difficulty. Traditionally one has assumed that the best strategy is to "keep it simple" in order to obtain persuasive effect (Anderson & Olson 1980). The argument opposing this traditional view is that the use of technical wording should vary across market segments, in order to match the technical level of the advertisement with the technical level of the market segment (Anderson & Olson 1980). Support for this proposition can be found in the literature where prior knowledge is one important factor that facilitates processing of technical information (Johnson & Kieras 1983).

Ambiguity is the third source for perceived evaluation difficulty. An image, or product representation, may be ambiguous because of the lack of relevant information or a surplus of irrelevant information (Lindsay & Norman 1977). It can also be ambiguous because of the existence of several different ways of constructing a meaningful representation of the product. Within consumer behaviour ambiguity has been addressed both in theories of learning from product experience (Hoch & Ha 1986, Hoch & Deighton 1989) and advertising - evidence interactions (Ha & Hoch 1989). Ha & Hoch (1989) define product ambiguity as «the potential for multiple interpretations of product quality». They also propose that consumers making global evaluations go through a three-stage process: (1) identifying relevant attributes for consideration, (2) evaluating the level of each attribute, and (3) combining this information

[2] Task complexity refers largely to the quantity dimension mentioned above (Payne 1976), while format refers to the information presentation (Bettman & Zins 1979). However, the focus is on processing strategies.

to form an overall evaluation of each alternative. Ambiguity may be present at all stages. Little product experience, excessive information load or lack of relevant information may cause problems in identifying relevant attributes. Attributes that are fuzzy or entangled with other attributes can result in problems with determining attribute levels. Ambiguity at the latter stage in the above outlined process may arise if consumers cannot apply a consistent information strategy (Ha & Hoch 1989). Such a situation arises when consumers cannot identify dominant alternatives.

Evaluation difficulty can also be addressed as process variables. Process variables such as invested effort and time might be used as indicators of evaluation difficulty. Waern (1982) identified perception of processing effort as one dimension of difficulty. A task is perceived as more difficult the more effort one has to invest to reach a satisfactory result. McDougall's (1987) ease of evaluation measure contained two[3] (out of three) process related indicators; time spent and need of more information.

4.1.1. Services/Goods, Intangibility and Ease of Evaluation

Although the proposition that services are more difficult to evaluate has been supported by a number of conceptual contributions (Bateson 1979, Zeithaml 1981), it has only to a limited extent been the subject of empirical testing (e.g. Hartman & Lindgren, Jr. 1993). McDougall (1987) tested the proposition with mixed support.

In the above sections three different sources of difficulty were identified; complexity, novelty, and ambiguity. The services marketing literature indicates that the difficulty of evaluating intangible products is not connected to the complexity dimension of difficulty as described in section 4.1. Many contributions suggest that consumers compensate increasing difficulty by reducing complexity, which is evident in propositions regarding the size of the evoked set for services (smaller) as compared to goods (Zeithaml 1981, Friedman & Smith 1993). Furthermore, the literature suggests that consumers use fewer cues evaluating

[3] The ease of evaluation measure consists of three items (easy decision, want information and spend little time).

services than goods, due to the lack of informational pieces accompanying intangible products.

Novelty as a source of difficulty is not particularly relevant in describing differences between goods and services, since novelty is present in evaluations of both goods and services when consumers have no prior experience of a product class. Thus, it is not reasonable to expect any differential effects.

Evidence of the importance of ambiguity can be found in the services marketing literature (Bowen & Schneider 1988), which has focused on the difficulties imposed by the lack of physical evidence or the intangible nature of services. This lack of physical evidence is argued to lead to indeterminacy or difficulties in evaluating and subsequently choosing the right service. This form of ambiguity corresponds to the definition of stimulus ambiguity offered by Howard & Sheth (1969), where ambiguity is defined as "the lack of clarity of the Stimulus Display in communicating the descriptive and evaluative aspects of the brand, product class and the nature of Motives". The services marketing literature focuses mainly on the descriptive and evaluative aspects of the service as sources of problems in the evaluation, and less effort has been devoted to the aspects of motives[4]. The increase in difficulty is argued to result from lack of search qualities in a pre-purchase situation (Zeithaml 1981), which is based on Nelson's (1970, 1974) classification of search and experience goods. Indeed, many services are expected to be dominated by credence qualities (Zeithaml 1981), and cannot be evaluated even after consumption without incurring further costs (Darby & Karni 1973). The proportion of search relative to experience qualities has even been used as a direct measure of pre-purchase difficulty (Arnthorsson, Berry & Urbany 1991). Furthermore, Paivio (1965) found that abstract information, defined as lack of objective referents, were more difficult to evaluate and thus less effective in the learning of verbal associations.

[4] There are contributions discussing the experiential nature of services (in particular entertainment) (Grove & Fisk 1992, Cooper-Martin 1992), but this group of services has even been classified as a new product category emphasizing the symbolic benefits of consumption (Holbrook & Hirschman 1982).

As demonstrated above, it is argued in the services marketing literature that services contain more ambiguous information than goods. To evaluate this proposition it is necessary to take a closer look at the different types of product attributes. The following will examine the evaluative consequences of intangible attributes as opposed to tangible attributes.

A product can be conceptualised as a bundle of attributes. An attribute can be either tangible or intangible. This study focuses on the quality of intangible and tangible attributes in product evaluation. The quality of an attribute refers to the degree to which an attribute provides a relevant basis for making a decision in terms of accuracy and efficiency (Maute & Forrester Jr. 1991). An attribute can be described according to the consumer's confidence in his/her ability to identify differences between alternatives based on the specific attribute (confidence value), and how "good" this attribute is in predicting valuable aspects of the product (predictive value).

In his sorting rule model Cox (1967) distinguished between the confidence and predictive value of cues, in order to explain which cues consumers use in evaluating products. The cues serve as predictors of attributes in the product[5]. The attributes can possess different values and consequences based on the different wants and needs of the consumer. In order to choose the right alternative the consumer has to identify cues with informational value about product attributes[6]. High predictive value implies that a cue is a good indicator of a product attribute. An additional value of the cue is it's confidence value, which tells something about how confident the consumer is in identifying differences between alternatives based on this cue. Cox (1967) defined confidence and predictive value as follows:

> "Predictive value is a measure of the probability with which a cue seems associated (i.e. predicts) with a specific product attribute. Confidence value is a measure of how *certain* the consumer is that the *cue* is what she thinks it is" (Cox 1967, pp 331)

[5] Brunswick's lens model also addresses the relationships between cues in the environment and some target event (see Hogarth 1989). Judgement accuracy depends on the match between the cues and the target event these cues are supposed to reflect.

[6] This distinction between cues and attributes is also present in Steenkamps (1989, 1990) conceptual quality model.

It is important to stress that confidence value (CV) and predictive value (PV) rely on a subjective evaluation of different cues. For instance, the consumer might have faith in a price quality relationship for a product, which implies that the cue price has high PV, even though no objective, verifiable evidence is available for this relationship.

Cox suggested that the consumer would most likely use cues with both high predictive and confidence value (HPHC situation), and then put priority on predictive value (HPLC before LPHC and finally LPLC)[7]. Olson (1977) claimed, based on several studies, that the consumer would only use cues with both high predictive and confidence value (HPHC). However, Schellinck (1983) suggested that consumers can not always find a sufficient number of cues both high in predictive and confidence value, and that the consumer's choice between high predictive/low confidence cues (HPLC) and low predictive/high confidence cues (LPHC) is based on his/her attitude towards risk[8]. Other authors (Kupsch, Hufschmied, Mathes & Schöler 1978) have focused on different functional forms of combining PV and CV in order to predict cue usage[9]. The empirical results of the various contributions with respect to PV and CV provide only mixed support in terms of predicting cue usage even though the descriptive potential of the framework is considerable (Steenkamp 1989).

The above contributions have concentrated on how consumers select cues for evaluating products. The sorting rule model is concerned with predicting which cues the consumers use, based on the cues' confidence and predictive value when evaluating products for purchase. The focus of the present study, however, is on the quality of intangible versus tangible cues in

[7] HPHC refers to high predictive value and high confidence value, HPLC refers to high predictive value and low confidence value, while LPHC refers to low predictive value and high confidence value. Finally LPLC refers to low predictive value and low confidence value.

[8] High predictive/low confidence cues put the consumer in a high risk/high gain situation, while low predictive/high confidence cues reflects a low risk/low gain situation. The results of Schellinck's (1983) study are questioned by Pinson (1983) who explains the findings as being a result of artificial constraints in Schellinck's study, and Pinson suggests that people are using different processing heuristics in real life situations.

[9] Different models of cue utilization (Kupsch et al. 1978);

A. Der additiven Verknüpfen (The additive combination): CV + PV
B. Der multiplikativen Verknüpfen (The multiplicative combination): CV * PV
C. Die euklidische Distanzformel (The Euclidean distance from origin to the (PV,CV) coordinates in the two-dimensional (PV;CV) space): $(PV^2 + CV^2)^{1/2}$. The greater the Euclidean distance from a cue to the origin the greater its probability of being used.

product evaluations. This implies that the focus is on whether one type of cues perform better than the other with respect to confidence and predictive value.

Intangible attributes can be conceptualised as a subgroup of beneficial and image attributes (Lefkoff-Hagius & Mason 1993), which Myers & Shocker (1981) suggested would be most important in judgements of choice or preference[10]. Preference judgements are generally assumed to be more subjective and heterogeneous among consumers (Lefkoff-Hagius & Mason 1990) than similarity judgements which commonly are assumed to be more objective and homogeneous.

Lefkoff-Hagius & Mason (1990) found tangible attributes to be relatively more important in making similarity judgements, while intangible attributes were relatively more important in preference judgements. This is supported in a study by Reynolds & Perkins (1987) where perceptual differences are concrete and thus should be separated at the lowest level of abstraction. One possible consequence of this might be that intangible attributes[11] would have a relatively higher degree of predictive value, since they reflect aspects more directly tied to

[10] The following typology is suggested by Finn (1985) and further developed by Lefkoff-Hagius et al. (1993);

	Characteristics	Beneficial	Image
Description	Physical proporties (product referent)	What product will do for user (task or outcome referent)	How product represents user to others or self (user referent)
Related work:			
Howard & Sheth (1969)	Denotative	Connotative	
Cohen (1979)	Defining	Instrumental	
Enis & Roering (1980)	Product offering	Core product	Augmented product
Hirschman (1980)	**Tangible**	**Intangible**	**Intangible**
Myers & Shocker (1981)	Characteristic	Beneficial	Imagery
Tumbusch (1987)	Physical	Performance benefit	Psychological positioning
Hauser & Clausing (1988)	Engineering characteristics	Customer attributes	

[11] Since symbolical meanings of products are intangible attributes of a product, the consequence for predictive value might not be as clear as with the beneficial group of attributes. This implies that one has to be careful with the selection of method for elicitation of attributes, since unstructured and loosely stimulus-bounded methods might produce many more attributes which contain symbolic meanings.

the benefits sought in the product. Tangible attributes might possess relatively higher confidence value due to the "objective" nature of these attributes. This follows from the previously presented propositions (chapter 3) where tangible attributes were considered to be more objective and verifiable than intangible attributes. Thus, tangible attributes reflecting product characteristics might possess higher confidence value than intangible attributes[12]. Pechmann & Ratneshwar (1992) included search vs. experience attributes as one of several stimulus factors that would influence diagnosticity of mental representations. In their study they argued that search attributes in general possess higher diagnostic value than experience attributes, although there are situations where brands do not differ with respect to search attributes. The authors claim that these situations should be relatively easy for the consumer to detect. Conversely, experience attributes are likely to be less diagnostic (Pechmann & Ratneshwar 1992). This argument is based on the hypothesis confirmation bias suggested in Hoch & Ha's (1986) model of learning from product experience. Since search and experience attributes have earlier been conceptualised as one dimension of intangibility, the higher diagnostic value of search attributes supports the previous proposition that tangible attributes possess a higher degree of confidence value.

The consequence of ambiguity with respect to ease of evaluation can be addressed using the three-stage process model of evaluation suggested by Ha & Hoch (1989). As previously described the following stages are included; (1) identification of relevant attributes for consideration, (2) evaluation of the level of each attribute, and (3) combination of this information to form an overall evaluation of each alternative. Lack of physical evidence in services can be seen as a problem in the identification of relevant attributes, which is assumed in the services marketing literature (Zeithaml 1981, Bowen & Schneider 1988). This lack of physical evidence is argued to lead to indeterminacy or difficulties in evaluation and subsequent choice, since the consumer finds it difficult to determine appropriate decision criteria or attributes (Burton 1990). Consequently, it is argued that consumers to a larger extent must rely on surrogate information in the evaluation of services (e.g. company image (Lee & Ulgado 1993)). However, the above discussion of attribute qualities does not support

[12] There are several other factors, and perhaps even more important ones, that might explain confidence and predictive value of attributes (e.g. attribution processes, familiarity with the product class, amongst others), but in this case we have focussed on potential differences between tangible and intangible attributes. Thus, the argument is concerned with relative differences between intangible and tangible attributes.

a proposition that information must be tangible in order to represent adequate product representations. It is argued that intangible attributes are more relevant for preference judgements, and more associated with beneficial attributes of the product. However, it is suggested that tangible attributes outperform intangible attributes with respect to similarity judgements. Thus, intangible attributes might be associated with more ambiguity than tangible attributes at the second stage in the evaluation process, due to the relatively lower confidence value of intangible attributes. Hence, it may be more difficult to distinguish between alternatives based on intangible attributes compared to tangible attributes. The effect of intangible and tangible attributes in terms of ambiguity at the third stage of combining information to an overall evaluation is not clear. According to Cox (1967) consumers would place higher priority on predictive value than confidence value, and thus the result would be that tangible attributes should be more ambiguous. However, this proposition has not received empirical support. Instead different authors have suggested that cue usage strategies may be dependent on individual risk preferences (Schellinck 1983) or processing heuristics (Pinson 1983).

Although, the literature claims that intangible products (services) are more difficult to evaluate compared to goods due to lack of physical evidence, the above discussion regarding confidence and predictive values of cues reveals that this proposition might be somewhat loosely founded. Whether intangible or tangible cues are most relevant for evaluating products remain an open question. However, the proposition from the services marketing literature is the basis for hypotheses H1a and H1b.

H1a Evaluation of services are perceived to be more difficult than the evaluation of goods

H1b The higher the degree of product intangibility, the higher the perceived difficulty of evaluation

H1b proposes a general effect of product intangibility. However, it is possible that the different dimensions of intangibility relate differently to perceived difficulty. For instance, the first dimension of intangibility, abstractness, defines intangible attributes as subject related as opposed to object related. In the literature related to questionnaire development it is argued that subject anchored measures are more easily accessible than stimulus anchored

measures (Henjesand, Troye & Breivik 1992). The rationale for this argument is that the consumer has direct access to his/her subjective judgements as opposed to appraisals derived from object information. Accessibility evinces higher evaluation-conation consistency (Raden 1985). Thus, it is possible that abstractness is negatively related to perceived difficulty. However, presently we maintain the above general hypothesis whilst recognising the possibility of alternatives.

Difficulty of evaluation is also a question of processing effort. A decision is more difficult if the consumer has to spend more time and effort in order to achieve a satisfactory result. Indication of differences in terms of processing effort can be found in the services marketing literature. Murray (1991) found that consumers were slower in making decisions dealing with services compared to goods. Furthermore, in the previous hypotheses we suggested that services were more difficult to evaluate than goods. This may imply that in order to reach a satisfactory result, service evaluation requires more effort in terms of time and information gathering than that required to evaluate goods. However, it is questionable whether difficulties with respect to perception of effort can be identified in time and effort spent on making a decision. The consumer tries to achieve cognitive economy (Shugan 1980), which implies that the consumer reduces the effort by simplifying the task. This can be done by reducing the size of the evoked set or the number of attributes/criteria used for evaluation. Both of these strategies have been indicated previously to be present in the evaluation of services/intangible products. However, it should be possible to identify differences in terms of perceptions of effort needed to achieve a desired result, instead of focusing on the observed actions with respect to information gathering.

H1c Consumers perceive evaluations of services to require more effort relative to evaluation of goods

H1d The higher the degree of intangibility the higher the perceived requirements of effort in the decision process

In the following section some consequences of perceived difficulty are discussed, such as the certainty or confidence the consumer feels about his/her evaluations or choices.

4.2. Certainty (Confidence) of Evaluation

A frequently mentioned consequence of service intangibility is the increased level of risk associated with purchasing services compared to goods (Zeithaml 1981, McDougall & Snetsinger 1990, Murray 1991). This could both be an antecedent or consequence of the level of certainty or confidence in evaluations and decisions involving services (or intangible products). A number of antecedents of consumer confidence or certainty[13] are suggested in the literature. Smith & Swinyard (1988) proposed a positive relationship between confidence and quantity of information[14], credibility of information sources, and consistency of information. The positive relationships between product knowledge and confidence along with personal relevance and confidence are consistent with the finding of a positive relationship between quantity of information and confidence (White, Tashchian & Ohanian 1991, Peterson & Pitz 1988). Wendler (1983) found a positive relationship between brand comprehension and confidence, especially in situations where the consumer experienced high levels of risk and involvement. This finding is in line with the theory of buyer behaviour by Howard & Sheth (1969) where confidence was defined as the inverse of stimulus ambiguity. Furthermore, Peterson & Pitz (1988) found that confidence decreased by increasing the apparent task difficulty. In their study task difficulty was manipulated by varying the similarity of alternatives. The task was considered to be more difficult when the alternatives were almost alike as compared to when alternatives were more different.

[13] In the present work the terms confidence and certainty are used interchangebly. This simplification might be questionable and Peterson & Pitz (1988) demonstrated that confidence and certainty had differential effect with respect to information search (confidence increase, certainty decrease). The authors defined (un)certainty to refer to predictions about an unknown quantity, while confidence was defined as the belief that a given prediction is correct. However, a substantial part of the literature does not distinguish between these two terms.

[14] A number of studies have supported the idea that confidence increases with quantity of information (e.g. Jacoby et al. 1974), although decision accuracy might decrease.

4.2.1. Services/Goods, Intangibility and Certainty of Evaluation

Section 4.1.1 argues that service evaluation is more difficult than goods evaluation, since intangible products possess more ambiguity. A consequence of ambiguity is that services are found to be more susceptible to influence from external sources (Weinberger & Brown 1977). Additionally the literature claims that services, and consequently intangible products, are more heterogeneous than goods. Research based on attribution theory in consumer behaviour has pointed out that confidence decreases when consistency decreases (Folkes 1988). Thus, the consumer is expected to be less confident of evaluations and/or choices with respect to intangible products than for tangible products. Thus, the following hypotheses are proposed:

H2a Consumers are less confident in their evaluations of services than their evaluations of goods

H2b Consumer confidence with a product evaluation decreases with higher product intangibility

Contrary to the above arguments, Koehler (1991) found that imagination increases confidence. The reason for this increase in confidence is the hypothesis confirmation bias. Ambiguous information may not be particularly useful information for disconfirmation. Since intangible attributes can be seen as more ambiguous than tangible attributes, consumers are less likely to encounter disconfirmative events through their experience with a service than with a good. Hoch & Ha (1986) proposed that product experience, due to ambiguous information, contains a bias towards hypothesis confirmation. Confirming instances would likely increase confidence, and thus the prediction would be opposite of the above proposed hypotheses. However, it might be possible to trace this effect through product familiarity, since more familiar respondents should have encountered more «confirmatory» experiences.

4.3. Importance of Surrogate Cues

The literature suggests that consumers demonstrate a higher tendency of using cues like price and physical facilities as signs or indicators of service quality than they do when assessing the quality of goods (Zeithaml 1981). The implicit assumption is that consumers simplify the decision process by focusing on cues that are easily processed.

A theoretical conceptualisation that might shed light on this issue is the elaboration likelihood model (ELM) (Petty, Cacioppo & Schumann 1983). The ELM identifies two different routes to persuasion; a peripheral and a central route. The central route views "attitude change as resulting from a person's diligent consideration of information he/she feels is central to the true merits of a particular attitudinal position" (Petty et al. 1983), while a peripheral route is not characterised by careful considerations of pros and cons of an alternative. The literature on ELM has identified involvement (Petty et al. 1983, Axsom, Yates & Chaiken 1987, Borgida & Howard-Pitney 1983), need for cognition (Cacioppo & Petty 1982, Cacioppo, Petty, Kao & Rodriguez 1986) and ability (Bitner & Obermiller 1985) as mediators and moderators in predicting the route that is most effective in persuasion. A peripheral route is most likely when a person has a low level of involvement, low need for cognition and is less able to process relevant information. In this study the ability dimension is particularly relevant, since the heightened difficulty and ambiguity of services compared to goods suggest that consumers are less able to evaluate services as opposed to goods. Bitner & Obermiller (1985) suggested, as a possible extension of the ELM, that the consumer is more likely to follow a peripheral route in evaluating services/intangible products. Miniard, Sirdeshmukh & Innis (1992) have investigated the effect of different persuasions routes on brand choice, and found that a peripheral route only had effect if the accessible nonperipheral decision inputs did not possess diagnosticity. Diagnosticity of the of the decision input was linked to discriminative ability which is closely connected to the perceived variability among alternatives with respect to the decision inputs. This finding supports the proposition made by the services marketing literature, where services are said to lack diagnostic information inputs and thus facilitate the reliance on surrogate (or peripheral) cues in product evaluations[15].

[15] Surrogate and peripheral cues are used interchangeably, since both concepts reflect a process not characterized by careful considerations.

4.3.1. Services/Goods, Intangibility and Importance of Surrogate Cues

The services marketing literature stress the role of price and physical facilities as cues for evaluating service quality (Zeithaml 1981). Company image is another evaluation criteria found to be important in evaluating services (Lee & Ulgado 1993). The implicit assumption is that consumers simplify the decision process by using simple heuristics based on easily accessible information. A general finding within the schema literature is that factors that increase the costs of being wrong motivate people to use relatively data-driven strategies (Fiske & Taylor 1991). Although services or intangible attributes in general facilitate theory-driven strategies, it is possible that consumers fall back on data-driven strategies to resolve the heightened perceived difficulty (see section 4.1.1) and the reduced confidence associated with services (see section 4.2.1). Consequently, the use of surrogate cues, which are tangible, might be more important in service evaluations. Furthermore, tangible evidence might be important in arguing a decision and subsequently reduce choice uncertainty (Urbany, Dickson & Wilkie 1989). Bitner & Obermiller (1985) also suggested, based on the ELM approach, that consumers are more likely to follow a peripheral route in evaluating services than goods.

According to the accessibility - diagnosticity model (Feldman & Lynch 1988, Herr, Kardes & Kim 1991), accessible information is not used as an input for evaluation when more diagnostic information is available. We have argued previously that intangible attributes possess relatively less diagnostic value than tangible attributes. Consequently, the consumer might focus more on readily accessible information, such as price and physical facilities, when evaluating services compared to goods. The same prediction can be found in the expert/novice literature, where novices are found to examine data according to ease of access (Kirschenbaum 1992). Additionally novices rely more on surface structure information, while experts use both surface and deep structure information. Evaluation of services might place consumers in a more novice like position, since relevant data is less available for services. Hence, the following hypotheses are proposed:

H3a Consumers find peripheral cues more important in evaluations of services than goods

H3b Increased product intangibility is associated with a higher tendency to use peripheral cues in product evaluations

4.4. Use of Information Sources

Consumers use two broad types of information sources when evaluating products; internal and external information sources (Bettman 1979). Examples of internal information sources are past product and purchase experiences, and previous learning about the environment (Murray 1991). Several typologies of external sources are found in the marketing literature. External information can be classified in terms of source origin (marketer-dominated or general) and source type (personal (face to face) or impersonal (mass media)).

Engel & Blackwell (1982) combined the above described dimensions (source origin and source type) in a two-by-two matrix including cells for 1) word-of-mouth, 2) general media, 3) personal selling, and 4) advertising. Murray (1991) included impersonal and personal advocate information sources (marketer dominated), impersonal and personal independent information sources, direct observation, personal experience and outright purchase in his study.

Although all purchases necessarily involve risk, or can be seen as a form of risk-taking behaviour (Bauer 1967), the literature suggests that purchasing services are perceived by consumers as more risky than purchasing goods. The perceived risk approach conceptualises risk as a function of the amount at stake (consequences if the act was not favourable) and the individual's subjective feeling or degree of certainty that the consequences will be unfavourable (Cox 1967). Several risk-reduction strategies are available, such as reduction of aspiration levels and risk adoption (Cox 1967, Murray 1991, Dowling & Staelin 1994). Research on information acquisition have investigated the effect of risk with respect to information search. For example, Jacoby et al. (1994) studied the relationship between information acquisition and uncertainty reduction. Others have focused on information sources as they may be associated with a risk-reduction strategy by consumers (Murray 1991).

Studies have found that consumers demonstrate a higher preference for interpersonal sources[16] (Perry & Hamm 1969) and personal experience (Locander & Hermann 1979) as external information sources, when the perceived risk associated with a purchase increases. Examples of personal sources are the observed attitudes of others towards the product, such as others use and ownership of the product, and verbal opinions of others towards the product (i.e. recommendations, etc.).

4.4.1. Services/Goods, Intangibility and Use of Information Sources

The extent to which consumers use different information acquisition strategies for services than for goods have been addressed in previous studies (Weinberger & Brown 1977, Swartz & Stephens 1984, Murray & Schlacter 1990, Murray 1991). Weinberger & Brown (1977) investigated differences in informational influence of various information sources between goods and services. Their study focused on differences in informational influences associated with three external information sources; neutral, consumer and marketer-dominated sources. The main hypothesis was that services were more susceptible to external information influences than goods. The rationale behind the hypothesis was the heightened risk and evaluation difficulty associated with services compared to goods. Their results provided mixed support for this hypothesis, although the authors concluded that their study had lend support to much of the conceptual service literature (Weinberger & Brown 1977). Swartz & Stephens (1984) studied information search for services and found that contacts with provider (personal marketer-dominated) were the most important information source for the included services. This information source was even more important than independent personal sources. A more comprehensive study of differences in consumer information acquisition activities between goods and services is presented by Murray (1991, also see Murray & Schlacter 1990). Again, the heightened perceived risk associated with services as opposed to goods serves as the basis for developing hypotheses. These hypotheses are concerned with usage and preference of information sources, effectiveness of information sources, and confidence in information sources. The hypotheses are developed according to

[16] Arndt (1967) referred to interpersonal communiaction as word-of-mouth. He also stressed the role of this information source as particularly useful in uncertainty reduction.

risk reduction strategies associated with information acquisition. All hypotheses are supported and the author concludes that purchasing of services is associated with heightened perceived risk, and accordingly the information acquisition strategies for services differ from those strategies employed when purchasing goods (Murray 1991).

Based on Murray's study several hypotheses are included regarding use of information sources. Since services are associated with greater perceived risk it follows that consumers would use risk-coping strategies. This rationale suggests that consumers will engage in an extended information acquisition process, which implies that consumers are less inclined to purchase a service without some form of information processing prior to purchase. The willingness of the service consumer to make an outright purchase is the approach used to conceptualise this phenomenon (Murray 1991). The more risky a purchase is to be perceived the less is the preference for outright purchase. Since services are asserted to be more risky the following hypotheses are proposed:

H4a Consumers have less preference for outright purchase as an information strategy for services than for goods

H4b Product intangibility is negatively related to preference for outright purchase

The above argument uses risk perception as the only factor to explain preference for outright purchase. However, it is possible that consumers employ outright purchase more frequently as an information strategy for services than for goods, since less relevant information is available. Consequently, extensive information search might be deemed as to costly. Thus an explanation in addition to risk perception might be required to explain the use of information sources. Availability of information might be an additional explanation relating to the use of information sources. The two factors, risk perception and availability of information, work in opposite directions and may serve as rival explanations for potential empirical findings.

The experiential nature of services make them more difficult to evaluate prior to purchase. Other individuals, who have experienced the service directly or indirectly, provide a subjective and evaluative source of information that approximate direct experience of the

product. It is likely that such personal sources would be more used when evaluating services than goods. The findings of Swartz & Stephens (1984) suggest that also marketer-dominated personal sources are important in evaluating services. Accordingly, hypotheses H4c and H4d include personal sources in general.

H4c Consumers use more personal information sources when evaluating services compared to goods

H4d Product intangibility is positively related to the use of personal information sources

Direct observation as a risk reduction strategy is less available for services than goods, due to the experiential nature of services (Zeithaml 1981). Although observable information is present for services, it is regarded as less relevant information in order to infer product quality. Because direct observation and product trial is rarely possible when purchasing services, it follows directly that consumers are less able to employ this as a risk reduction strategy.

H4e Consumers use direct observation less often when purchasing services than goods

H4f Product intangibility is negatively related to the use of direct observation

Information gathering with respect to services requires a lot of effort on behalf of the consumer, since less information is available for services and by consequence the cost of an extended search will be elevated. A possible implication would be that less information will be sought and acquired. Consequently, consumers are more likely to prefer and use internal information sources when available. Accordingly, consumers with prior experience would have a greater preference for and employ internal information sources more when purchasing services than goods.

H4g Consumers rely more on past personal experience when purchasing service than goods

H4h Product intangibility is positively related to the use of past personal experience

4.5. Predictive Ability

Frequently used criteria in the assessment of product evaluation models, especially multi-attribute models, are the model's ability to predict choice, intention or global evaluation, in other words the model's predictive ability. All other things being equal a model is characterised as better than another if it possesses higher predictive ability. Several factors influence a model's predictive ability. The qualities of different attributes included in the model structure such as attribute *relevance*, the *importance* of the included attributes, *attribute variability*, and *within alternative variance* all have potential to influence predictive ability. The relevance of the attributes in the model structure must influence the predictive ability of the model, since relevant attributes are expected to be associated with choice and/or global evaluation almost by definition. Also the important attributes should be more strongly associated with satisfactory prediction than less important attributes. This is because more important attributes are weighted more heavily in the global evaluation. The two latter dimensions of attribute quality; *attribute variability* and *within alternative variance*, have been found to influence the predictive ability of multi-attribute models. *Attribute variability* refers to the degree with which different product alternatives differs on a particular attribute. There are several studies that have found a positive relationship between *attribute variability* and predictive ability (Best & Ursic 1987, Lines, Breivik & Supphellen 1995). Increased discriminatory power between product alternatives is the main explanatory factor accounting for this positive relationship between *attribute variability* and predictive ability. *Within alternative variance*, also referred to as dimensionality (Durand & Lambert 1983, Marks & Olson 1981, Walker, Celsi & Olson 1987), refers to the degree of agreement between all the pieces of information (attributes) referring to a brand, where high levels of *within alternative variance* indicate finer discriminations amongst stimulus input (Best & Ursic 1987). There has been found a negative relationship between *within alternative variance* and predictive ability (Lines et al. 1994). Furthermore, the effect of *within alternative variance* on decision accuracy was found to be negative (Best & Ursic 1987), whilst it had no significant effect on perceived informativeness (Best & Williams 1980). The negative relationship between *within alternative variance* and decision accuracy occurs because high *within alternative variance* makes a task more difficult by adding to complexity. Low *within alternative variance* should, on the other hand, facilitate consistency and require less computational effort (Best &

Williams 1980, Best & Ursic 1987). Although low *within alternative variance* facilitates consistency it limits the amount of unique information.

4.5.1. Services/Goods, Intangibility and Predictive Ability

Several factors addressed in the previous sections influence the predictive ability. Ease of evaluation and certainty of evaluation both have an effect on predictive ability. Higher levels of perceived difficulty are likely to reduce consistency, and consequently the predictive ability decrease. Additionally, low levels of certainty may have a negative influence on predictive ability. An important factor in the earlier discussion of difficulties in evaluation of services/intangible products compared to goods is the lack of *relevant* attributes associated with services. Consequently, consistency in the evaluation and predictive ability are likely to be lower for services/intangible products than for goods/tangible products.

Mackenzie (1986) found that information concreteness, defined as the degree of detail and specificity about objects, actions, outcomes, and situation context, correlated positively with attribute *importance*. This may indicate that tangible attributes would be more important in the evaluation of products. However, it is important to stress that Mackenzie's definition of concreteness does not correspond to the "concreteness" distinction between tangible and intangible attributes[17]. Furthermore, the experiments are conducted with advertisements as stimuli and the focus has been on attitudinal change (or change in perceived importance).

Previously we have argued that *attribute variability* is positively related to predictive ability. Furthermore, we have argued that the confidence value of a tangible cue is likely to be higher than for an intangible cue. Burton (1990) proposed that due to the intangibility of services, it becomes more difficult to assess one service provider against another. Thus, it is reasonable to assume that consumers are more able, or confident, in discriminating between product alternatives based on tangible cues. This would be an indication that the predictive

[17] Mackenzie's definition of concreteness shows a rather high degree of resemblence with the Dubè-Rioux et al. (1990) definition of specificity (see chapter 3) which captures only one subdimension of the intangibility concept.

ability associated with services should be lower than for goods. According to these arguments the following hypotheses are proposed:

> H5a The predictive ability of multi-attribute models involving services are less than that of models involving goods
>
> H5b Increasing levels of product intangibility are associated with decreasing predictive ability

The *within alternative variance* dimension, however, yields a different prediction. It is argued that the effect hierarchy for services starts with affect or feeling followed by learning about the service (Young 1981, Friedman & Smith 1993). Furthermore, it was argued that company image is used as the basis for evaluating services (Lee & Ulgado 1993). Both of these suggestions imply that the evaluation of the different service attributes is affected by some form of central tendency. Both of these propositions reflect some kind of halo effect, where the former is closely associated with a general impression type of halo, while the latter is closer to a salient dimension type of halo (see Fisicaro & Lance 1990). These central tendencies will reduce *within alternative variance*, which in turn is likely to increase consistency and thus predictive ability.

The proposition that service product representations include a less relevant attribute structure is questionable. Intangible attributes, according to the concreteness - abstractness dimension, should exhibit higher predictive value, which *ceterus paribus* should increase predictive ability. This point is further emphasised because intangible (abstract) attributes are classified as beneficial attributes, while tangible (concrete) attributes are classified as characteristic attributes (see Lefkoff-Hagius & Mason 1993). It follows that beneficial attributes ought to be relevant for choice, although they have to possess some attribute variability in order to be classified as determinant (Alpert 1971, Myers & Alpert 1968, Alpert 1980). The foundation for the above proposed hypotheses is consequently somewhat ambiguous, and as demonstrated above several arguments indicate an opposite direction of the predictions regarding predictive ability.

Furthermore, it might be argued that the abstractness dimension of intangibility which includes more subject-related attributes would possess higher personal relevance to the individual. Thus, the individual is expected to be more able to discriminate between alternatives based on these attributes and by consequence the predictive ability is likely to increase, and not decrease, with higher levels of abstractness (see for example Neimayer et al. 1992). Thus H5a and H5b do not have a particularly strong foundation.

Chapter 5. Summary of Hypotheses

Several hypotheses were presented in chapter 4. Since the hypotheses were presented along with their theoretical arguments, this chapter provides only a summary of the stated hypotheses.

The first group of hypotheses are concerned with evaluation differences between goods and services (table 5.1). These hypotheses are based on differences between goods and services regarding perceived evaluation difficulty, perceived processing effort, certainty of evaluation, predictive ability, the use of surrogate cues, and the use of information sources.

Table 5.1. Summary of Hypotheses (Goods vs. Services)

Constructs	Hypotheses[1] Goods	Services	Reference (Section)
Perceived evaluation difficulty	<		H1a (4.1.1)
Perceived processing effort	<		H1c (4.1.1)
Certainty of evaluation	>		H2a (4.2.1)
Predictive ability	>		H5a (4.5.1)
Use of surrogate cues	<		H3a (4.3.1)
Use of information sources:			
Use of personal information sources	<		H4c (4.4.1)
Use of direct observation	>		H4e (4.4.1)
Reliance on personal experience	<		H4g (4.4.1)
Preference for outright purchase	>		H4a (4.4.1)

[1] < - less than, > - greater than

The use of information sources is divided into four types of information sources according to our discussion in chapter 4.

The hypotheses testing of the effect of product intangibility with respect to the evaluative dimensions and use of information sources require a test of association. Thus, the proposed relationships are stated as either negative or positive. A summary of these hypotheses can be found in table 5.2 below.

Table 5.2. Summary of Hypotheses (Product Intangibility)

Constructs	Hypotheses[1]	Reference
Product intangibility / Perceived evaluation difficulty	+	H1b (4.1.1)
Product intangibility / Perceived processing effort	+	H1d (4.1.1)
Product intangibility / Certainty of evaluation	-	H2b (4.2.1)
Product intangibility / Predictive ability	-	H5b (4.5.1)
Product intangibility / Use of surrogate cues	+	H3b (4.3.1)
Product intangibility / Use of information sources:		
Use of personal information sources	+	H4d (4.4.1)
Use of direct observation	-	H4f (4.4.1)
Reliance on personal experience	+	H4h (4.4.1)
Preference for outright purchase	-	H4b (4.4.1)

[1] Sign of Association

Because the hypotheses are not specified differently for different product intangibility dimensions, table 5.2 does not distinguish between the three product intangibility dimensions presented in chapter 3. However, we will come back to these dimensions if the analyses suggest that these dimensions have differential effects.

The hypotheses presented in table 5.1 and 5.2 are the starting point for the forthcoming discussion on choice of research design. The following chapter also includes a presentation of the measurement of variables included in this study.

A test of the basic assumption in the service literature that services are associated with higher product intangibility compared to goods is included in the analysis. This proposition is expected to hold for all three intangibility dimensions.

Chapter 6. Methodology

This chapter contains five sections. Section 6.1 includes general considerations regarding choice of research design. Section 6.2 discusses several aspects of stimulus selection. Results from two pre-tests are reported and the final choice of stimulus material presented. Specific details with respect to the experimental design are discussed and presented in section 6.3. Section 6.4 addresses issues of data collection. Finally, section 6.5 considers issues with respect to measurement.

6.1. Research Design

The hypotheses impose certain requirements on the research design. One of the first questions that may be raised is whether the hypotheses imply causal relationships. Cook & Campbell (1979) suggested that three requirements must be met in order to draw truly causal inferences. These requirements are; 1) covariation between cause and effect, 2) temporal precedence of the cause and 3) ability to rule out alternative interpretations for a possible cause and effect connection. The hypotheses are formulated as covariation and mean-difference hypotheses and, as such, do not imply causal relationships. The main reason for not examining causal relationships is the difficulty involved in meeting the second requirement of temporal precedence in this study. This study is based on actual product representations. Product representations and evaluations are formed through an interaction between the subject (consumer) and the object (product), where the aspects of evaluation are influenced by the individuals specific experiences, exposure to products, situational factors, etc.. Therefore, it is difficult to construct a design that is able to establish temporal precedence using actual product representations. The temporal precedence must be established a priori. Thus this study does not deal with causal relationships in the strict form of causation.

However, the basic approach of the study is that different levels of product intangibility effects the evaluation differently. Therefore, both of the other requirements are relevant for this study. Covariation between the independent variable and the dependent variables are necessary to provide support for the hypotheses. Furthermore, comparison between different product intangibility levels also requires control of alternative explanatory variables. This facilitates the use of an experimental research design, which is chosen based on strengths of experiments in terms of;

a) *control* of extraneous variables including the experimental situation
b) *manipulation* of independent variable or treatment
c) possibility of *comparisons* between treatment conditions

A central feature in this design is the manipulation of the independent variable, service vs. good. Based on the manipulation of the independent variable comparisons between treatment conditions can be attributed to differences in the serviceness of products. Random assignment of subjects attempts to assure control of extraneous variables[1].

Whether a within or between subject design is most suitable in order to address the hypotheses depends mainly on a trade off between subject heterogeneity and practice effects (Keppel 1982). In general, large subject heterogeneity favours within-subject designs. In this case subject heterogeneity may stem from different evaluation capacities among consumers (e.g. need for cognition, see Petty & Cacioppo 1986). Subject heterogeneity is likely to yield higher within-group variance compared to between-group variance when aggregating individual responses to treatment groups. This problem has been addressed within psychology, and there has been an ongoing debate concerning which of the two approaches, idiographic (individual based) or nomothetic (aggregated) (Jaccard & Dittus 1990), are most

[1] The control of extraneous variables, or isolation of the variables of interest, is an unobtainable ideal (Bollen 1989). Hence, a more realistic criterion would be pseudo-isolation. Pseudo-isolation assumes that the disturbance term, including all omitted variables ($\zeta_1 = f(x_{q+1},.....,x_\infty)$), is uncorrelated with the exogenous variables of an equation (eg. $y_1 = \gamma_{11}x_1 + \gamma_{22}x_2 + ... + \gamma_{1q}x_q + \zeta_1$). The disturbance ζ_1 is a random variable that is uncorrelated with x_1 to x_q. Random assignments of subjects is a design characteristic that aims at achieving this objective.

appropriate in addressing psychological problems[2]. In order to rule out subject heterogeneity several requirements must be met. Evaluation scales should be similar across individuals[3] and the translation from evaluation to response should be similar. The problem associated with within-subject design is the possibility of results being influenced by practice effects, such as learning and boredom.

A mixed design with elements from both between-subject and within-subject design was chosen for this study. Efficient data collection was facilitated by subjects responding to more than one product category. According to the above this permits some subject heterogeneity control. However, the respondents had to respond to two product categories only. This is because the required effort per respondent was high, and thus the number of product categories (stimuli conditions) had to be limited. Consequently, the design is not a pure within-subject design as learning and boredom effects are difficult to identify from two stimuli conditions only. However, the design is not a pure between-subject design as each respondent is exposed to two stimuli (or product categories). Specific details of the design are presented in section 6.3. Analytical consequences will be discussed in the following chapter.

[2] An example of the debate on idiographic vs. nomothetic approaches can be found in Psychological Review (1980 - 1882). Based on research on personality Kenrick & Stringfield (1980), Rushton, Jackson & Paunonen (1981), and finally Kendrick & Braver (1982) discuss which approach is most useful in order to draw valid conclusions.

[3] A comprehensive treatment of different forms of scale equality can be found in Jaccard & Wan (1986).

6.2. Selection of Stimuli

In order to test the hypotheses, the subjects of the study were exposed to both a good and a service. Classification of the stimulus material was determined by two pre-tests where students were exposed to a set of products and asked to classify these products according to their degree of serviceness. The first test asked the students to classify 32 stimuli products, while the second test required them to classify 20 stimuli products. Both tests classified products according to their degree of serviceness. Also, in the first test the products were rated according to their degree of intangibility. The results from these studies and earlier studies reported in the service literature (Murray 1991, McDougall & Snetsinger 1990), served as input for selecting the products used as stimuli in the main study. By inspection of specific questions with respect to the intangibility scale there appears to be a great potential for misunderstanding. Consequently, the range of responses for the intangibility scales are frequently restricted (e.g. McDougall & Snetsinger (1990), where the mean intangibility rating of services was reported to be 3.2 while the corresponding rating of goods was 2.2 on a 7 point scale). This was confirmed through the pre-test for this study using this type of intangibility scale. From a list of 32 products, including products with high and low service ratings, the mean intangibility score was 2.82 with a standard deviation of 1.33 using a 7-point scale (1 very tangible, 7 very intangible)[4]. The results indicated that respondents used a restricted range of the intangibility scale. This is especially evident since the ratings of degree of serviceness for the same 32 products on a 7 points scale contained less skewness (mean of 3.82) and higher standard deviation (2.42).

The final 10 products (5 mostly goods and 5 mostly services) reported in table 6.1 were chosen based on the levels (mean rating) of serviceness and the standard deviations of these ratings from the second pre-test[5]. Additionally, we made sure that some products frequently used in the service literature were included.

---

[4] The pre-test was conducted as a controlled experiment with students in an introductory marketing class as respondents. 88 respondents rated 8 products each leaving the number of responses or cases to 697 with 7 cases were missing. The tangibility measure is a mean sum-score based on four indicators.

[5] The second pre-test included 80 respondents responding to four product categories each.

Table 6.1. Descriptive Statistics of Stimuli Products

Products	Mean [1]	Standard deviation	N
Goods:			
Car	2.81	1.80	16
Leisure Jacket	1.24	.56	17
Running Shoes	1.13	.35	15
Jeans	1.31	.70	16
Pocket Camera	1.94	1.53	16
Services			
Dental Examination	5.94	1.20	17
Hotel Visit	5.29	1.21	17
Restaurant Dinner	4.81	1.17	16
Hair Cut	6.19	1.17	16
Charter Tour	5.19	1.17	16

[1] High service rating (7)
Low service rating (1)

The above results show that the serviceness ratings for serivices, generally, contain higher variation than that corresponding to goods, with the exceptions of car and pocket camera. These are more complex products with both higher serviceness ratings and standard deviation.

A T-test reveals that the serviceness ratings are significantly different between the five goods and the five services (T-value = 18.22, services (5.56) and goods (1.69)). Since most of the products were located fairly close to the extreme scale points, the given set of stimuli products appear to possess sufficient discriminatory power between goods and services.

6.3. Outline of Experiment

Two major concerns were most influential in determining the experimental design of this study. First, as will be seen in the next section the data collection method is based on personal interviews. Due to limited financial resources it was essential to obtain as much information from the respondents as possible. This meant that each respondent responded to more than one product category. Secondly, the work load imposed on the respondents had to be kept at

a reasonable level, to obtain valid and reliable information. Thus, the number of product categories for each respondent should be limited. These two concerns are conflicting and the experimental design tries to strike a balance between them. The outline of the experiment is presented below.

In the study each respondent answered questions about two products, one from each category (services/goods). The 150 respondents were distributed evenly among the different product categories with 30 subjects responding to each of the 10 products. Table 6.2 shows that the products were arranged in pairs with one good and one service in each (e.g. car - hair cut). The order of presentation between goods and services was randomised across subjects, to allow control of framing and learning effects. Through this manipulation it is possible to eliminate these effects as rival explanations for the observed differences. The following design plan was used for the study:

Table 6.2. Outline of Experiment

	Subjects	Responses	Products	Good - Service	Service - Good
		30	Car		
	30			15	15
		30	Hair Cut		
		30	Leisure Time Jacket		
	30			15	15
		30	Hotel Visit		
		30	Running Shoes		
	30			15	15
		30	Restaurant Dinner		
		30	Pocket Camera		
	30			15	15
		30	Charter Tour		
		30	Jeans		
	30			15	15
		30	Dental Examination		
Total:	150	300	10	75	75

A more detailed presentation of the experiment in terms of layout of the personal interview will be presented in section 6.4, where an in-depth discussion of the interview procedures and questionnaires is included.

The data administration was carried out according to the experimental plan presented in table 6.2. Due to removal of careless respondents the obtained experimental outline deviated somewhat from the original plan. However, table 6.3 shows that the obtained responses have almost the same distribution as the original plan, with a fairly even number of responses from the different product categories (varying from 29 to 31). Thus the cell sizes can be said to be equal.

Table 6.3. Obtained Responses with Respect to Experimental Design

	Subjects	Responses	Products	Good - Service	Service - Good
		30	Car		
	30			14	16
		30	Hair Cut		
		31	Leisure Time Jacket		
	31			17	14
		31	Hotel Visit		
		29	Running Shoes		
	29			14	15
		29	Restaurant Dinner		
		31	Pocket Camera		
	31			16	15
		31	Charter Tour		
		31	Jeans		
	31			14	17
		31	Dental Examination		
Total:	152	304	10	75	77

Table 6.3 indicates that two extra respondents were included in the study. The data collection procedure is presented in more detail in the following section.

6.4. Data Collection

Information regarding attributes and product representations was necessary in order to test the hypotheses. An elicitation procedure was required to obtain relevant product representations from the respondents. Because attribute elicitation requires that the respondents are instructed and supervised about the procedure, a high degree of control is necessary in the data collection process. Thus personal interviews were used to collect the data.

The interview included four phases. In the first phase, product attributes were elicited by a repertory grid procedure, followed by a free listing of additional attributes the consumer considered when buying (choosing) the different products. The second phase consisted of a questionnaire to examine the quality of the different attributes. Phase three contained questions regarding evaluative dimensions at the product level including control variables. The fourth phase included several demographic variables. The attribute elicitation was carried out for both products before the rest of the questionnaire was completed.

The proposed hypotheses are assumed to hold across products and consumers. An experimental design is used in order to control extraneous influences. This implies that the treatment groups should be maximally homogeneous in order to control for extraneous influences (Calder, Phillips & Tybout 1981). However, this study also attempts to generalise findings beyond the specific research setting, as the purpose is to test an assumption stated in the services marketing literature. The implication of this is that the study contains elements from both theory and effect applications (Calder et al. 1981). Thus the study can be seen as an intermediate between these two applications, and will be a theory-like test subjected to real world variability. A field experiment was found appropriate in order to address the research questions of this dissertation.

152 subjects were interviewed in this study. The population of interest to the study was consumers in general. The sampling unit was consumers listed in the Oslo telephone directory. The chosen sampling method was cluster sampling, whereby different areas in Oslo were selected at random and respondents randomly picked from these areas. The reason for

using a cluster sampling procedure was to reduce the travelling cost of the interviewers. Subjects were first contacted by telephone and interviews were arranged. Approximately 25% of the persons contacted agreed to participate in the study.

The final sample contained 43% males and 57% females. The household size of the subjects was as follows; single (20%), 2 persons (33%), 3 persons (19%), 4 persons (20%), and five or more persons (7%). The respondents' age varied between 18 and 78, and was fairly evenly distributed. The sample contains a bias towards more educated people, with almost 50% having two or more years of post high school education («videregående skole»). 3% had primary and secondary school («grunnskole») only. Demographic variables are not included in the analysis as the experimental outline described in the previous section ensures equal demographic profile for goods and services.

6.5. Measurement

This section addresses the measurement procedures applied in this study. Validity and reliability issues are addressed together with the measurement models in section 7.2.

First the elicitation procedure is presented and discussed followed by a presentation of the measurement of the dependent variables. Subsequently, the measurement of product intangibility is discussed and the measurement approach of this study presented. Finally, a couple of control variables is discussed in terms of implications for both the study and measurement.

6.5.1. Elicitation Procedure

The attributes were elicited by a repertory grid procedure (Kelly 1955, Shaw & Mancuso 1988), using the dyad approach. After the repertory grid procedure was completed[6] the subjects were asked whether they could come up with additional attributes that they thought were relevant in a *purchase* situation. This was a critical aspect of the study as the elicitation procedure is highly dependent on type of instruction. Several aspects reflected in the instruction may affect attribute elicitation. Below, we discuss distinctions between choice and judgement situations, as well as pre- vs. post-purchase situations.

Cognitive systems are developed in order to solve specific tasks. Hence, it is necessary to determine the task or goals intended solved by a cognitive system (Goldman 1986). The distinction between choice and judgement situations has proven to be important in consumer behaviour. Many researchers report evidence that the consumers use a phased decision strategy (Bettman 1979) which involves elimination by aspects as a screening strategy and additive utility in order to evaluate the remaining alternatives in making a choice. However, the judgement task facilitates a linear compensatory strategy (Johnson & Russo 1984). The

[6] In most cases when respondents could no longer list additional alternatives.

relevance with respect to the cognitive representation can be seen in the number of dimensions likely to be utilised. Although, the judgement task facilitates compensatory strategies where several dimensions are examined, the choice task typically starts out with a few screening dimensions before the last group of alternatives is examined in more detail. The difficulties involved in assessing services compared to goods should in a judgement task be reflected in the number of dimensions which are utilised or identified in the stimulus. Provided services are harder to evaluate one may expect that the consumer identifies fewer dimensions or concentrates on a few to ease evaluation. The effect of the assessment difficulties is more ambiguous. The more difficulties involved in the assessment could result in decreased ability to single out a final group as more preferable, and consequently more alternatives are investigated using an additive utility type of strategy. Conversely, the result may be that the consumer uses even fewer dimensions with increased threshold values in screening services than goods. This may suggest that fewer alternatives enter the final stage. The judgement task can be divided into two subgroups; conceptual and instrumental (Wilton & Myers 1986). The conceptual task require the respondent to gain understanding of a problem only, but it is not necessary to reach a recommendation or an explicit decision. The instrumental task, however, implies that the respondent ought to be able to select specific options from a set of alternatives. Ranking different alternatives is an example of this form of judgement task. This study focuses on evaluations with respect to choice.

Another issue, important to this study, is whether the evaluation is performed before or after using the product. The services marketing literature focuses, by and large, on evaluative problems in pre-purchase situations (Zeithaml 1981). This focus is evident in the use of Nelson's (1970) classification of search and experience attributes, which have been used as a direct measure of evaluative difficulty (Arnthorsson et al. 1991). It appears natural to focus on pre-purchase difficulties in this study, since most of the differences are expected to vanish in post-purchase evaluations. Therefore, the theoretical discussion focuses on pre-purchase evaluation differences. The focus on pre-purchase difficulties imposes the problem of designing a realistic research design. To create a situation which totally rules out post-purchase evaluations requires the elimination of earlier experience of the product category in

order to establish a situation with a maximum potential for discovering differences. However, the price would be a set of rather hypothetical instructions and the lack of relevance might draw the attention away from interesting "real" differences.

The instruction presented to the respondents before eliciting the attributes stressed the importance of a choice situation. Furthermore, the instruction attempted to capture pre-purchase considerations in a somewhat indirect way by emphasising attributes that the respondents would use instead of focusing on earlier product encounters. This is a weak manipulation in order to obtain pre-purchase considerations, but maintain some degree of realism in the instruction. The main instruction looked as follows;

e.g. «What attributes would you consider when purchasing a (e.g. pocket camera)?»

The instructions were slightly different between goods and services due to semantic considerations. Although it is natural to say purchase a car, it is not as natural to talk about purchasing a dental service. Thus, in the case of services the word purchasing was substituted by selecting.

e.g. «What attributes would you consider when selecting a (e.g. dentist)?»

6.5.2. Measurement of Dependent Variables

The following dependent constructs are included in this study; ease of evaluation (or perceived evaluation difficulty), perceived processing effort, certainty in evaluation, predictive ability, importance of surrogate cues, and use of different information sources. A summary of the questions can be found in appendix B.

The ease of evaluation was measured by five items. Three items were constructed in order to measure how easy/difficult the respondents found discriminating between alternatives within

the given product category. Two additional items were included from Kapferer & Laurent's (1985/86) involvement scale (see appendix B), since the questions tap the same domain. All five items were measured on 7 point Likert-type scales.

Processing effort was measured by two items, where one item measured the time required to find the best alternative whilst the other measured required information in order to find the best alternative. These two items were used by McDougall & Snetsinger (1990) as measures of evaluation difficulty. Both items were measured on 7 point Likert-type scales.

Certainty of evaluation was measured by five items. Three items were constructed to capture how certain the respondent was in choosing the best alternative within a product category. Again, two additional items were included from Kapferer & Laurent's (1985/86) involvement scale. All the items included in this study are constructed in order to tap choice uncertainty (Urbany et al. 1989), an approach found in several articles focusing on confidence (Wendler 1983, Peterson & Pitz 1988). The items were measured on 7 point Likert-type scales.

Predictive ability was measured as the correlation between estimated global evaluation and reported global evaluation and intention. The estimated global evaluation was calculated based on the multi-attribute model as can be seen in the formula below;

Estimated Global Evaluation $(GE)_{est}$ $$GE_{est} = \sum_{i=1}^{m} w_i * x_{ij}$$ (eq 6.1)

where:

m = *number of attributes;*
w_i = *standardised self-reported importance weight for attribute i;*
x_{ij} = *evaluation of attribute i for alternative j.*

The predictive ability was then computed as follows;

Mean Predictive Ability (PA)

$$PA_{GE} = \sum_{k=1}^{p} r_{GE_{ojk},\, GE_{estjk}} / p \qquad \text{(eq 6.2.1)}$$

$$PA_{INT} = \sum_{k=1}^{p} r_{INT_{ojk},\, GE_{estjk}} / p \qquad \text{(eq 6.2.2)}$$

where:

r = a Pearson product-moment correlation coefficient computed within-subject across elicited alternatives;
p = number of individuals;
GE_{estjk} = *estimated global evaluation of alternative j for individual k;*
GE_{ojk} = *self-reported global evaluation of alternative j for individual k;*
INT_{ojk} = *self-reported intention of alternative j for individual k.*

Since a repertory grid procedure was used in eliciting attributes and alternatives for both the product and service category, the number of attributes and alternatives varied from respondent to respondent. Since individuals responded regarding both one good and one service, predictive ability was calculated on a product - individual level; that is, there were two computed correlations for each individual, one for the good and one for the service condition, such that 152 respondents result in 304 correlations. The number of elicited alternatives used in computing the individual-level correlations ranged from 4 to 12, averaging about 6.

The importance of the price attribute was used as measure of importance of surrogate cues. Although this item does not tap the entire conceptual domain of the construct (surrogate cues include both price and physical facilities (Zeithaml 1981)), it was deemed the most feasible approach given the research design. This measure was calculated as the difference in importance of the price attribute, when elicited from the respondents, compared to the mean importance of the other elicited attributes. Attribute importance was measured by a single-item measure[7].

The information sources scale was an adapted version of Murray's (1991) original scale (see appendix B). The number of items were reduced from 25 to 15 in order to make the task

[7] See the questionnaire included in the appendix B.

feasible for subjects responding to the study. However, care was taken to maintain all the facets in the original scale. For the purpose of this study 13 items were used in order to tap five dimensions of which four are included in the stated hypotheses. Use of impersonal information sources was measured by 4 items and use of personal information sources were measured by 4 items. Direct observation was measured by a single item, while reliance on personal experience and preference for outright purchase were measured by two items each. The scale for all items contained 7 categories ranging from I would definitely use (1) to I would never use (7) the particular information source in question.

6.5.3. Measurement of Product Intangibility

There are several strategies that may be considered to measure the intangibility concept. First, one can treat the concept as containing several facets (dimensions), which suggests construction of items reflecting the different facets of the concept (Ironson, Smith, Brannick, Gibson & Paul 1989). This conceptualisation is particularly relevant if one wants to include both the accessibility to the senses notion and the mental component notion suggested by Bateson (1979). The items listed below reflect such a conceptualisation of the intangibility construct[8].

1. I have a very clear image of this item. (Access)
2. The image is aroused immediately. (Access)
3. This is a very abstract item to picture. (Abstractness)
4. This item is very tangible. (Global)
5. This is a complex item to think about. (Complexity)
6. This item would be easy to describe to another person. (Access)
7. This item evokes different images. (Unique access)
8. The item is difficult to picture. (Access)
9. I feel I have an accurate visualisation of the item. (Unique access)

The items are taken from McDougall & Snetsinger (1990).

[8] McDougall (1987) defined tangibility as the ability to picture or visualize the object for the purpose of his study. This is a definition that is both more specific (only one of the five senses) and broader (including accessability of a mental representation) than the accessability to the senses conceptualization.

The above items seem to a large extent to cover the accessibility of the product image. Items reflecting the complexity and abstractness of the product are also included along with a global measure of intangibility. McDougall & Snetsinger (1990) reduced the original scale to include five items only. The scale was tested on two products and two services with reliability scores exceeding 0.71 (Cronbach's alpha) in all cases. The reduced scale, based on a factor analysis, did not surprisingly contain fewer dimensions[9], including the accessibility aspect (4 items) and the global item only. Later studies replaced the global item (McDougall & Snetsinger 1990), and retained only accessibility items in the intangibility scale. Thus reducing the intangibility scale to unidimensionality[10].

A second approach is to treat the intangibility concept as a global concept. A global measure of intangibility implies that the respondent judge the overall intangibility of a product[11]. One way of constructing a global measure of intangibility is to provide the respondent with a detailed instruction explaining the properties included in the intangibility concept[12]. A potential problem with this approach is that a global evaluation does not provide insight into

---

[9] The following items are included in the scale:

1. I have a very clear picture of this item.
2. The image comes to mind right away.
3. This is not the sort of item that is easy to picture.
4. This item is very tangible.
5. This is a difficult item to think about.

[10] The new item was as follows; This item is very easy to see and touch.

[11] The final version of the intangibility scale suggested by McDougall & Snetsinger (1990) is an example of an unidimensional scale, which can be treated as a global conceptualization of the intangibility construct.

[12] An early version of McDougall's intangibility scale was a global scale and the instruction used in this scale is presented below;

> Some products and services are easy to picture or visualize before people buy them. These products and services would be considered very tangible. Others are difficult to picture or visualize before being bought. These products and services would be considered very intangible.
>
> Please assume you were planning to make the decision to purchase the product or service. Then rate each of the products or services in terms of how tangible or intangible you think they are.

	Very Tangible					Very Intangible
- Prod A	1	2	3	4	5	6

the process giving rise to this result (Ironson et al. 1989), and therefore the control validity of the concept is reduced (Zaltman, Pinson & Angelmar 1972)[13].

A third approach is to define the intangibility of a product as a composite of the product attributes. This approach assumes that the whole is equal to the sum of its principal parts (Ironson et al. 1989).

One way of constructing this kind of scale is to determine the overall level of intangibility by the relative proportion of intangible attributes compared to tangible attributes. The previously discussed "layers of meaning" paradigm suggested by Hirschman (1980) is well suited for this kind of conceptualisation. The attributes of the product is classified as either tangible or intangible, and the overall level of product intangibility can be determined by the proportion of intangible attributes relative to tangible attributes. Johnson et al. (1992) found that more abstract products are associated with more abstract attributes, which suggest that this might be a valid approach for measuring product intangibility. A critical part of this measurement procedure is the elicitation of the relevant attributes, since the proportion of intangible relative to tangible attributes heavily depends on the included attributes.

A variant of this composite measure is Shostack's (1977) conceptualisation of differences between goods and services. Shostack acknowledges that almost all sort of products consist of both tangible and intangible attributes or elements. The criterion for determining if a product is a good or service is whether the core of the product is tangible or intangible. The rest of the attributes will determine the degree of intangibility on a continuum with pure good and pure service at the extreme ends.

From the definition of intangibility presented in chapter 3 the measure of product intangibility was chosen as a composite of attributes. The composite approach enables one to investigate the three dimensions of intangibility discussed earlier, as the identification of tangible and

[13] For a detailed discussion, see Troye & Henjesand (1992).

intangible attributes could be performed through a classification of attributes elicited from the respondents[14]. The reliability of the classification can be assessed through measures of inter-coder reliability. The inter-coder reliability in turn is influenced by the instruction or definition of the classification criteria, and will most likely increase if the operational definition (instruction) is clear and not ambiguous. Coding instructions are presented in appendix C.

Two judges classified 673 attributes on three main dimensions (each including 4 categories) using 7 point scales. For the purpose of this study the scales were reduced to three point scales (-1 for 1 to 3, 0 for 4, 1 for 5 to 7), in order to calculate the proportion of tangible and intangible cues. The number of categories within each dimension were also reduced to two. The two judges rated all attributes on the concreteness - abstractness dimension (C-A), levels of specificity dimension (LoG), and lack of pre-purchase inspection possibilities (LPPI). In general there was a relatively high level of agreement between the judges (75,6% identical classifications for concreteness - abstractness, 76,8% for levels of specificity, and 68,2% for pre-purchase inspection possibilities). A third judge classified the attributes when the ratings of the two main judges differed.

The level of intangibility was computed as the proportion of intangible attributes compared to the total number of attributes. This procedure was used for all three dimensions (C-A, LoG, LPPI). Also, to include the problem of indeterminacy[15] (attributes that are not classified as either tangible or intangible) into the intangibility concept, an extra item was included for all the intangibility dimensions. These items were computed by the formula; 1 - the proportion of tangible attributes.

[14] The composite measure of product intangibility also contains more variation than the global scale. Thus it is more suited to discriminate between goods and services. Results from the second pre-test indicates a significant difference between goods and services in terms of product intangibility (proportion of intangible attributes). The T-value for the difference between the included services and goods was 7.78 with the following proportions of intangible attributes; services 0.80 and goods 0.42.

[15] The first indicator of the proportion of intangible attributes was calculated as the number of intangible attributes (1's) divided by the total number of attributes. The second indicator also accounted for the 0's, or attributes not classified as either tangible or intangible, and was computed as follows: 1 - (number of tangible attributes (-1's) divided by the total number of attributes).

6.5.4. Control Variables

There are several factors that either moderate or mediate the proposed relationships between intangibility and the different dependent variables. In this chapter some implications of these moderators and mediators are discussed.

In this study familiarity/knowledge and an aspect of involvement are included as control variables. There are several reasons for including these variables in the study. First, because both involvement and familiarity/knowledge are used frequently within the consumer behaviour discipline to explain differences in decision processing and evaluation, the potential for influencing the results of this study is substantial. Second, by including these variables as control variables in a more explorative fashion, involvement and knowledge/familiarity can can increase the explanatory power of the study, in particular in cases when it is possible to predict (or hypothesise) the direction of a potential differential effect. Thus, these variables provide additional explanatory potential for this study, and can also play an useful role in construct validation. Therefore, the following also includes a brief discussion of the general effects of involvement and familiarity/knowledge on the dependent variables.

6.5.4.1. Involvement

Most consumer behaviour models include the consumer involvement concept, and the implications of different levels of involvement have been demonstrated to influence decision processes (Engel & Blackwell 1982), elaboration (Petty et al. 1983), information search (Beatty & Smith 1987), and evoked set formation (see Troye 1983). Although the importance of the involvement construct is generally agreed upon as being considerable, the different applications of the "term" involvement have lead to diverse definitions of the construct (Zaichkowsky 1985). Even though the most common definition of involvement includes some form of personal relevance (Fiske & Taylor 1991) the operational definitions remain diverse. One factor contributing to this diversification is the lack of clarity in the construct's

denotation, or even the different denotations of the construct. The marketing literature has used the term involvement in relation to advertisements, products and purchase decisions (see Zaichkowsky 1985), and within the psychological discipline different involvement concepts such as value-relevant involvement, outcome-relevant involvement and impression-related involvement have been demonstrated to have different effects on persuasion (Johnson & Eagly 1989, Johnson & Eagly 1990). In this study the focus is on effects caused by a person's involvement with a product.

Involvement has been hypothesised to lead to greater perception of attribute differences and greater perception of attribute importance (Howard & Sheth 1969, Lastovicka & Gardner 1978), which would affect the hypotheses regarding predictive ability (Lineset al. 1994). There are different ways that involvement can effect these variables. First, involvement might have no differential effect. Second, it is possible that the evaluative difference between tangible and intangible attributes is reduced for highly involved consumers. A third possibility is that different levels of involvement influences the proportion of intangible attributes, suggesting that the intangibility level of the same service or good include an additional source of variation caused by different levels of involvement. Furthermore, consumers with a high level of involvement might experience less difficulties and more confidence in evaluating intangible products than consumers with lower levels of involvement. Thus the involvement level might behave as a moderator of the earlier proposed relationship between tangibility and ease of evaluation, and confidence in the evaluation. Involvement is a central variable explaining the different persuasion routes in the ELM model. This implies that highly involved persons are more likely to use a central form of elaboration and moderate the suggested relationship between intangibility and use of surrogate cues.

Kapferer & Laurent (1985/86) identified five facets of involvement; interest, pleasure, sign, risk importance and risk probability. The different facets of involvement may have different impact on the evaluation. We have decided to include risk importance as a control variable in this study. Risk importance seems particularly relevant to the certainty of evaluation and use of information sources. Many of the hypotheses regarding the use of information sources are based on risk perceptions, and thus it is deemed useful to control the effects of risk importance

associated with the product categories. This is the central aspect of involvement mentioned in the services marketing literature. Other aspects of the Kapferer & Laurent's involvement scale are included as measures of the dependent variables, since they are closely associated with the ease of evaluation and certainty of evaluation.

6.5.3.2. Familiarity/Knowledge

Product knowledge and familiarity have been shown to affect information search, cognitive structure and ability to differentiate products (Brucks 1985, Alba & Hutchinson 1987). The effect on information search is not clear in terms of amount of information or number of attributes that people investigate (Johnson & Russo 1984). Furthermore, the effect of knowledge or familiarity on cognitive structure is not clear. Knowledge might lead to a richer cognitive structure. However, it might also lead to a higher degree of relevance of the information that is included in the cognitive structure. Familiarity increases the ability to analyse information and isolate what is most important and task relevant (Alba & Hutchinson 1987). Additionally, product knowledge and familiarity influence the differentiation ability in such a way that the differentiation of products become more refined, more complete and more veridical as familiarity increases (Alba & Hutchinson 1987). This suggests that knowledge and familiarity might affect the before stated hypotheses in various ways. First, the predictive ability or evaluative consistency is likely to increase, due to a focus on more relevant attributes. Second, familiarity and knowledge are likely to increase the confidence and reduce the perceived difficulty of product evaluations. One reason for this suggestion is the increased expertise in making such judgements. Another is the hypothesis confirmation bias, which may be particularly relevant for intangible products (i.e. Koehler 1991). In this case ambiguous information may be integrated as confirmation of an expectation (see Wilson, Lisle, Kraft & Wetzel 1989), and thus increase the confidence in the product evaluation. Familiarity also increases the ability to elaborate on the given information and generate accurate knowledge beyond what is given (Alba & Hutchinson 1987), which implies that the reliance on surrogate cues (or peripheral routes) is likely to decrease with increased familiarity.

Familiarity/knowledge is measured by six (seven) items in the study. The first two included items are Bruck's (1985) proposed measures of subjective knowledge. Both of these are measured on a seven-point semantic differential scale. The other items are supposed to tap knowledge/familiarity and experience more directly. One of the item is used for goods only where it is meaningful to distinguish between purchase experience and product usage experience.

Chapter 7. Analysis

This chapter contains the different analyses conducted in this study. The first section includes a discussion of the descriptive statistics included in appendix D. The second section is concerned with the measurement models of the study, including discussions of the dimensionality of the intangibility construct, construct validity and reliability. Hypotheses tests of differences between goods and services are conducted in the third section, using two-group analysis in LISREL. The structural models involving product intangibility are presented in the fourth section of this chapter. Finally, a summing-up section is included at the end of this chapter.

7.1. Descriptive Statistics

An overview of the descriptive statistics for the sample is presented in appendix D. Only two items have kurtosis values of more than 2. Both items are measures of information sources. Item 25 is a measure of personal experience as information source and asks whether the respondent would consider previous product experience of the product category. This item appears as an «easy» item to agree to and thus the item is leptokurtic. The same can be said about item 28, a measure of preference for outright purchase, although for the opposite reason. The item asks whether the person would buy the first product that meets the eye without any further elaboration. It is inherently «difficult» to agree to such a statement. The difference between how easy it is to agree to these items can also be seen through the positive (item 25) and negative (item 28) skewness associated with the items.

Most of the other items are platykurtic with negative kurtosis values down to -1.834 (item 24). In terms of absolute values 29 out of 45 items have kurtosis values less than 1.

Based on a review of findings regarding non-normality and consequences with respect to model fit Kaplan (1990) suggested that skewness values exceeding 1 (absolute value) should

be treated with caution for moderately sized samples (such as this). With a few exceptions (items 25, 28, 41, 44 and 45), skewness seems not to impose specific problems in this sample. Most of the problematic variables are going to be deleted in the measurement models presented in the forthcoming section.

Except for item 15 and to a lesser extent item 13 and item 14 missing values do not appear to be a problem in this sample. The main reason for the missing values of items 13 and 14, representing predictive ability, is that some respondents filled out only one of the global evaluation measures (global evaluation or intention), leaving the other missing. The reason for the missing values for item 15 (relative importance of price) is that price only was mentioned in 179 cases. The remaining cases did not have price as an elicited attribute. Thus, pairwise deletion of missing data seems justified.

7.2. Measurement Models

According to Anderson & Gerbing (1988) a two-step approach is preferable for testing structural equation models. First, the measurement model is estimated without imposing any «structural» constraints. This allows an inspection of the lack of fit that can be attributed to the measurement alone. The second step includes the structural relationships proposed by the theoretical framework. The two-step approach avoids the problem of interpretational confounding which can result from a one-step approach (Anderson & Gerbing 1988). The two-step approach was employed for this study.

LISREL 8.12a was applied to all models reported in this section. Two measurement models were estimated, since the number of variables is quite high. Thus, a division into two models was necessary both for technical and simplicity reasons.

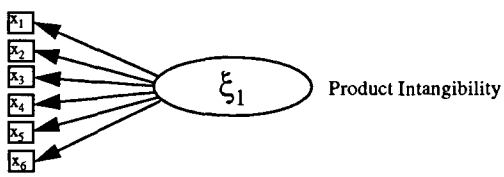
Numerous fit indices are proposed in the literature, and a number of different fit indices are now reported in recent versions of SEM software such as LISREL 8.12a (Jöreskog & Sörbom 1993) . Although, the different indices are inter-correlated, the same model can fit according to one index, but at the same time not fit according to another index. Thus, several fit indices are reported. To test the overall fit of the model we have included a selection of stand alone (GFI and NFI) and relative (NNFI, CFI, RMSEA) fit indices (Tanaka 1993). Both CFI and RMSEA are non-centrality indices. RMSEA also measures the error of approximation, including a confidence interval around the RMSEA fit measure (Browne & Cudeck 1993). GFI, NFI and NNFI are included since these indices are frequently used to report overall fit of structural equation models. CFI and RMSEA are relatively new indices developed to overcome some of the weaknesses associated with the above indices. These five indices are used to determine overall fit, and in addition χ^2 is also reported.

Before discussing the main measurement models, the dimensionality of the intangibility construct is estimated and evaluated.

7.2.1. The Dimensionality of Product Intangibility

The theoretical discussion of the intangibility concept suggested that there were three dimensions of intangibility. However, these are proposed to relate similarly to the different evaluative dimensions and use of information sources. Thus, the first part of this study is to test if the different dimensions warrant separate treatment. Two LISREL models were estimated to test the dimensionality of the concept. The different models are presented in figure 7.1.

Model a)



Model b)

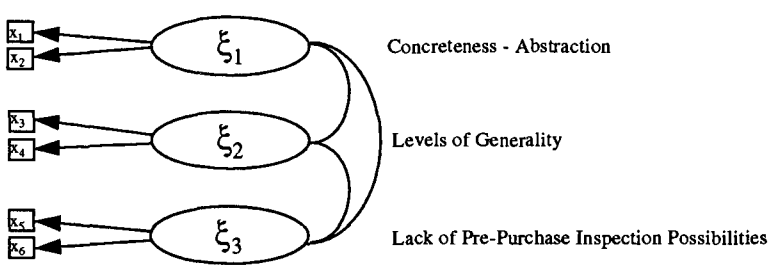


Figure 7.1. Dimensionality of the Product Intangibility Construct

The first model (a) tested a uni-dimensional conceptualisation of intangibility, while the second model (b) included three different dimensions. The results are presented in table 7.1 below:

Table 7.1. Model Fit for Different Models of the Dimensionality of Product Intangibility

	Product Intangibility	
	Uni-dimensional	Three Dimensional
Chi-Square	332.51 (P = 0.0)[a]	16.92 (P = 0.0096)
(Degrees of Freedom)	(9)	(6)
RMSEA	0.34	0.078
GFI	0.77	0.98
NFI	0.82	0.99
NNFI	0.70	0.99
CFI	0.82	0.99
	$\lambda_{1,1}$[b] 0.97	$\lambda_{1,1}$ 0.97
	$\lambda_{2,1}$ 0.97	$\lambda_{2,1}$ 0.97
	$\lambda_{3,1}$ 0.80	$\lambda_{3,2}$ 0.94
	$\lambda_{4,1}$ 0.80	$\lambda_{4,2}$ 0.94
	$\lambda_{5,1}$ 0.60	$\lambda_{5,3}$ 0.82
	$\lambda_{6,1}$ 0.62	$\lambda_{6,3}$ 0.87

[a] n=304
[b] Standardised Coefficient

All the included fit indices indicate better fit for the three-dimensional conceptualisation of intangibility. The chi-square difference between the two models (215.59 with 3 degrees of freedom) is highly significant, suggesting that the three-dimensional model is by far the better conceptualisation. Given the items that are used in order to measure the dimensions this is hardly surprising, since each dimension have two indicators very similar to each other. Also the standardised factor loadings are similar for two out of three dimensions. The inter-correlations between the intangibility dimensions are high, and are presented in table 7.2 below;

Table 7.2. Correlation Matrix (Estimates) Between Intangibility Dimensions

	C-A[1]	LoG[2]	LPPI[3]
C-A	1.00		
LoG	0.83	1.00	
	(0.02)[4]		
LPPI	0.71	0.62	1.00
	(0.04)	(0.04)	

[1] Concreteness - Abstractness Dimension
[2] Levels of Specificity Dimension
[3] Lack of Pre-purchasing Inspection Possibilities Dimension
[4] Standard error estimates in parentheses

Reliability and validity assessments of the intangibility dimensions are included in both measurement models presented in the following section.

7.2.2. Measurement Model of Evaluative Dimensions

Due to the high number of items the data set was divided into two in the forthcoming analyses. Hence, two measurement models are analysed. The first measurement model includes the evaluative dimensions, intangibility dimensions and control variables. The final version is illustrated in figure 7.2.

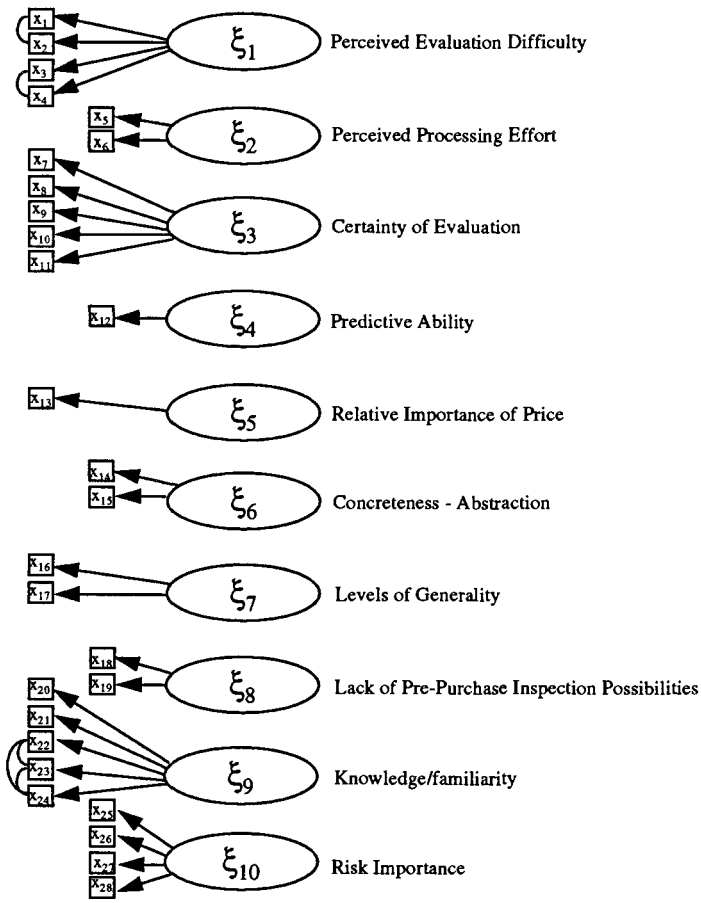


Figure 7.2. Measurement Model (Evaluative Dimensions)

The evaluative dimensions are perceived difficulty of evaluation (ξ_1), perceived processing effort (ξ_2), certainty of evaluation (ξ_3), predictive ability (ξ_4), and relative importance of price in the evaluation (ξ_5). Furthermore, three dimensions of intangibility; C-A (ξ_6), LoG (ξ_7), and LPPI (ξ_8) are included. Also, two control variables, knowledge/familiarity (ξ_9) and risk importance (ξ_{10}) are included in the measurement model. In addition to the paths included in the above model, all latent constructs were allowed to correlate with each other.

Several different models were tested. The overall fit of the different models are reported in table 7.3. The first model was the general measurement model based on the conceptualisation presented in the previous chapter. The model did not receive adequate model fit, and all fit indices suggested substantial room for improvements. The first approach was to drop problematic items. In model 2 three items were dropped. Item 3 was dropped from the perceived difficulty of evaluation (ξ_1), due to low factor loading. Two additional items (44 and 45) were dropped from the risk importance construct (ξ_{10}) for the same reason. Although, a substantial drop in chi-square was observed the fit was still not satisfactory. An additional problem with the solution from model 2 (and also model 1) is that one (item 13) of the two items measuring predictive ability was out of range (standardised λ above 1) and thus one item (13) was deleted in model 3, leaving predictive ability (ξ_4) as a single indicator construct. This move had very little effect on model fit. In model 4 several error terms are allowed to correlate. The perceived difficulty of evaluation (ξ_1) construct was measured by two scales. Two of the items (item 4 and item 5) were taken from Kapferer & Laurent's (1985/86) involvement scale, while the other two (item 1 and item 2) were constructed for the purpose of this study. Furthermore, because the items were placed differently in the questionnaire, it seems reasonable to allow the error terms between item 4 and item 5 and the error terms between item 1 and item 2 to correlate.

A similar argument can be made with respect to the familiarity/knowledge construct (ξ_9). The first two items (items 35 and 36) in the scale were based on Bruck's (1985) measures of subjective knowledge, while the other three (items 37, 38 and 39) are straightforward measures of knowledge and experience with the product category. Thus, the error terms between the three latter items were allowed to correlate.

Table 7.3. Fit Indices of Measurement Models

	Goodness of fit	Specifications
Model 1	Chi-square = 1034.37 (df = 420) RMSEA = 0.069 GFI = 0.81 NFI = 0.82 NNFI = 0.86 CFI = 0.88	General measurement model
Model 2	Chi-square = 752.09 (df = 333) RMSEA = 0.064 GFI = 0.85 NFI = 0.85 NNFI = 0.89 CFI = 0.91	Three items dropped (Item 3, Item 44, Item 45)
Model 3	Chi-square = 732.93 (df = 307) RMSEA = 0.068 GFI = 0.85 NFI = 0.85 NNFI = 0.89 CFI = 0.91	Four items dropped (Item 3, Item 44, Item 45, Item 13) Item 13 due to out of range estimate
Model 4	Chi-square = 579.72 (df = 302) RMSEA = 0.055 (p-value of close fit = 0.11) GFI = 0.88 NFI = 0.88 NNFI = 0.92 CFI = 0.94	Four items dropped (Item 3, Item 44, Item 45, Item 13) Some correlated error terms

As can be seen from the table 7.3 the fit of model 1 to 3 are not entirely satisfactory. Model 4, however, receives acceptable fit by most fit indices[1] (Medsker, Williams & Holahan 1994). In view of these results model 4 is chosen as the final measurement model of the evaluative dimensions in this study and has been illustrated in figure 7.2.

The next step is to evaluate the reliability and validity of the constructs in the measurement model. Table 7.4 presents an overview of the factor loadings with the accompanying T-values and error terms. The structure is the same as given in figure 7.2.

[1] A review of fit indices (not including RMSEA) by Gerbing & Anderson (1993) suggest that CFI, proposed by Bentler (1990), is the most promising candidate to satisfy the criterion as a suitable fit index. Thus priority is given this index along with RMSEA in this study.

Table 7.4. Measurement Model of Evaluative Dimensions

Factor loadings[a]		/T-values	Error term[a]		/T-values	Item reliability	Average variance extracted	Composite reliability
$\lambda_{1,1}$	0.64	11.65	$\theta_{1,1}$	0.59	10.72	0.41		
$\lambda_{2,1}$	0.61	10.84	$\theta_{2,2}$	0.63	10.99	0.37		
$\lambda_{3,1}$	0.74	13.56	$\theta_{3,3}$	0.45	8.64	0.55	0.46	0.77
$\lambda_{4,1}$	0.71	12.68	$\theta_{4,4}$	0.50	9.29	0.50		
$\lambda_{5,2}$	0.63	10.08	$\theta_{5,5}$	0.61	9.16	0.39		
$\lambda_{6,2}$	0.79	12.12	$\theta_{6,6}$	0.38	5.03	0.62	0.51	0.67
$\lambda_{7,3}$	0.76	14.95	$\theta_{7,7}$	0.42	10.04	0.58		
$\lambda_{8,3}$	0.72	13.93	$\theta_{8,8}$	0.48	10.50	0.52		
$\lambda_{9,3}$	0.77	15.05	$\theta_{9,9}$	0.41	9.98	0.59	0.54	0.85
$\lambda_{10,3}$	0.70	13.43	$\theta_{10,10}$	0.50	10.69	0.50		
$\lambda_{11,3}$	0.71	13.57	$\theta_{11,11}$	0.50	10.64	0.50		
$\lambda_{12,4}$	1.00	24.62	$\theta_{12,12}$		-			
$\lambda_{13,5}$	1.00	24.62	$\theta_{13,13}$		-			
$\lambda_{14,6}$	0.97	23.14	$\theta_{14,14}$	0.05	4.04	0.95		
$\lambda_{15,6}$	0.97	23.05	$\theta_{15,15}$	0.06	4.33	0.94	0.95	0.97
$\lambda_{16,7}$	0.94	21.37	$\theta_{16,16}$	0.11	5.53	0.89		
$\lambda_{17,7}$	0.94	21.42	$\theta_{17,17}$	0.11	5.42	0.89	0.89	0.94
$\lambda_{18,8}$	0.82	15.63	$\theta_{18,18}$	0.33	7.13	0.67		
$\lambda_{19,8}$	0.87	16.94	$\theta_{19,19}$	0.24	5.02	0.76	0.72	0.83
$\lambda_{20,9}$	0.69	12.53	$\theta_{20,20}$	0.52	9.73	0.48		
$\lambda_{21,9}$	0.75	13.78	$\theta_{21,21}$	0.44	8.71	0.56		
$\lambda_{22,9}$	0.76	14.04	$\theta_{22,22}$	0.42	8.22	0.58	0.47	0.82
$\lambda_{23,9}$	0.65	11.18	$\theta_{23,23}$	0.58	9.85	0.42		
$\lambda_{24,9}$	0.57	9.56	$\theta_{24,24}$	0.67	10.56	0.33		
$\lambda_{25,10}$	0.76	13.34	$\theta_{25,25}$	0.42	7.29	0.58		
$\lambda_{26,10}$	0.41	6.64	$\theta_{26,26}$	0.83	11.61	0.17		
$\lambda_{27,10}$	0.74	12.83	$\theta_{27,27}$	0.46	7.96	0.54	0.41	0.72
$\lambda_{28,10}$	0.57	9.63	$\theta_{28,28}$	0.67	10.61	0.33		
			$\theta_{1,2}$	0.33	7.10			
			$\theta_{3,4}$	0.09	2.25			
			$\theta_{22,23}$	0.22	4.80			
			$\theta_{22,24}$	0.16	3.53			
			$\theta_{23,24}$	0.33	6.49			

[a] Standardised coefficients

Bagozzi & Yi (1988) suggested three reliability measures; individual item reliability, composite reliability, and average variance extracted. All three reliability measures are presented in the above table. The item reliability is defined as; $\rho_i = \lambda_i^2 varT/(\lambda_i^2 varT + \theta_{ii})$, where $T = \xi_j$ or η_k. This formula is valid in situations, like this one, where each indicator is influenced by one latent construct only. In situations where two or several latent constructs influence an indicator all influences should be included to assess reliability of the item. This follows from Bollen's (1989) definition of reliability, where the reliability of x_i is the magnitude of the direct relations all variables (except δ's) have on x_i. In the LISREL-output the squared multiple correlation coefficient for x_i is a straightforward measure of item reliability. This measure also equals Bagozzi & Yi's individual item reliability measure in situations where only one latent variable has influence on the specific item. Average variance extracted is defined as follows; $\rho_v = \sum\lambda_i^2 varT/(\sum\lambda_i^2 varT + \sum\theta_{ii})$, where Bagozzi & Yi (1988) suggest values exceeding 0.5 as desirable. Composite reliability is defined as follows; $\rho_c = (\sum\lambda_i)^2 varT/((\sum\lambda_i)^2 varT + \sum\theta_{ii})$, and values of composite reliability should exceed 0.6 in order to be satisfactory.

Most factor loadings reported in table 7.4 are reasonably high and all are significant. The item reliability varies from 0.17 to 0.95. Small values of item reliability imply that only a small portion of the variance is explained, and although no rule of thumb for sizes of item reliability is suggested in the literature, some variables seem to have low item reliability. Most of these items measure control variables. Although, all constructs pass the test of composite reliability (exceeding 0.6) the values of average variance extracted confirm that most problems regarding reliability involve the control variables. With exception of perceived difficulty of evaluation (ξ_1) all the theoretical constructs in the study exceed 0.5 in average variance extracted. Both of the control variables (ξ_9 , ξ_{10}) extract less than 50% of the variance. Both ξ_1 (perceived difficulty of evaluation) and ξ_9 (familiarity/knowledge) contain items with correlated error terms and this might contribute to lower reliability, since this violates the assumption of uni-dimensionality. Some of the systematic variance of these variables are not attributable to latent constructs and do not show up in the reliability measures. Risk importance (ξ_{10}), on the other hand, has problems with the reliability. $\lambda_{26,10}$ is especially problematic with it's low individual item reliability (0.17). However, high inter-correlations alone are not sufficient in order to obtain sound measurement, if we are not able to capture all facets of the construct (Bollen &

Lennox 1991). Thus, we have chosen to include all the items in the further analysis in order to maintain a broader domain for the risk importance construct.

Several measures regarding aspects of construct validity are proposed in the structural equation modelling (SEM) literature. Bollen (1989) suggested several measures that could overcome some weaknesses associated with traditional validity approaches. Although all of his suggestions can be used when a measure depends solely on one latent variable, they appear to be more useful when several latent variables affect the measure. For instance, Bollen's standardised validity coefficient is equal to the λ's in table 7.4, but since no items are measured with more than one latent variable the relative influence is not obtainable. Similarly, Bollen's unique validity variance equals the item reliability when the measures depend on one latent variable only. Anderson & Gerbing (1988) offered an approach for assessing convergent and discriminant validity. Convergent validity can be assessed by determining whether each indicator's estimated pattern coefficient on its posited underlying construct factor is significant. This can easily be done by checking the T-values for the λ's in table 7.4. All of them are significant (T-values greater than 2) and based on this criterion convergent validity is assured. However, this is a fairly weak criterion. Discriminant validity can be assessed by determining whether the confidence interval (+/- two standard errors) around the correlation estimate between two factors include 1.0 (absolute value). Table 7.5 reports the correlation matrix between the latent constructs including the standard errors.

Appendix E reports an additional validity test, which is an approximation of criteria-related validity based on the inter-relationship between the different dependent constructs. The test reveals that criteria-related validity to a large extent is assured, although problems exist for some of the relationships. Also, these problems can be attributed to lack of clarity in theoretical rationale, and not necessarily to insufficient measurement.

Table 7.5. Estimated Correlation Matrix Between Evaluative Dimensions

	PED	PPE	CE	PA	RIP	C-A	LoG	LPPI	K/F
PPE	0.43								
	(0.07)[a]								
CE	-0.83	0.01							
	(0.04)	(0.07)							
PA	-0.08	-0.17	0.12						
	(0.07)	(0.07)	(0.06)						
RIP	0.04	0.08	-0.05	-0.02					
	(0.07)	(0.07)	(0.06)	(0.06)					
C-A	-0.09	0.09	0.06	0.08	0.02				
	(0.07)	(0.07)	(0.06)	(0.06)	(0.06)				
LoG	-0.03	0.21	0.04	0.00	0.01	0.83			
	(0.07)	(0.07)	(0.06)	(0.06)	(0.06)	(0.02)			
LPPI	-0.04	0.11	0.06	0.02	-0.03	0.70	0.62		
	(0.07)	(0.07)	(0.07)	(0.06)	(0.06)	(0.04)	(0.04)		
K/F	-0.66	0.03	0.66	0.06	-0.02	0.08	0.12	0.04	
	(0.05)	(0.08)	(0.05)	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)	
RI	0.13	0.52	0.20	-0.03	-0.13	0.12	0.15	0.17	0.20
	(0.08)	(0.07)	(0.07)	(0.07)	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)

PED - Perceived Evaluation Difficulty
PPE - Perceived Processing Effort
CE - Certainty of Evaluation
PA - Predictive Ability
RIP - Relative Importance of Price
C-A - Concreteness - Abstraction
LoG - Levels of Generality
LPPI - Lack of Pre-Purchasing Inspection Possibilities
K/F - Knowledge/familiarity
RI - Risk Importance

[a] Standard errors in parentheses

The matrix above shows that no correlation estimate include 1.0 in its confidence interval (5th and 95th percentile). The closest relationship is between perceived difficulty of evaluation (ξ_1) and certainty of evaluation (ξ_3) where the correlation is estimated to be -0.83 with the corresponding confidence interval between -0.75 and -0.91. Thus discriminant validity is assured according to Anderson & Gerbing's (1988) requirement[2].

[2] However, according to Fornell & Larcker's (1981) criterion for discriminant validity, discriminant validity between PED and CE is not achieved. Discriminant validity is achieved if the following expression holds for all ξ's: $\rho_{vc}(\xi_i) > \phi^2$, which implies that average variance extracted (AVE) should be higher for each latent construct than the squared correlation between the constructs. The AVE for the PED and the CE constructs are 0.46 and 0.54 respectively. The squared correlation between the constructs is (-0.83^2) 0.69. Consequently discriminant validity is not achieved according to Fornell/ Larcker's criterion. For all remaining constructs discriminant validity are achieved according to this criterion.

7.2.3. Measurement Model of Information Sources

The second measurement model includes use of impersonal information sources (ξ_1), use of personal information sources (ξ_2), use of direct observation (ξ_3), reliance on personal experience (ξ_4), and preference for outright purchase (ξ_5). Additionally, the intangibility dimensions and the control variables are included in this model as well. The final measurement model is illustrated in figure 7.3. The model also includes correlations between latent constructs, although this is not indicated in figure 7.3.

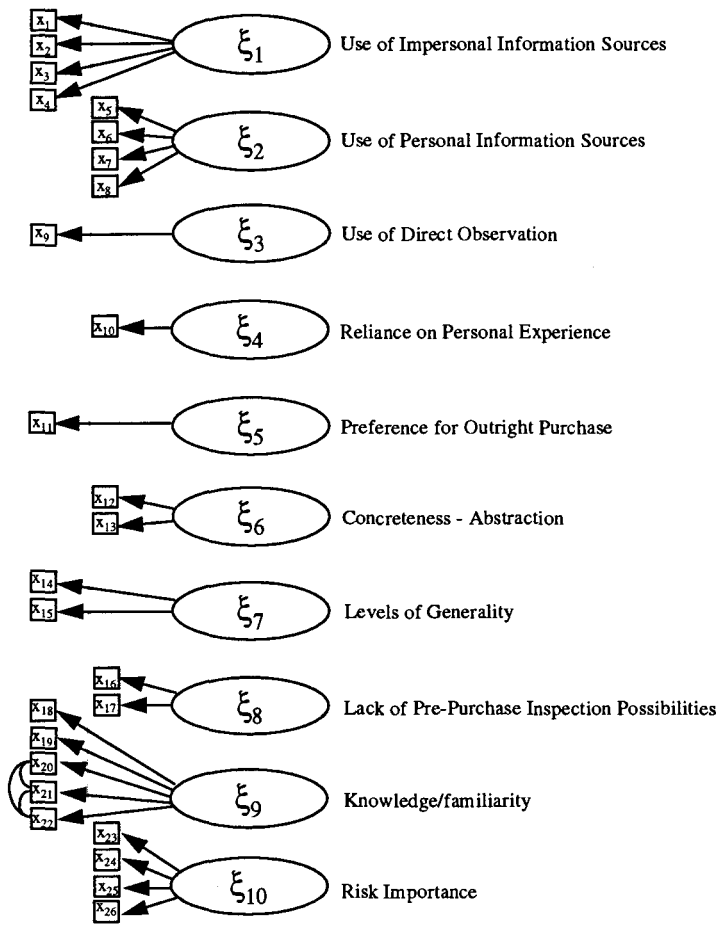


Figure 7.3. Measurement Model (Use of Information Sources)

Two different models were tested. The first model was a general model containing the items described in the previous chapter (6). The model received acceptable fit according to most indices. In the second model two items were dropped due to excessive kurtosis and skewness (see appendix D), where item 25 was a measure of reliance on personal experience and item 28 a measure of preference for outright purchase. Consequently, the use of information sources contain three single indicator constructs: use of direct observation (ξ_3), reliance on personal experience (ξ_4), and preference for outright purchase (ξ_5).

Table 7.6. Fit Indices of Measurement Models (Use of Information Sources)

	Goodness of fit	Specifications
Model 1	Chi-square = 633.05 (df =306) RMSEA = 0.059 GFI = 0.87 NFI = 0.87 NNFI = 0.91 CFI = 0.93	General measurement model
Model 2	Chi-square = 502.83 (df =254) RMSEA = 0.057 (p-value of close fit = 0.06) GFI = 0.89 NFI = 0.89 NNFI = 0.93 CFI = 0.94	Two items dropped (Item 25, Item 28) Excessive Kurtosis Some correlated error terms

The second model did receive better overall fit, which mostly is due to the inclusion of correlated error terms in the knowledge/familiarity construct (ξ_9). These are the same as in the previous measurement model presented in section 7.2. The factor loadings with corresponding error terms and T-values are presented in table 7.7. Also, measures of construct reliability are presented in table 7.7.

Table 7.7. Measurement Model of Information Sources

Factor loadings[a]		/T-values	Error term[a]		/T-values	Item reliability	Average variance extracted	Composite reliability
$\lambda_{1,1}$	0.75	14.72	$\theta_{1,1}$	0.43	10.19	0.57		
$\lambda_{2,1}$	0.83	16.82	$\theta_{2,2}$	0.32	8.82	0.68		
$\lambda_{3,1}$	0.81	16.22	$\theta_{3,3}$	0.35	9.30	0.65	0.63	0.87
$\lambda_{4,1}$	0.79	15.78	$\theta_{4,4}$	0.38	9.60	0.62		
$\lambda_{5,2}$	0.68	12.35	$\theta_{5,5}$	0.54	10.34	0.46		
$\lambda_{6,2}$	0.64	11.46	$\theta_{6,6}$	0.59	10.72	0.41		
$\lambda_{7,2}$	0.82	15.84	$\theta_{7,7}$	0.34	7.65	0.66	0.49	0.79
$\lambda_{8,2}$	0.66	11.96	$\theta_{8,8}$	0.57	10.52	0.43		
$\lambda_{9,3}$	1.00	24.62	$\theta_{9,9}$	-	-			
$\lambda_{10,4}$	1.00	24.62	$\theta_{10,10}$	-	-			
$\lambda_{11,5}$	1.00	24.62	$\theta_{11,11}$	-	-			
$\lambda_{12,6}$	0.97	23.07	$\theta_{12,12}$	0.05	4.38	0.95		
$\lambda_{13,6}$	0.97	23.14	$\theta_{13,13}$	0.05	4.17	0.95	0.95	0.97
$\lambda_{14,7}$	0.94	21.39	$\theta_{14,14}$	0.11	5.53	0.89		
$\lambda_{15,7}$	0.94	21.41	$\theta_{15,15}$	0.11	5.48	0.89	0.89	0.94
$\lambda_{16,8}$	0.81	15.54	$\theta_{16,16}$	0.35	7.60	0.65		
$\lambda_{17,8}$	0.88	17.31	$\theta_{17,17}$	0.22	4.78	0.78	0.72	0.83
$\lambda_{18,9}$	0.68	12.02	$\theta_{18,18}$	0.53	9.41	0.47		
$\lambda_{19,9}$	0.71	12.50	$\theta_{19,19}$	0.50	8.88	0.50		
$\lambda_{20,9}$	0.81	14.26	$\theta_{20,20}$	0.35	5.92	0.65	0.49	0.83
$\lambda_{21,9}$	0.69	11.29	$\theta_{21,21}$	0.53	8.32	0.47		
$\lambda_{22,9}$	0.61	9.78	$\theta_{22,22}$	0.62	9.35	0.38		
$\lambda_{23,10}$	0.75	13.05	$\theta_{23,23}$	0.43	7.41	0.57		
$\lambda_{24,10}$	0.41	6.55	$\theta_{24,24}$	0.83	11.61	0.17		
$\lambda_{25,10}$	0.75	12.92	$\theta_{25,25}$	0.44	7.59	0.56	0.41	0.72
$\lambda_{26,10}$	0.58	9.65	$\theta_{26,26}$	0.67	10.54	0.33		
			$\theta_{20,21}$	0.15	3.02			
			$\theta_{20,22}$	0.10	1.94			
			$\theta_{21,22}$	0.28	5.10			

[a] Standardised coefficients

Table 7.7 shows that both use of impersonal information sources (ξ_1) and use of personal information sources (ξ_2) satisfy the requirement of composite reliability. However, only use of impersonal information sources (ξ_1) satisfies the average variance extracted requirement,

although use of personal information sources (ξ_2) almost meets this requirement. Thus, this model conceptualisation serves as the basis for the structural analysis.

Again all λ's are significant indicating convergent validity. Also, the requirement of discriminant validity is met as illustrated in table 7.8 below. Furthermore, the measurement of the use of information sources satisfy the Fornell & Larcker's (1981) criteria of convergent and discriminant validity.

Table 7.8. Estimated Correlation Matrix Between Use of Information Sources

	UIIS	UPIS	UDO	RPE	POP	C-A	LoG	LPPI	K/F
UPIS	0.47								
	(0.06)[a]								
UDO	0.26	-0.17							
	(0.06)	(0.06)							
RPE	0.29	0.50	-0.02						
	(0.06)	(0.05)	(0.06)						
POP	-0.48	-0.36	0.05	-0.26					
	(0.05)	(0.06)	(0.06)	(0.05)					
C-A	-0.02	-0.25	0.34	-0.08	0.11				
	(0.06)	(0.06)	(0.05)	(0.06)	(0.06)				
LoG	-0.14	-0.19	0.28	-0.13	0.16	0.82			
	(0.06)	(0.06)	(0.05)	(0.06)	(0.06)	(0.02)			
LPPI	-0.04	-0.24	0.33	-0.19	0.12	0.70	0.62		
	(0.07)	(0.07)	(0.06)	(0.06)	(0.06)	(0.04)	(0.04)		
K/F	-0.08	0.19	0.05	-0.09	0.06	0.08	0.12	0.04	
	(0.07)	(0.07)	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)	(0.07)	
RI	-0.36	-0.36	-0.13	-0.25	0.30	0.13	0.15	0.17	0.18
	(0.06)	(0.07)	(0.06)	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)

UIIS - Use of Impersonal Information Sources
UPIS - Use of Personal Information Sources
UDO - Use of Direct Observation
RPE - Reliance on Personal Experience
POP - Preference for Outright Purchase
C-A - Concreteness - Abstraction
LoG - Levels of Generality
LPPI - Lack of Pre-Purchasing Inspection Possibilities
K/F - Knowledge/familiarity
RI - Risk Importance

[a] Standard errors in parentheses

The above considerations lead us to conclude that the measurement models are satisfactory. Both models turn out to be valid, in terms of convergent and discriminant validity, and reasonably reliable given the assessment presented in this section.

7.3. Comparison of Goods vs. Services

Test of mean differences which are derived from multivariate comparisons between groups are frequently done by MANOVA. However, SEM models are often more suitable for these kind of comparisons, especially in situations of reflective measurement (Bagozzi & Yi 1994, Cole, Maxwell, Arvey & Salas 1993). Thus, two-group analyses provided by LISREL were used in order to test the hypotheses regarding mean differences between goods and services. The analyses are based on the two measurement models presented in the previous sections.

One specific problem, when employing two group analysis to our data, is the violation of the assumption of independence between samples. This is because each individual responded to two products (one good and one service). Therefore, the samples are not independent of each other. Although, a test where all variables are included in the same model, and the error terms are allowed to correlate for the same constructs, revealed low correlation coefficients only (maximum 0.2 for latent constructs, and 0.13 for observables). However, the assumption of independence is violated, but the effect of dependence between the samples might be a stronger test of differences between groups, since sampling error should be the same in the two groups. The results provided in the LISREL output would be conservative estimates of the differences (Brown & Sechrest 1980), since the analysis assumes two independent groups with corresponding sampling errors (two error sources).

Marsch (1994) suggested a five step procedure in order to test for factor invariance. This procedure starts out with a totally non-invariant model with no between-groups invariance constraints. If this model does not fit it is pointless to carry on testing for factor invariance. If the model fits, the next step is to restrict the factor loadings to be invariant across groups. Then both factor loadings and factor correlations are set to be invariant, and finally the factor variances are restricted not to vary across groups. If able to fit this rather restrictive model the measures can be said to be tau-equivalent across groups. The fifth, and most restrictive model, is a totally invariant model where factor loadings, factor correlations, factor variance, and uniqueness' are invariant across groups (parallel measures across groups). In this study we are interested in testing mean differences between the latent constructs. Consequently, a test of invariance of intercepts and means of latent constructs must be included. The literature

suggests that prior to comparing models including intercepts and means of latent constructs the invariance of factor loadings and form should hold (Bollen 1989)[3]. Both measurement models received satisfactory fit by most indices with invariant factor loadings across groups (goods vs. services).

Table 7.9. Comparison of Evaluative Dimensions Across Goods and Services

Comparison of evaluative dimensions		
Chi-Square	1084.4 (P = 0.0)[a]	
(Degrees of Freedom)	(640)	
RMSEA	0.048/p=0.75	
GFI	0.81	
NFI	0.80	
NNFI	0.89	
CFI	0.90	
Perceived evaluation difficulty	κ_1[b]	0.61 (3.67)[c]
Perceived processing effort	κ_2	0.69 (3.46)
Certainty of evaluation	κ_3	-0.21 (-1.39)
Predictive ability	κ_4	0.05 (1.15)
Rel. imp. of price	κ_5	-0.25 (-1.48)
C-A	κ_6	-0.21 (-7.92)
LoG	κ_7	-0.13 (-5.48)
LPPI	κ_8	-0.18 (-8.78)
Familiarity/knowledge	κ_9	-0.13 (-1.04)
Risk importance	κ_{10}	0.38 (1.96)

[a] n=152 in both groups
[b] Difference goods - services
[c] T-values

Inspection of table 7.9 shows that none of the hypotheses regarding evaluative dimensions are supported at the $p < 0.05$ level. The effects of perceived evaluation difficulty and perceived

[3] See the second step in testing for factor invariance suggested by Marsch (1994).

processing difficulty are highly significant in the opposite direction. Certainty of evaluation and relative importance of price are significant at a $p < 0.1$ level (one-tail) providing weak support for these hypotheses. There is no significant difference between goods and services in terms of predictive ability.

There are significant differences between goods and services with respect to levels of intangibility. All dimensions have substantial differences and all differences are highly significant in the expected direction (note the scales range from 0 to 1 for the observables). There is no significant difference with respect to familiarity/knowledge, but the difference for risk importance is almost significant at a $p < 0.05$ level with more risk importance associated with goods than services.

Table 7.10 reports the results from the model containing use of information sources. Three of the information sources received statistical support, and only two hypothesised relationships are supported. Use of personal information sources was significant (at a 0.005 level, one-tailed) and in the hypothesised direction. Furthermore, use of direct observation was highly significant in the hypothesised direction. No support was received for the hypotheses involving personal experience and preference for outright purchase. Thus, the results provide some support for the hypotheses regarding information sources.

Although not an explicit part of the hypotheses the use of impersonal information sources was found significantly more in use when evaluating goods than services. The results for product intangibility and the control variables are very similar to those from the earlier analysis.

Table 7.10. Comparison of Use of Information Sources Across Goods and Services

Comparison of information sources		
Chi-Square	947.3	(P = 0.0)[a]
(Degrees of Freedom)		(540)
RMSEA		0.050/p=0.50
GFI		0.83
NFI		0.81
NNFI		0.89
CFI		0.91
Use of impersonal inf. sources	κ_1[b]	0.90 (4.79)[c]
Use of personal inf. sources	κ_2	-0.43 (-2.79)
Use of direct observation	κ_3	4.28 (22.98)
Reliance on personal experience	κ_4	-0.26 (-1.27)
Preference for outright purchase	κ_5	0.12 (0.55)
C-A	κ_6	-0.21 (-7.91)
LoG	κ_7	-0.14 (-5.56)
LPPI	κ_8	-0.18 (-8.76)
Familiarity/knowledge	κ_9	-0.13 (-1.10)
Risk importance	κ_{10}	0.36 (1.89)

[a] n=152 in both groups
[b] Difference goods - services
[c] T-values

The results regarding information sources support some of Murray's (1991) findings. Murray found that consumers showed a decreased preference for outright purchase, preferred personal to impersonal sources, depended less on observation and/or trial, and preferred internal sources to all others when they have experience with the product category. All of these measures are not comparable with the ones in this study. The findings regarding use of impersonal and personal sources can be said to support the proposition that people prefer personal to impersonal sources in the evaluation of services compared to goods. The finding regarding direct observation clearly supports Murray's results. The present result with respect to

preference for outright purchase does not support Murray's study. Similarly, although with no direct counterpart in Murray's study, personal experience is not found to be significant in this study. However, a closer look at Murray's results may explain why these are difficult to replicate. In his study effect sizes were small and explained a fraction of the variance (ranging from 2% to 6%) only. Thus, large sample sizes (n=230 to 250) instead of large effect sizes are likely to be the dominant explanation for observed differences.

Risk importance was significantly different across goods and services. Consequently, two models including the control variables as exogenous constructs were analysed. The factor loadings (λ's) and intercepts (τ_x's and τ_y's) were set invariant to make the empirical definitions of constructs meaningful across groups. All other parameters were allowed to vary across groups, except for κ's (means of exogenous latent constructs) and α's (means of endogenous latent constructs) which were fixed for the service group. The model involving evaluative dimensions is presented in figure 7.4.

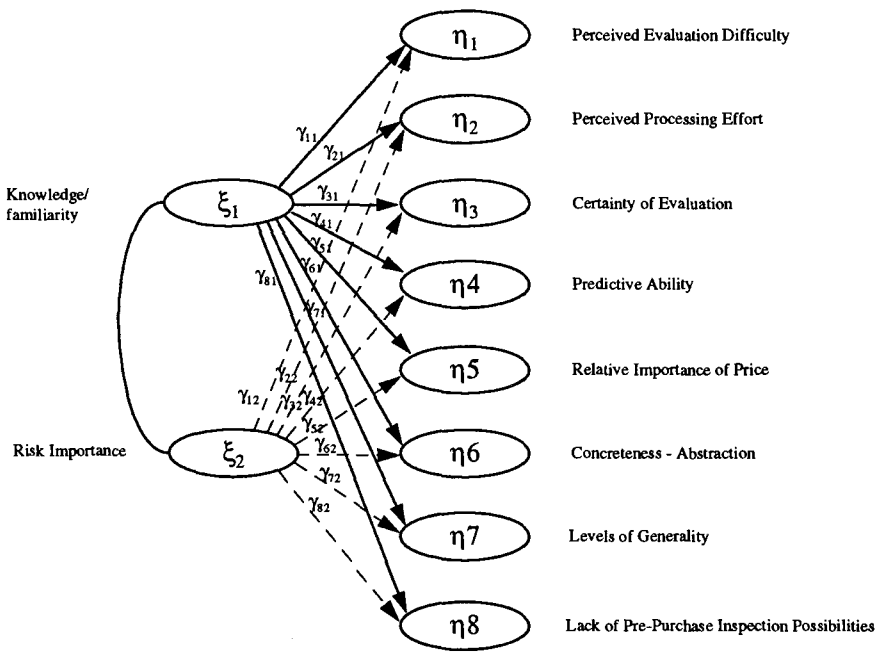


Figure 7.4. Comparisons of Means with Control of Effects due to Knowledge/Familiarity and Risk Importance

The results for the evaluative dimensions are presented in table 7.11 and 7.12. Table 7.11 indicates a reasonable fit for the model, with acceptable values of RMSEA and CFI.

Table 7.11. Structural Model (Two-group Analysis), Effect of Control Variables with Respect to Evaluative Dimensions

Comparison of evaluative dimensions, modelled effects of control variables (Knowledge/familiarity (ξ_1), Risk importance (ξ_2))

Chi-Square	1084.4 (P = 0.0)
(Degrees of Freedom)	(640)
RMSEA	0.048/p=0.75
GFI	0.81
NFI	0.80
NNFI	0.89
CFI	0.90

	Goods	Services
γ_{11}	-1.16** (0.15)[a]	-0.67** (0.14)
γ_{21}	---	---
γ_{31}	0.95** (0.13)	0.76** (0.14)
γ_{41}	---	0.07* (0.04)
γ_{51}	---	---
γ_{61}	---	---
γ_{71}	---	0.05** (0.02)
γ_{81}	---	---
γ_{12}	0.36** (0.09)	---
γ_{22}	0.56** (0.11)	0.40** (0.11)
γ_{32}	---	0.16** (0.07)
γ_{42}	-0.05* (0.02)	---
γ_{52}	---	-0.25** (0.10)
γ_{62}	---	0.06** (0.01)
γ_{72}	---	0.04** (0.01)
γ_{82}	---	0.05** (0.01)

	Squared multiple correlations for structural equations:		
Perceived evaluation difficulty	η_1	0.72	0.29
Perceived processing effort	η_2	0.36	0.18
Certainty of evaluation	η_3	0.51	0.39
Predictive ability	η_4	0.03	0.04
Relative importance of price	η_5	0.00	0.06
C-A	η_6	0.00	0.16
LoG	η_7	0.01	0.13
LPPI	η_8	0.01	0.15

* $p < 0.05$ ** $p < 0.01$

[a] Standard errors in parentheses

The model suggests that knowledge/familiarity and risk importance have different effects on goods compared to services. However, only the effect of knowledge/familiarity on perceived

evaluation difficulty (γ_{11}) is significantly different between groups ($\chi^2 > 3.84$ in a χ^2 difference test). This suggests that knowledge/familiarity has a larger negative effect on perceived evaluation difficulty for goods than for services. The squared multiple correlations of the structural relationships reveal that knowledge/familiarity and risk importance explain a great deal of the variance of perceived evaluation difficulty, perceived processing effort and certainty in evaluation for the goods group, while they explain less for the services group. An interesting finding is that these control variables, and in particular risk importance, explain some of the variance with regard to the intangibility dimensions for the services group, while almost none of the variance is explained for the goods group. Furthermore, the negative impact of risk importance with respect to relative importance of price supports the finding of Ostrom & Iacobucci (1995), where consumers were found to be less price sensitive for less critical purchase situations when evaluating services. However, it is important to note that the γ estimates are not significantly different across groups. The LISREL model with the two control variables as exogenous constructs may moderate or change the mean differences between latent constructs presented earlier. Table 7.12 below presents the results with the effect of the control variables taken into consideration.

Table 7.12. Comparison of Evaluative Dimensions Between Goods and Services Controlling the Effect of Knowledge/Familiarity and Risk Importance

Perceived evaluation difficulty	α_1[b]	0.33
		(2.05)[c]
Perceived processing effort	α_2	0.46
		(2.40)
Certainty of evaluation	α_3	-0.09
		(-0.64)
Predictive ability	α_4	0.07
		(1.52)
Relative importance of price	α_5	-0.26
		(-1.45)
C-A	α_6	-0.22
		(-7.79)
LoG	α_7	-0.14
		(-5.58)
LPPI	α_8	-0.18
		(-8.57)
Familiarity/knowledge	κ_1	-0.13
		(-1.04)
Risk importance	κ_2	0.38
		(1.96)

[a] n=152 in both groups
[b] Difference goods - services
[c] T-values

Table 7.12 displays the difference between goods and services with respect to perceived evaluation difficulty and perceived processing effort are less when we have controlled for the effect of experience/familiarity and risk importance. These differences remain significant and opposite to the hypothesised direction. The weak support found for certainty of evaluation vanishes when the effect of the control variables are included. However, the effect of predictive ability becomes significant at a $p < 0.1$ level (one-tail) when adjusted for the effect of knowledge/familiarity and risk importance. The other differences are not affected by modelling the effect of control variables.

The effect of the control variables with respect to the mean differences of the latent constructs representing use of information sources is illustrated in table 7.13 and 7.14 below. The model is illustrated in figure 7.5.

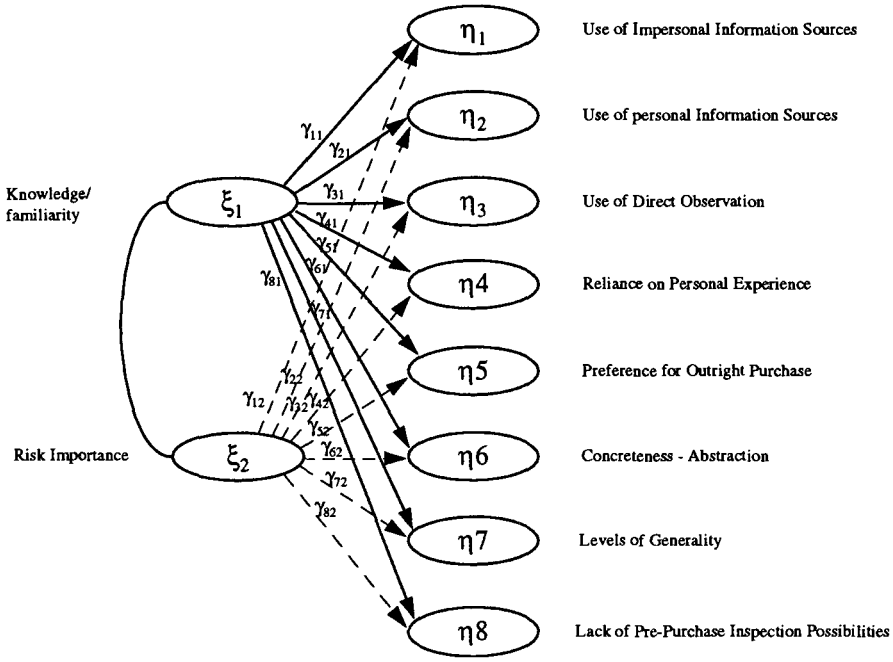


Figure 7.5. Comparisons of Means with Control of Effects due to Knowledge/Familiarity and Risk Importance

As with the model of evaluative dimensions the overall fit of this model is reasonable, at least according to the RMSEA and CFI. Again, the factor loadings and intercepts are set equal across group, while the other parameters are allowed to vary across groups. The means of the latent constructs are set to zero in the service group in order to estimate the significance of the difference of means for latent variables across groups.

The γ pattern appears more similar for goods and services with respect to use of information sources than was the case for evaluative dimensions. The effect of knowledge/familiarity with respect to use of direct observation (γ_{31}) was the only significantly difference between the groups ($\chi^2 > 3.84$ in a χ^2 difference test). Although knowledge/familiarity did not show an effect on use of direct observation for goods, the effect was negative for services. This indicates that more experienced consumers tend to rely less on direct observation when evaluating services. The control variables explain relatively small parts of the variance in use of information sources with the highest squared multiple correlation for use of personal information sources (0.24, 0.20). The results are given in table 7.13.

Table 7.13. Structural Model (Two-group Analysis), Effect of Control Variables with Respect to Use of Information Sources

Comparison of use of information sources, modelled effects of control variables (Knowledge/familiarity (ξ_1), Risk importance (ξ_2))

Chi-Square	947.31 (P = 0.0)
(Degrees of Freedom)	(540)
RMSEA	0.050/p=0.50
GFI	0.83
NFI	0.81
NNFI	0.89
CFI	0.91

	Goods	Services
γ_{11}	---	---
γ_{21}	-0.36** (0.13)[a]	-0.39** (0.14)
γ_{31}	---	-0.31** (0.15)
γ_{41}	---	---
γ_{51}	---	---
γ_{61}	---	---
γ_{71}	---	0.05** (0.02)
γ_{81}	---	---
γ_{12}	0.51** (0.12)	0.19** (0.09)
γ_{22}	0.40** (0.09)	0.29** (0.08)
γ_{32}	---	---
γ_{42}	0.43** (0.13)	0.20* (0.11)
γ_{52}	-0.52** (0.13)	-0.25** (0.11)
γ_{62}	---	0.06** (0.02)
γ_{72}	---	0.04** (0.01)
γ_{82}	---	0.05** (0.01)

Squared multiple correlations for structural equations:

Use of impersonal info. sources	η_1	0.19	0.06
Use of personal info. sources	η_2	0.24	0.20
Use of direct observation	η_3	0.02	0.06
Reliance on personal experience	η_4	0.11	0.03
Preference for outright purchase	η_5	0.15	0.05
C-A	η_6	0.00	0.16
LoG	η_7	0.01	0.13
LPPI	η_8	0.01	0.15

* $p < 0.05$ ** $p < 0.01$

[a] Standard errors in parentheses

The use of personal information sources becomes more significant when controlling for the effects due to risk importance and familiarity (see table 7.14). Perhaps, the most interesting effect is that reliance on personal experience is significantly different at a $p < 0.1$ level ($p < 0.05$ one-tailed) when the effects of the control variables are taken into consideration. This

result supports the hypothesis regarding differences between goods and services with respect to reliance on personal information sources. The hypothesis that preference for outright purchase is higher for goods than services is supported at $p < 0.1$ level (one-tail test). For the remaining variables the differences in use of information sources between goods and services are not substantially different when controlled for the effects of knowledge/familiarity and risk importance.

Table 7.14. Comparison of Use of Information Sources Between Goods and Services Controlling the Effect of Knowledge/Familiarity and Risk Importance

Use of impersonal info. sources	α_1[b]	0.71
		(3.73)[c]
Use of personal info. sources	α_2	-0.62
		(-4.03)
Use of direct observation	α_3	4.32
		(21.91)
Reliance on personal experience	α_4	-0.41
		(-1.93)
Preference for outright purchase	α_5	0.30
		(1.36)
C-A	α_6	-0.22
		(-7.80)
LoG	α_7	-0.14
		(-5.67)
LPPI	α_8	-0.18
		(-8.56)
Familiarity/knowledge	κ_1	-0.13
		(-1.10)
Risk importance	κ_2	0.36
		(1.89)

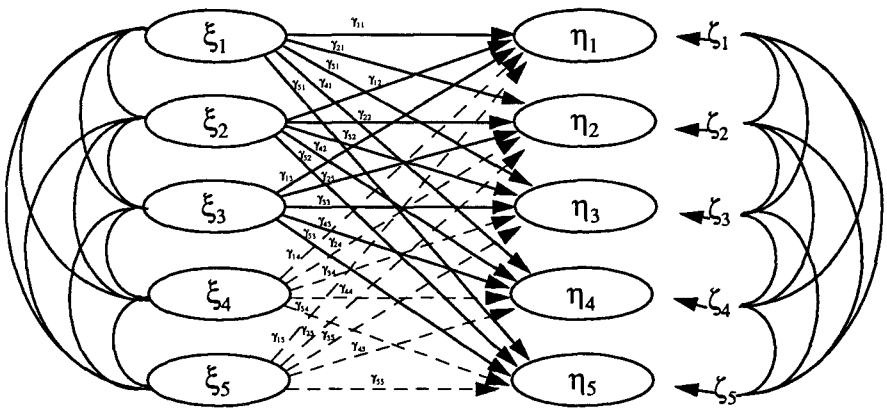
[a] n=152 in both groups
[b] Difference goods - services
[c] T-values

Generally, the results become a little more in accordance with the hypotheses when controlled for the effects of risk importance and knowledge/familiarity. However, in most cases the results do not change dramatically.

7.4. Product Intangibility and Product Evaluation

The final set of hypotheses involve effects of product intangibility. The hypotheses are tested by two structural models containing the same variables as in the previously tested measurement models. The intangibility dimensions and control variables are treated as exogenous constructs in the models, while the evaluative dimensions and the information sources are endogenous constructs in the different models.

The first LISREL model included the evaluative dimensions as dependent constructs. The model is presented in figure 7.6.



ξ_1 Concreteness - Abstraction
ξ_2 Levels of Generality
ξ_3 Lack of Pre-Purchase Inspection Possibilities
ξ_4 Knowledge/familiarity
ξ_5 Risk Importance

η_1 Perceived Evaluation Difficulty
η_2 Perceived Processing Effort
η_3 Certainty of Evaluation
η_4 Predictive Ability
η_5 Relative Importance of Price

Figure 7.6. Structural Model Involving Evaluative Dimensions

Table 7.15 indicates that the model received satisfactory fit by most indices. The explanatory power of the structural model varied for different constructs. Perceived evaluation difficulty (PED) was explained very well (squared multiple correlation for structural equations = 0.52), while the same coefficients for predictive ability (PA) and relative importance of price were low, 0.03 and 0.02 respectively. Furthermore, perceived processing effort (PPE) and certainty of evaluation (CE) had high squared multiple correlations (0.32 and 0.45

respectively). Thus, the model explains PED, PPE and CE well, but explains only a small proportion of the variance associated with PA and relative importance of price. This may indicate that there is a problem with the power of the test with respect to predictive ability and relative importance of price (Jöreskog & Sörbom 1989).

Table 7.15. Structural Model of the Effect of Product Intangibility with Respect to Evaluative Dimensions

Structural model of the effect of intangibility with respect to evaluative dimensions

Chi-Square	579.7 (P = 0.0)
(Degrees of Freedom)	(302)
RMSEA	0.055/p=0.11
GFI	0.88
NFI	0.88
NNFI	0.92
CFI	0.94

	ξ_1	ξ_2	ξ_3	ξ_4	ξ_5	Squared structural correlation
η_1	-0.26[a]	0.25	-0.03	-0.72	0.27	0.52
	(-1.97)[b]	(2.15)	(-0.34)	(-7.61)	(3.67)	
η_2	-0.26	0.37	-0.02	-0.10	0.52	0.32
	(-1.83)	(2.79)	(-0.15)	(-1.35)	(5.45)	
η_3	0.10	-0.17	0.05	0.66	0.07	0.45
	(0.89)	(-1.57)	(-0.61)	(8.19)	(1.09)	
η_4	0.31	-0.23	-0.06	0.07	-0.03	0.03
	(2.47)	(-1.99)	(-0.65)	(1.02)	(-0.49)	
η_5	0.06	0.02	-0.06	0.00	-0.13	0.02
	(0.49)	(0.17)	(-0.65)	(0.01)	(-1.90)	

ξ_1 - Concreteness -Abstractness (C-A)
ξ_2 - Levels of specificity (LoG)
ξ_3 - Lack of pre-purchasing inspection possibilities (LPPI)
ξ_4 - Knowledge/familiarity
ξ_5 - Risk importance
η_1 - Perceived difficulty of evaluation
η_2 - Perceived processing effort
η_3 - Certainty of evaluation
η_4 - Predictive ability
η_5 - Relative importance of price

[a] Standardised coefficients
[b] T-values

The significance of the different γ estimates indicates whether the different hypotheses are confirmed. Thus, the next step is to look at the different estimates and interpret these according to the previously listed hypotheses. The first issue to be raised is that the different intangibility dimensions have different effects on the evaluative dimensions. Since all hypotheses are similar for the different intangibility dimensions this is a result worthy of further examination.

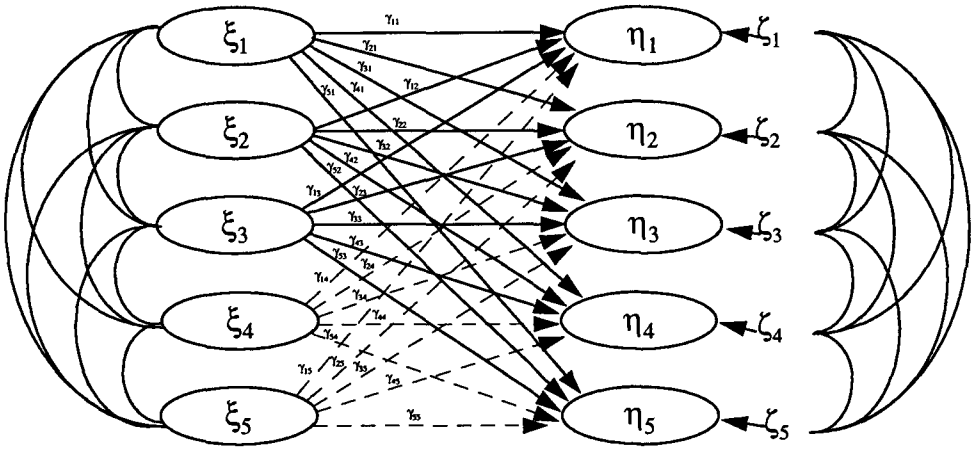
The concreteness - abstractness (C-A) dimension has a negative effect on perceived evaluation difficulty ($p < 0.05$), perceived processing effort ($p < 0.1$) and a positive influence on predictive ability ($p < 0.05$). Almost the contrary is found for the level of generality dimension (LoG). LoG has a positive effect with respect to perceived evaluation difficulty ($p < 0.05$), perceived processing effort ($p < 0.05$) and a negative effect on predictive ability ($p < 0.05$). Lack of pre-purchase inspection possibilities exhibits no significant effects for any of the evaluative dimensions.

Both familiarity/knowledge and risk importance affect the evaluative dimensions. Familiarity/knowledge has a strong negative impact on perceived evaluation difficulty and a strong positive effect with respect to evaluation certainty. This implies that people find evaluation less difficult and are more certain in their evaluation when they are more familiar with the product category.

Risk importance yields a positive effect with respect to perceived evaluation difficulty and perceived processing effort and a negative impact on the relative importance of price ($p < 0.1$). Thus, people who experience high risk importance associated with the product category perceive the evaluation to be more difficult and need more processing effort than those with lower levels of risk importance. People experiencing high risk importance also have lower relative importance of price in their evaluation. This could be an indication of an increased tendency to use central routes in their evaluation.

The second LISREL model is concerned with the effects of product intangibility with respect to use of information sources. Again, this model included familiarity/knowledge and risk

importance as exogenous constructs along with the intangibility dimensions. The model is illustrated in figure 7.7.



ξ_1 Concreteness - Abstraction
ξ_2 Levels of Generality
ξ_3 Lack of Pre-Purchase Inspection Possibilities
ξ_4 Knowledge/familiarity
ξ_5 Risk Importance

η_1 Use of Impersonal Information Sources
η_2 Use of Personal Information Sources
η_3 Use of Direct Observation
η_4 Reliance on Personal Experience
η_5 Preference for Outright Purchase

Figure 7.7. Structural Model Involving Use of Information Sources

The fit of the model is satisfactory (see table 7.16). The squared multiple correlations for the structural equations are not as high as for some of the evaluative dimensions. The coefficients vary from 0.10 for reliance on personal experience and preference for outright purchase up to 0.25 for use of personal information sources.

The results reveal that the different product intangibility dimensions relate differently to use of information sources. Abstractness has negative effect with respect to use of impersonal information sources ($p < 0.05$), use of direct observation ($p < 0.1$), and reliance on personal experience ($p < 0.1$). The effect related to use of personal information sources is positive ($p < 0.1$). The level of generality dimension has a positive effect with respect to use of impersonal information sources ($p < 0.05$). Lack of pre-purchase inspection possibilities has a negative effect concerning the use of direct observation ($p < 0.05$) and positive effect with respect to reliance of personal experience ($p < 0.05$).

Table 7.16. Structural Model of the Effect of Product Intangibility with Respect to Use of Information Sources

Structural model of the effect of intangibility on information sources

Chi-Square			502.8	(P = 0.0)		
(Degrees of Freedom)				(254)		
RMSEA				0.057/p=0.06		
GFI				0.89		
NFI				0.89		
NNFI				0.93		
CFI				0.94		
	ξ_1	ξ_2	ξ_3	ξ_4	ξ_5	Squared structural correlation
η_1	-0.29[a]	0.34	-0.03	-0.00	0.35	0.17
	(-2.20)[b]	(2.90)	(-0.33)	(-0.04)	(0.30)	
η_2	0.24	-0.06	0.06	-0.28	0.37	0.25
	(1.82)	(-0.52)	(0.56)	(-3.81)	(4.81)	
η_3	-0.22	0.00	-0.21	-0.06	0.20	0.17
	(-1.88)	(0.04)	(-2.33)	(-1.06)	(3.17)	
η_4	-0.22	0.13	0.22	0.04	0.21	0.10
	(-1.78)	(1.19)	(2.37)	(0.66)	(3.15)	
η_5	0.10	-0.18	-0.03	0.01	-0.28	0.10
	(0.81)	(-1.61)	(-0.35)	(0.17)	(-4.10)	

ξ_1 - Concreteness -Abstractness (C-A)
ξ_2 - Levels of specificity (LoG)
ξ_3 - Lack of pre-purchasing inspection possibilities (LPPI)
ξ_4 - Knowledge/familiarity
ξ_5 - Risk importance
η_1 - Use of impersonal information sources
η_2 - Use of personal information sources
η_3 - Use of direct observation
η_4 - Reliance on personal experience
η_5 - Preference for outright purchase

[a] Standardised coefficients
[b] T-values

Familiarity/knowledge exhibits a negative effect for use of personal information sources. No other significant effects can be found with respect to familiarity/knowledge. Risk importance is positively related to use of personal information sources, use of direct observation, and reliance on personal experience. Also, a significant negative path is found from risk importance to preference for outright purchase. The effects of risk importance related to the use of

information sources make sense, indicating that people tend to employ more risk reducing information strategies when they face situations of high risk importance.

Both models (table 7.15 and 7.16) provide some support for the hypotheses. However, the dimensionality of the intangibility constructs yields different predictions depending on the dimension in focus. The next section presents a summary of the hypotheses with accompanying results.

7.5. Summary of the Hypotheses Tests

This section is divided in two parts. The first part reviews the findings with respect to goods and services. The second part includes the results with respect to product intangibility.

Chapter 5 presented a number of hypotheses regarding differences between goods and services. Table 7.17 lists the hypotheses together with the accompanying results from the empirical study.

Table 7.17. Summary of Hypotheses Test (Goods vs. Services)

Constructs	Hypotheses; Goods	Services	Findings; Goods	Services	Sign.level[a]
Perceived evaluation difficulty	<		>		(p < 0.025)
Perceived processing effort	<		>		(p < 0.025)
Certainty of evaluation	>		0		
Predictive ability	>		>		(p < 0.1)
Relative importance of price	<		<		(p < 0.1)
Use of personal information sources	<		<		(p < 0.01)
Use of direct observation	>		>		(p < 0.000)
Reliance on personal experience	<		<		(p < 0.05)
Preference for outright purchase	>		>		(p < 0.1)

[a] One-tailed tests

Table 7.17 indicates that only a few of the hypotheses regarding evaluative dimensions received support. The hypotheses involving predictive ability and importance of price received weak support at a $p < 0.1$ level. All other hypotheses concerning evaluative dimensions are rejected. The findings with respect to evaluation difficulty (PED and PPE) are even significant in the opposite direction of the proposed hypotheses. The results involving use of information sources lend support to all the proposed hypotheses, although use of personal information sources and preference for outright purchase only received weak support.

Generally, we find little support for the proposed evaluation differences between goods and services in this study. The results regarding the use of information sources are more promising on behalf of the service literature.

The analyses revealed different effects of different product intangibility dimensions. The following presentation look at the results from the hypotheses test separately for the different dimensions. The summary in table 7.18 presents the findings with respect to the first product intangibility dimension, the concreteness - abstractness dimension.

Table 7.18. Summary of Hypotheses Test Involving Concreteness - Abstraction

Constructs	Hypotheses	Findings	Significance level[a]
C-A/PED	+	-	($p < 0.025$)
C-A/PPE	+	-	($p < 0.05$)
C-A/CE	-	0	
C-A/PA	-	+	($p < 0.025$)
C-A/USC	+	0	
C-A/Use of personal sources	+	+	($p < 0.05$)
C-A/Use of direct observation	-	-	($p < 0.05$)
C-A/Reliance on personal experience	+	-	($p < 0.05$)
C-A/Preference for outright purchase	-	0	

[a] One -tailed tests

Table 7.18 shows that a lot of the hypotheses regarding effects of increased abstractness was not confirmed. The findings with respect to level of generality reveal a different pattern. The results are presented in table 7.19.

Table 7.19. Summary of Hypotheses Test Involving Level of Generality

Constructs	Hypotheses	Findings	Significance level[a]
LoG/PED	+	+	($p < 0.025$)
LoG/PPE	+	+	($p < 0.01$)
LoG/CE	-	-	($p < 0.1$)
LoG/PA	-	-	($p < 0.025$)
LoG/USC	+	0	
LoG/Use of personal sources	+	0	
LoG/Use of direct observation	-	0	
LoG/Reliance on personal experience	+	0	
LoG/Preference for outright purchase	-	-	($p < 0.1$)

[a] One -tailed tests

Contrary to the C-A dimensions the effects of level of generality support the hypotheses with respect to evaluative dimensions. This pattern is not found with respect to use of information sources.

Finally the findings regarding the effects of lack of pre-purchasing inspection possibilities are shown in table 7.20.

Table 7.20. Summary of Hypotheses Test Involving Lack of Pre-Purchase Inspection Possibilities

Constructs	Hypotheses	Findings	Significance level[a]
LPPI/PED	+	0	
LPPI/PPE	+	0	
LPPI/CE	-	0	
LPPI/PA	-	0	
LPPI/USC	+	0	
LPPI/Use of personal sources	+	0	
LPPI/Use of direct observation	-	-	($p < 0.025$)
LPPI/Reliance on personal experience	+	+	($p < 0.025$)
LPPI/Preference for outright purchase	-	0	

[a] One -tailed tests

Perhaps, the most interesting finding of this study is the different effects of the different intangibility dimensions, in particular abstractness and level of specificity. A more or less consistent pattern can be found for these intangibility dimensions. The level of specificity dimension seems to follow predictions made in the service marketing literature regarding evaluative dimensions. This can be seen in table 7.19 where the level of generality dimension, in most cases, behaves according to the hypotheses with respect to evaluative dimensions. The opposite seems to be the case for the abstractness dimension (table 7.18), where the findings tend to contradict the hypotheses. No associations are found between lack of pre-purchase inspection possibilities and the evaluative dimensions.

While the level of generality dimension (LoG) is mostly in accordance with the hypotheses involving evaluative dimensions, the opposite is true for use of information sources with the exception of weak support for the hypothesis involving preference for outright purchase. The

other product intangibility dimensions support two hypotheses each regarding use of information sources.

Chapter 8. Discussion and Implications

This chapter contains six sections. The first section includes a discussion of the findings with respect to evaluative differences between goods and services. The second section addresses differences in use of information sources between goods and services. The splitting of the discussion of evaluative aspects and use of information sources is prompted by the empirical findings which indicate different effects of the good/service typology for evaluative aspects and use of information sources. The third and fourth section follow the same kind of structure, where section 8.3 addresses effects of different product intangibility dimensions with respect to evaluative aspects, while section 8.4 considers effects of product intangibility regarding use of information sources. The fifth section focuses on limitations of this study. The final section contains suggestions for future research and several practical implications.

8.1. Evaluative Consequences of Goods and Services

The summary in table 8.1 shows that most hypotheses regarding evaluative differences between goods and services are rejected. Only predictive ability and relative importance of price receive weak support ($p < 0.1$). Thus, the findings do not lend much support to the propositions made in the services marketing literature.

This section will look into some potential explanations for the findings in this study. First, we take a critical look at previous empirical findings with respect to evaluative differences between goods and services. Then we look at the theoretical foundations for these propositions. Finally, the results of this study are inspected more closely in relation to both empirical and theoretical findings.

Table 8.1. Hypotheses: Evaluative Dimensions (Good vs. Services)

Constructs	Hypotheses; Goods	Services	Findings; Goods	Services	Sign. level[a]
Perceived evaluation difficulty	<		>		($p < 0.025$)
Perceived processing effort	<		>		($p < 0.025$)
Certainty of evaluation	>		0		
Predictive ability	>		>		($p < 0.1$)
Relative importance of price	<		<		($p < 0.1$)

[a] One -tailed tests

Earlier empirical assessments of evaluative differences between goods and services are not convincing. Hartman & Lindgren, Jr (1993) found services to be more difficult to evaluate than goods. However, this finding with respect to ease of evaluation is somewhat questionable. First, there might be a problem of interpretational confounding with their measure of intangibility and ease of evaluation (they use ease of evaluation as one indicator of intangibility). Second, the authors do not run explicit tests for evaluative differences between goods and services. Instead, they infer that services are more difficult to evaluate than goods from a perceptual map based on a factor analysis. A third problem is the lack of control variables. Although, the authors claim to have included commonly used items, it seems that the inclusion of product knowledge/experience as a control variable would be advisable. McDougall (1987) found only minor differences in ease of evaluation between goods and services. These differences were not significant. Few other empirical examinations are found in addition to these two articles.

The theoretical foundation for the propositions regarding evaluative differences between goods and services is also loosely founded. The examination of the theoretical foundations presented in chapter 4 demonstrated that the arguments in the services marketing literature are often

superficial. Ambiguity was argued to be the major source of difficulty explaining potential differences between goods and services. Intangible attributes were proposed to possess less diagnostic information than tangible attributes, with the consequence that evaluation of services was considered more difficult than evaluation of goods. Lack of diagnosticity was tied to lack of objective and verifiable attributes that could be used to distinguish between product alternatives. According to the three-stage process model of evaluation suggested by Ha & Hoch (1989), ambiguity can evolve at different stages. In this discussion we will focus on the first step, which consists of identifying relevant attributes. In chapter 4 lack of physical evidence was argued to lead to problems in identifying relevant attributes. However, there is no firm theoretical basis for suggesting that tangible attributes are more relevant than intangible attributes. Intangible attributes are closely related to beneficial attributes and thus possess high predictive value, while tangible attributes are closely related to product characteristics and possess high confidence value. This is in accordance with the findings of Lefkoff-Hagius & Mason (1990) where intangible attributes were found to be more useful in preference judgements, while tangible attributes were found to be preferred in similarity judgements. Based on these findings intangible attributes should be more relevant compared to tangible attributes, and consequently evaluation of services should be less difficult than the evaluation of goods.

Constructivist perspectives assume that a person construct the world around him/her, and organises the information according to his/her cognitive structure. A total constructivist position assumes that a person would be defined in terms of the complete, integrated system of internal representations that he or she can retrieve to impose on and to anticipate the steady flow of input that he or she encounters (Mancuso & Shaw 1988). From this position input must be processed in terms of the idiosyncratic, organised system the person has acquired. Constructivist approaches are useful in explaining the role of intangible attributes in product evaluation. Chapter 3 suggested that intangible attributes are projected on to the stimulus, which is in accordance with a constructivist approach. These attributes may be more meaningful to the person than tangible attributes present in the physical product, since they represent the persons conceptualisation of the product. Thus, according to constructivist perspectives, the evaluation of services is not more difficult than the evaluation of goods.

Considering the above discussion the findings of this study with respect to perceived evaluative dimensions (perceived evaluation difficulty, perceived processing effort and certainty of evaluation) are not particularly surprising. Instead, the findings suggest that a closer look into the underpinnings of product evaluation is required before conclusions are made regarding these evaluation dimensions. The opposite patterns of the perceived evaluation dimensions and the inferred evaluative dimensions (predictive ability, relative importance of price) are interesting findings. Although, the findings with respect to the perceived evaluation dimensions, where the respondent states whether he/she finds the task difficult or how certain he/she is in their evaluation, contradict the propositions made in the services marketing literature, the propositions regarding the inferred evaluative dimensions receive some support. These findings resemble to a certain extent findings regarding information load, where more information lead to increased confidence in the evaluation while evaluation accuracy decreases. It appears to be the case that consumers tend to perceive an evaluation as more difficult, although they may be more consistent in their evaluation (increased predictive ability). Also, constructs such as predictive ability and relative importance of price might be influenced by the perceived differentiation among product alternatives. If products are perceived to be similar on all attributes except for price, then the consumer should emphasise price in order to make a rational choice, since price is the only cue containing discriminatory power. Predictive ability is also likely to be affected by lack of differentiation, making consistent judgements over the total range of product alternatives more difficult. Although perceived variability among product alternatives was not an explicit part of the hypotheses, it was included in the study. A comparison across groups (goods vs. services) revealed that the perceived variability was not significantly different across groups[1], removing differentiation as a rival explanation for the reported findings. However, the effects with respect to inferred evaluation aspects (predictive ability, relative importance of price) are fairly small in this study, and these findings should be interpreted with some caution.

To sum up, the propositions forwarded in the services marketing literature that services are more difficult to evaluate compared to goods are not supported. A critical assessment of theoretical and empirical contributions suggest that the propositions are loosely founded. A

[1] Three items were used to measure perceived variability. T-tests revealed that the p-values for differences across groups varied from p=0.113 to 0.483.

particularly weak point is the suggested consequences of product intangibility. We will return to this issue in section 8.3.

8.2. Goods vs. Services and Use of Information Sources

Although this study offers little support for the hypotheses involving evaluative aspects, all hypotheses regarding use of information sources are supported (see table 8.2). The findings of this study are in accordance with the findings of Murray's study (1991). The differences between goods and services are larger in this study, although some of Murray's measures are not identical to the ones used in this study.

Table 8.2. Hypotheses: Use of Information Sources (Good vs. Services)

	Hypotheses;		Findings;		Sign. level[a]
Constructs	Goods	Services	Goods	Services	
Use of personal information sources	<		<		($p < 0.01$)
Use of direct observation	>		>		($p < 0.000$)
Reliance on personal experience	<		<		($p < 0.05$)
Preference for outright purchase	>		>		($p < 0.1$)

[a] One -tailed tests

We will argue that these findings can serve as a description of differences in use of information sources between goods and services. However, the proposed mechanism, risk perception, that should explain most of these differences is not a sufficient explanation.

The findings of Murray and of this study seem surprising given the findings with respect to evaluative aspects discussed in the previous section. Perceived evaluation difficulty, perceived

processing effort and certainty of evaluation are supposed to be related to risk perceptions associated with a purchase. Perceived evaluation difficulty and perceived processing effort should have a positive relationship to risk perceptions, while certainty of evaluation is expected to have a negative relationship to risk perceptions. Because the arguments for the hypotheses regarding use of information sources to a large extent depend on the assumption of heightened pre-purchase uncertainty and perceived difficulty associated with services as compared to goods, the findings with respect to use of information sources are not consistent with the findings discussed in the previous section.

A closer look at the proposed risk reduction strategies associated with information acquisition seems necessary in order to explain these results. Murray (1991) argues, based on previous research on information acquisitions and risk perceptions, that the following strategies are risk reduction strategies in information acquisition: use of more information sources (or decreased preference for outright purchase), increased reliance on personal information sources, and finally increased reliance on personal experience. Use of direct observation is also a risk reduction strategy, although to a large extent not available for services. This is confirmed in Murray's and this study.

Although risk perception is one factor that might explain the use of information sources, other factors might influence use of information sources as well. In this study it is found that risk importance, which captures some aspects of risk perceptions[2], affects the use of information sources in the same way as described in the literature. Use of personal information sources, use of direct observation and reliance on personal experience are all information sources more frequently in use with increasing levels of risk importance. Furthermore, outright purchase is a less preferred information source when risk importance is high (see table 7.16).

The use of the first three information sources can be seen as risk reduction strategies. However, it is not likely that this is the only influence on use of information sources. Risk importance has, as suggested in the literature, a positive effect on perceived difficulty (see

[2] Risk importance can be said to be a global measure of risk perception. The concept is concerned with the extent to which a person is affected by the possibility of a mispurchase within a given product category. Risk perceptions are often divided into different types, such as financial, psychological, social, performance, etc., and then aggregated (summated) to a general risk perception concept. Our measure of risk importance can be considered as an alternative to this measurement procedure.

table 7.15). Furthermore, there is higher risk importance associated with goods compared to services ($p < 0.1$, table 7.14), even though the differences in use of information sources suggest an opposite finding. Therefore, it is reasonable to expect that other factors might be more important when explaining use of information sources. We will discuss two potential factors that might explain the reported findings with respect to use of information sources.

First, use of information sources are likely to be influenced by the availability of information. Since services possess less cues that can be inspected prior to purchase, some information sources are not available for service evaluation. Both Murray's and the present study found that use of direct observation was higher for goods than for services. This finding is contrary to the suggestions based on risk perceptions. However, the findings can be explained by the availability of information. Similar to the argument used to explain why people don't use direct observation when evaluating services, people would use personal information sources and personal experience since this information is available. Since other information sources might not be available, they have to stick to the ones they got.

Another potential factor that might explain the findings is the relevance of the information. Mental representations of services include more experiential attributes than mental representations of goods. Objective and technical product specifications seem less useful in evaluating product experiences and consequently less useful in evaluating services. Information of an interpretative and subjective nature might address the information needs of services more directly. Personal information sources and personal experience are information sources which are subject to inferences, subjective evaluations and capable of providing information about product experiences, because these information sources approximate direct experience. Consequently, these information sources can be considered more relevant information sources when evaluating services than when evaluating goods. The difference found between goods and services for the intangibility dimension, lack of pre-purchase inspection possibilities (or proportion of experience attributes), indicates that services are considered more experiential. The positive effect of lack of pre-purchase inspection possibilities regarding reliance on personal experience lends some support to this speculation.

The above discussion has demonstrated that the hypotheses regarding use of information sources are supported, although several questions regarding the use of information sources as sole indicators of risk reduction strategies should be raised. Two additional factors, availability and relevance of information, are offered as potential factors influencing the use of information sources. These factors might explain the inconsistencies between the perceived evaluative aspects and use of information sources. Thus, more research is needed to identify potential factors explaining the findings regarding use of information sources.

8.3. Product Intangibility and Evaluative Dimensions

The multi-dimensionality of the product intangibility construct is an interesting finding of this study. In chapter 3 we pointed out several weaknesses associated with the conceptualisation of product intangibility found in the services marketing literature. The lack of explicit definitions with corresponding operationalisations was argued to confuse the use of the product intangibility concept with related constructs such as ambiguity and complexity.

In this study product intangibility was conceptualised as consisting of three dimensions. First, abstractness was argued to be one dimension of product intangibility. This conceptualisation was based on Hirschman's (1980) definition of intangibility, the notion of «accessibility to the senses». This definition is also the one most frequently used in the services marketing literature (see appendix A). The second dimension was specified as level of generality and was based on a study of Dubè-Rioux et al. (1990) where they distinguished between the abstractness and level of generality dimension. The rationale for this dimension can be found in the categorisation literature (see Rosch 1978). The third dimension was inferred from Zeithaml (1981), and was labelled lack of pre-purchase inspection possibilities. This dimension lacks a firm theoretical rationale, and is based on Nelson's (1970) typology of search and experience attributes. Whether the product intangibility construct should be treated as an uni-dimensional or multi-dimensional construct is also a question of redundancy in constructs (Singh 1991). At a conceptual level, constructs are considered redundant if the conceptual definitions are not sufficiently different and no substantial differences in antecedents

and/or consequences are identified. In the following sections we will address these aspects with respect to product intangibility.

The model including three product intangibility dimensions received better fit than the model with a global product intangibility construct. Although the different product intangibility dimensions were highly inter-correlated, they have different effects with respect to the evaluative dimensions. This finding confirms that uni-dimensionality should not be assessed by internal consistency alone, but should also include some external relationships in order to assess external consistency (Gerbing & Anderson 1988). The effects of the different product intangibility dimensions will be discussed in the following paragraphs and these effects are important in order to empirically assess if the product intangibility dimensions are redundant.

The abstractness dimension is most frequently referred to in the services marketing literature. Thus, this dimension should behave according to the predictions offered in the services marketing literature. This is not the case with respect to the evaluative dimensions. Table 8.3 shows that this dimension has the opposite effect on most of the evaluative dimensions. Perceived evaluation difficulty (PED) and perceived processing effort (PPE) decrease with higher abstractness levels, while the predictive ability (PA) increases with higher abstractness levels. No effects are found with respect to certainty of evaluation (CE) and relative importance of price (RIP).

Table 8.3. Hypotheses: Evaluative Dimensions (Concreteness - Abstraction)

Constructs	Hypotheses	Findings	Significance level[a]
C-A/PED	+	-	($p < 0.025$)
C-A/PPE	+	-	($p < 0.05$)
C-A/CE	-	0	
C-A/PA	-	+	($p < 0.025$)
C-A/RIP	+	0	

[a] One -tailed tests

Chapter 4 discussed a potential explanation for this finding. The abstractness dimension defines intangible attributes as subject related, while tangible attributes are considered to be object related. Subject related attributes provide more personal meaning to the individual (Neimayer et al. 1992), and consequently they might be more accessible. Accessible information is less difficult to evaluate which may account for the findings of this study. This is in accordance with research related to questionnaire development where subject anchored measures are found to be more easily accessible than stimulus anchored measures (Henjesand et al. 1992).

The level of generality dimension has different effects on evaluative dimensions where the effects are in agreement with those predicted by the services marketing literature (table 8.4). The effects with respect to the evaluative dimensions are significant in the expected direction, with the exception of relative importance of price.

Table 8.4. Hypotheses: Evaluative Dimensions (Level of Generality)

Constructs	Hypotheses	Findings	Significance level[a]
LoG/PED	+	+	($p < 0.025$)
LoG/PPE	+	+	($p < 0.01$)
LoG/CE	-	-	($p < 0.1$)
LoG/PA	-	-	($p < 0.025$)
LoG/RIP	+	0	

[a] One-tailed tests

General attributes seem more difficult to evaluate and consequently people are less certain of their evaluation and predictive ability decreases. General attributes are more indirectly attached to objects that are evaluated, which seem to make them more problematic to use for evaluation. This result is similar to MacKenzie's (1986) finding, where specific attributes were found to be more important in product evaluations.

The predictions made in the services marketing literature appear to be more associated with the level of generality dimension than with the abstractness dimension, although the definitions of product intangibility in the services marketing literature are more in accordance with the abstractness dimension.

The last product intangibility dimension, lack of pre-purchase inspection possibilities, does not exhibit any effect with respect to the evaluative dimensions. This dimension has a less convincing theoretical foundation than the other two product intangibility dimensions. Therefore, it may be questioned whether this dimension provides additional information value to the two other dimensions discussed above.

In conclusion, the services marketing literature treat the different product intangibility dimensions as if they were redundant, although the conceptual and the empirical assessment suggest that this is not the case. Thus, product intangibility can fruitfully be approached as a multi-dimensional construct. The product intangibility construct contains three dimensions in the present study. According to the theoretical rationale and the empirical findings, two of the three dimensions seem worthy of closer examination. The third dimension, lack of pre-purchase inspection possibilities, does not exhibit any significant effect with respect to the evaluative dimensions. The other two product intangibility dimensions, abstractness and generality, have different effects on the evaluative dimensions. An interesting finding is that the services marketing literature emphasises the abstractness dimension when defining intangibility, although it is the generality dimension that behaves according to the predictions offered in the services marketing literature. Thus, the generality dimension appears to be more influenced by the mechanisms proposed in the services marketing literature. The abstractness dimension triggers opposite effects with respect to the evaluative dimensions. It is argued that this might be attributed to more personal meaning attached to abstract attributes than to concrete attributes. Consequently, more refined predictions and propositions regarding consequences of product intangibility ought to be made.

8.4. Product Intangibility and Use of Information Sources

The different product intangibility dimensions had different effects related to use of information sources. The abstractness dimension exhibited positive effects with respect to use of personal information sources and use of direct observation, while the effect related to reliance of personal information sources was negative (table 8.5).

Table 8.5. Hypotheses: Use of Information Sources (Concreteness - Abstraction)

Constructs	Hypotheses	Findings	Significance level[a]
C-A/Use of personal sources	+	+	($p < 0.05$)
C-A/Use of direct observation	-	-	($p < 0.05$)
C-A/Reliance on personal experience	+	-	($p < 0.05$)
C-A/Preference for outright purchase	-	0	

[a] One -tailed tests

The findings of this study indicate that explanatory mechanisms in addition to risk perceptions must be included to explain the results, similar to those suggested in section 8.2. The abstractness dimension was found to have a negative impact on perceived evaluation difficulty, perceived processing effort and a positive effect on predictive ability. All these results suggest that people find abstract attributes easier to use in evaluations than concrete attributes. The implication is that one should expect lower levels of risk attached to evaluations based on more abstract attributes[3]. Consequently, the findings reported in table 8.5 are somewhat surprising for the use of direct observation and reliance on personal experience. However, relevance of information can be an explanation for the findings reported in table 8.5. First, use of personal information sources might be a relevant information source for abstract attributes. Second, direct observation might be a poor indicator of abstract attributes. These findings suggest that

[3] The correlation between the latent constructs suggests a low negative correlation between C-A and risk importance.

the claim of Levitt (1981) that marketers should try to tangibilise the intangibles should not be accepted without further considerations. The finding that abstractness is negatively related to reliance on personal experience seems difficult to incorporate into an explanation relying on personal relevance, since personal experience should be relevant to the person involved. Thus, more research on factors that may explain use of information sources is required in order to reach any well-founded conclusions.

The level of generality dimension has almost no effect related to use of information sources, as shown in table 8.6. The only significant effect is the relatively weak negative effect regarding preference for outright purchase.

Table 8.6. Hypotheses: Use of Information Sources (Level of Generality)

Constructs	Hypotheses	Findings	Significance level[a]
LoG/Use of personal sources	+	0	
LoG/Use of direct observation	-	0	
LoG/Reliance on personal experience	+	0	
LoG/Preference for outright purchase	-	-	($p < 0.1$)

[a] One -tailed tests

This effect result from increased risk levels associated with general attributes, which is in accordance with the findings reported for the evaluative dimensions in section 8.3. However, it is worth noting that even if it is likely that level of generality is positively related to risk perceptions, there are almost no effects with respect to use of information sources. This lends further support to the proposition that the included information sources are not necessarily adequate representations of risk-reduction strategies.

Table 8.7 reports the findings with respect to the lack of pre-purchase inspection possibilities. Although, no effect of this dimension was found for evaluative dimensions, two relationships achieve statistical significance when considering the use of information sources. Insufficient theoretical foundation was the main explanation for the lack of findings related to the evaluative dimensions. The findings regarding use of information sources follow directly from the attribute classification. Lack of pre-purchase inspection possibilities implies more focus on the experiential aspects of products.

Table 8.7. Hypotheses: Use of Information Sources (Lack of Pre-Purchase Inspection Possibilities)

Constructs	Hypotheses	Findings	Significance level[a]
LPPI/Use of personal sources	+	0	
LPPI/Use of direct observation	-	-	($p < 0.025$)
LPPI/Reliance on personal experience	+	+	($p < 0.025$)
LPPI/Preference for outright purchase	-	0	

[a] One -tailed tests

The two significant findings are closely associated with reliance on experience, where use of direct observation is negatively related, while reliance on personal experience is positively associated with lack of pre-purchase inspection possibilities.

8.5. Limitations of the Study

Any research project involves a number of choices. The researcher tries to maximise strengths compared to limitations resulting from these choices. In this section we will address some limitations associated with this study. Limitations within the following areas are addressed: theoretical perspective and inclusion of variables, research design, stimuli selection, measurement, sample, and methods of analysis.

8.5.1. Theoretical Perspectives

The focus of this study has been on evaluative dimensions. The research questions addressed in this study are general and there are a number of theoretical explanations and dimensions that could have been employed in order to focus on these questions. We used a mix of perceived evaluation dimensions (perceived evaluation difficulty, perceived processing effort, and certainty of evaluation) and inferred evaluation dimensions (predictive ability, relative importance of price). Several effects were identified with respect to these variables in relation to the service/good typology and product intangibility. The evaluative dimensions studied in this investigation are a selection of possible evaluative dimensions that could have been addressed. Other theoretical perspectives might have led to a focus on different variables.

Attitude theory would draw the attention to variables such as attitude intensity (Krosnick & Schuman 1988), attitude accessibility (Fazio 1989), and attitude strength with a focus on stability and affective-cognitive consistency (Raden 1985). Evaluative dimensions different from the ones used in this study could have been identified using attitude theory as the theoretical perspective.

Consumer satisfaction and product quality may be viable perspectives in order to generate dependent variables. For instance, it could be interesting to investigate if satisfaction judgements have different structure for services than for goods (see Singh 1991), both in terms of content and product quality evaluations.

There could be evaluative differences between goods and services attributed to differences in the stimulus ability to arouse affect. Services might be associated with higher levels of affect, which in turn would influence the evaluation (see Pieters and van Raaij 1988). One way would be to investigate if affect mediates different effects on expectations, stability of evaluations and use of decision rules for services than for goods.

Furthermore, the services marketing literature has also suggested differences in consumers' evaluation processes between goods and services for a number of other variables than the ones included in this study. Brand loyalty and brand switching, size of evoked set, and product adoption have all been suggested in the literature (Zeithaml 1981, McDougall & Snetsinger 1990).

The previous discussion of the findings of this study also indicated that other variables could provide additional information. Differentiation among product alternatives was argued to be a useful control factor eliminating alternative explanations for the reported results. In order to further explore suggestions with respect to factors influencing use of information sources, variables such as availability and relevance of information could be useful additions in future research efforts.

8.5.2. Research Design

The design attempted to create a situation that approximated a realistic situation by the instruction of focusing on a purchase (choice) within a given product category. A couple of problems with this design should be addressed.

Financial constraints limited the number of respondents included in this study. Instead of asking the respondents questions about one product category only, the respondents answered questions from two product categories to increase the information yield from each interview and thus reduce costs. The chosen experimental design mix elements from both within-subject and between-subject experiments. Consequently, it is difficult to make full use of unique strengths associated with any of the two types of experimental designs. Also, it is difficult to

overcome some weaknesses associated with the two approaches. For example, because the individual was exposed to two product alternatives only, it is difficult to identify practice or learning effects. Instead the experiment vary the product category, good or service, that was presented first, assuming that these learning effects cancel out. Also, the respondents had to finish the elicitation procedures for both products before entering phase two of the interview.

Pre-purchase evaluation was emphasised in the development of the hypotheses. However, the design of the study is not fully consistent with this focus. In order to focus on a pre-purchase context, one would have to use hypothetical instructions and situations. For example, for services one would have to use instructions like: *imagine that you move to another city and should select a dentist*, while instructions like: *imagine that you went to the shop and couldn't find any of your usual brand(s) of jeans* would be more appropriate for goods. Both of these instructions are hypothetical and would appear fairly unrealistic to the respondents. There is a trade-off between realism of the experiment and a strong focus on the pre-purchase context. We gave realism higher priority in the present study, but tried to instruct the respondent to focus on attributes the consumer would use instead of focusing on earlier product encounters. This is admittedly a weak manipulation, but was deemed more suitable for the study. There is a possibility that a more hypothetical approach would yield different results. However, it might be difficult to establish whether these results are consequences of the stimulus or lack of comprehension of the experimental situation.

8.5.3. Stimuli Selection

This study has focused on differences between goods and services. Avoidance of mono-operation bias was judged to be important in designing the research project because we set out to investigate a general problem, evaluation differences between goods and services, and not evaluation problems specific to certain product categories. Five different services and five different goods were used in order to eliminate this problem from the study. It is, however, an open question if we are able to conclude with respect to goods and services in general. To a certain extent this is a question of the sampling of products from the good and service categories. Products, in general, are complex stimuli and there are numerous ways in which

products can differ or be similar. For instance, while Murray (1991) found services to be more associated with risk than goods[4], risk importance was higher for the good category than for the service category in this study[5]. Thus, the goods and services included in the different studies seem to have been drawn from somewhat different domains[6]. It remains an open question if these differences matter, but since the pre-tests of both studies clearly indicate that the products differ in terms of serviceness, the main manipulation seems to work. However, the complexity of product stimuli suggests that future research should include a wider range of goods and services.

8.5.4. Measurement

There is a problem with the measurement of importance of surrogate cues in this study, where the relative importance of price is used as a measure of the construct. This measure does obviously not tap the entire domain of the importance of surrogate cues construct, but was used as the most convenient way to measure an aspect of this construct. The poor conceptualisation might account for the relatively few effects found with respect to this variable in the present study.

---

[4] Guseman (1981) also found higher amount of perceived risk for services than for goods. The lack of control variables and the fact that several of the included goods were fairly mundane products as opposed to the included services limits the value of the study.

[5] This study included cars which are a complex and differentiated product. Conversely, dental service might be a service which people deem to be the same and thus less risky. These two products could thus be responsible for the higher perceived risk importance level and consequently perceived evaluation difficulty found for goods as compared to services. Removing these two product categories from the general good and service categories changes the results with respect to perceived evaluation difficulty in the expected direction. However, the differences between goods and services are still significant for the perceived evaluation difficulty items, and in the same direction (assessed by a T-test). Consequently, the findings of this study is not affected by the removal of these product categories.

[6] One service in Murray's study, teeth cleaning, is very similar to the dental examination in this study. A couple of the goods, windbreaker jacket and pocket camera, are also identical to goods used in this study.

8.5.5. Sample of the Study

A random sampling procedure was used for this study. The final sample, however, is biased towards more educated people. Since only 3% reported that they only had primary and secondary school, it is not feasible to control for the effect of education in this study. More educated people have more differentiated and complex cognitive structures, and are more able to elaborate and make thorough evaluations of product alternatives compared to less educated people (Alba & Hutchinson 1987). This could imply that they also are more able to evaluate services than less educated people, and the expected differences between goods and services vanish.

However, the mental representations vary between goods and services in this study, as can be seen from significant differences found between goods and services with respect to the product intangibility dimensions. The differences are in the expected directions according to the services marketing literature. Thus the major difference between the product categories is captured in the study. A look at the descriptives statistics with respect to evaluative dimensions (appendix D) suggests that ceiling effects can not be plausible explanations for the findings of this study.

8.5.6. Method of Analysis

Structural equation modelling (SEM) was used as the analysis method in this work. Several advantages mentioned earlier, especially when relying on reflective measurement, favour use of SEM. However, there is one specific problem with the use of SEM in this study. The test for differences in means of latent constructs between goods and services was performed using a two-group SEM analysis. The problem is the violation of the statistical assumption of independence between the samples, because each respondent had to respond to two products, one service and one good, the samples are not independent. Although this study found low correlations between error terms, the assumption of independence between samples is not fulfilled. The consequence of this violation is probably minor as the sampling error is over-estimated by using two-group analysis because the analysis assumes that two different samples

are drawn from the population, instead of one. The test of mean differences with corresponding significance tests amounts to a conservative test of evaluation differences between goods and services (Brown & Sechrest 1980). Therefore, the violation of the assumption of independence between samples is not considered to be a serious limitation of this study.

8.6. Implications and Suggestions for Future Research

There are several findings of this study that point to future research directions. Three major areas will be discussed: evaluation of services compared to goods, product intangibility as a multi-dimensional construct, and the role of perceived risk as a predictor of use of information sources. Additionally, to the above areas we conclude this section with a discussion of the good/service typology as opposed to Levitt's (1981) focus on product tangibles and product intangibles with respect to consumer evaluations.

8.6.1. Evaluation of Services Compared to Evaluation of Goods

Contrary to propositions made in the services marketing literature, this study has found that the evaluation of services is not more difficult than the evaluation of goods[7]. The previous sections have pointed to several weaknesses with the contemporary beliefs regarding the evaluation of services as opposed to goods. The findings of this study suggest that instead of an emphasis on the unique difficulties associated with services the focus should be revised. This implies that from a theoretical perspective traditional product marketing and services marketing have a broader base and wider generality for their theories. Both traditions may be unified since services marketing may not require special attention. It remains an open question whether services marketing or traditional product marketing gain most from the removal of the service/good typology[8]. However, it is likely that the traditional marketing practices would

[7] Indeed, the current findings oppose this notion.
[8] It is important to note that we are referring to the service/good typology in relation to consumer evaluations. This study offers no indications that the typology is of no use in other areas.

gain from introducing concepts and perspectives related to «prosumption» found in the services marketing literature (Toffler 1980, Kotler 1986). The services marketing's focus on processes in the service encounter could be expanded and used to provide further insight into general product experiences (e.g. Bitner & Booms 1990).

The practical implications are similar to the above theoretical implications, where the results of this study suggest that separate treatments of traditional product marketing and services marketing appear unnecessary. The results question if special strategies for risk reduction and simplification on behalf of the consumer are needed for services, since these strategies appear equally useful for goods.

Chapter 9 contains a critical assessment of the good/service typology based on the findings of this study and formal requirements for classification schemata.

8.6.2. Product Intangibility as a Multi-dimensional Construct

The product intangibility construct was found to be multi-dimensional in this study. Especially, the two dimensions, abstractness and generality, are interesting starting points for future research projects, because these dimensions have a theoretical rationale and empirical support. The dimensionality of the product intangibility construct is an interesting research topic for future studies.

Theoretically these findings offer increased diagnosticity as to what dimensions influence product evaluations. The increased diagnosticity can be interpreted very generally, and evaluated in terms of the usefulness of product attribute typologies (ex. tangible/intangible, object-related/subject-related, characteristic/beneficial/image) to explain evaluative consequences. Thus, these findings can enhance the often limited focus on number of alternatives and attributes, represented by the information load paradigm, to include more substantial judgements regarding attributes in order to explain evaluation difficulty. Furthermore, the methodology used in this study, elicitation of product representations from

the respondents and then coding the attributes into broader, theoretically defined categories, can be very useful for several purposes. One example might be in the analysis of information content in products and/or advertising. Instead of using rather ad-hoc based classification schemes presented to a limited number of coders (see Resnik & Stern 1977), one can elicit information from the consumer and thereafter classify the information into theoretically derived categories of informativeness. Thus, idiosynchracies of the respondents and a firm theoretical framework can be maintained.

The different effects of abstractness and generality hold some interesting implications for the services marketing literature. Abstractness, which is the most frequently encountered definition of product intangibility in the literature, triggered opposite effects than proposed in the services marketing literature. Conversely, the generality dimension exhibited the effects on product evaluations suggested in the services marketing literature.

The differential effects of the product intangibility dimensions impose new challenges for the services marketing literature. Although the generality dimension implies that evaluation of services would be more difficult, the effects of the abstractness dimension suggests the opposite. Abstract information possesses more personal meaning and people find this information less difficult to use. Abstract information is probably more capable of capturing idiographic information which is felt to be more relevant for the individual in the evaluation of products. Although abstract attributes are easier to evaluate for the consumer, they add complexity to market research. This added complexity arises due to the idiosyncrasies inherent in abstract attributes that will affect measurement procedures and research designs.

The frequently encountered proposition that intangible benefits should be tied to tangible clues (Levitt 1981, Klein & Lewis 1985) to ease the evaluation for the consumer does not receive full support in the present study. Although, general attributes are perceived as more difficult to evaluate, abstract attributes are perceived as easier to evaluate. Consequently, one might expect that tangible clues to be more useful for general attributes than for abstract attributes. The marketer faces new challenges in communicating abstract attributes, since these often are idiosyncratic to the consumer. Consequently, segmentation based on product representations

could be useful in abstract representations for recruiting customers which have the greatest potential to be satisfied by the offered product.

8.6.3. Risk Perception and Use of Information Sources

The inconsistencies identified with respect to perceived evaluation difficulty (risk importance) and use of risk reducing information sources are interesting results pointing out future research directions. Previous research on service evaluation has suggested that perceived risk is the key factor explaining use of information sources. However, there might be other explanatory mechanisms in addition to risk perceptions capable of explaining the use of information sources. We have argued that findings such as consumers tendency to use personal information sources and reliance on personal experience, can serve as descriptions of consumers use of information sources when purchasing services. Complex stimuli, such as products, can vary with respect to a number of dimensions. Our results suggest that there are differences between goods and services not captured by the dimension of perceived risk. Consequently, perceived risk as the sole explanatory mechanism used to explain use of information sources, is not an adequate explanation for differences in use of information sources proposed in the literature.

Future research should address other factors that influence use of information sources. Some of these factors may be found through an examination of product characteristics, such as proportion of experience and abstract attributes. Product characteristics, reflecting the information found in the product itself, can be used to suggest differences in the use of information sources. Consequently, predictions will not be limited to the service/good distinction only. We have pointed out availability and relevance of information as potential dimensions for further investigation in future research efforts.

8.6.4. Goods/Services vs. Tangibles/Intangibles

Levitt (1981) claimed that since all products contain both tangibles and intangibles, the good/service typology was of limited value. This study supports Levitt's claim. Services were not found to be different in terms of evaluative consequences representing unique challenges to services marketing. Furthermore, product intangibility was found to affect product evaluations. However, the implications of product intangibility found in this study differ from those suggested by Levitt. Product intangibility was found to contain two dimensions with different effects with respect to evaluations. The abstractness dimension does not support Levitt's suggestion that one should tangibilise the intangibles. Instead, abstract attributes are considered to be easier to evaluate and abstract product representations do indicate higher predictive ability. However, the generality dimension supports Levitt's suggestion making unique predictions difficult. Thus, the management of different product intangibility dimensions could be a topic of future research efforts.

Finally, a general comment on product evaluations. It seems that research related to product evaluations has employed to narrow a focus on the information found within the product itself. This information is considered as most important and relevant. However, if this information is not available, the product evaluation is considered more difficult with the effect that the purchase is associated with higher levels of perceived risk. It is important to recognise that consumers have a number of information sources in addition to the product. Lack of direct information from the product may result in the use of other information sources, such as other experiences and personal experience, without increasing the difficulty of the evaluation.

Chapter 9. Goods/Services: Critical Assessment

This study has found that services are not perceived as more difficult to evaluate than goods. Thus, the empirical assessment provides some doubt about the usefulness of this product typology with respect to consumers evaluations. In this final section we use Hunt's criteria for evaluating classification schemata in order to conduct a critical assessment of the good/service typology.

Hunt (1983) suggested the following five criteria for evaluating classification schemata:

1. Does the classification schema adequately specify the phenomenon to be classified?

2. Does the classification schema adequately specify the properties or characteristics that will be doing the classifying?

3. Does the classification schema have categories that are mutually exclusive?

4. Does the classification schema have categories that are collectively exhaustive?

5. Is the classification schema useful?

The first criterion refers to what phenomenon is being classified, which in this case is products. Usually the product is classified according to whether the physical, tangible component or the intangible «service» component constitutes the major component of the product . Two types of problems are associated with the specification of the phenomenon in the service/good typology. The first problem is associated with the question of what a product offering is. The second problem is concerned with determining which aspects constitute the major part of the product (Troye 1979).

Since consumers are not buying products for the physical characteristics themselves, but for the benefits provided by the product, it is argued that intangibility is not a distinguishing characteristic between goods and services (Wyckham et al. 1975), due to the intangible nature of goals and benefits (Levitt 1981). Also, frequently used product definitions in marketing, i.e. Murphy & Enis's (1986);

> "any product is perceived by the buyer to be a combination or bundle of utilities - qualities, processes and/or capabilities (goods, services, and ideas) that is expected to provide satisfaction" (pp 25)

question the role of intangibility as a distinguishing characteristic, because any product offering necessarily must include intangible attributes and does not justify a distinction between goods and services based on intangibility. However, other writers (Uhl & Upah 1983) stress the role of intangibility with respect to pre-purchase inspection opportunities, and maintain that the good/service typology is useful in marketing.

The second problem concerns the determination of what constitutes the major part of the product offering. Shostack (1977) divided products into intangible dominant services and tangible dominant goods, where the major part of the offering determined whether a product should be classified as a service or a good. However, it may be difficult to judge whether a product can be characterised as tangible or intangible dominant. Shostack (1977) used airlines and automobiles as examples of services and goods respectively. Airlines were intangible dominant, with transport as the major part of the product, while automobiles were tangible dominant with the vehicle as the major part of the product. Murphy & Enis (1986) would probably argue that transportation is the key issue for both automobiles and airlines according to their product definition, since the capability of transportation can be argued to be a central aspect in provision of satisfaction both for airlines and automobiles . Following Levitts's (1975) classic article on marketing myopia one might argue that Shostack's example reflects a myopic perspective on marketing, since a focus on the physical product instead of need fulfilment was argued to be myopic. Other examples also address the difficulty in determining tangible/intangible dominance. It is difficult to understand why car rental is considered to be a service, while a car is considered to be a good. With respect to the above example by Shostack the vehicle must be the basis for both product offerings. Also, it might be difficult to see a significant difference between the product offering of a library and a publisher in terms of tangible/intangible dominance. It appears reasonable to suggest that both offerings include books as their major part of the product offering or from a less «myopic» perspective knowledge or entertainment. These examples illustrate that the identification of the major component of a product is not always an easy task. This identification might be even more difficult in situations where goods and services compete with each other (Dholokia &

Venkatraman 1993). The present study has utilised an alternative approach that overcome some of the weaknesses associated with Shostack's approach. This study determined overall intangibility through the proportion of intangible attributes. Consequently, the determination of product core tangibility/intangibility is not necessary.

Hunt's second criterion refers to the specification of the characteristics or properties that are used in the classification. Several different product characteristics are offered in order to distinguish between goods and services in the literature. The following four characteristics are the most frequently cited in the services marketing literature (Zeithaml et al. 1985); intangibility, heterogeneity, simultaneity of production and consumption, and perishability. Two types of questions may be asked in order to evaluate the specification of the characteristics which serve as the basis for the classification.

The first question concerns the specification of the classification rule. The classification rule can be «conjunctive», «disjunctive» or «compensatory». The former refers to a rule where a product should be intangible *and* heterogeneous *and* be produced and consumed at the same time *and* be perishable in order to be classified as a service. This rule requires that a product must satisfy all of these criteria to be a service. The second classification rule implies that a product only has to meet one criterion to be classified as a service. Thus, a product must be either intangible *or* heterogeneous *or* be produced and consumed at the same time *or* be perishable to be classified as a service. The third approach implies that a product would be a service if it satisfies the requirements for most of the classification characteristics. In the service literature the use of classification rule is rarely discussed. Uhl & Upah (1983) probably offer the most precise specification of the classification rule;

> «... any task or work performed for another and/or provision of any facility, product, or activity for another's use and not ownership which arises from an exchange transaction. It is intangible and is, therefore, incapable of being stored or transported. It can be recalled for further use only through enacting an additional exchange transaction. There may be an accompanying sale of a product. » (pp 236)

Although, Uhl & Upah (1983) use somewhat different classification characteristics (transportation and ownership), our attention is directed towards the classification rule. Uhl & Upah argue for a «disjunctive» rule in order to classify a product as a service. This

classification rule is less restrictive than a «conjunctive» rule and is likely to result in a large service category. Conversely, the use of a «conjunctive» rule is likely to result in few services. Weinberger & Brown (1977) cite an example of a compensatory categorisation method suggested by Johnson (1969). This method specifies a number of subjective weights for several characteristics based on a content analysis of the marketing literature[1]. An illustration of the different classification rules is given in appendix F.

The second question with respect to the classification characteristics concerns the ambiguity of the classification procedures. The procedures should be intersubjectively unambiguous or possess high interjudge reliability, in order to satisfy requirements of the classification schemata (Hunt 1983). The relatively few contributions addressing the classification rule of the good/service typology could be an indication of a high degree of consensus regarding the classification rule. However, according to Uhl & Upah (1983) the opposite appears to be the case for the services marketing literature. Thus, the lack of explicit attention to the classification rule has resulted in low inter-judge reliability.

Hunt's (1983) third classification criterion suggests that all categories at the same level of classification should be *mutually exclusive*. This implies that there should not be fuzzy borders between different categories. The discussion below addresses if the classification characteristics of the good/service typology satisfy this criterion.

The services marketing literature states that services are intangible while goods are tangible. Thus, services lack physical evidence of the offering's quality, whereas physical evidence is available for goods. Therefore, quality judgements of services are claimed to be more difficult than for goods since tangible information is said to be more accessible (Zeithaml 1981). Given the findings of this study this claim appears loosely founded. The results of this study suggest that abstract attributes are more accessible than concrete attributes, while general attributes are less accessible than specific attributes. Also Wyckham et al. (1975) questioned if physical

[1] The characteristics and their subjective weights are as follows;
1) Intangibility (.32)
2) Simultaneity of Production and Consumption (.22)
3) Perishability (.20)
4) Buyer Participation (.13)
5) Nonstandardization (.08)
6) Importance of Producer (.05)

information is always more accessible than intangible information. They considered the acquisition of a PC which has a large proportion of tangible evidence. The complexity of a PC, at least in 1975, made tangible cues no more accessible than intangible cues. Thus, a question was raised with respect to intangibility as a classification criterion, as the tangible information was no more meaningful than the intangible information. Furthermore, Bateson (1979) defined intangibility to include an additional mental component, where intangible products were supposed to evoke a fuzzy image. Consequently, the perception of intangibility may vary across individuals, making an unique classification more difficult.

The services marketing literature suggests that services are associated with more heterogeneity, mostly due to the human dimension of the service encounter. A substantial part of the services marketing literature is concerned with issues associated with this heterogeneity, such as quality control (Parasuraman et al. 1985) and standardisation vs. personalisation of the service encounter (Surprenant & Solomon 1987). However, the personal factor does not necessarily imply more heterogeneity with respect to product perceptions, since employees are flexible and can adjust the offering to suit different needs of different consumers. The flexibility of the employees implies that they can adjust a standardised product to meet special requirements of different consumers (e.g. include/exclude specific vegetables, provide additional information) and thus, tailor-make service solutions for different consumers. This might result in a more positive evaluation of a service with less variation than the evaluation of standardised goods, because the offering is adjusted to specific needs (Troye 1990). Empirical evidence suggests that there is less variation in satisfaction evaluations for the service encounter than for other parts of the product (Troye & Wilcox 1988). Also, the evaluations were more positive than the evaluations of other aspects of the product. Heterogeneity refers not only to variations in a product offering, but also to variation across product alternatives. However, heterogeneity across product alternatives is not unique for services, as producers of goods are interested in differentiating their product offerings as well.

Simultaneity of consumption and production is another criterion that is claimed to be unique to services (Zeithaml et al. 1985), because a service does not exist at the point of purchase the service must be produced at the same time as it is consumed. However, it can be argued that this implies that service producers have more control over the consumer's consumption of the

product. Consequently, service producers have an advantage instead of a special problem compared to good producers who have no control over the consumption of their products.

Perishability is the last of the above mentioned classification criteria. Services cannot be stored as they do not exist prior to purchase and this imposes special problems for services with respect to managing demand fluctuations. Although some goods like fresh meat, fish and vegetables may be difficult to store for extended periods, storage problems in general may impose specific problems with respect to management of services compared to goods.

The above discussion suggests that there might be fuzzy borders between services and goods based on the classification characteristics suggested in the literature. Frequently, it may prove difficult to establish whether a service accompanies the sale of a good or a good accompanies the sale of a service.

The fourth criterion suggests that classification schemata should be *collectively exhaustive* (Hunt 1983). Generally, this criterion is satisfied since all sort of product offerings could be classified as either a good or a service. This implies that if a product is not a service, then it must be a good.

The fifth criterion suggests that a classification schemata should be *useful* (Hunt 1983). Several criteria may be employed to assess whether the service/good classification schemata is useful or not. Enis & Roering (1981) pointed at logical inconsistencies in the service/good typology. These logical inconsistencies refer to within-category heterogeneity and between-category homogeneity. Within-category heterogeneity indicates that dissimilar products are grouped together as services (e.g. McDonalds, banks, prostitutes, universities, barber shops), whereas between-category homogeneity refers to similar products which are classified differently (e.g. toupees (good) and barber shop (services), books and libraries). The strategies of barber-shops have more in common with strategies of toupee-dealers than those of prostitutes. From a theoretical point of view, the usefulness of the good/service typology is therefore questionable (Enis & Roering 1981). Consequently, the service/good typology lack sufficient face validity and the theoretical usefulness of the classification schemata is limited. Also, it is questionable if the practical implications of the typology warrant the use of the

service/good typology. Zeithaml et al. (1985) suggest several special strategies for services. However, most of these strategies apply to both goods and services (e.g. stimulating word-of-mouth communications, creating strong organisational image, engaging in post-purchase communications, managing consumers, using strategies to cope with fluctuating demand). Furthermore, this study found services to be easier to evaluate than goods, contrary to predictions made in the services marketing literature. Therefore, the usefulness of the service/good typology is seriously questioned with respect to consumer evaluations.

The above discussion suggests that there are several problems with the service/good typology. The problems associated with the typology do not suggest that there are no useful contributions in the services marketing literature. For instance, the different characteristics used to distinguish between goods and services may cause specific problems for marketers. However, these problems are not necessarily associated with services only, e.g., the simultaneity of consumption and production results in a somewhat different value chain of services than from that of goods. The literature has addressed this as a particular problem with respect to quality control of services compared to goods. However, it can be argued that this perspective of quality control should affect producers of goods as well, due to the focus on the prosumer (Toffler 1980) which is argued to have a great influence on future marketing theory development (Kotler 1986)[2]. A consequence of the prosumer perspective is that services probably involve less difficulties with respect to quality control, due to the relatively higher degree of control of the consumption process by the service provider.

In conclusion, the good/service typology contains a number of weaknesses that seriously questions its validity. Theoretical and empirical assessments reveal doubts regarding the derived evaluative consequences proposed in the services marketing literature. Instead, a focus on more basic dimensions, such as product intangibility, may prove to be a more promising starting point for future research efforts.

---

[2] The prosumer is already included in more general measurement perspectives of product quality (i.e. Troye & Henjesand 1992).

References

Alba, J.W. & J.W. Hutchinson
Dimension of Consumer Expertise, Journal of Consumer Research, Vol. 13, March 1987

Alpert, M.I.
Identification of Determinant Attributes: A Comparison of Methods, Journal of Marketing Research, Vol. 8, 1971

Alpert, M.I.
Unresolved Issues in Identification of Determinant Attributes, in J.C. Olson (ed.), Advances in Consumer Research, Vol. 7, Association for Consumer Research, 1980

Anderson, J.C. & D.W. Gerbing
Structural Equation Modelling in Practice: A Review and Recommended Two-Step Approach, Psychological Bulletin, Vol. 103, No. 3, 1988

Anderson, R.E. & M.A. Olson
Technical Wording in Advertising: Implications for Market Segmentation, Journal of Marketing, Vol. 44, Winter 1980

Arndt, J.
Word of Mouth Advertising and Informal Communication, in D.F. Cox (ed.), Risk Taking and Information Handling in Consumer Behavior, The Presidents and Fellows of Harward College, 1967

Arnthorsson, A., W.E. Berry & J.E. Urbany
Difficulty of Pre-Purchase Quality Inspection: Conceptualization and Measurement, in R.H. Holman and M.R. Solomon (eds.), Advances in Consumer Research, Vol. 18, Association for Consumer Research, 1991

Axsom, D., S. Yates & S. Chaiken
Audience Response as a Heuristic Cue in Persuasion, Journal of Personality and Social Psychology, Vol. 53 No. 1, 1987

Bagozzi, R.P. & Y. Yi
Advanced Topics in Structural Equation Models, in R.P. Bagozzi (ed.), Advanced Methods of Marketing Research, Basil Blackwell Ltd., 1994

Bagozzi, R.P. & Y. Yi
On the Evaluation of Structural Equation Models, Journal of the Academy of Marketing Science, Vol. 16, No. 1, Spring 1988

Bateson, J.E.G.
Why We Need Service Marketing, in O.C. Ferrell, S.W. Brown & C.W. Lamb (eds.), Conceptual and Theoretical Developments in Marketing, American Marketing Association 1979

Bauer, R.A.
Consumer Behavior as Risk Taking, in D.F. Cox (ed.), Risk Taking and Information Handling in Consumer Behavior, The Presidents and Fellows of Harward College, 1967

Beatty, S.E. & S.M. Smith
External Search Effort: An Investigation Across Several Product Categories, Journal of Consumer Research, Vol. 14, June 1987

Bentler, P.M.
Comparative Fit Indexes in Structural Models, Psychological Bulletin, Vol. 107, No. 2, 1990

Bergström, L.
Objektivitet, Bokforlaget Prisma, Stockholm, 1972

Best, R.J. & D.B. Williams
Structural Properties of Consumer Information and Perceptions of Informativeness, in J.C. Olson (ed.), Advances in Consumer Research, Vol. 7, Association for Consumer Research, 1980

Best, R.J. & M. Ursic
The Impact of Information Load and Variability On Choice Accuracy, in M. Wallendorf and P. Anderson (eds.), Advances in Consumer Research, Vol. 14, Association for Consumer Research, 1987

Bettman, J.R.
An Information Processing Theory of Consumer Choice, Addison-Wesley Publishing Company Inc., 1979

Bettman, J.R. & M.A. Zins
Information Format and Choice Task Effects in Decision Making, Journal of Consumer Research, Vol. 6, September 1979

Bettman, J.R. & P. Kakkar
Effects on Information Presentation Format on Consumer Information Acquisition Strategies, Journal of Consumer Research, Vol. 3, March 1977

Bitner, M.J. & B.H. Booms
The Service Encounter: Diagnosing Favorable and Unfavorable Incidents, Journal of Marketing, Vol. 54, 1990

Bitner, M.J. & C. Obermiller
The Elaboration Likelihood Model: Limitations and Extensions in Marketing, in E.C. Hirschman & M.B. Holbrook (eds.), Advances in Consumer Research, Vol. 12, Association for Consumer Research, 1985

Bollen, K.A.
Structural Equations with Latent Variables, John Wiley & Sons, 1989

Bollen, K. & R. Lennox
Conventional Wisdom on Measurement: A Structural Equation Perspective, Psychological Bulletin, Vol. 110, No. 2, 1991

Borgida, E. & B. Howard-Pitney
Personal Involvement and the Robustness of Perceptual Salience Effects, Journal of Personality and Social Psychology, Vol. 45 No. 3, 1983

Bowen, D.E. & B. Schneider
Services Marketing and Management: Implications for Organizational Behavior, Research in Organizational Behavior, Vol. 10, 1988

Brown, E.D. & L. Sechrest
Experiments in Cross-Cultural Research, in H.C. Triandis & R.W. Brislin (eds.), Handbook of Cross-Cultural Psychology, Vol. 2, Methodology, Allyn and Bacon, Inc., 1980

Brown, J.R. & E.F. Fern
Goods vs. Services Marketing: A Divergent Persective, in J.H. Donnelly & W.R. George (eds.) Marketing of Services, American Marketing Association 1981

Browne, M.W. & R. Cudeck
Alternative Ways of Assessing Model Fit, in K.A. Bollen & J.S. Long (eds.), Testing Structural Equation Models, SAGE Publications, 1993

Brucks, M.
The Effects of Product Class Knowledge on Information Search Behavior, Journal of Consumer Research, Vol. 12, June 1985

Burton, S.
The Framing of Purchase for Services, Journal of Services Marketing, Vol. 4, Fall 1990

Cacioppo, J.T. & R.E. Petty
The Need for Cognition, Journal of Personality and Social Psychology, Vol. 42, No. 1, 1982

Cacioppo, J.T., R.E. Petty, C.F. Kao & R.Rodriguez
Central and Peripheral Routes to Persuasion: An Individual Difference Perspective, Journal of Personality and Social Psychology, Vol. 51, No. 5, 1986

Calder, B.J., L.W. Phillips & A.M. Tybout
Designing Research for Application, Journal of Consumer Research, Vol. 8, 1981

Carpenter, G.S., K. Nakamoto
Consumer Preference Formation and Pioneering Advantage, Journal of Marketing Research, Vol. 26, August 1989

Cohen, J.B.
The Structure of Product Attributes: Defining Attribute Dimensions for Market Planning and Evaluation, in A.D. Shocker (ed.), Analytic Approaches to Product and Market Planning, Cambridge, MA: Marketing Science Institute, 1979

Cole, D.A., S.E. Maxwell, R. Arvey & E. Salas
Multivariate Group Comparisons of Variable Systems: MANOVA and Structural Equation Modeling, Psychological Bulletin, Vol. 114, No. 1, 1993

Cook, T.D. & D.T. Campbell
Quasi-Experimentation: Design & Analysis Issues for Field Settings, Houghton Mifflin Company, 1979

Cooper-Martin, E.
Consumers and Movies: Information Sources for Experiential Products, Advances in Consumer Research, Vol. 19, 1992

Cox, D.F.
Risk Handling in Consumer Behavior - an Intensive Study of Two Cases, in D.F. Cox (ed.), Risk Taking and Information Handling in Consumer Behavior, The Presidents and Fellows of Harward College, 1967

Darby, M.R. & E. Karni
Free Competition and the Optimal Amount of Fraud, The Journal of Law & Economics, Vol. 16, April 1973

Darley, W.K. & R.E. Smith
Advertising Claim Objectivity: Antecedents and Effects, Journal of Marketing, Vol. 57, October 1993

Dholokia, R.R. & M. Venkatraman
Marketing Services that Compete with Goods, Journal of Services Marketing, Vol. 7, No. 2, 1993

Dowling, G.R. & R. Staelin
A Model of Perceived Risk and Intended Risk-handling Activity, Journal of Consumer Research, Vol. 21, June 1994

Dubè-Rioux, L., D.T. Regan & B.H. Schmitt
The Cognitive Representation of Services Varying in Concreteness and Specificity, in M.E. Goldberg, G.Gorn & R.W. Pollay (eds.), Advances in Consumer Research, Vol. 17, Association for Consumer Research 1990

Durand, R.M. & Z.V. Lambert
Construct and Object Complexity in Cognitive Structures: Some Conceptual Issues, in R.P. Bagozzi and A.M. Tybout (eds.), Advances in Consumer Research, Vol. 10, Association for Consumer Research, 1983

Einhorn, H.J. & R.M. Hogarth
Prediction, Diagnosis, and Causal Thinking in Forecasting, Journal of Forecasting, Vol. 1, 1982

Engel, J.F. & R.D. Blackwell
Consumer Behavior, CBS College Publishing, 1982

Enis, B.M. & K.J. Roering
Product Classification Taxonomies: Synthesis and Consumer Implications, in C.W. Lamb & P.M. Durane (eds.), Theoretical Developments in Marketing, American Marketing Association, 1980

Enis, B.M. & K.J. Roering
Services Marketing: Different Products, Similar Strategy, in J.H. Donnelly & W.R. George (eds.) Marketing of Services, American Marketing Association 1981

Fazio, R.H.
On the Power and Funcionality of Attitudes: The Role of Attitude Accessability, in A.R. Pratkanis, S.J. Breckler & A.G. Greenwald (eds.), Attitude Structure and Function, Lawrence Erlbaum Associates, 1989

Feldman, J.M. & J.G. Lynch, Jr.
Self-Generated Validity and Other Effects of Measurement on Belief, Attitude, Intention, and Behavior, Journal of Applied Psychology, Vol. 73 No. 3, 1988

Finn, A.
A Theory of the Consumer Evaluation Process for New Product Concepts, in J. Sheth (ed), Research in Consumer Behavior, Vol. 1, JAI Press Inc., 1985

Fisicaro, S.A. & C.E. Lance
Implications of the Three Causal Models for the Measurement of Halo Error, Applied Psychological Measurement, Vol. 14, 1990

Fiske, S.T. & S.E. Taylor
Social Cognition, McGraw-Hill Inc., 1991

Flew, A.
An Introduction to Western Philosophy: Ideas and Argument from Plato to Popper, Thames and Hudson, 1989

Flipo, J.-P.
On the Intangibility of Services, The Services Industries Journal, Vol. 8, 1988

Folkes, V.S.
Recent Attribution Research in Consumer Behavior: A Review and New Directions, Journal of Consumer Research, Vol. 14, March 1988

Fornell, C. & D.F. Larcker
Evaluating Structural Equation Models with Unobservable Variables and Measurement Error, Journal of Marketing Research, Vol. 18, February 1981

Friedman, M.L. & L.J. Smith
Consumer Evaluation Processes in a Service Setting, Journal of Services Marketing, Vol. 7, No. 2, 1993

Friedmann, R. & M.R. Zimmer
The Role of Psychological Meaning in Advertising, Journal of Advertising, Vol. 17 No. 1, 1988

Friedmann, R. & V.P. Lessig
Psychological Meaning of Products and Product Positioning, Journal of Product Innovation Management, Vol. 4 1987

Friedmann, R. & W. French
Psychological Meaning of Products: A Basis for Product Positioning, in W. Henry, M. Menasco and H. Takada (eds.), New-Product Development and Testing, Lexington Books, 1989

Friedmann, R. and V.P. Lessig
A Framework of Psychological Meaning of products, in R. Lutz (ed.), Advances in Consumer Research, Vol. 13, Association for Consumer Research, 1986

Garner, W.R.
Aspects of a Stimulus: Features, Dimensions, and Configurations, in E. Rosch and B.B. Lloyd (eds.), Cognition and Categorization, Lawrence Erlbaum Associates Publishers, 1978

Garner, W.R. & C.D. Creelman
Problems and Methods of Psychological Scaling, in H. Helson and W. Bevan (eds.), Contemporary Approaches in Psychology, Princeton: D. Van Nostrand, 1967

Gerbing, D.W. & J.C. Anderson
An Updated Paradigm for Scale Development Incorporating Unidimensionality and Its Assessment, Journal of Marketing Research, Vol. 25, May 1988

Gerbing, D.W. & J.C. Anderson
Monte Carlo Evaluations of Goodness-of-Fit Indicies for Structural Equation Models, in K.A. Bollen & J.S. Long (eds.), Testing Structural Equation Models, SAGE Publications, 1993

Glass, A.L. & K.J. Holyoak
Cognition, Newberry Award Records Inc., 1986

Goldman, A.I.
Epistemology and Cognition, Presidents and Fellows of Harward College, 1986

Grove, S.J. & R.P. Fisk
The Service Experience as Theater, Advances in Consumer Research, Vol. 19, 1992

Grönroos, C.
Veien til bedre tjenesteytelser, Bedriftsøkonomens Forlag A/S 1984

Guseman, D.S.
Risk Perception and Risk Reduction in Consumer Services, in J.H. Donnelly & W.R. George (eds.) Marketing of Services, American Marketing Association 1981

Gutman, J.
A Means-End Chain Model Based on Consumer Categorization Processes, Journal of Marketing, Vol. 46, Spring 1982

Ha, Y.W. & S.J. Hoch
Ambiguity, Processing Strategy, and Advertising-Evidence Interactions, Journal of Consumer Research, Vol. 16, December 1989

Hartman, D.E. & J.H. Lindgren, Jr.
Consumer Evaluations of Goods and Services, Journal of Services Marketing, Vol. 7, No. 2, 1993

Hauser, J.R. & D. Clausing
The House of Quality, Harward Business Review, Vol. 66, May-June 1988

Henjesand, I.J., S.V. Troye & E. Breivik
Does Labelling Matter? Some Empirical Differences between Subject and Stimulus Anchored Response Scales in Customer Evaluations, Working Paper, Centre for Research in Economics and Business Administration, Bergen 109/1992

Herr, P.M., F.R. Kardes & J. Kim
Effects of Word-of-Mouth and Product-Attribute Information on Persuasion: An Accessibility-Diagnosticity Perspective, Journal of Consumer Research, Vol. 17, March 1991

Hirschman, E.C.
Attributes of Attributes and Layers of Meaning, in J.C. Olson (ed.), Advances in Consumer Research, Vol. 7, Association for Consumer Research, 1980

Hoch, S.J. & J. Deighton
Managing What Consumers Learn from Experience, Journal of Marketing, Vol. 53, April 1989

Hoch, S.J. & Y.-W. Ha
Consumer Learning: Advertising and the Ambiguity of Product Experience, Journal of Consumer Research, Vol. 13, October 1986

Hogarth, R.
Judgement and Choice, John Wiley & Sons Ltd., 1989

Holbrook, M.B. & E.C. Hirschman
The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun, Journal of Consumer Research, Vol. 9, Sept. 1982

Horton, R.
Buyer Behavior; A Decision-Making Approach, Charles E. Merrill Publishing Company, 1984

Howard, J.A. & J.N. Sheth
The Theory of Buyer Behavior, John Wiley & Sons Inc. 1969

Hunt, S.D.
Marketing Theory: The Philosophy of Marketing Science, Richard D. Irwin, Inc. 1983

Iacobucci, D.
An Empirical Examination of some Basic Tenets of Services: Goods-Services Continua, in T.A. Swartz, D.E. Bowen and S.W. Brownm Advances in Services Marketing and Management, Vol. 1, JAI Press Inc., 1992

Ironson, G.H., P.C. Smith, M.T. Brannick, W.M. Gibson & K.B. Paul
Construction of a Job in General Scale: A Comparison of Global, Composite, and Specific Measures, Journal of Applied Psychology, Vol. 74, No. 2, 1989

Jaccard, J. & C.K. Wan
Cross-Cultural Methods for the Study of Behavioral Decision Making, Journal of Cross-Cultural Psychology, Vol. 17, 1986

Jaccard, J. & P. Dittus
Idiographic and Nomothetic Perspectives on Research Methods and Data Analysis, in C. Hendrick & M.S. Clark (eds.), Research Methods in Personality and Social Psychology, Sage Publications, 1990

Jacoby, J., D.E. Speller & C.A. Kohn
Brand Choice Behavior as a Function of Information Load, Journal of Marketing Research, Vol. 11, February 1974

Jacoby, J., J.J. Jaccard, I. Currim, A. Kuss, A. Ansari & T. Troutman
Tracing the Impact of Item-by-Item Information Accessing on Uncertainty Reduction, Journal of Consumer Research, Vol. 21, September 1994

Johnson, B.T. & A.H. Eagly
Effects of Involvement on Persuasion: A Meta-Analysis, Psychological Bulletin, Vol. 106, No. 2, 1989

Johnson, B.T. & A.H. Eagly
Involvement and Persuasion: Types, Traditions, and the Evidence, Psychological Bulletin, Vol. 107, No. 3, 1990

Johnson, E.J. & J.E. Russo
Product Familiarity and Learning of New Information, Journal of Consumer Research, Vol. 11, June 1984

Johnson, E.M.
Are Goods and Services Different? An Exercise in Marketing Theory, Unpublished Dissertation, Washington University 1969

Johnson, M.D.
The Differential Processing of Product Category and Noncomparable Choice Alternatives, Journal of Consumer Research, Vol. 16, Dec. 1989

Johnson, M.D. & C. Fornell
The Nature and Methodological Implications of the Cognitive Representation of Products, Journal of Consumer Research, Vol. 14, Sep. 1987

Johnson, M.D., D.R. Lehmann, C. Fornell & D.R. Horne
Attribute Abstraction, Feature-Dimensionality, and the Scaling of Product Similarities, International Journal of Research in Marketing, Vol. 9, 1992

Johnson, W. & D. Kieras
Representation-Saving Effects of Prior Knowledge in Memory for Simple Technical Prose, Memory & Cognition, Vol. 11, 1983

Jöreskog, K.G. & D. Sörbom
LISREL 7, A Guide to the Program and Applications, SPSS Inc., 1989

Jöreskog, K.G. & D. Sörbom
New Features in LISREL 8, Scientific Software International, Inc., 1993

Kapferer, J.-N. & G. Laurent
Consumer Involvement Profiles: A New Practical Approach to Consumer Involvement, Journal of Advertising Research, Vol. 25, No. 6, December 1985/January 1986

Kaplan, D.
Evaluating and Modifying Covariance Structure Models: A Review and Recommendation, Multivariate Behavioral Research, Vol. 25, No. 2, 1990

Kaufmann, G.
Problem Solving and Creativity, in K. Grønhaug & G. Kaufmann (eds.), Innovation: A Cross-Disciplinary Perspective, Universitetsforlaget, 1988

Keller, K.L. & R. Staelin
Effects of Quality and Quantity of Information on Decision Effectiveness, Journal of Consumer Research, Vol. 14, September 1987

Kelly, G.A.
The Psychology of Personal Constructs, Vol. 1, W.W. Norton & Company Inc., 1955

Kendrick, D.T. & D.O. Stringfield
Personality Traits and the Eye of the Beholder: Crossing Some Traditional Philosophical Boundaries in the Search for Consistency in All of the People, Psychological Review, Vol. 87, 1980

Kendrick, D.T. & S.L. Braver
Personality: Idiographic and Nomothetic! A Rejoinder, Psychological Review, Vol. 89, 1982

Keppel, G.
Design and Analysis: A Researcher's Handbook, Prentice Hall Inc., 1982

Klein, D.M. & R.C. Lewis
Personal Construct Theory: A Foundation for Deriving Tangible Surrogates in Services Marketing, in T.M. Bloch, G.D. Upah & V.A. Zeithaml (eds.), Services Marketing in a Changing Environment, American Marketing Association, 1985

Kirschenbaum, S.S.
Influence of Experience on Information-Gathering Strategies, Journal of Applied Psychology, Vol. 77 No. 3, 1992

Koehler, D.J.
Explanation, Imagination, and Confidence in Judgment, Psychological Bulletin, Vol. 110, No. 3, 1991

Kotler, P.
The Prosumer Movement: A New Challenge for Marketers, Advances in Consumer Research, Vol. 13, Association for Consumer Research 1986

Krosnick, J.A. & H. Schuman
Attitude Intensity, Importance, and Certainty and Susceptibility to Response Effects, Journal of Personality and Social Psychology, Vol. 54, No. 6, 1988

Kupsch, P., P. Hufschmied, H.D. Mathes & K. Schöler
Die Struktur von Qualitätsurteilen und das Informationsverhalten von Konsumenten beim Kauf langlebiger Gebrauchsgüter, Westdeutscher Verlag GmbH, Opladen 1978

Lastovicka, J.L. & D.M. Gardner
Low Involvement versus High Involvement Cognitive Structures, Advances in Consumer Research, Vol. 5, 1978

Lee, M. & F.M. Ulgado
Service Extension Strategy: A Viable Basis for Growth?, Journal of Services Marketing, Vol. 7, No. 2, 1993

Lefkoff-Hagius, R. & C.H. Mason
Characteristic, Beneficial, and Image Attributes in Consumer Judgments of Similarity and Preference, Journal of Consumer Research, Vol. 20, June 1993

Lefkoff-Hagius, R. & C.H. Mason
The Role of Tangible and Intangible Attributes in Similarity and Preference Judgments, in M.E. Goldberg, G.Gorn & R.W. Pollay (eds.), Advances in Consumer Research, Vol. 17, Association for Consumer Research 1990

Levitt, T.
Marketing Intangible Products and Product Intangibles, Harward Business Review, Vol. 59, May-June 1981

Levitt, T.
Marketing Myopia, Harward Business Review, Vol. 53, September-October 1975

Lindsay, P.H. & D.A. Norman
Human Information Processing: An Introduction to Psychology, Harcourt Brace Jovanovich Inc., 1977

Lines R., E. Breivik & M. Supphellen
Method Effects in Attribute Elicitation: A Multidimensional Comparison of Four Techniques, Working Paper, Centre for Research in Economics and Business Administration, Bergen 18/1995

Lines, R., E. Breivik & M. Supphellen
Le Biais Dans Les Méthodes D'identification Des Attributs: Une comparaison multidimensionelle de la grille répertoire et des techniques d'attributs préétablis, in B. Pras and B. Forgues (eds.), Actes de l'Association Française du Marketing, Vol. 10, 1994

Locander, W.B. & P.W. Hermann
The Effects of Self-Confidence and Anxiety on Information Seeking in Consumer Risk Reduction, Journal of Marketing Research, Vol. 16, May 1979

Lovelock, C.H. & E. Langeard & J.E.G. Bateson & P. Eiglier
Some Organizational Problems Facing Marketing in the Service Sector, in C.H. Lovelock (ed.), Managing Services: Marketing, Operations, and Human Resources, Prentice-Hall International Inc., 1988

MacKenzie, S.B.
The Role of Attention in Mediating the Effect of Advertising on Attribute Importance, Journal of Consumer Research, Vol. 13, September 1986

Mancuso, J.C. & M.L.G. Shaw
A Constructivist Perspective on Assessing Personal Cognitive Structures, in J.C. Mancuso & M.L.G. Shaw (eds.), Cognition and Personal Structure: Computer Access and Analysis, Praeger Publishers, 1988

Marks, L.J. & J.C. Olson
Toward a Cognitive Structure Conceptualization of Product Familiarity, in K.B. Monroe (ed.), Advances in Consumer Research, Vol.8, Association for Consumer Research, 1981

Marsch, H.W.
Confirmatory Factor Analysis Models of Factorial Invariance: A Multifaceted Approach, Structural Equation Modeling, Vol. 1, No. 1, 1994

Maute, M.F., W.R. Forrester, Jr.
The Effect of Attribute Qualities on Consumer Decision Making: A Causal Model of External Information Search, Journal of Economic Psychology, Vol. 12, 1991

McDougall, G.H.G.
Determinants of Ease of Evaluation: Products and Services Compared, Canadian Journal of Administrative Science, Vol. 4, Dec 1987

McDougall, G.H.G. & D.W. Snetsinger
The Intangibility of Services: Measurement and Competitive Perspectives, Journal of Services Marketing, Vol. 4, 1990

Medsker, G.J., L.J. Williams & P.J. Holahan
A Review of Current Practices for Evaluating Causal Models in Organizational Behavior and Human Resources Management Research, Journal of Management, Vol. 20, No. 2, 1994

Mervis, C.B. & E. Rosch
Categorization of Natural Objects, Annual Review of Psychology, Vol. 32, Annual Reviews Inc., 1981

Miniard, P.W., D. Sirdeshmukh & D.E. Innis
Peripheral Persuasion and Brand Choice, Journal of Consumer Research, Vol. 19, September 1992

Murphy, P.E. & B.M. Enis
Classifying Products Strategically, Journal of Marketing, Vol. 50, July 1986

Murray, K.B.
A Test of Services Marketing Theory: Consumer Information Acquisition Activities, Journal of Marketing, Vol. 55, Jan 1991

Murray, K.B. & J.L. Schlacter
The Impact of Services versus Goods on Consumers' Assessment of Perceived Risk and Variability, Academy of Marketing Science, Vol. 18, Number 1 1990

Myers, J.H. & A.D. Shocker
The Nature of Product-Related Attributes, in J.N. Sheth (ed.), Research in Marketing, Vol. 5, JAI Press Inc., 1981

Myers, J.H. & M.I. Alpert
Determinant Buying Attitudes: Meaning and Measurement, Journal of Marketing, Vol. 32, October 1968

Neimayer, G.J. , J.F. Leso, C. Maramarosh, S. Prichard & M.Moore
The Role of Construct Type in Vocational Differentiation: Use of Elicited versus Provided Dimensions, Journal of Counceling Psychology, Vol. 39, 1992

Nelson, P.
Advertising as Information, Journal of Political Economy, vol. 82, 1974

Nelson, P.
Information and Consumer Behavior, Journal of Political Economy, vol. 78, 1970

Normann, R.
Service Management: Ledelse og strategi i produksjon av tjenester, Bedrifts-økonomens Forlag A/S 1983

Olson, J.C.
Price as an Informational Cue: Effects on Product Evaluation, in A.G. Woodside, J.H. Sheth & P.D. Bennett (eds.), Consumer and Industrial Buying Behavior, Elsevier North-Holland Inc., 1977

Ostrom, A. & D. Iacobucci
Consumer Trade-Offs and the Evaluation of Services, Journal of Marketing, Vol. 59, January 1995

Ozanne, J.L., M. Brucks & D. Grewal
A Study of Information Search Behavior during the Categorization of New Products, Journal of Consumer Research, Vol. 18, No. 4, March 1992

Paivio, A.
Abstractness, Imagery, and Meaningfulness in Paires-Associate Learning, Journal of Verbal Learning and Verbal Behavior, Vol. 4, 1965

Parasuraman A. & V.A. Zeithaml & L.L. Berry
A Conceptual Model of Service Quality and Its Implications for Future Research, Journal of Marketing, Vol. 49 1985

Park, C.W. & D.C. Smith
Product-Level Choice: A Top-Down or Bottom-Up Process?, Journal of Consumer Research, Vol. 16, december 1989

Payne, J.W.
Task Complexity and Contingent Processing in Decision Making: An Information Search and Protocol Analysis, Organizational Behavior and Human Performance, Vol. 16, 1976

Pechmann, C. & S. Ratneshwar
Consumer Covariation Judgments: Theory or Data Driven, Journal of Consumer Research, Vol. 19, December 1992

Perry, M. & B.C. Hamm
Canonical Analysis of Relations Between Socioeconomic Risk and Personal Influence in Purchase Decisions, Journal of Marketing Research, Vol. 6, February 1969

Peterson, D.K. & G.F. Pitz
Confidence, Uncertainty, and the Use of Information, Journal of Experimental Psychology: Learning, Memory, and Cognition, Vol. 14, No. 1, 1988

Petty, R. & J. Cacioppo
Communication and Persuasion: Central and Peripheral Routes to Attitude Change, Springer-Verlag, 1986

Petty, R.E., J.T. Cacioppo & D. Schumann
Central and Peripheral Routes to Advertising Effectiveness: The Moderating Role of Involvement, Journal of Consumer Research, Vol. 10, September 1983

Pieters, R.G.M. & van Raaij, W.F.
The Role of Affect in Economic Behavior, in W.F. van Raaij, G.M. van Veldhoven & K.E. Wärneryd (eds.), Handbook of Economic Psychology, Kluwer Academic Publishers, 1988

Pinson, C.
Exploring the Nature of Consumer Information Processing Heuristics, in R.P. Bagozzi and A.M. Tybout (eds.), Advances in Consumer Research, Vol. 10, Association for Consumer Research, 1983

Raden, D.
Strength Related Attitude Dimensions, Social Psychology Quarterly, Vol. 48, 1985

Resnik, A. & B.L. Stern
An Analysis of Information Content in Television Advertising, Journal of Marketing, Vol. 47, January 1977

Reynolds, T.J. & J. Gutman
Advertising Is Image Management, Journal of Advertising Research, Vol. 24, No. 1., February/March 1984

Reynolds, T.J. & J. Gutman
Laddering Theory, Method, Analysis, and Interpretation, Journal of Advertising Research, Vol. 28, February/March 1988

Reynolds, T.J. & J.P. Rochon
Means-End Based Advertising Research: Copy Testing is Not Strategy Assessment, Journal of Business Research, Vol. 22, 1991

Reynolds, T.J. & W.S. Perkins
Cognitive Differentiation Analysis: A New Methodology for Assessing the Validity of Means - End Hierarchies, Advances in Consumer Research (ed. M. Wallendorf & P. Anderson), Vol. XIV, 1987

Richard, M.D. & A.W. Allaway
Service Quality Attributes and Choice Behavior, Journal of Services Marketing, Vol. 7, No. 1, 1993

Rosch, E.
Principles of Categorization, in E. Rosch and B.B. Lloyd (eds.), Cognition and Categorization, Lawrence Erlbaum Associates Publishers, 1978

Rushton, A.M. & D.J. Carson
The Marketing of Services: Managing the Intangibles, European Journal of Marketing, Vol. 19, No. 3 1985

Rushton, J.P., D.N. Jackson & S.V. Paunonen
Personality: Nomothetic or Idiographic? A Response to Kendrick and Stringfield, Psychological Review, Vol. 88, 1981

Russo, J.
More Information is Better: A Reevaluation of Jacoby, Speller, and Kohn, Journal of Consumer Research, Vol. 1, 1974

Sabini, J.P. & M. Silver
Some Senses of Subjective, in P.F. Secord (ed.), Explaining Human Behavior: Consciousness, Human Action and Social Structure, Sage Publications Inc., 1982

Schellinck, D.A.
Cue Choice as a Function of Time Pressure and Perceived Risk, in R.P. Bagozzi and A.M. Tybout (eds.), Advances in Consumer Research, Vol. 10, Association for Consumer Research, 1983

Shaw, M.L.G. & J.C. Mancuso
Modeling Cognitive Processes, in J.C. Mancuso & M.L.G. Shaw (eds.), Cognition and Personal Structure: Computer Access and Analysis, Praeger Publishers, 1988

Shostack, G.L.
Breaking Free from Product Marketing, Journal of Marketing, Vol. 41, April 1977

Shugan, S.M.
The Cost of Thinking, Journal of Consumer Research, Vol. 7, September 1980

Singh, J.
Redundancy in Constructs: Problem, Assessment, and an Illustrative Example, Journal of Business Research, Vol. 22, 1991

Singh, J.
Understanding the Structure of Consumers' Satisfaction Evaluations of Service Delivery, Journal of the Academy of Marketing Science, Vol. 19, No. 3, Summer 1991

Smith, R.E. & W.R. Swinyard
Cognitive Response to Advertising and Trial: Belief Strength, Belief Confidence and Product Curiosity, Journal of Advertising, Vol. 17, No. 3, 1988

Steenkamp, J.-B.E.M.
Perceived Quality of Food Products and Its Relationship to Consumer Preferences: Theory and Measurement, Journal of Food Quality, 1990

Steenkamp, J.-B.E.M.
Product Quality: An Investigation into the Concept and How It Is Perceived by Consumers, Van Gorcum & Comp B.V., 1989

Surprenant, C.F. & M.R. Solomon
Prediction and Personalization in the Service Encounter, Journal of Marketing, Vol. 51, April 1987

Swartz, T.A. & N. Stephens
Information Search for Services: The Maturity Segment, in T.C. Kinnear (ed.), Advances in Consumer Research, Vol. 11, Association for Consumer Research, 1984

Tanaka, J.S.
Multifaceted Conceptions of Fit in Structural Equation Models, in K.A. Bollen & J.S. Long (eds.), Testing Structural Equation Models, SAGE Publications, 1993

Toffler, A.
The Third Wave, William Collins Sons & co. Ltd., 1980

Troye, S.V.
Behavioral Implications of the Distinction Between Products and Services, Unpublished working paper, Urbana, Illinois, 1979

Troye, S.V.
Evoked Set Formation From the Perspective of Decision Making as an Instance of Categorization, Unpublished doctoral dissertation, Urbana, Illinois, 1983

Troye, S.V.
Markedsføring: Styring av kvalitet, Universitetsforlaget AS, 1990

Troye, S.V.
Teori- og Forskningsevaluering: Et kritisk realistisk perspektiv, TANO, 1994

Troye, S.V. & I.J. Henjesand
Marketing as Quality Management: An Integrated Perspective on Product and Service Quality, Working Paper, Centre for Research in Economics and Business Administration, Bergen 3/1992

Troye, S.V. & J. Wilcox
Tjenestemarkedsføringens iboende gjenstridighet: Noen kjetterske påstander om tjenestekvalitet samt empirisk belegg, Beta, Vol. 2, November 1988

Tumbusch, J.J.
How to Design a Conjoint Study, Sawtooth Software Conference Proceedings, 1987

Uhl, K.P. & G.D. Upah
The Marketing of Services: Why and How is it Different?, Research in Marketing, Vol. 6, JAI Press, Inc. 1983

Urbany, J.E., P.R. Dickson & W.L. Wilkie
Buyer Uncertainty and Information Search, Journal of Consumer Research, Vol. 16, September 1989

van Doren, D.C. & P.B. Relle
Confronting Intangibility: A Practical Approach, Journal of Professional Services Marketing, Vol. 2, Spring 1987

van Raaij, W.F.
Consumer Information Processing for Different Information Structures and Formats, in W.D. Perrault Jr. (ed.), Advances in Consumer Research, Vol. 4, Association for Consumer Research, 1977

Waern, Y.
What Makes a Task Difficult? A Study of the Relation Between Task Requirements, Task Performance, and Perceived Difficulty, Psychological Research, Vol. 44, 1982

Walker, B., R. Celsi & J. Olson
Exploring the Structural Characteristics of Consumers' Knowledge, in M. Wallendorf and P. Anderson (eds.), Advances in Consumer Research, Vol. 14, Association for Consumer Research, 1987

Walker, B.A. & J.C. Olson
Means-End Chains: Connecting Products With Self, Journal of Business Research, Vol. 22, 1991

Webster Reference Dictionary of the English Language, Publishers United Guild, 1983

Weinberger, M.G. & S.W. Brown
A Difference in Informational Influences: Services vs. Goods, Journal of the Academy of Marketing Science, Vol. 5, No. 4 Fall 1977

Wendler, E.R.
Consumer Information and Confidence: Moderating Effects of Perceived Comprehension and Risk, in R.P. Bagozzi and A.M. Tybout (eds.), Advances in Consumer Research, Vol. 10, Association for Consumer Research, 1983

White, J.D., A. Tashchian & R. Ohanian
An Exploration into the Scaling of Consumer Confidence: Dimensions, Antecedents, and Consequences, Journal of Social Behavior and Personality, Vol. 6 No. 3, 1991

Wilson, T.D., D.J. Lisle, D. Kraft & C.G. Wetzel
Preferences as Expextation-Driven Inferences: Effects of Affective Expectations on Affective Experience, Journal of Personality and Social Psychology, Vol. 56 No. 4, 1989

Wilton, P.C. & J.G. Myers
Task, Expectancy, and Information Assessment Effects in Information Utilization Processes, Journal of Consumer Research, Vol. 12, March 1986

Wright, A.A. & J.G. Lynch, Jr.
Communication Effects of Advertising versus Direct Experience When both Search and Experience Attributes Are Present, Journal of Consumer Research, Vol. 21, No. 4, March 1995

Wyckham, R.G., P.T. Fitzroy & G.D. Mandry
Marketing of Services: An Evaluation of the Theory, European Journal of Marketing, Vol. 9, Number 1 1975

Young, R.F.
The Advertising of Consumer Services and the Hierarchy of Effects, in J.H. Donnelly & W.R. George (eds.) Marketing of Services, American Marketing Association 1981

Zaichkowsky, J.L.
Measuring the Involvement Construct, Journal of Consumer Research, Vol. 12, Dec. 1985

Zaltman, G., C.R.A. Pinson & R. Angelmar
Metatheory and Consumer Behavior, Hilsdale, Illinois Dryden Press, 1972

Zeithaml, V.A.
Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence, Journal of Marketing, Vol. 52, July 1988

Zeithaml, V.A.
How Consumer Evaluation Processes Differ between Goods and Services, in J.H. Donnelly & W.R. George (eds.) Marketing of Services, American Marketing Association 1981

Zeithaml, V.A. , A. Parasuraman & L.L. Berry
Problems and Strategies in Service Marketing, Journal of Marketing, Vol. 49 1985

Zinkhan, G.M., M. Johnson & F.C. Zinkhan
Differences between Product and Services Television Commercials, Journal of Services Marketing, Vol. 6, No. 3, Summer 1992

APPENDIX A

REVIEW OF LITERATURE ON PRODUCT INTANGIBILITY

Authors	Objective	Definition of intangibility	Description of the study	Product/respondents	Findings
Wyckham, Fitzroy & Mandry (1975)	Critical evaluation of the service/good typology from a marketing perspective	Cannot be physically evaluated All products contain both intangibles and tangibles	Conceptual	General	
Shostack (1977)	Establish service marketing as a research field	Impalpable Product intangibility treated as a continuum (based on her molecular model)	Examples Conceptual	General (Automobiles vs Airlines as examples)	
Bateson (1979)	Establish differences between services and goods marketing Special contribution; The two component model of intangibility	Two components Impalpable; cannot be touched Mental; cannot be grasped	Conceptual	General	
Levitt (1981)	Focus on intangibles and tangibles instead of goods and services	No explicit definition of intangibility (examples) All products contain both intangibles and tangibles	Conceptual	General	
Rushton & Carson (1985)	How to market intangibles	Physical and mental component Continuum	Anecdotal, no empirical verification	General	

Authors	Objective	Definition of intangibility	Description of the study	Product/respondents	Findings
McDougall (1987)	Comparison of goods and services in terms of ease of evaluation (A special focus on intangibility)	Ability to picture or visualize the object	Exploratory study; Global measure of intangibility Field study; (3 item scale) Global measure Difficult to picture After not sure	Life insurance, Haircut, Restaurant meal, Shampoo, Television set, Shirt/Blouse (73 students) (286 households, response rate 51%)	Tangibility played a minor role in explaining evaluative difficulties
Bowen & Schneider (1988)	Implications for organizational behaviour of service marketing management	Two component model	Conceptual	General	
McDougall & Snetsinger (1990)	Development of a measurement instrument for intangibility	Ability to picture or visualize the object (good or service)	The first study; A tangibility scale of 9 items The second study; The scale reduced to 5 items	18 products (55 respondents, convenience sample) Matress, Compact car, Exercise club, Caribbean cruise (122 respondents, convenience sample)	Validation of the scale; Reliability scores exceeding .71 in all cases Criterion-related validity checks

Authors	Objective	Definition of intangibility	Description of the study	Product/respondents	Findings
Murray & Schlacter (1990)	Test of service marketing theory, with a special focus on consumer's assessment of perceived risk and variability	No explicit definition of intangibility	"Serviceness" independent variable Measured by a perceived overall rating of 146 subjects (rated 235 products) Intangibility included in the instructions	15 products divided into three groups of low, moderate and high service attribute products (256 students)	Services evoke heightened risk and product variability perceptions
Dubè-Rioux, Regan & Schmitt (1990)	Investigate the dimensionality of intangibility in cognitive service representation	Concreteness and specificity Product intangibility treated as a continuum	Pre-test of concreteness and specificity ratings in order to identify services to be used in the study No tests for the intangibility concept in general	College education, Legal services, Healthcare, Autorepair, and different "brands" of these product categories (42 graduate students)	Support for concreteness effects, but not for specificity
Murray (1991)	Test of service marketing theory, with a special focus on risk from a consumer perspective	No explicit definition of intangibility	"Serviceness" independent variable Measured by a perceived overall rating of 146 subjects (rated 235 products) Intangibility included in the instructions	15 products divided into three groups of low, moderate and high service attribute products (256 students)	Services more risky than goods Observed trough use of information sources
Iacobucci (1992)	Empirical examination of the service-good continua	No explicit definition of intangibility	Measured by a single item scale; Item is highly tangible	48 products (51 students)	Correlation between serviceness and intangibility of .842

Authors	Objective	Definition of intangibility	Description of the study	Product/respondents	Findings
Hartman & Lindgren, Jr. (1993)	Investigation of evaluation differences between goods and services	No explicit definition of intangibility	Measured by a two-item scale; Item is highly tangible Item is easy to evaluate prior to purchase	41 consumer items (Mail survey distributed to 500 members of an elementary parents and teachers organization/369 usable surveys were collected)	The results support the proposition that services are more difficult to evaluate than goods (Based on a combined rating on several service/goods characteristics)
Richard & Allaway (1993)	Use of SERVQUAL in order to predict choice behaviour	Intangibility simply assumed	SERVQUAL	Pizza home-delivery (263 adult home-delivery consumers)	
Friedman & Smith (1993)	Consumer evaluation processes in a service setting	No explicit definition of intangibility	The authors focussed on the distinction between search and experience characteristics These characteristics were measured through calculating the proportion of attributes checked from each category on a questionaire	Child-care services (225 parental respondents, a response rate of 31.7%)	Parents use more experience characteristics as their reasons for choosing providers

Authors	Objective	Definition of intangibility	Description of the study	Product/respondents	Findings
Flipo (1988)	Investigate the concept of intangibility with respect to services	Intangibility defined as "untouchability" as the central characteristic (This definition is claimed to be a stricter definition than those using all the five senses)	Conceptual Based on the controllability the author defines different forms or classes of intangibility		
Burton (1990)	Point out the difficulty in establishing decision frames for service purchases Conceptual	Cannot be seen or touch, implication; decision criteria more abstract	Conceptual	Services	
Zeithaml (1981)	Evaluation process differences between goods and services	Cannot be sensed, Services (intangible products) possess few search qualities)	Conceptual	General	Several hypotheses are proposed Services proposed to include more perceived risk Consumers rely upon different means of reducing risk for services than goods

Authors	Objective	Definition of intangibility	Description of the study	Product/respondents	Findings
Guseman (1981)	Comparison of risk perception and risk reduction between goods and services	No explicit definition, simply assumed	Goods and services selected based on industrial classification code book	Goods; hosiery, butter, cough drops, felt tip markers, tape recorders, bed matress, leather goods, paint brush roller, wood stands, typewriter Services; appliance repair, motels, medical doctors, banks, clothes cleaning, motion pictures, spectator sports, dance instructions, automobile rental, apartment rental	
Brown & Fern (1981)	Difference between goods vs. services marketing	Two component model (Bateson 1979) Conceptual	Conceptual	General	

Authors	Objective	Definition of intangibility	Description of the study	Product/respondents	Findings
Weinberger & Brown (1977)	Difference in informational influences between services and goods. Special focus on personal information sources		Measured by a single, global item of intangibility. Intangibility was one of six dimensions used in order to classify services and goods	Out of 53 products 8 products were selected for the study; Goods: spray deodorant, snapshot camera, cereal, sumglasses Services: physician, beaty salon, health spa, dry cleaner Respondents: 240 women (majority between 20-49 years)	In general the hypotheses were supported (personal information sources more influential for services than goods), although one hypothesis was rejected.

APPENDIX B
Summary of Questions

Questionnaire/Interview procedure

The questionnaire contains the following four parts:

1. Elicitation and evaluation of attributes and alternatives (Rep.Grid). Additionally, the respondents rated the elicited alternatives in terms of purchase intent and overall evaluation. All evaluation judgments were rated on 7 point Likert-type scales.

2. The second part contains questions regarding importance ratings for the elicited attributes. The importance was measured on a 7 point scale from not at all important to extremely important.

3. The third part includes the questions regarding ease of evaluation (items 1-3, items 22-23), processing effort (items 4-5), certainty of evaluation (items 6-8, item 21, item 24), perceived variability (items 9-11), use of information sources (items 32-46), knowledge/familiarity (items 12-17) and risk importance (items 18-20, items 29-31). The scales are reported below, with hairdresser used as example.

4. The fourth part addresses demographic variables. The scales are reported below.

Furthermore, a complete norwegian version of the original questionnaire (part 2, 3 and 4) is included.

Part 3

1. It is easy for me to choose hairdresser for a haircut

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

2. It is not difficult to find the hairdresser that is best for me

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

3. It is difficult to discriminate between different hairdressers when cutting my hair

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

4. I spend a lot of time on finding the hairdresser that is best for me

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

5. I emphasis information gathering before choosing among hairdressers

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

6. How confident are you in that you choose the hairdresser that is best for you?

Not at all Confident	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Very Confident*

7. How confident are you in that you chose the hairdresser that was best for you the last time you cut your hair?

Not at all Confident	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Very Confident*

8. How confident are you in that you find the hairdresser that is best for you when you need a hair cut

Not at all Confident	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Very Confident*

9. Hairdressers are very similar

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

10. There are large differences between hairdressers

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

11. There are only minor quality differences between hairdressers

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

12. Rate your knowledge of hairdressers, as compared to the average customer

One of the most knowledgeable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*One of the least knowledgeable*

13. Circle the numbers below to describe your familiarity with hairdressers

Not at all familiar	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Extremely familiar*

14. How familiar are you with hairdressers in general?

Not at all *Limited* *Fairly* *Very* *Extremely*

15. How familiar are you with different hairdressers?

Not at all *Limited* *Fairly* *Very* *Extremely*

16. How often do you cut your hair?

Every day	___	*Several times a week*	___
Once a week	___	*2-3 times a month*	___
Once a month	___	*Several times a year*	___
Once a year	___	*Less than once a year*	___

17. How experienced are you with different hairdressers?

Not at all *Limited* *Fairly* *Very* *Extremely*

In the present study we are interested in measuring involvement with hairdressers . To take this measure, we need you to judge hairdressers against a series of descriptive scales according to how you perceive hairdressers. Make each item a separate and independent judgment. Work at fairly high speed through this questionnaire without being careless.

Circle the number that best describes your judgment.

18. When you choose a hairdresser, it is not a big deal if you make a mistake

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

19. It is really annoying to choose a hairdresser that proves unsuitable

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

20. If, after I have chosen a hairdresser, my choice proves to be poor, I would not be really upset

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

21. I can never tell whether I choose the right hairdresser

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

22. I feel a bit confused when choosing hairdresser

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

23. Choosing hairdresser is not complicated

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

24. When I choose a hairdresser I am always certain that I choose the right one

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

25. You can tell a lot about a person by the hairdresser he or she chooses

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

26. The hairdresser I choose gives a glimpse of the type of man/woman I am

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

27. I enjoy giving away hairdresser appointments as gifts to others

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

28. It gives me pleasure to choose a hairdresser

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

29. I attach great importance to the choice of hairdresser

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

30. I am totally indifferent to the choice of hairdresser

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

31. Choice of hairdresser leaves me totally indifferent

Strongly Disagree	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Strongly Agree*

Circle the number below that best describes your reaction when choosing a hairdresser

	definitely would						*definitely would not*	
	.	*generally would*						
	.	.	*would be inclined to*					
	.	.	.	*may or may not*				
	.	.	.	.	*would not be inclined to*			
	.	.	.	.	.	*generally would not*		
	.	.	.	.	.	.		
32.	1	2	3	4	5	6	7	... think about my previous involvement with hairdressers
33.	1	2	3	4	5	6	7	... try to remember the hairdresser my friends use
34.	1	2	3	4	5	6	7	... ask the opinion of the hairdresser
35.	1	2	3	4	5	6	7	... pay attention to magazine ads about hairdressers before choosing
36.	1	2	3	4	5	6	7	... ask members of my family or relative for their opinion
37.	1	2	3	4	5	6	7	... check some kind of product test of hairdressers
38.	1	2	3	4	5	6	7	... simply go ahead and make a selection without additional information
39.	1	2	3	4	5	6	7	... try to recall relevant events which I can associate with hairdressers
40.	1	2	3	4	5	6	7	... ask the opinion of a friend or someone I know
41.	1	2	3	4	5	6	7	... choose the first hairdresser I found
42.	1	2	3	4	5	6	7	... ask to try or sample the hair cut before choosing hairdresser
43.	1	2	3	4	5	6	7	... see a detailed written description of hair cut service
44.	1	2	3	4	5	6	7	... read printed brochures about the hairdresser
45.	1	2	3	4	5	6	7	... read a report from an expert
46.	1	2	3	4	5	6	7	... pay attention to what previous customers had to say about the hairdresser

Part 4

Circle the relevant alternative

Sex: Male Female

Numbers of members in the household: 1 2 3 4 5 More than 5

Age: ____ year

Check the relevant alternative:

Education:

Primary and secondary school: ___

Primary and secondary school + 1-3 years: ___

High school + 1-2 years: ___

More than 2 years of
post-high school education: ___

Norwegian Version
(e.g. hairdresser and car)

DEL II

Tilleggspørsmål vedrørende produktegenskaper

Sett ring rundt det svaralternativet som best beskriver din oppfatning

Frisør

Avsnitt A: Sett ring rundt svaralternativet som passer (sett inn egenskapene fra del I)

Hvor viktig er ..... (egenskap 1) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 2) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 3) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 4) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 5) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 6) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 7) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 8) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 9) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 10) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 11) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 12) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 13) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 14) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 15) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 16) for valg av frisør?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Avsnitt B: Sett ring rundt svaralternativet som passer (sett inn egenskapene fra del I)

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 1)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 2)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 3)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 4)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 5)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 6)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 7)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 8)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 9)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 10)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 11)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 12)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 13)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 14)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 15)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige frisører basert på .....
når du skal velge frisør? (egenskap 16)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Avsnitt C: Sett ring rundt svaralternativet som passer (sett inn egenskapene fra del I)

I hvilken grad sier ..... (egenskap 1) noe om hvor bra en frisør er?

Overhodet Ingenting 1 2 3 4 5 6 7 I svært stor grad

I hvilken grad sier ..... (egenskap 2) noe om hvor bra en frisør er?

Overhodet Ingenting 1 2 3 4 5 6 7 I svært stor grad

I hvilken grad sier ..... (egenskap 3) noe om hvor bra en frisør er?

Overhodet Ingenting 1 2 3 4 5 6 7 I svært stor grad

I hvilken grad sier ..... (egenskap 4) noe om hvor bra en frisør er?

Overhodet Ingenting 1 2 3 4 5 6 7 I svært stor grad

I hvilken grad sier ..... (egenskap 5) noe om hvor bra en frisør er?

Overhodet Ingenting 1 2 3 4 5 6 7 I svært stor grad

I hvilken grad sier ..... (egenskap 6) noe om hvor bra en frisør er?

Overhodet Ingenting 1 2 3 4 5 6 7 I svært stor grad

I hvilken grad sier ..... (egenskap 7) noe om hvor bra en frisør er?

Overhodet Ingenting 1 2 3 4 5 6 7 I svært stor grad

I hvilken grad sier ..... (egenskap 8) noe om hvor bra en frisør er?

Overhodet Ingenting 1 2 3 4 5 6 7 I svært stor grad

I hvilken grad sier ..... (egenskap 9) noe om hvor bra en frisør er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 10) noe om hvor bra en frisør er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 11) noe om hvor bra en frisør er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 12) noe om hvor bra en frisør er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 13) noe om hvor bra en frisør er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 14) noe om hvor bra en frisør er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 15) noe om hvor bra en frisør er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 16) noe om hvor bra en frisør er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

Personbil

Avsnitt A: Sett ring rundt svaralternativet som passer (sett inn egenskapene fra del I)

Hvor viktig er ..... (egenskap 1) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 2) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 3) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 4) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 5) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 6) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 7) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 8) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 9) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 10) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 11) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 12) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 13) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 14) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 15) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Hvor viktig er ..... (egenskap 16) for valg av bil?

Svært Uviktig	1	2	3	4	5	6	7	Svært Viktig

Avsnitt B: Sett ring rundt svaralternativet som passer (sett inn egenskapene fra del I)

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 1)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 2)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 3)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 4)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 5)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 6)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 7)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 8)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 9)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 10)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 11)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 12)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 13)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 14)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 15)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på å skille mellom gode/dårlige biler basert på ..... når du skal kjøpe bil? (egenskap 16)

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Avsnitt C: Sett ring rundt svaralternativet som passer (sett inn egenskapene fra del I)

I hvilken grad sier ..... (egenskap 1) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 2) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 3) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 4) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 5) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 6) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 7) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 8) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 9) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 10) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 11) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 12) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 13) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 14) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 15) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

I hvilken grad sier ..... (egenskap 16) noe om hvor bra en bil er?

Overhodet Ingenting	1	2	3	4	5	6	7	I svært stor grad

DEL III

Tilleggsspørsmål vedrørende ulike produktkategorier

Sett ring rundt det svaralternativet som best beskriver din oppfatning

Frisør

Det er lett for meg å velge frisør når jeg skal klippe håret

Helt uenig	1	2	3	4	5	6	7	Helt enig

Det er enkelt å finne fram til den frisøren som passer best for meg

Helt uenig	1	2	3	4	5	6	7	Helt enig

Det er vanskelig å skille mellom ulike frisører når jeg skal klippe håret

Helt uenig	1	2	3	4	5	6	7	Helt enig

Jeg bruker mye tid for å finne fram til den frisøren som passer meg best

Helt uenig	1	2	3	4	5	6	7	Helt enig

Jeg legger stor vekt på å samle inn mye informasjon ved valg av frisør

Helt uenig	1	2	3	4	5	6	7	Helt enig

Hvor sikker er du på alltid å velge den frisøren som passer best for deg når du skal klippe håret?

Svært usikker	1	2	3	4	5	6	7	Svært sikker

Hvor sikker er du på at du valgte den frisøren som passet deg best sist du klippet håret?

Svært usikker	1	2	3	4	5	6	7	Svært sikker

Hvor sikker er du på å finne den frisøren som passer best for deg når du skal klippe håret?

Svært usikker	1	2	3	4	5	6	7	Svært sikker

Frisører er stort sett like

Helt uenig	1	2	3	4	5	6	7	Helt enig

Det er stor forskjell på frisører

Helt uenig	1	2	3	4	5	6	7	Helt enig

Det er små kvalitetsforskjeller mellom frisører

Helt uenig	1	2	3	4	5	6	7	Helt enig

Sett ring rundt den svarkategorien som passer

Vurder din kunnskap vedrørende hårklipp hos frisør i forhold til den gjennomsnittelige kunde

En av de mest kunnskapsrike	1	2	3	4	5	6	7	En av de minst kunnskapsrike

Sett ring rundt det tallet som beskriver din fortrolighet med hårklipp hos frisør

Overhode ikke fortrolig	1	2	3	4	5	6	7	Ekstremt fortrolig

Hvor stor kjennskap har du til frisører generelt?

Ingen Liten Middels Stor Svært stor

Hvor god kjennskap har du til ulike frisører?

Ingen Liten Middels Stor Svært stor

Hvor ofte går du til frisør?

Hver dag	___	Flere ganger i uken	___
1 gang i uken	___	2-3 ganger i måneden	___
1 gang hver måned	___	Flere ganger i året	___
1 gang i året	___	Mindre enn 1 gang i året	___

Hvor stor erfaring har du med ulike frisører?

Ingen Liten Middels Stor Svært stor

I denne undersøkelsen er vi også interessert i å kartlegge hvor interessant og viktig du synes frisører og valg av frisører er. For å gjøre dette ønsker vi at du vil besvare spørsmålene under ut fra din oppfatning av frisører. Vurder hvert spørsmål hver for seg. Siden vi er interessert i førsteinntrykket av hvert spørsmål vil det være en fordel om du besvarer spørsmålene så hurtig som mulig, men samtidig forsøker å gi en så korrekt beskrivelse som mulig.

Sett ring rundt det alternativet som best beskriver din oppfatning.

Det betyr ikke all verden hvis jeg velger feil frisør

Helt uenig 1 2 3 4 5 6 7 Helt enig

Det er virkelig irriterende å velge en dårlig frisør

Helt uenig 1 2 3 4 5 6 7 Helt enig

Et valg av en dårlig frisør vil ikke bekymre meg så mye

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg vet aldri om jeg velger riktig frisør

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg føler meg litt forvirret når jeg skal velge frisør

Helt uenig 1 2 3 4 5 6 7 Helt enig

Valg av frisør er ikke vanskelig

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg føler meg sikker på at jeg velger riktig frisør når jeg skal klippe håret

Helt uenig 1 2 3 4 5 6 7 Helt enig

Hvilken frisør en velger sier noe om personen som skal klippe håret

Helt uenig 1 2 3 4 5 6 7 Helt enig

Hvilken frisør jeg velger sier ingenting om meg selv

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg liker å klippe håret hos frisør

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg liker å gi bort gavekort på hårklipp til andre

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg synes at å klippe håret hos en frisør er en fornøyelse

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg synes valg av frisør er en svært viktig beslutning

Helt uenig 1 2 3 4 5 6 7 Helt enig

Det betyr ingenting for meg hvilken frisør jeg går til

Helt uenig 1 2 3 4 5 6 7 Helt enig

Det er likegyldig for meg hvilken frisør jeg går til

Helt uenig 1 2 3 4 5 6 7 Helt enig

*Sett ring rundt det tallet som best beskriver hva du vil gjøre når du skal velge **frisør***

jeg vil helt sikkert		jeg vil stort sett		jeg vil ofte	jeg vil av og til	jeg vil sjelden	jeg vil stort sett aldri	jeg vil aldri	
1	2	3	4	5	6	7			... tenke på tidligere erfaringer med ulike frisører
1	2	3	4	5	6	7			... prøve å huske hvilken frisør vennene mine bruker
1	2	3	4	5	6	7			... spørre om frisørens mening
1	2	3	4	5	6	7			... studere annonser og reklame før jeg velger frisør
1	2	3	4	5	6	7			... spørre et familiemedlem eller slektning om han/hennes mening
1	2	3	4	5	6	7			... sjekke opp produkttester eller lignende
1	2	3	4	5	6	7			... velge frisør uten å samle inn noe informasjon på forhånd
1	2	3	4	5	6	7			... forsøke å huske tidligere episoder og hendelser som jeg eller andre har med ulike frisører
1	2	3	4	5	6	7			... spørre om en venns eller bekjents mening
1	2	3	4	5	6	7			... velge den første frisøren jeg finner
1	2	3	4	5	6	7			... spørre om en test på hårklipp før jeg velger frisør
1	2	3	4	5	6	7			... se en detaljert skriftlig beskrivelse av hårklipptjenesten
1	2	3	4	5	6	7			... lese brosjyrer som omtaler frisøren
1	2	3	4	5	6	7			... lese en beskrivelse fra en ekspert
1	2	3	4	5	6	7			... legge merke til hva tidligere kunder sier om ulike frisører

Personbil

Det er lett for meg å velge hvilken bil jeg vil kjøpe ved kjøp av personbil

Helt uenig 1 2 3 4 5 6 7 Helt enig

Det er enkelt å finne fram til den bilen som passer meg best når jeg skal kjøpe bil

Helt uenig 1 2 3 4 5 6 7 Helt enig

Det er vanskelig å skille mellom ulike biler ved kjøp av bil

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg bruker mye tid for å finne fram til den bilen som passer best for meg ved kjøp av bil

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg legger stor vekt på å samle inn mye informasjon ved kjøp av bil

Helt uenig 1 2 3 4 5 6 7 Helt enig

Hvor sikker er du på alltid å velge den bilen som passer best for deg ved kjøp av bil?

Svært usikker 1 2 3 4 5 6 7 Svært sikker

Hvor sikker er du på at du valgte den bilen som passet deg best sist du kjøpte bil?

Svært usikker	1	2	3	4	5	6	7	Svært sikker

Hvor sikker er du på å finne den bilen som passer best for deg når du skal velge bil?

Svært usikker	1	2	3	4	5	6	7	Svært sikker

Personbiler er stort sett like

Helt uenig	1	2	3	4	5	6	7	Helt enig

Det er stor forskjell på personbiler

Helt uenig	1	2	3	4	5	6	7	Helt enig

Det er små kvalitetsforskjeller på biler

Helt uenig	1	2	3	4	5	6	7	Helt enig

Sett ring rundt den svarkategorien som passer

Vurder din kunnskap vedrørende bil i forhold til den gjennomsnittelige bilkjøper

En av de mest kunnskapsrike	1	2	3	4	5	6	7	En av de minst kunnskapsrike

Sett ring rundt det tallet som beskriver din fortrolighet med bil

Overhode ikke fortrolig	1	2	3	4	5	6	7	Ekstremt fortrolig

Hvor stor kjennskap har du til bil generelt?

Ingen Liten Middels Stor Svært stor

Hvor god kjennskap har du til biler fra ulike produsenter?

Ingen Liten Middels Stor Svært stor

Hvor ofte bruker du bil?

Hver dag	___	Flere ganger i uken	___
1 gang i uken	___	2-3 ganger i måneden	___
1 gang hver måned	___	Flere ganger i året	___
1 gang i året	___	Mindre enn 1 gang i året	___

Hvor ofte kjøper du bil? _____

Hvor stor erfaring har du med biler fra ulike produsenter?

Ingen Liten Middels Stor Svært stor

I denne undersøkelsen er vi også interessert i å kartlegge hvor interessant og viktig du synes bil og kjøp av bil er. For å gjøre dette ønsker vi at du vil besvare spørsmålene under ut fra din oppfatning av bil. Vurder hvert spørsmål hver for seg. Siden vi er interessert i førsteinntrykket av hvert spørsmål vil det være en fordel om du besvarer spørsmålene så hurtig som mulig, men samtidig forsøker å gi en så korrekt beskrivelse som mulig.

Sett ring rundt det alternativet som best beskriver din oppfatning.

Det betyr ikke all verden hvis jeg kjøper feil bil

Helt uenig 1 2 3 4 5 6 7 Helt enig

Det er virkelig irriterende å kjøpe en dårlig bil

Helt uenig 1 2 3 4 5 6 7 Helt enig

Et kjøp av en dårlig bil vil ikke bekymre meg så mye

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg vet aldri om jeg velger riktig bil

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg føler meg litt forvirret når jeg skal kjøpe bil

Helt uenig 1 2 3 4 5 6 7 Helt enig

Det å kjøpe bil er ikke vanskelig

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg føler meg sikker på at jeg velger riktig bil når jeg skal kjøpe bil

Helt uenig 1 2 3 4 5 6 7 Helt enig

Hvilken bil en kjøper sier noe om personen som velger bil

Helt uenig 1 2 3 4 5 6 7 Helt enig

Hvilken bil jeg kjøper sier ingenting om meg selv

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg liker å kjøpe bil

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg liker å gi bort en bil som gave

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg synes at det å kjøre bil er en fornøyelse

Helt uenig 1 2 3 4 5 6 7 Helt enig

Jeg synes kjøp av bil er en svært viktig beslutning

Helt uenig 1 2 3 4 5 6 7 Helt enig

Det betyr ingenting for meg hvilken bil jeg kjører med

Helt uenig 1 2 3 4 5 6 7 Helt enig

Det er likegyldig for meg hvilken bil jeg kjører med

Helt uenig 1 2 3 4 5 6 7 Helt enig

Sett ring rundt det tallet som best beskriver hva du vil gjøre når du vurderer å kjøpe **bil**

jeg vil helt sikkert							
.	jeg vil stort sett						
.	.	jeg vil ofte					
.	.	.	jeg vil av og til				
.	.	.	.	jeg vil sjelden			
.	.	.	.	.	jeg vil stort sett aldri		
.	.	.	.	.	.	jeg vil aldri	
1	2	3	4	5	6	7	... tenke på tidligere erfaringer med ulike biler
1	2	3	4	5	6	7	... prøve å huske hvilken type bil vennene mine bruker
1	2	3	4	5	6	7	... spørre om selgers mening
1	2	3	4	5	6	7	... studere annonser og reklame før jeg kjøper bil
1	2	3	4	5	6	7	... spørre et familiemedlem eller slektning om han/hennes mening
1	2	3	4	5	6	7	... sjekke opp produkttester eller lignende
1	2	3	4	5	6	7	... kjøpe bil uten å samle inn noe informasjon på forhånd
1	2	3	4	5	6	7	... forsøke å huske tidligere episoder og hendelser som jeg eller andre har med ulike biler
1	2	3	4	5	6	7	... spørre om en venns eller bekjents mening
1	2	3	4	5	6	7	... kjøpe den første bilen jeg ser
1	2	3	4	5	6	7	... spørre om jeg kan prøve bilen før jeg kjøper den
1	2	3	4	5	6	7	... se en detaljert skriftlig beskrivelse av bilen
1	2	3	4	5	6	7	... lese brosjyrer som omtaler biler
1	2	3	4	5	6	7	... lese en rapport eller beskrivelse fra en ekspert
1	2	3	4	5	6	7	... legge merke til hva tidligere kunder sier om ulike biler

DEL IV

Tilleggspørsmål; Demografiske variabler

Sett ring rundt det svaralternativet som passer

Kjønn; Mann Kvinne

Antall medlemmer i husholdningen; 1 2 3 4 5 mer enn 5

Alder: _____ år

Sett kryss ved det alternativet som passer;

Hvor lang utdannelse har du;

Grunnskole eller tilsvarende ___

1-3 år utover grunnskole ___

1-2 år utover videregående skole ___

Mer enn 2 år utover videregående skole ___

APPENDIX C
Coding Instructions

This appendix includes the coding instructions. The categories are presented on the following pages, and the coders rated the relevance of the different categories on the following 7-point scale:

Please rate the relevance of the different categories (classifications) for the different attributes in a similar manner as in the example below.

Categories (Please rate the relevance of the different categories based on the following scale; Not at all relevant 1 2 3 4 5 6 7 Very relevant)

	Category 1	Category 2	Category 3	Category 4
Attribute X	5	3	1	1
AttributeY	1	2	6	4

The classifications were later dichotomised for the subsequent analysis (1 for the category with the highest score (category 1 for attribute X and category 3 for attribute Y in the example above) and 0 for the other categories).

The instructions for the concreteness/abstractness (C-A), level of generality (LoG) and lack of pre-purchase inspection possibilities (LPPI) are presented below.

Concreteness/Abstractness

The following categories were used to tap the concreteness/abstractness dimension. Attributes classified as belonging to category 1 or category 2 were coded as concrete attributes, while attributes classified as belonging to category 3 and category 4 were coded as abstract attributes for the analyses.

Category 1 (Product referent) , "CHARACTERISE THE PRODUCT"

Refers to "objective", verifiable, characteristics of the product which are measurable on some sort of physical scale (e.g. temperature,acidity, thickness etc.). These attributes will fall into the following categories;

- Dichotomous (present/absent, e.g. air bag in a car)
- Multichotomous (always present, but assumes only one of several possible values which are not ordered (nominal of nature, e.g. colour of a car)
- Multi-level (a value of the attribute can be ranked as higher or lower than another value using a metric or interval scale, e.g. number of cylinders in a car, amount of horsepower in a car)

Category 2 (Product referent) ,"CHARACTERISE THE PRODUCT"

Pseudo-physical characteristics; These attributes are also objective in nature, but are not as measurable on a physical scale. However, they reflect physical properties that are generally understood by consumers, and it is possible to link these attributes directly to some formt of physical characteristics (e.g. sweetness, spiciness, etc.).

Category 3 (Task or outcome referent) , "BENEFITS"

Attributes that reflect subjective evaluations of the task, process or outcome from using a product. These attributes reflect a more indirect inference process, and can not be associated with unique physical properties. The attributes are inherently ordinal of nature.

Attributes within this category describe the advantage of using the product/service (e.g. friendly staff, tastes good, is durable, etc.)

Category 4 (User referent) , "IMAGERY"

Attributes reflecting what the usage of the product/service says about the person who is selecting or using it. These properties refer to expressive statements. (e.g. gives me a sexy look, provides certain types of images)

Level of Generality

The following categories were used to tap the level of generality dimension. Attributes classified as belonging to category 1 were coded as specific attributes, while attributes classified as belonging to category 2, category 3 and category 4 were coded as general attributes for the analyses.

Category 1 (Product/service specific, subordinate level)

Attributes which characterise a specific aspect of the service/good at a subordinate level, and are restricted to that particular product or service (e.g. blitz is a highly specific attribute relevan tto photo cameras).

Category 2 (Higher level attributes that subsume a number of other attributes)

Attributes at a higher, more abstracted, level that subsume other attributes (e.g. service, etc.).

Category 3 (Attributes used across products/services and user situations)

Attributes where the use is not restricted to a particular service/product category or user situations (e.g. service, quality).

Category 4 (attributes that reflect the aggregation of product experience)

Attributes that represent an aggregation of experiences (e.g. earlier experience, routine).

Lack of Pre-Purchase Inspection Possibilities

The following categories were used to tap the level of generality dimension. Attributes classified as belonging to category 1 or category 2 were coded as search attributes, while attributes belonging to category 3 were coded as experience attributes in the analyses.

Category 1 (Search)

Attributes that can be inspected prior to purchase

e.g. thickness, appearance

Category 2 (Pseudo-search)

Attributes that cannot be directly inspected prior to purchase, but relevant information about the specific attribute is readily available

e.g. washable, travel reports

Category 3 (Experience)

Attributes that must be evaluated from consumption experience

e.g. food quality, service

Category 4 (Credence)

Attributes that cannot be evaluated in normal use without requiring additional costly information

e.g. necessity of pulling out healthy wisdom teeth

APPENDIX D
Descriptive Statistics

Table D.1 presents the descriptive statistics for the evaluative dimensions of the present study. Means, standard deviations, skewness, kurtosis, and number of responses are reported for each item. The descriptive statistics were discussed in section 7.1.

Table D.1. Descriptive Statistics of the Sample (Evaluative Dimensions)

	Mean	Std.dev.	Skewness	Kurtosis	N
Evaluation Difficulty;					
Item 1[a]	2.924	1.849	0.791	-0.496	301
Item 2[a]	3.043	1.779	0.679	-0.563	304
Item 3	3.941	1.945	0.005	-1.264	303
Item 4[a]	3.116	1.872	0.583	-0.919	302
Item 5	3.655	1.967	0.194	-1.272	304
Perceived Processing Difficulty;					
Item 6	4.145	2.114	-0.114	-1.393	303
Item 7	3.927	2.070	-0.001	-1.359	303
Certainty of Evaluation;					
Item 8	4.752	1.626	-0.442	-0.525	303
Item 9	5.478	1.491	-0.972	0.312	299
Item 10	5.146	1.411	-0.796	0.467	302
Item 11[a]	5.112	1.609	-0.810	-0.180	304
Item 12	4.776	1.730	-0.547	-0.643	299
Predictive Ability;					
Item 13[b]	0.588	0.343	0.088	-1.098	275
Item 14[b]	0.483	0.360	0.556	-0.915	278
Relative Importance of Price;					
Item 15[c]	-0.424	1.489	-0.788	1.108	179

[a] Reversed items [b] Z-transformed correlation coefficients
[c] Difference between importance of price compared to the importance of other attributes
[d] 1 - Proportion of non-tangible attributes (non-concrete, non-specific, non-search)

The statistics for use of information sources, product intangibility dimensions, and control variables are presented in table D.2.

Table D.2. Descriptive Statistics of the Sample (Use of Information Sources)

	Mean	Std.dev.	Skewness	Kurtosis	N
Information Sources;					
Impersonal Sources;					
Item 16	4.689	2.029	-0.388	-1.196	302
Item 17	4.845	2.186	-0.646	-1.040	304
Item 18	3.993	2.167	-0.017	-1.405	303
Item 19	4.788	1.943	-0.486	-0.967	302
Personal Sources;					
Item 20	4.556	1.728	-0.236	-0.850	304
Item 21	3.819	1.932	0.128	-1.050	304
Item 22	3.690	1.804	0.195	-0.893	303
Item 23	4.125	1.784	-0.113	-0.901	303
Direct Observation;					
Item 24	4.033	2.686	-0.086	-1.834	301
Personal Experience;					
Item 25	1.770	1.266	2.100	4.359	304
Item 26	3.118	1.809	0.664	-0.543	304
Outright Purchase;					
Item 27	5.151	1.862	-0.747	-0.635	304
Item 28	6.109	1.266	-1.592	2.404	304
Intangibility;					
Concreteness - Abstractness;					
Item 29	0.446	0.260	0.223	-0.433	304
Item 30[d]	0.487	0.257	0.049	-0.390	304
Level of Specificity;					
Item 31	0.436	0.229	-0.068	-0.273	304
Item 32[d]	0.502	0.225	-0.345	0.167	304
Lack of Pre-purchase Inspection Possibilities;					
Item 33	0.272	0.212	0.935	1.054	304
Item 34[d]	0.446	0.235	0.172	-0.160	304
Product Familiarity/Experience;					
Item 35[a]	3.597	1.341	-0.097	-0.471	303
Item 36	4.531	1.480	-0.422	-0.296	303
Item 37	2.941	0.752	0.380	0.362	303
Item 38	2.693	0.729	0.133	0.044	303
Item 39	2.700	0.741	0.299	0.855	303
Involvement (Risk-importance);					
Item 40[a]	4.796	1.907	-0.488	-1.074	304
Item 41	5.743	1.741	-1.468	0.957	304
Item 42[a]	5.312	1.774	-0.860	-0.500	304
Item 43	4.620	1.918	-0.466	-0.940	303
Item 44	5.578	1.531	-1.092	0.529	304
Item 45	5.776	1.424	-1.384	1.631	304

[a] Reversed items [b] Z-transformed correlation coefficients

[c] Difference between importance of price compared to the importance of other attributes

[d] 1 - Proportion of non-tangible attributes (non-concrete, non-specific, non-search)

APPENDIX E
Criterion-Related Validity

E.1. Assessment of Criterion-Related Validity

The different evaluative aspects presented in chapter 4, are not independent of each other. Thus, the different aspects of evaluation can be included in a general model, which include directional relationships between the different concepts. Although, these directional relationships are not an explicit part of the hypotheses testing, a discussion on how the different evaluation aspects relate to each other will be included in this section. This discussion is included to increase the diagnostic value of the study, since it is possible to identify counter-intuitive results (e.g. increased difficulty associated with increased certainty). Owing to similar reasoning this model can aid validity considerations regarding measures.

Perceived difficulty of evaluation[1] (PED) is expected to influence several other aspects of evaluation. First, increased difficulty is expected to be related to the perceived requirements with respect to processing effort (PPE). Increased PED is likely to be positively related to PPE. However, if PED influence PPE or PPE influence PED remains an open question, because increased difficulty may lead to increased processing effort in order to cope with this difficulty, but also that more processing effort may lead to increased perceived difficulty. Thus, a positive relationship between PED and PPE is proposed but the hypothesis does not suggest any specific direction of the relationship between PED and PPE. PED is likely to influence the certainty or confidence in the evaluation (CE). For instance, Wendler (1983) found a positive relationship between brand comprehension and confidence. Furthermore, Howard & Sheth (1969) set confidence as the inverse of stimulus ambiguity, which has been argued to be the driving force of the perceived evaluation difficulty in the present study. Thus, PED is hypothesised to have a negative influence on CE. Conversely, PPE might have a positive influence on CE, because more processing effort is one strategy to reduce uncertainty. Also, more information is found to increase certainty, although the effect on accuracy is more

[1] Perceived difficulty of evaluation is the reverse of the previously discussed ease of evaluation.

questionable (Jacoby et al. 1974)[2]. Also, perceived evaluation difficulty (PED) is expected to affect the predictive ability (PA), or the consistency of evaluation, since the difficulty would reduce the discriminatory power. Consequently, the consistency of evaluation should be reduced resulting in decreased predictive ability. Thus, PED is hypothesised to have a negative impact on PA. PPE is expected to have a negative influence on PA. High levels of PPE indicate that the evaluation is difficult and that the respondents feel a need for spending more time and gather more information to make a good decision. Thus, consistency is likely to be reduced in situations where high levels of PPE are required. The services marketing literature (Zeithaml 1981) proposes that the consumer copes with the increased difficulty of evaluation by using surrogate cues to simplify the task. This implies that increased PED should lead to increased use of use surrogate cues (USC). The relationship between PPE and USC is set to be positive, because more perceived processing effort is likely to be accompanied by the use of surrogate cues as a simplification strategy.

[2] However, there are reasons to question this hypothesis due to the conceptualisation of PPE. Earlier the PPE concept is defined as the perceived effort needed in order to achieve a satisfactorily result. This conceptualisation may actually behave differently with respect to the CE concept than suggested above. First, low CE may imply that more processing effort is needed in order to reduce uncertainty. This would lead to a negative relationship between PPE and CE. Second, it is also questionable that the direction goes from PPE to CE and not in the opposite direction, which seems just as likely given the conceptualisation of PPE. Thus, the proposed direction of influence between PPE and CE is somewhat ambiguous.

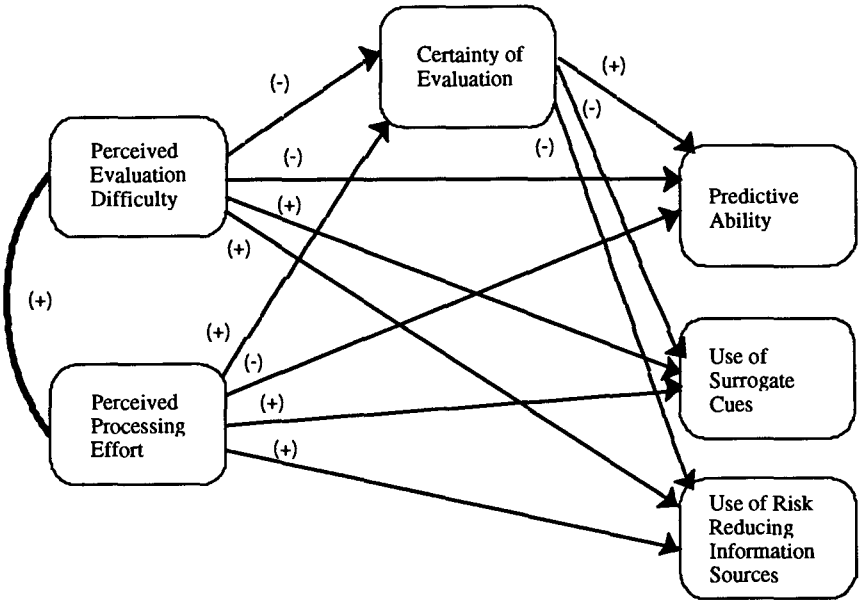


Figure E.1. Relationships Amongst the Theoretical Concepts

PED may contribute to the consumers perception of perceived risk, and consequently the relationship between PED and use of risk reducing information sources (URRIS) is postulated to be positive. Furthermore, the effect of PPE is postulated to be positive as more information is needed to reduce risk.

Uncertainty makes consistency more difficult, and thus certainty of evaluation (CE) is expected to have a negative consequence for predictive ability. Furthermore, the above model postulates a negative relationship between CE and USC, because the reliance on less informative cues are likely to be accompanied by less certainty and confidence. High levels of certainty imply lower risk levels (Cox 1967) and, consequently, certainty of evaluation (CE) is postulated to have a negative effect with respect to use of risk reducing information sources (URRIS).

The above described inter-connections between the dependent variables can be used as an approximation for assessing criterion-related validity.

E.2. Model for Assessing Criterion-Related Validity

Assessment of criterion validity requires a variable that is a standard with which to compare the measures of interest. It is common to distinguish between concurrent and predictive validity, where the former refers to a criterion existing at the same time, while the latter criterion occurs in the future. Thus, it is possible to inspect whether the constructs of interest behave as expected. There are several weaknesses associated with criterion validity. First, low validity coefficients can be attributed to the degree of measurement error in the criterion as well as the measure of interest. Furthermore, the criterion validity coefficient will vary depending on the selected criterion. Thus, a low criterion validity coefficient should not necessarily imply rejection of the measurement procedure used to measure the construct of interest.

The previous section presented a model of relationships between dependent variables. These relationships are not the main concern of this study. This model can serve as a basis for evaluating the validity of the different constructs. However, cautions should be made, since all relationships do not have a firm theoretical basis.

A structural model including the relationships described above provides a starting point for assessing the validity of the coefficients. The model fit was not particularly good (Chi-square=556.54 (df = 233), RMSEA=0.067, GFI=0.82, NFI=0.83, NNFI=0.87, and CFI=0.89). However, for this purpose the fit was deemed acceptable, due to the lack of a firm theoretical basis. The following coefficients are relevant for this purpose (table E.1);

Table E.1. Structural Model Assessing Criterion-Related Validity

	ξ_1	ξ_2	η_8	Squared multiple correlation
η_1	-0.56[a]	0.68[a]	-0.47[a]	0.30
	(-2.54)[b]	(4.89)	(-2.40)	
η_2	-0.18[a]	0.62[a]	-0.35[a]	0.35
	(-1.05)	(5.44)	(-2.18)	
η_3		0.16[a]		0.02
		(2.44)		
η_4		0.38[a]		0.15
		(5.68)		
η_5	0.42[a]	-0.67[a]	0.25[a]	0.31
	(2.44)	(-6.40)	(1.62)	
η_6	0.19	-0.21	0.27	0.04
	(1.12)	(-2.28)	(1.73)	
η_7	-0.20	0.18	-0.22	0.02
	(-1.18)	(1.96)	(-1.39)	
η_8	-0.90	0.34		0.72
	(-9.36)	(4.97)		

ξ_1 - Perceived difficulty of evaluation
ξ_2 - Perceived processing effort
η_1 - Use of impersonal information sources
η_2 - Use of personal information sources
η_3 - Use of direct observation
η_4 - Reliance on personal experience
η_5 - Preference for outright purchase
η_6 - Predictive ability
η_7 - Relative importance of price in the evaluation
η_8 - Certainty of evaluation

[a]Reversed in order to make the scales compatible
[b]T-values

In addition to the above coefficients the correlation between perceived difficulty of evaluation and perceived processing effort is high and significant (0.35 (T-value = 4.13)). This is in accordance with the predictions made in figure 7.1. Some of the γ's and β's are excluded from the analyses for the purpose of identification. The removed γ's and β's were insignificant.

A closer look at the coefficients reveals that some of the coefficients support predictions made

in figure E.1. Perceived processing effort (PPE) has a significant positive influence with respect to use of all information sources, with the exception of preference for outright purchase. These results support the previously presented model. Perceived difficulty of evaluation (PED) is not so well behaved with respect to information sources. PED has a negative influence with respect to the use of impersonal information sources and a positive influence in favour of preference for outright purchase. A closer look at these relationships suggests that these findings are possible to explain. Use of impersonal information sources may not be a preferred source of information when the respondents find the evaluation difficult. Thus, they may have problems with making sufficiently sense out of the impersonal information. Furthermore, they might find the evaluation so difficult that they do not find it worthwhile to investigate further alternatives, which may explain the positive relationship between PED and preference for outright purchase. PED has a significant positive total effect (0.13 (T-value = 1.95, $p < 0.1$ (0.05 one tailed)) regarding use of personal information sources.

The certainty of evaluation (CE) exhibits the expected negative influence with respect to the use of impersonal and personal information sources. CE holds an expected positive influence ($p < 0.1$ (one-tailed)) over preference for outright purchase.

Both PED and PPE exhibit highly significant effects in the expected direction on CE. PPE shows the expected negative effect over predictive ability ($p < 0.05$). CE exhibits an expected positive effect with respect to predictive ability ($p < 0.05$ (one-tailed)).

Perceived processing effort (PPE) shows a positive effect with respect to relative importance of price ($p \cong 0.05$). Neither CE nor PED exhibit significant effects with respect to the relative importance of price.

The results listed in table E.1 provide some support for the proposed relationships between evaluative dimensions and information sources. Most constructs are well explained by the structural model with squared multiple correlations for structural equations given by the following values; 0.15 for reliance on personal experience (η_4), 0.30 for use of impersonal

information sources (η_1), 0.31 for preference for outright purchase (η_5), 0.35 for use of personal information sources (η_2), and finally 0.72 for certainty of evaluation (η_8). The results regarding these measures are in the expected directions. Some constructs are not particularly well explained with squared multiple correlations for structural equations between 0.02 and 0.04 (use of direct observation (η_3), predictive ability (η_6), and relative importance of price (η_7)). A closer look at their relationships with other constructs also indicate that these measures appear to be somewhat problematic. This is particularly the case with the relative importance of price in the evaluation, but also predictive ability appears somewhat problematic. A crucial question would be whether the lack of relationships can be attributed to poor measurement or the theoretical relationships themselves. Some of these relationships are not, as previously mentioned, based on a thorough and firm theoretical basis. Thus, these results should be interpreted with caution.

Although, the effects are moderate, both certainty of evaluation and perceived processing effort behaved in accordance with the predictions made in figure E.1 with respect to predictive ability. Furthermore, the measurement procedure has functioned well earlier (e.g. Lines et al 1994) and consequently the lack of explanatory power is suggested to be more a result of an inadequate theoretical framework than the measurement itself.

The problems associated with the relative importance of price in the evaluation may be more associated with the measurement procedure than that of the theoretical framework. The importance of the price cue is compared to the mean level for all the other attributes. Thus, the comparative referent of the price attribute may leave a little to be desired, as the rest of the attributes may be both important and meaningless depending on how the elicitation proceeded for different individuals. Furthermore, the price attribute might be influenced by post-rationalisation. Consequently, this measurement procedure is not entirely satisfactory, although the measure behaved as expected in relation to perceived processing effort.

APPENDIX F
Classification of Goods and Services

Different classification rules may lead to different good and service categories. In chapter 9 we listed three different classification rules: disjunctive, conjunctive and compensatory. Table F.1 illustrates different classification rules applied on four different products: electricity, car repair, book club membership, and dental examination. Three different criteria are used to emphasis the role of classification rule for distinguishing between goods and services.

Table F.1. The Role of Different Classification Rules

	Electricity	Car Repair	Book Club Membership	Dental Examination
Intangible	Yes (Although it certainly can be felt)	Yes	Yes (Although the book is tangible)	Yes
Simultaneity of Production/Consumption	No	No	No	Yes
Perishable	No	Yes	No	Yes
Classification of goods and services according to different classification rules:				
Disjunctive	Yes	Yes	Yes	Yes
Conjunctive	No	No	No	Yes
Compensatory (Two out of three criteria)	No	Yes	No	Yes

Table F.1 addresses a central problem with the service/good classification. The same products are classified as services or goods depending on the classification rule that is applied. Thus, it is a problem that the services marketing literature does not discuss and/or define which classification rule that is applicable. Furthermore, table F.1 illustrates that the service category

would be very comprehensive by using a disjunctive classification rule, and very restricted by using a conjunctive approach.