Intangibility and its influence on consumer behavior: from the brand and the generic product category perspectives

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ABSTRACT

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Intangibility has been a well-recognized research topic especially in service marketing. However, recently, as virtual products or information products have emerged in consumer markets, the role of intangibility has shifted from a service-exclusive term to a product-related one. This is because that many products are intangible in some degrees to consumers.

Lately, academic research shows that intangibility is a three-dimensional construct that includes: physical intangibility, mental intangibility, and generality. This finding has advanced the understandings on intangibility of virtual products. However, little has been done in relating to branding strategy and its influence on consumer behavior under this topic.

Thus, the focus of this research is to study whether the branding strategy, as compared to the generic category strategy, is an efficient risk and evaluation difficulty reducer when the branded product/service is perceived to be intangible. Moreover, this research also concentrates on how the branding strategy will assist the consumer decision process by reducing perceived risk, evaluation difficulty and perceived intangibility.

Data were collected among university students. The result of the data analysis shows that brand is a major intangibility-reducer especially for services. It also reduces consumer perceived evaluation difficulty and purchase-related risk.

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INTRODUCTION

Intangibility is a well-recognized research topic especially in service marketing. For many years, intangibility, along with inseparability, heterogeneity and perishability, has been the major characteristics that distinguished services from goods. Many marketing implications were suggested accordingly. Recently, virtual products have appeared in consumer markets. Consequently, the role of intangibility has shifted from a service-exclusive term to product related one. This is because many virtual products are intangible at least to some degree for consumers. Products that as web browsers and MP3 music files are difficult to be accessed by the senses, and may be even difficult to grasp mentally. Hence, faced with the new changes and challenges brought forward by this new category of products, marketing studies should exert more effort than ever to explore this field.

Moreover, Laroche et al. (2001) have found that intangibility is a three-dimensional construct. Contrary to traditional beliefs that intangibility was uni-dimensional, or two-dimensional, intangibility is now found to comprise of three dimensions: physical intangibility, mental intangibility, and generality. This finding has advanced the understanding on intangibility and will contribute to improve marketing research on virtual products.

Similar to the studies on intangibility, the brand has been a major focus of the marketing literature. Numerous researchers have worked on this topic in fields as such consumer behavior, advertising, and services marketing. However, little has been done to relate brand strategy with intangibility and needless to say with the newly discovered

three dimensions of intangibility. The importance of studying brand strategy within an intangibility context rests on the premise that the brand is believed to reduce consumers' perceived risk and difficulty of evaluation, which are some of the consequences of intangibility facilitating consumer decision-making and consumption.

Thus, the focus of this research is to study whether the branding strategy is an efficient risk and evaluation difficulty reducer when the branded product/service is perceived to be intangible. Moreover, this research also concentrates on how the branding strategy will assist the consumer decision process by reducing perceived risk, evaluation difficulty and even intangibility.

Therefore, the research questions in this thesis are: first, to test how each of the three dimensions of intangibility will affect the consumer decision process by studying their influence on difficulty of evaluation and perceived risk. Second, how knowledge and involvement will affect the relationship of intangibility with difficulty of evaluation and perceived risk. Third, how a brand perspective will affect the above mentioned consumer decision process compared to a generic product/service category perspective.

The literature review on the above-proposed constructs will be presented first. Then a summary of the hypotheses and model proposed will follow. After the summary, the methodology of the study will be presented followed by the statistical analysis including t-tests and regression analyses. Finally, a discussion on the hypotheses will ensue followed by recommendations for future research and managerial implications.

LITERATURE REVIEW

I. Intangibility

i. Intangibility and its definition

Following discussions centering on the differences between goods and services (e.g., Regan 1963), intangibility, together with inseparability, heterogeneity and perishability has been identified as one of the four major characteristics used to classify services (Regan 1963, Shostack 1977, Davis, Guittiman and Jones 1979, Berry 1980, Rathmell 1974; Berry and Clark 1986; Zeithaml, Parasuraman and Berry 1985; Rust et al. 1996). However, it has been argued that intangibility is the key characteristic that differeciate goods from services (Zeithaml and Bitner 1996, Bebko 2000). Moreover, Levitt (1981) also discussed that practical problems arise from intangibility ranging from producer's quality control to consumers evaluations. Thus, Levitt (1981) concluded that lack of physical attributes, or intangibility, is most likely the factor that results in service variability, inseparability and perishability. The importance of studying intangibility lies greatly on its impact on consumer decision-making and marketing strategy planning. Therefore, given the importance of intangibility in services marketing, it is necessary to take a closer look at its definition.

Judd (1968) described service intangibility as inaccessible to the touch. Bateson (1977) explained that services, in contrast to tangible goods or physical substances, were "physically intangible," and that they "cannot be touched, tasted, smelt or seen." In 1977, Shostack described a service as one that should be experienced because it couldn't be stored, touched, tasted or be tried on for size. She, therefore, defined tangible as

"palpable," "material;" while intangibility as "impalpable" and "not corporeal." Later in her article, Shostack (1977) continued to illustrate the differences between tangible goods and intangible services. She believed that a tangible object could be described precisely. Therefore, a tangible object was subject to "physical examination, photographic reproduction or quantitative measure" (Shostack 1977). Moreover, it could be exactly replicated, modified and duplicated. On the other hand, intangibility elements were "dynamic, subjective and ephemeral" and that "exceedingly difficult to quantify." (Shostack 1977).

Moreover, Berry (1980) defined intangibility as something that could not be touched and impalpable and that "can not be easily defined, formulated or grasped mentally." Van Dierdonck (1992) characterized intangibility as immaterial because services were "intangible like acts or deeds, and they can not be taken away or even been seen." Defining services as "actions or performances" while products as "physical objects or devices," Lovelock (2000) identified nine basic differences between services and products. Nevertheless, intangibility remained one of the major differences between goods and services. In addition, Lovelock (2000)'s definition on intangibility of services performance was in line with previous literature in that it could not be "touched, wrapped or taken away". Bebko (2000) studied intangibility from two perspectives. Bebko (2000) proposed that intangibility should include another aspect such as lack of physical evidence of process instead of being defined exclusively as lack of physical attributes of service offered. Therefore, the total degree of intangibility was affected by both the process and the outcome (Bebko 2000, also see Mittal and Baker 2002). Hence, the physical evidence referred to service delivery environment, interaction environment

between service providers and customers, and any tangible commodities that would facilitate service performance and communication (Zeithaml and Bitner 1996). Therefore, Bebko (2000) concluded that physical evidence could be used to communicate service quality and to create service experience.

In brief, there are abundant studies on intangibility and its definition. Most scholars agree that intangibility is one of the most distinguishing characteristics of services. Therefore, it is also a major difference from goods or physical objects that are usually perceived as tangible. In addition, intangibility of service is usually defined as inaccessible by sense, subjective, and difficult to measure (Judd 1968, Bateson 1977, Shostack 1977, Berry 1980, Van Dierdonck 1992, Lovelock 2000)

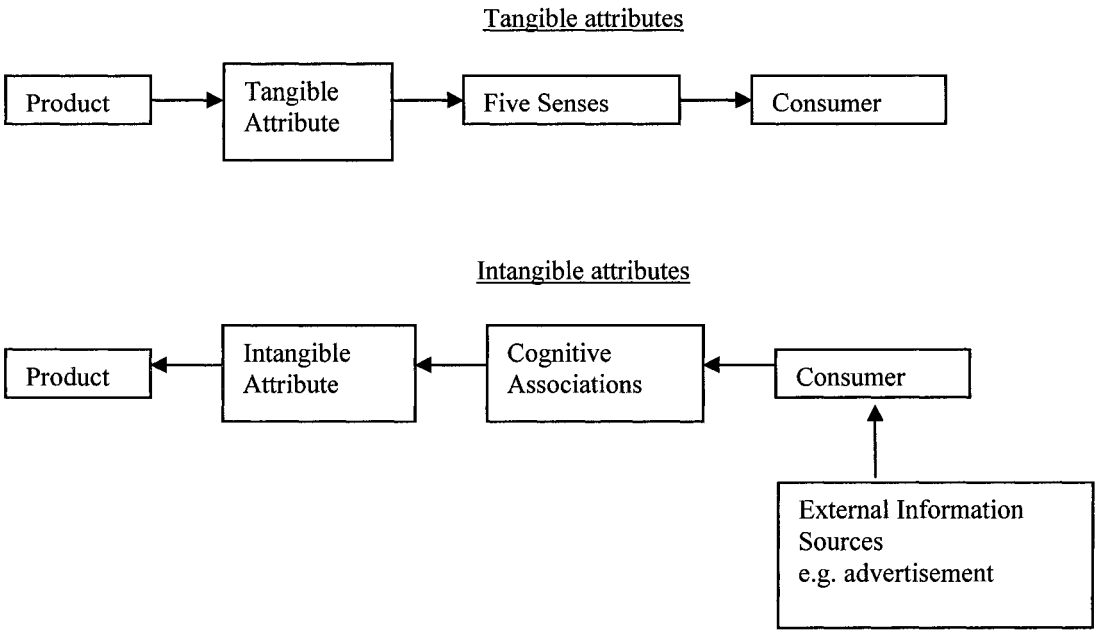
ii. Intangibility spectrum and layers of meanings

Related studies on product and services resulted in a sense of research on the intangibility continuum (Shostack 1977, Hirshman 1980, Murray and Schlacter 1990, Lovelock 2000).

First, Hirschman (1980) grouped stimulus attributes into tangible and intangible features. She referred to tangible attributes as the ones that were "accessible through senses and are palpable." Hence, tangible attributes were classified as objective characteristics of a product because 1) they arose directly from products, therefore, were independent of mind; 2) they could be detected by at least one of the five senses, and thus were derived from sensory perceptions.

On the other hand, Hirschman (1980) defined intangible attributes as not palpable. Instead, they were dependent on mind and were mental rather than physical. Hence,

intangible attributes were subjective as opposed to tangible attributes. In addition, she also proposed that intangible attributes were influenced by consumer experience and their socialization process that included social influences from reference groups, families or other social institutions (i.e., school, church and mass media). The author's proposed difference between tangible and intangible attributes is presented in the following figure:

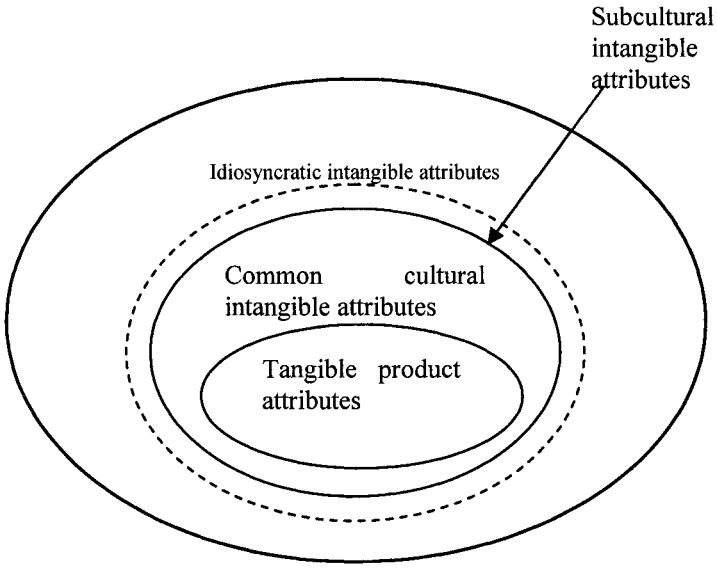


Source: Hirschman, Elizabeth C. (1980), "Attributes of Attributes and Layers of Meaning", Advances in Consumer Research, Vol. 7, p.10.

Figure 1: Tangible and intangible product attributes

Hirschman (1980) pointed out that the level of tangible attributes of products was "invariant," whereas the level of intangible attributes of the same product varied widely among individuals and over time. Therefore, she proposed a three-layer-product-meaning concept based on the above-mentioned concepts (figure 2). The author argued that the center layer of meaning was usually composed of tangible attributes that were invariant

among people and cultures. The second layer was composed of some intangible attributes. Though variant among different cultural groups, they remained comparatively invariant within a certain society. However, the third layer was composed of "idiosyncratic" intangible attributes that represented idiosyncratic meaning of a product, and therefore exhibited high levels of interpersonal variance. Hence, the second and third layer together may produce a full meaning of any tangible attributes of a stimulus. In addition, Hirschman (1980) also proposed that it was also possible to have a subculture layer positioned between the second and third layers that represented a layer of meaning shared by specific ethic groups.

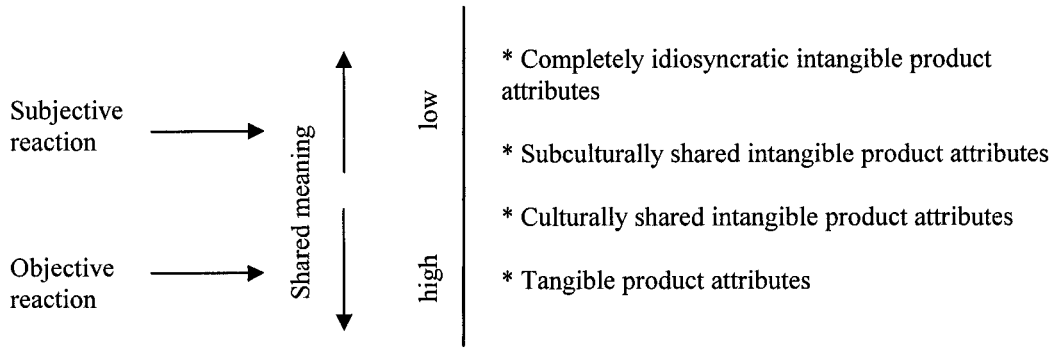


Source: Hirschman, Elizabeth C. (1980), "Attributes of Attributes and Layers of Meaning", Advances in Consumer Research, Vol. 7, p.12.

Figure 2: Layers of meaning

Finally, Hirschman (1980) proposed that the more tangible the attributes, the higher the shared values of a product, whereas the more intangible the attributes, the less shared values (figure 3). By proposing this, Hirschman (1980) concluded a continuum of

shared meanings that "ranges from very high or perfect overlap across individuals for the tangible attributes of the product to very low or totally uncorrelated attribute associations at the 'idiosyncratic' end of the spectrum."

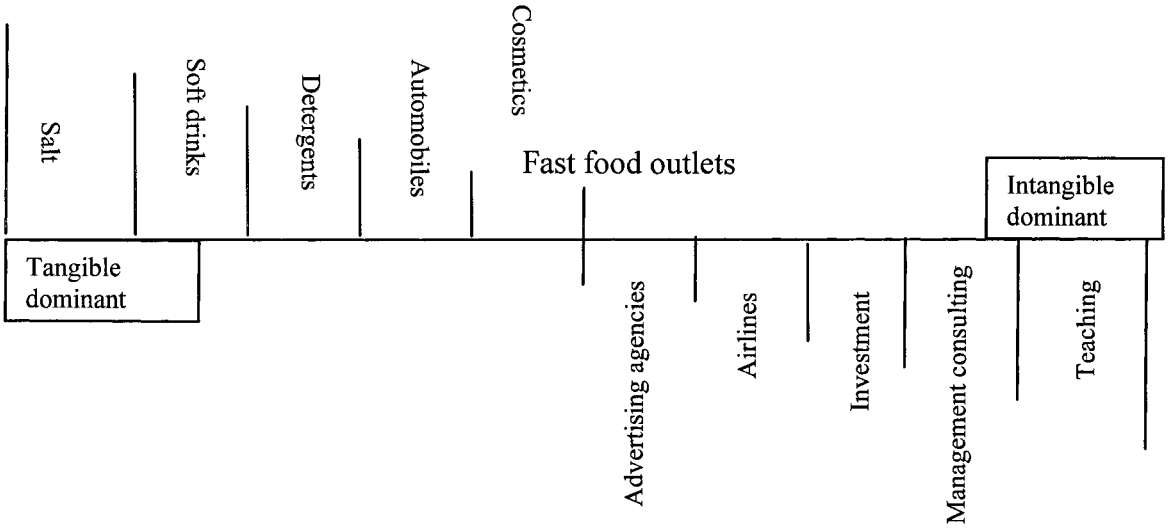


Source: Hirschman, Elizabeth C. (1980), "Attributes of Attributes and Layers of Meaning", Advances in Consumer Research, Vol. 7, p.12.

Figure 3: continuum of shared meaning

At the same time, most authors agree that the distinction between goods and services, rather than discrete, was continuous. This distinction could be achieved by putting goods and services on a scale from tangible-dominant (represented by X axis) to intangible-dominant (represented by Y axis) (e.g., Shostack 1977, Murray and Schlacter 1990, McDougall and Snetsinger 1990, Lovelock 2000). In 1977, Shostack proposed the Molecular Model to visualize and manage market entities through studying their tangibility and intangibility attributes. The Molecular Model reflected the fact that there were really very few pure goods and services in the market since a market entity could be partly tangible and partly intangible. Moreover, the model also suggested that a market entity with multiple elements should be particularly managed because a change in one

single element may greatly alter the entity (figure 4). Therefore, Shostack (1977) concluded that the greater the portion of intangibility attributes in a marketing entity, the more the relevant marketing strategy was different from product marketing strategy. In summary many scholars concluded that the intangibility spectrum was continuous and that most marketing offers were combinations of both tangibility elements and intangibility elements (Shostack 1977, Berry 1980, Lovelock 1991, Rust et al 1996, Bebko 2000).



Source: Shostack, G. Lynn. *(1977), "Breaking free from product marketing", Journal of Marketing, Chicago; APR. 1977; Vol. 41, Iss. 2; pg. 73*

Figure 4: Scales of market entities

iii. Intangibility and its dimensions

Many scholars have agreed that intangibility is not an uni-dimentional construct. Bateson (1977) defined services as not only physically intangible, but also mentally difficult to grasp. Later on, Bateson (1977) pointed out two aspects of intangibility that were physical intangibility and mental intangibility (also see McDougall et al 1990).

Similarly, Hirschman (1980) postulated a two-dimensional construct of intangibility with one physical or sensory dimension and the other a mental dimension.

Based on previous research, Dube-Rioux, Regan and Schmitt (1990) also proposed a two-dimensional intangibility construct, which was composed of concreteness and specificity. Concreteness was defined as "related to accessibility to senses" while specificity as "subordinations, the specificity of a word being inversely related to the number of subordinate words it embraces."

In their research, Dube et al (1990) studied how the two dimensions (concreteness and specificity) would affect cognitive representation of services. After conducting two pretests among 42 graduates in marketing and 18 psychology students, the authors concluded that concrete attributes were the ones that could represent "features or outcomes of services that can be seen, felt, smelled or tasted." On the other hand, abstract attributes were represented by features or outcomes that couldn't be experienced by the above senses. Dube et al (1990) also defined specific attributes as attributes "precisely to identifiable features or outcomes," while generic attributes were representations of the more general aspects of the feature or outcomes of services.

However, Dube et al (1990) studied only eight services in their research (i.e., two abstract/generic services: college education and legal services; two abstract/specific services: Morton College of Arts and Sciences and Thompson and Associates Divorces Specialist; two concrete/generic services: healthcare and auto repair: and two concrete/specific services: Max Krauss, Doctor of Dentistry and Fix-it, Muffler/Brake shop). They concluded that although the two dimensions studied, concreteness and specificity, were correlated in some degree, they could still be treated as independent

variables. In addition, Dube et al (1990) found that services, especially abstract and concrete services, were different in their cognitive representations. To consumers, abstract services mentally represented more abstract and generic attributes. On the other hand, concrete services represented more specific attributes.

Building on Dube et al (1990)'s study, Breivik et al (1998) developed a two-dimensional concept of intangibility as well. However, in their study, they named two dimensions: inaccessibility to senses and generality. First, Breivik et al. (1998) defined inaccessibility to the senses as attributes that were mentally related to products and that reflected mainly a mental construction based on information related to products/ services rather than a direct dependence on products/services exposure. They stated that "tangible attributes are perceived directly upon exposure to the product (e.g., color), while intangible attributes reflect a mental construction based on information communicated about the product (e.g., atmosphere)" (Breivik, Troye and Olsson, 1998, p.5). Consequently, Breivik et al (1998) concluded that the attributes of inaccessibility to the senses were subject-dependent since they were associated with a product more mentally than physically. Therefore, tangible attributes would be described as object-referent because that they were accessible to the senses. Second, Breivik et al. (1998) defined generality as general attributes that led to general outcomes (e.g., safety of a car) and specificity as typical features associated with products or services (e.g., airbag). However, in their study, they used very tangible products (i.e., clothing, camera, and car) as opposed to services with intangible characteristics (i.e., haircut, hotel stay, and dental examination).

The most recent study proposed that intangibility was a three-dimensional construct (Laroche, Bergeron and Goutaland, 2001). The three dimensions were physical intangibility (i.e., not easy to be seen or touched), mental intangibility (i.e., not easy to grasp mentally) and generality (as opposed to specificity). In their study, "serducts" and "provices" were used to represent services with tangibility elements and products with intangibility elements. Among the products and services studied, jeans, computer, haircut and pizzeria dinner were more tangible, whereas web browser, pop music, together with charter flight and checking account were more intangible. The research showed that the mental intangibility dimension was the most important one in the overall construct.

Laroche et al (2001)'s finding was consistent with previous literature. For instance, physical intangibility was defined as inaccessibility to the senses in Breivik, Troye and Olsson (1998)'s study. Moreover, this dimension was wisely researched in the service marketing literature as the distinctive feature between products and services (Zeithaml 1981, Hirschman 1980, Bateson 1977, Shostack 1977). The generality dimension was also found in Breivik et al (1998)'s study though it had a rather small influence on the overall construct. Moreover, Laroche et al (2001) found that the degree of generality differed across types of products and services. Services might be perceived as general when it is difficult for consumers to extract "identifiable definitions, features, and outcomes" (Laroche et al, 2001). Similarly, good might be perceived as general when consumers hold general perceptions against it (Laroche et al, 2001).

The finding of the third dimension, mental intangibility, confirmed Laroche et al (2001)'s proposition that inaccessibility to senses (physical intangibility) and generality were not sufficient to measure the overall construct fully since intangibility was subject-

specific (Hirschman 1980, Breivik et al 1998). It was also because physical intangibility didn't provide a complete mental representation of a product especially when consumers didn't have much product related experiences (McDougall and Snetsinger, 1990; Finn 1985). However, the finding of this dimension was not surprising. Previously, many authors identified the existence of mental intangibility to some degree. For instance, Berry (1980) featured intangibility as not being able to be grasped mentally. McDougall and Snetsinger (1990) also argued that intangibility was composed of physical and mental attributes. Finally, Hirschman (1980), Breivik et al (1998) also used physical/mental difference as a standard to classify tangible and intangible attributes.

Briefly Laroche, Bergeron and Goutaland (2001) concluded that the new three-dimensional concept of intangibility provided valuable explanations on tangibility of goods and intangibility of services. In all, their findings showed that goods could be physically tangible and at the same time, mentally intangible, whereas services could be physically intangible and at the same time, mentally very tangible.

In short, intangibility is a multidimensional construct. However, the latest research has found that it is composed of three dimensions (Laroche, Bergeron and Goutaland 2001). Therefore, in this study, the concept of three-dimensional construct will be applied.

iv. Intangibility and its measurement

The measurement of intangibility is subjective rather than objective. Moreover it depends greatly on the nature of the evaluation process (Hirschman 1980, Breivik et al 1998, Goutaland 1999). Since tangible attributes are mostly objectively accessible, the

evaluation process of tangibility is more an objective task to an evaluator. However, since intangible attributes are more related to the evaluator's mental constructions, the evaluation process is dependent on the individual's assessment and experience (Hirschman 1980).

v. Intangibility and related marketing strategies

As a result of its inherited characteristics, intangibility has therefore brought forward many challenges to marketers such as storability (Bateson 1988, Berry 1980, Langeard et al 1981), patentability (Eigier and Langeard 1975, 1976. Judd 1968), communicatability (Rathmell 1974) and pricing (Dearden 1978, Lovelock 1981). Moreover, intangibility also affects consumer perceived difficulty of evaluation and risks. Therefore, it is not surprising that the most frequently suggested marketing strategy is to reduce consumer perceived risks and evaluation difficulties by stressing the tangibility cues of the intangibility services (Berry 1980, George and Berry 1981, Shostack 1977, McDougall and Snetsinger 1990, Reddy, Buskirk and Kaicker 1993, Flipo 1988, Edgett and Parkinson 1993, Easingwood 1989, Berry and Clark 1986, Bitner 1992, Zeithaml and Bitner 2000, and Lovelock 2001). To marketers, it means to strive for a match between marketing communication and service's specificity and concreteness (Dube-Rioux, Regan and Schmitt 1990, Bebko 2000). These can be achieved through the management of physical surroundings and presentations (Berry and Clark 1986), mental visualization and association (Berry and Clark 1986), effective advertising (Mittal 1999, Berry and Clark 1986, Zeithaml and Bitner 2000, Lovelock 2001)), and the use of image and brand management (Edgett and Parkinson 1993, Easingwood and Mahajan 1989, Berry 2000).

For example, in their survey of 285 sales representatives, Kely and George (1980) found that in order to reduce service's perceived intangibility, sales forces must place great importance on promoting organizations' reputations. Easingwood et al (1989) also suggested branding as a position strategy. In their study, they stated that there were two levels of brandings, namely corporate level branding (i.e., to "associate the company with a symbol", such as the Hartford's stag (Easingwood et al 1989)) and product level branding. In short, Easingwood et al (1989) concluded that branding was a useful tool to position financial services. However, it might be risky if marketers rely too much on it. Moreover, Berry (2000) also supported the idea of "branding the company" in order to enhance customers understanding and visualization of the services they buy. In addition, Berry (2000) suggested that as the product was the main brand for packaged goods; for services, companies were the primary brands. Finally, Mittal and Baker (2002) suggested that brand identity, brand positioning, and demand creation were useful advertising strategies in fighting against intangibility occurring in hospitality services.

In summary, the services marketing literature recommends branding as one of the tools to reduce intangibility. Therefore, in the following section, how the difference between brand and generic approaches on products and services affects intangibility will be discussed.

vi. Previous research on intangibility from the brand and the generic product category perspectives

Based on previous literature on abstractness and concreteness, Howard (1977) stated that consumer choices were somewhat of a hierarchical process. In the process,

different choices were believed to be related to different levels of abstraction. Thus, Howard (1977) viewed higher-level choices as the ones occurring at the higher end of abstractness. Such choices were more abstract alternatives such as product categories. On the other hand, Howard (1977) considered lower level choices as more concrete alternatives such as brands within a category. Howard's finding was consistent with the definition of abstractness referred as subordination-superordination of categories.

Moreover, Howard (1977) went a step further by hypothesizing a direct relationship between abstractness of choice alternatives and abstractness of consumer's choice criteria. Howard (1977) hypothesized that abstractness of consumer choice criteria in the evaluation hierarchy was in accordance with the level of abstractness of a consumer choice. Howard's hypothesis was indirectly supported by Boote's study in 1975. In Boote's study, participants were asked to rate the importance of Rokeach's instrumental and terminal values both at brand and generic product category levels. Consistent with Howard's hypothesis, Boote (1975) concluded that concrete instrumental values were rated more important for brand-level consumer choices while abstract terminal values were more important for product category level choices.

Johnson (1984), unlike Howard's hierarchical process of consumer choice, hypothesized a continuum of attributes from concrete to abstractness. Focusing mainly on non-comparable consumer choices based on abstract and concrete product features, Johnson (1984) showed that the more noncomparable (dissimilar) products became, the more abstract the product attributes were.

Based on the above conclusion, Johnson and Fornell (1987) conducted a further study on the relationship between abstractness/concreteness and dimension/feature.

Dimensions were defined as "continuous attributes on which objects differ as a matter of degrees"; whereas features were "dichotomous attributes that objects either have or don't have." It was widely considered that one dimension might usually contain or include information on several features. Therefore, as one single dimension might capture several features, so might an abstract attribute contain several concrete attributes (Johnson and Fornell 1987). In conclusion, Johnson and Fornell (1987) stated that abstract products tended to have more abstract attributes. Moreover, the abstract representations might contain more dimensions. On the contrary, concrete representations might contain more features.

Building on Johnson and Fornell (1987)'s finding that specific product attributes were associated with brands while generic attributes were associated with product category, Dube-Rioux, Regan and Schmitt (1990) proposed another study on how concreteness and specificity might affect cognitive representation of services. Solely concentrated on services, their research suggested that abstract and concrete services were cognitively represented differently. Abstract services, no matter if they were generic or specific, affiliated with more abstract and generic attributes. However, they found that services specificity had no effect on the level of specificity or concreteness of salient attributes.

In summary, there are some literatures that have studied abstractness/concreteness, and generic/specificity at the brand and product category levels. Moreover, it seems that researchers agree that generic and abstractness are more associated with the generic product category while specificity and concreteness are more related to the brand. However, no relevant research has yet been conducted to study brand

and generic impact on the three dimensions of intangibility. Therefore, it will be very interesting to study the three-dimensional construct from the brand and generic category perspectives.

Hence, according to previous literature review, it is hypothesized that:

H1: The degree of generality is higher in generic category choices than in brand-level choices.

Unlike generality, there is some complexity in formulating the hypotheses for mental and physical intangibility. First, since the finding of mental intangibility as an independent dimension is rather recent, there is no literature directly supporting the following hypothesis. However, service-marketing researches do shed some light on how brand and generic category levels would affect mental intangibility through their marketing implications. For instance, Laroche et al (2001) mentioned that mental tangibility and specificity were the most efficient tools to reduce customer perceived intangibility especially for information and virtual products. Therefore, applications such as pictures on before-and-after services, company logo or symbol all function to mentally visualize services and therefore, increase services' tangibility. Thus, it can be implied that branding might serve as a tool to reduce consumer difficulty in grasping services mentally.

Second, most of the researches studied have used service. For example, Mittal and Baker (2002) used hotel and restaurant services in their work. But, will the above conclusion apply to goods? Laroche et al (2001) found that there were some goods that though physically tangible, were perceived mentally intangible (e.g., computer, also see Goutaland 1999). Therefore, it is inferred that mental intangibility also exists among

goods. Furthermore, it is assumed in this study that brands work as a mental-intangibility-reducer on products as well.

Hence, it is hypothesized that:

H2: The degree of mental intangibility for generic category level choices is higher than that for brand level choices.

Apparently, physical intangibility also exists among goods and services. However, how the generic and brand perspectives will influence is still a question to be studied. It is suggested that services and goods should be separately hypothesized on this aspect. This is because physical intangibility is defined as not easily seen or touched (Laroche et al, 2001). Therefore, for goods, whether they belong to a generic category or are identified with a brand, there is no difference on their physical existence -- that is physical intangibility. For example, a MP3 file can't be touched or felt physically. Therefore, whether it is a Sony's MP3 file or a generic MP3 file, the physical intangibility always exists. It is independent of whether the product is branded or whether it belongs to a generic product category.

However, for services, the independence of physical intangibility from brand and generic perspectives is questionable. Services, as generally agreed, are physically intangible. Hence, apart from a visualization strategy, Berry and Clark (1986) also recommended a "physical representation" strategy aimed at enhancing service's tangibility through physically accessible objects, objects directly or peripherally a component of a service (e.g., buildings, vehicles). Hotel services provide abundant examples in this regard. For instance, some hotels purposely park luxury cars before their entrance in order to tangiblize their services qualities by making the services physically

more tangible (Kotler, Bowen and Makens 1999). Nevertheless, physical representation, along with branding, is perceived as a method to tangiblize the intangibles with tangible cues. Thus, it is hard to conclude that branding is separated from physical intangibility for services. This difficulty might stem from ambiguities in the definition of the construct as previously discussed (e.g., Breivik et al 1998, Dube et al 1990). Hence, when applying generic and brand perspectives to services, physical intangibility would most likely not stand independent and unaffected.

Hence, it is hypothesized that:

H2: The degree of physical intangibility in generic category level choices is a) higher than it on brand level choices (especially for services) b) similar to it on brand level choices (especially for goods)

II. Perceived risk and difficulty of evaluation

Much of the literature on service marketing has linked intangibility to consumer decision-making difficulties. Very often, intangibility leads to difficulties in producers' quality control and customers' purchase decision (Levitt 1981). Intangibility is also related to difficulty of evaluation (Zeithaml 1981; McDougall 1987; McDougall and Snetsinger 1990), perceived processing efforts (McDougall 1987), and low certainty of evaluation (Murray 1991; Mitchell and Greatorex 1993). In addition, given that uncertainty is closely associated to risk (Bateson 1979, Mitchell and Greatorex 1993 and Taylor 1974), the latter should also be included in this study.

In the following section, the two consequences of intangibility, i.e., difficulty of evaluation and perceived risk, as identified by many researchers, will be explored in

detail. Related research on brand and generic product category will also be presented, followed by the proposed hypotheses.

i. Difficulty of evaluation

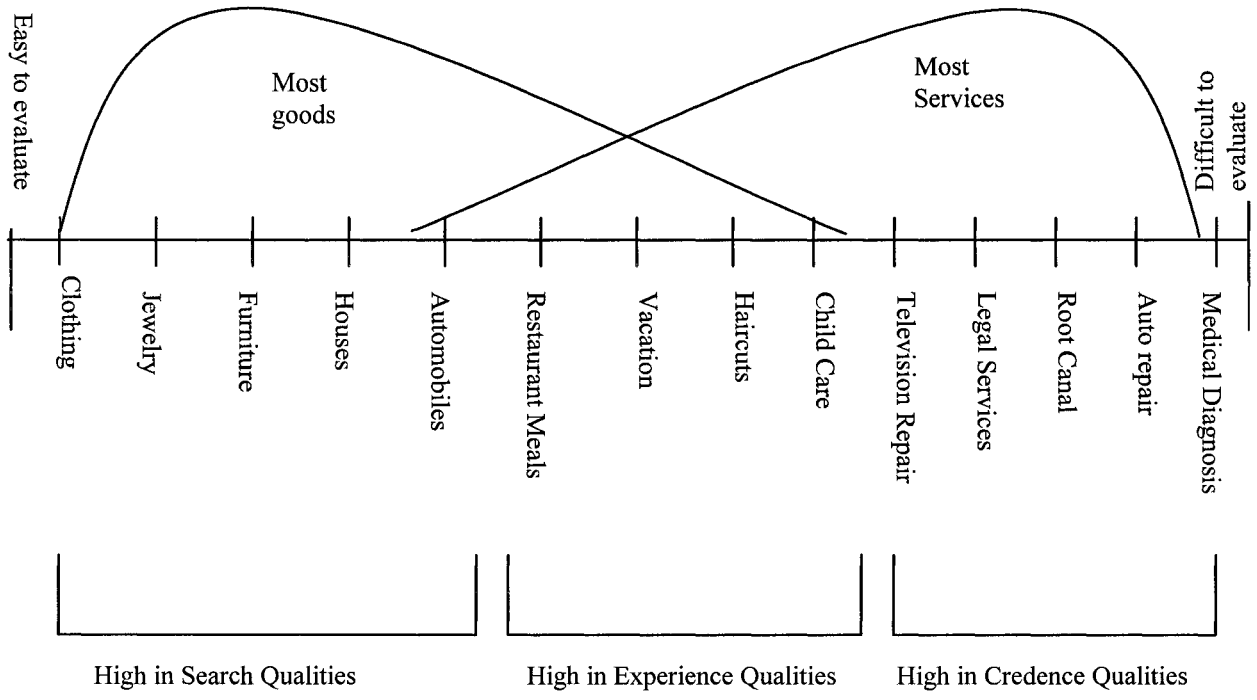
1. Perceived evaluation difficulty

Intangibility makes it hard and inefficient for both consumers and marketers to evaluate and communicate on goods and services with intangible attributes (Zeithaml 1981). Berry (1980) recommended that marketing managers tangiblize services by creating a tangible representation, a representation that would embody the service with a physical carrier such as a physical card for bank credit. The tangible representation, Berry (1980) concluded, would enable consumers to perceive more easily what is being sold.

In 1981, Zeithaml proposed an evaluation framework to assist the evaluation process between goods and services (see figure 5). Zeithaml (1981) postulated that most goods fell to the left end of the tangibility-intangibility continuum because most goods were easy to evaluate, whereas most services fell to the right end of the continuum since most services were difficulty to evaluate. The author concluded then that the more tangible the goods/services, the easier the evaluation; whereas the more intangible the goods/services, the more difficult it was to evaluate them. Hence, Zeithaml (1981) suggested that consumers would use different cues and processes to evaluate services due to the existing evaluation difficulties. For instance, the author stated that most goods could be evaluated on their search qualities, qualities that could be determined by a consumer before purchase, such as product size, color, style, etc. (products such as clothing and furniture). However, some goods/services that lacked the above tangible

qualities should be evaluated on experience qualities, the ones that could be grasped during product consumption or after purchase (e.g., restaurant meals, or hair cut). Finally, the evaluation on the rest of goods/services should be based on credence qualities, those which could not be evaluated by consumers even after purchase but were usually based on word of mouth or trust. Professional and specialist's services were found dominant in this category (e.g., medical diagnosis, auto repair).

In all, Zeithaml (1981) found that services were perceived more difficulty to evaluate than goods due to their inherent characteristics (i.e., intangibility, inseparability, heterogeneity and perishability). She did not study, though the effect of intangibility on difficulty of evaluation.



Source: Zeithaml, Valarie A. (1981), "How consumer evaluation processes differ between goods and services", AMA's Special conference on Services Marketing, pp. 186

Figure 5: Continuum of evaluation for different types of products

In 1998, Breivik et al. studied the relationship between consumer perceived evaluation difficulties and intangibility. They defined perceived evaluation difficulty as a reflection on degrees of difficulty to discriminate and choose between alternatives. Moreover, Breivik et al. (1998) found that inaccessibility to senses was negatively associated with perceived evaluation difficulty. The more the inaccessibility to the senses, the lesser the difficulty the consumer perceived in an evaluation. Breivik et al. (1998) believed that this resulted from the consumer's inclination to refer to mental representations established from past experience than to process tangible attribute related information, a process requiring more efforts (Zeithaml 1981). However this finding was contrary to most beliefs that services were more difficult to evaluate due to their lack of physical evidence (Bateson 1979, Andreasen 1983). In addition, Breivik et al. (1998) also found that generality was positively related to perceived evaluation difficulty. They concluded that the more general a product/service, the more difficulty it was for consumers to evaluate because consumers' lack of specific mental representations.

Based on the three-dimension construct study, Goutaland (1999) found a significant positive relation between generality and difficulty of evaluation as well. She also unveiled the positive influence of mental intangibility on difficulty of evaluation. However, Goutaland (1999) found no significant effect of physical intangibility on difficulty of evaluation. She further rationalized that the nonsignificance might result from an overwhelming influence of mental intangibility on consumer evaluation.

2. Perceived processing efforts

In 1987, McDougall found that perceived processing effort during a good/service evaluation was closely related to evaluation difficulty. Furthermore, he proposed that it could be measured by the amount of time needed and the amount of information required for a purchase decision. Mitchell and Prince (1993) postulated that perceived processing effort was also dependent on good/service value. Thus, consumers would exert more effort on collecting related information in purchasing high-value products than low-value ones. Other studies also pointed out that perceived processing effort and sources of information gathering varied between goods and services (Zeithaml 1981, Finn 1985, Murray 1991). Finally, Breivik, Troye and Olsson (1998) defined perceived processing effort as "time and energy the buyer perceives to spend in order to make a decision." In their study, they found that perceived processing effort had similar patterns with the two proposed dimensions of intangibility as perceived evaluation difficulty, though the relations proved weaker. Hence, perceived processing effort was found negatively related to inaccessibility to senses but positively related to generality.

3. Certainty of evaluation

Certainty of evaluation was defined as reflections of consumers' confidence exhibited during product evaluation and choice-making (Wendler 1983). However, most services marketing research has studied uncertainty instead of certainty in a sense that risk perceptions and uncertain judgments were enhanced because of the inherent characteristics of services (Taylor 1974, Bateson 1979, Mitchell and Greatorex 1993). In fact, uncertainty of evaluation was perceived to be highly associated with risk. Bauer

(1960) and Cunningham (1967) considered uncertainty as one of the two dimensions of risk (i.e., uncertainty and adverse consequences). Taylor (1974) used the two terms interchangeably.

In summary, difficulty of evaluation influences consumer perceived processing effort when searching for good/service related information. It also affects consumers' certainty to make a correct purchase decision. Therefore, the more difficult the evaluation, the more uncertain a consumer feels, and at the same time, the more the consumer's perceived risks in the consumption.

ii. Perceived Risk

Perceived risk is the second consequence of intangibility included in this study. As mentioned above, perceived risk is tied closely to uncertainty of evaluation. The extensive research on this variable stems from its significant influence on consumer purchase decision (Bauer 1960; Cunningham 1967; Taylor 1974; Cox and Rich 1964, Dowling 1986, and Rose 1975).

1. Concept, components, dimensions and measurement of perceived risk

Cox and Rich (1964) conceptualized perceived risk as a function of uncertainty and negative consequences (also see Cunningham 1967, Bauer 1960, Taylor 1974, and Dowling 1986). In addition, Cox (1967) proposed that perceived risk had four components namely 1) uncertainty caused by "factors inherent in the product and brand," 2) uncertainty resulting from "place of purchase" and "mode of purchase," 3) degree of negative purchase consequences (such as financial and social loss), and 4) subjective uncertainty based on individual experience.

Alternatively, Bettman (1973) proposed that perceived risk was a composition of "inherent risk" and "handled risk." He defined inherent risk as "the latent risk a product class holds for a consumer, the innate degree of conflict the product class arouses in the consumer," and handled risk as "the amount of conflict a product class engenders when the buyer chooses a brand from that product class in his usual buying situation" (Bettman 1973). In short, Bettman (1973) concluded that handled risks "represents the end results of the action of information and risk reduction processes on inherent risk." Hence, inherent risk equaled handled risk only when consumers had no information. In this case, inherent risk dealt with perceived riskiness related to a product class, whereas handled risk represented riskiness associated with a particular brand (Bettman 1973). For example, inherent risk was high when a consumer perceived a great deal of risk on aspirin, while handled risk might be low when she bought confidently her favorite brand. Thus, Bettman (1973) recommended that marketers could reduce consumer perceived risks in two ways: first, by enhancing the importance of a product class; second, by affecting variables related to consumers' goodness of decision rules. Though it is relatively difficult to influence the importance of a product class, it is comparatively easy to affect consumers' decision rules in particular by "emphasizing that his brand is in the acceptable set of brands in terms of quality" (Bettman 1973). Finally, Bettman (1973) pointed out that brand related information was useful to reduce handled risk.

Most literature agreed that perceived risk was a construct with two dimensions namely uncertainty and consequences (Bauer 1960; Cunningham 1967; Taylor 1974; Ross 1975; Havlena and Desarbo 1990). In 1986, Dowling proposed a multiplicative relationship between the two dimensions. Dowling (1986) argued that uncertainty and

consequence contributed multiplicatively to perceived risk. The reasons were twofold. First, perceived risk would diminish in the absence of each dimension. Second, perceived risk would be reduced by a nonsalient adverse consequence (Dowling 1986). Hence, in order to better measure the construct, Dowling (1986) proposed that individual tolerance level and wealth should be taken into consideration. Dulude (1998) also recommended that risk measurement should include four levels: a global measure, measures on uncertainty and importance, and finally, combined measures on both uncertainty and importance. In her work on intangibility and perceived risk, Goutaland (1999) used a global measure to study inherent risk of products and services as a function of intangibility.

2. Different perspectives on perceived risk

Similar to Cox (1967)'s classification, the current literature presents four perspectives towards perceived risk. First, some scholars identified perceived risk from a personal trait perspective. They postulated that the perceived risk was subjective and dependent on consumers' individual interpretation of the risk and was related to their individual experiences (Taylor 1974, Cunningham 1967). Moreover, researchers also tied perceived risk to personal traits and tendencies. On one hand, the risks perceived were greatly dependent on one's character as to whether a consumer was a risk seeker or a risk avoider. For instance, risk avoiders tended to perceive a product/service riskier than average consumers, whereas risk seekers tended to regard the product/service safer (Cunningham 1967, Dowling 1986). On the other hand, they were also associated to individual's maximum tolerable level towards risks and risk-related losses. Hence,

consumers could be very likely to reject a product/service when its perceived risk and loss exceeded their tolerance level (Dowling 1986). Therefore, Cunningham (1967) suggested that consumer's experience and involvement would play an important role in individual perceptions of risks (also see Price 1981). In addition, Mitchell and Prince (1993) also pointed out that purchase related experience had little effect on low-value objects. However, its influence on high-value items was obvious. Nevertheless, the impact of experience on services was lesser than that on products. This might be due to quality variance among various services purchased (Mitchell and Prince 1993).

Second, some scholars discussed perceived risk from an "object" point of view, for they related perceived risks to types of products (Dowling 1986, Jacoby and Kaplan 1972). They suggested that perceived risks were dependent on the degree of consumer's product involvement and experience. For instance, a new product would be perceived as riskier because of lack of prior product experience and related information (Cox and Rich 1964, Havlena and DeSarbo 1990). Moreover, services generally led to higher consumer perceived risks than products because services tended to be more difficulty to evaluate and thus, resulted in higher uncertainty of purchase (Davis, Gultinan and Jones 1979; Bateson 1979; Zeithaml 1981; Murray and Schlacter 1990; Murray 1991; Mitchell and Greatorex 1993). At the same time, consumer perceived risks also influenced consumer choices among products (Dowling 1986, Bettman 1973). Thus, brand loyalty was recommended as a major risk reducing strategy (Roselius 1971, Ross 1975 and Greatorex 1993).

Third, researchers also studied perceived risk from a purchase choice perspective (Taylor 1974, Dowling 1986). Both Taylor (1974) and Dowling (1986) defined choice

risk as choice related opportunity loss. Many studies suggested that in a choice-making scenario, information might function as a risk reducer (Wendler 1983, Finn 1985, and Mitchell 1991). For instance, Murray (19991) found that the greater the perceived risks in a pre-purchase stage, the more information consumers would search. Consequently, the more information consumers found, the higher their confidence in their abilities to make good decisions, and thus, the lesser risks perceived. However, other scholars pointed out that too much information would eventually reduce certainty (Jacoby, Speller and Kohn 1974). Jacoby, Speller and Kohn (1974) stated that though more accessible information would reduce risk and uncertainty at the beginning, ultimately, over-loaded information would result in increased uncertainty and perceived risks.

Nevertheless, the above proposed relations between information search and perceived risk were not supported by Gemünden (1985)'s meta-analysis. Gemünden (1985) concluded that the positive relation between degree of risks and consumer information search was not necessarily true. Gemünden (1985) reasoned that this finding was surprising because in certain cases, product/service related risks were not high enough to stimulate consumer information search efforts. Moreover, other methods rather than information search would be applied to reduce perceived risks such as reliance on brand image and service providers. However, even though consumers would be inclined to search for more purchase related information, they might have found that either the information resources were unreliable, or the information search was hindered by numerous barriers such as related search costs. Finally, too much information and consumers' cognitive dissonance-selection process might also explain the above finding (Gemünden 1985).

Fourth, other researchers studied perceived risk from the mode of purchase or distribution channels (Taylor 1974, Cox and Rich 1964). Taylor (1974) acknowledged that different distribution channels would have different influence on consumer's perception of risks. For instance, when consumers shopped in person, the risks perceived would be lower than those felt when the consumer tried to process transactions through telephone calls. Furthermore, in the situations when the distribution channel did not allow a personal visit, the risk was perceived greater because consumers could only refer to their past experience to make decisions, such as experiences with service or product providers, with a certain brand and product, or reliance on commercials (Cox and Rich 1964). Hence Cox and Rich (1964) suggested two strategies to reduce risk that included reducing uncertainty and negative consequences (also see Rose 1975). In addition, Cox and Rich (1964) further recommended two strategies to reduce uncertainty, namely information search and reliance on existing information. Even though information search was not an always-preferable approach, knowledge might function as risk reducers (Cox and Rich 1964).

3. Types of perceived risk

Cox and Rich (1964) first identified two types of perceived risk—financial and social-psychological risks. In 1972, Jacoby and Kaplan suggested that "overall perceived risk" should include five types of risk namely performance risk, physical risk, social, psychological risk and time risk (also see Roselius 1971). Recently, Murry and Schlacter (1990) and Stone and Grønhaug (1993) identified six types of risk (i.e., financial risk, performance risk, physical risk, psychological risk, social risk and convenience loss or

time-related risk). However, each of these types seemed to be an extension and elaboration of previous studies. Moreover, Murry and Schlacter (1990) reported that all the six types of risk were perceived greater in services than in goods. However financial and performance risks, though perceived higher in services than in goods, were found statistically insignificant in their research.

4. Risk handling and risk reduction

Many studies have considered consumer risk handling as a risk reduction process (Stem, Lamb, and MacLachlan 1977). Other researchers have also found that consumers do go through this process before consumption (Cox and Rich 1964, Cox 1967, Barach 1969). Several methods of risk reductions have been empirically tested in the literature, such as advertising (Cox 1967, Barach 1969), word of mouth (Arndt 1967, Cunningham 1967 and Roselius1971), company loyalty (Bauer 1961), personal and group influence (Perry and Hamm, 1968), and price-quality effect (Roselius 1971). In addition, Roselius (1971) proposed eleven methods to reduce risk (see table 1). However, advertising was not included in it.

In addition, Bauer (1960) suggested that consumers might have preferences towards risk reduction methods. He further stated that brand loyalty was highly related to perceived risk (also see Roselius 1971, Stem, Lamb and MacLachlan 1977, Rose 1975, Mitchell and Greatorex 1993). Consistent with Bauer (1960)'s proposition, Roselius (1971) found that consumer preferences varied among types of risk and perceptions of the degree of risk (i.e., high or low). Furthermore, Roselius (1971) concluded that consumers preferred brand loyalty as a method to reduce perceived risk in all cases studied.

Table 1: Roselius's eleven methods of risk reduction and their definition

Endorsements	Buy the brand whose advertising has endorsements or testimonials from a person like you, from a celebrity or from an expert on the product
Brand loyalty	Buy the brand you have used before and have been satisfied with in the past
Major brand image	Buy a major, well-known brand of the product, and rely on the reputation of the brand
Private testing	Buy whichever brand has been tested and approved by a private testing company
Store image	Buy the brand that is carried by a store which you think is dependable, and rely on reputation of the store
Free sample	Use a free sample of the product on a trial basis before buying
Money-back guarantee	Buy whichever brand offers a money-back guarantee with the product
Government testing	Buy the brand that has been tested and approved by an official brand of the government
Shopping	Shop around on your own and compare product features on several brands in several stores
Expensive model	Buy the most expensive and elaborate model of the product
Word of mouth	Ask friend or family for advice on product

From: Roselius, T.R. (1971), "Consumer rankings of risk reduction methods", Journal of Marketing, January 1971, pp. 58

In brief, perceive risk is generally recognized to be influential on consumer decision-making because of the uncertainty and possible negative purchase consequences involved during the consumptions process. Hence, researchers explored and recommended a handful of risk reduction strategies to reduce consumer perceived risks. Among them, branding was recognized as a major approach (Roselius 1971, Sheth and Venkatesan 1968, Wernerfelt 1988).

5. Perceived risk and intangibility

Many studies on intangibility, based in the service industry in particular, argued that intangibility was positively related to perceived risk (Davis, Gultinan and Jones

1979; Bateson 1979, Zeithaml 1981; Murray and Schlacter 1990; Murray 1991; Mitchell and Greatorex 1993). This is to say that the more intangible a product/service was, the greater the perceived risk. However, the above proposition was based on intangibility as a uni-dimentional construct (i.e., physical intangibility).

Goutaland (1999)'s study revealed that mental intangibility was positively related to perceived risk. However, physical intangibility and generality had no significant impact on it. A possible explanation for the nonsignificance between physical intangibility and perceived risk in Goutaland (1999)'s study might lie on the discovery that intangibility was a three-dimensional construct. Overall, the construct was still positively related with perceived risk. However, based on the three-dimensional effects, physical intangibility, compared to mental intangibility, might contribute less in stimulating perceived risk (Goutaland 1999).

Moreover, the service industry has become a very dominant and eminent industry compared to the 1960's and 1970's. Nowadays, many consumers have accepted services as a common phenomenon and have become used to the fact that services are not physically tangible. Hence, physical intangibility, a significant difference between goods and services as revealed in previous literature, might not be perceived as important as before.

In addition, Goutaland (1999) explained that the nonsignificant relationship discovered between generality and perceived risk was due to her initially proposed model which was based on the two-dimensional concept of intangibility. This concept considered generality as part of mental intangibility. However, later in her study, she

found that intangibility was composed of three dimensions and generality was independent from mental intangibility.

In summary, past literature supports that perceived risk is a consequence of intangibility. Even though some research was conducted to explore the possible relationship between intangibility and perceived risk, few studies have been done regarding the three-dimensional intangibility scale.

6. Hypotheses

Thus, based on the previous literature and Goutaland (1999)'s findings, it is hypothesized:

H4: The more mentally intangible a product/service is, a) the more difficult it is to be evaluated, b) the more risky it is perceived

H5: The more general a product/service is, a) the more difficult it is to be evaluated, b) the more risky it is perceived

H6: The more physical intangible a product/service is, a) the more difficult it is to be evaluated, b) the more risky it is perceived

Even though Goutaland (1999) found no significant relations between physical intangibility (H6b) and generality (H5b) with perceived risk, past literature, in service marketing particularly, supported that physical intangibility engendered more perceived risk (Davis, Gultinan and Jones 1979; Bateson 1979, Zeithaml 1981; Murray and Schlacter 1990; Murray 1991; Mitchell and Greatorex 1993). Hence, in this study, hypotheses will be based on this traditional thought. Moreover, the positive relationship

between generality and perceived risk will be retested by conceptualizing generality as an independent dimension.

Past studies held different opinions on physical intangibility and difficulty of evaluation. As previously presented, Breivik et al. (1998) found inaccessibility to the senses negatively related to difficulty of evaluation. Goutaland (1999) found that no significant relationship existed between the two constructs. McDougall (1987) also drew a similar conclusion in his exploratory study in which tangibility was conceptualized as "easy to picture or visualize before purchase." McDougall (1987) later explained that the nonsignificant influence of physical intangibility on difficulty of evaluation might have been due to the oversimplified tangibility measure and non-representative sample used in the research. Thus, in this study, a positive relation between physical intangibility and difficulty of evaluation (H6a) is hypothesized to further explore the impact of physical intangibility on consumer evaluations.

iii. Difficult of evaluation and perceived risk studied on brand and product category level

As previously discussed, the brand facilitated consumer decision making particularly by improving decision-making efficiency (Alba and Hutchinson 1987, Johnson and Russo 1984) and reducing perceived risk (Montgomery and Wernerfelt 1992, Rubin 1990, Wernerfelt 1988).

In 1998, Erdem conducted a research on the efficiency of umbrella branding with the intention of understanding how consumers' previous experience with a certain brand in a product category would affect their quality perceptions towards another product with

the same brand name but belonging to another product category. Erdem (1998) proposed two models to describe the effect of umbrella branding on consumers' risk reduction and consumers' quality learning through past experience. In short, Erdem's (1998) empirical study successfully supported relevant findings that umbrella brands eliminated consumer perceived risks, difficulty of evaluation, and product uncertainty (also see: Montgomery and Wernerfelt 1992).

Moreover, Berry (2000) articulated that branding played a "special" role in service companies. He argued that branding was a method to tangiblize goods. It was also a necessity for the success of the organization. Therefore, Berry (2000) reasoned that strong brands would reduce purchase invisibility. It would also enable customers to tangiblize and visualize intangible objects by reducing perceived social and monetary risks that might occur after purchase eliminating the difficulty of pre-purchase evaluation.

In conclusion, Berry (2000) suggested that a strong branding strategy for service companies was necessary. The brand should not only be externalized among customers but also among employees as well. However, he didn't support his propositions with any empirical research. Nevertheless, his arguments on brand, perceived risk and tangiblization are constructive.

Therefore, it is hypothesized that:

H7: The impact of intangibility of product-category level choice on a) difficulty of evaluation and b) perceived risk is greater than that of brand-level choice.

III. Other variables related with the study

All though there are other variables related to the consumer decision-making process, in this study knowledge and involvement will be considered because they are closely associated to difficulty of evaluation and perceived risk. These two variables will be discussed in the following section.

i. Knowledge

Traditionally, knowledge used to be treated as a uni-dimensional construct (Alba and Hutchinson 1987). It was frequently referred to as either product familiarity or prior knowledge. By defining knowledge as above, it was assumed that consumers obtained some amount of product related information or experience (Alba and Hutchinson 1987). Consequently, knowledge used to be operationalized by various measures such as frequency of purchase (Anderson, Engledow and Becker 1979, Bettman and Park 1980), objective tests (Brucks 1985, Staelin 1978, Sujan 1985), formal training (Sujan 1985, Hutchsion 1983) and self-report measures (Johnson and Russo 1984).

However, the diversity and difference among measures of knowledge demonstrated that multi-dimensional measures would better capture the construct (Bettman 1986, Brucks and Mitchell 1981, Kanwar, Olson and Sims 1981). Bettman (1986) articulated that previous research on the measures of prior knowledge had not yet provided "convincing empirical demonstration of a measurement scheme" that was sufficient enough to provide the necessary framework. Brucks and Mitchel (1981) also pointed out that knowledge was a very complex construct that should be featured by structure and content of information stored in memory. In addition, Brucks (1986) further called for a

multi-dimensional measure of knowledge in order to provide a better understanding of consumer behavior.

Thus, Alba and Hutchinson (1987) proposed a two-dimensional measure to study consumer knowledge, namely familiarity and expertise. In their research, they defined familiarity as the number of product related experiences obtained by consumers. Furthermore, they defined product related experiences as those gained through advertising exposure, information search, interactions with sales persons and prior purchase decisions. Meanwhile, Expertise was defined as consumer's abilities to successfully perform product related tasks. Moreover, they defined consumer expertise very broadly from cognitive structure to cognitive process, both of which were required to successfully perform product-related tasks. In addition, Ghabi (1998) also featured knowledge with two dimensions, i.e., experience and familiarity. However, Ghabi (1998) argued that expertise was the "internal dimension", whereas experience the "practical dimension" of knowledge.

1. The two dimensions of knowledge: experience and expertise

1) Experience:

According to Ghabi (1998), experience is a two dimensional concept. It includes a behavioral dimension that represents choice, purchases and possession. It also includes a mental or cognitive dimension that represents research, exposure and information usage related to the products or services. Purchase frequency, purchase choice variety and purchase repetition determines the level of consumer experience related to a product or service (Mitchell and Prince 1993). Similarly, the range and depth of information search,

frequency of exposure and utilization of information, together with the variety of situations for operation could be used as indicators of consumer experience (Ghabi 1998)

Several approaches have been proposed to measure experience. Zaichovsky (1985) suggested the use of two variables, depth and breadth of consumption, to measure product usage. She further elaborated that durable goods and non-durable goods should be measured differently. For durable goods, the depth and breadth were number of times of product usage and number of different products used in a certain period of time. For non-durable goods, the depth and breadth were number of products consumed, and number of brands consumed. Murry and Schlacter (1990) proposed five items to measure experience that focused on purchase experience, product utilization and exposure, brand familiarity, purchase frequency and purchase confidence, and concluded that experience would reduce some consumer perceived risk.

However, much of the literature has treated experience as familiarity (e.g., Johnson and Russo 1984, and Alba and Hutchinson 1987). In 1991, Nantel and Robillard (1991) summarized two schools of perspectives on familiarity. The first school perceived familiarity as a function of experience, usage, expertise or knowledge. The authors argued that familiarity should not be measured through experience exclusively even though the two terms were interrelated especially in situations where consumers depended more on experience than on information search. The second school perceived familiarity as cognitive representation of product experience and knowledge. Thus, two types of experience (i.e., direct experience and indirect experience) were identified in addition to the above findings. Direct experience was directly linked to product usage, whereas indirect experience was associated to external sources of information such as advertising

(Nantel and Robillard, 1991). Finally, familiarity was also believed to increase consumers' abilities to categorize information and product/service to a more specific rather than generic level (Alba and Hutchinson 1987). For instance, consumers who were familiar with a BMW car would perceive it as BMW. On the other hand, consumers who were less familiar with the car would perceive it as a more generic car (Alba and Hutchinson 1987).

2) Expertise

The second dimension of knowledge was expertise. Alba and Hutchinson (1987) defined expertise as consumers' special capacity to successfully perform a product-related task. Consequently, they argued that consumer expertise should be "distinguished from product-related experience." Therefore, expertise was a complementary facet of the range of knowledge because experiences, or product familiarity, could not capture the complexity of consumer knowledge. Moreover, the authors proposed that expertise was a composition of five aspects or dimensions. The five dimensions were cognitive effort and automaticity, cognitive structure, analysis, elaboration and memory.

First, Alba and Hutchinson (1987) stated that consumers' familiarity towards a product would reduce their effort spent during product purchase and usage. Therefore, along with the reduction of the cognitive efforts demanded for a certain task, the overall performance should improve because resources were now available for other activities. At the same time, the authors defined automaticity as "processes that can be performed with minimum effort and without conscious control." It was concluded then that automaticity could "free-up" some cognitive resources and hence allow the resources to

be used in other processes (i.e., non-automatic process). In this way, antomaticity improved overall performance.

Second, Alba and Hutchinson (1987) defined cognitive structure as "factual knowledge or beliefs that consumers have about products and the ways in which that knowledge is organized." Thus, its primary function is to differentiate products and services in order to assist product purchase. Therefore, the more familiar (experienced) consumers were towards a product, the greater the ability to categorize the product to a more specific and abstract level.

Third, analysis referred to the extent of consumers' access to information related to a certain task. It was believed that analytic processing differed from non-analytic processing on selective encoding, classification, and inference. For instance, with regard to information search, experts obtained better understanding on available product information than novices due to their relatively highly developed conceptual structures (Alba and Hutchinson 1987).

Finally, Alba and Hutchinson (1987) defined elaboration as the number of facts required to make inference, and memory as "long-term retention of verbal information." They concluded that experts elaborated on given information more accurately than novices and that they relied less on stimulus-based information.

However, the authors did not provide operational methods to measure the above-proposed five aspects. In 1985, Zaichkovsky suggested that expertise and experience had a strong relationship when expertise was measured subjectively, but the relationship was weak when it was measured objectively. Thus, it is necessary to exam in subjective and

objective perceptions of knowledge in order to determine the proper forms of measurement (Ghabi 1998).

2. Objective and subjective knowledge

Many researchers have agreed that subjective and objective knowledge evaluations are different (Brucks 1985, Zaichkovsky 1985, Nantel and Robillard 1991). Subjective evaluation of knowledge is related to consumers' self-perceptions of their knowledge of a product, whereas objective evaluation of knowledge is related to the exact information consumers obtain. Subjective knowledge evaluation is then linked more to consumers' experiences while objective knowledge evaluation is more related to factual information available in memory (Nantel and Robillard 1991, and Park, Mothersbaugh and Feick 1994).

Referring back to the previous literature, Brucks (1985) summarized three measures to study consumer knowledge including an objective measure, a subjective measure and a measure associated with product experience. Mitchell (1981) also suggested that subjective measures were suitable for studies in self-evaluated behaviors while objective measures were preferable for objective research such as studying consumers' information processing ability. Therefore, due to the nature of this study, subjective measures of knowledge evaluation are used.

In short, knowledge is recognized as an individual characteristic that influences decision marking strategies (Bettman and Park 1980; Gharbi 1998). It is conceived as an internal individual trait, and is associated with aptitude and power to act.

3. Knowledge and intangibility

Goutaland (1999)'s empirical study revealed that knowledge functioned as a predictor and moderator between intangibility, difficulty of evaluation and perceived risk. She found that subjective knowledge had a direct negative influence on both difficulty of evaluation and perceived risk. Subjective knowledge was also found to interact with physical intangibility and mental intangibility when perceived risk was the dependent variable. Knowledge and physical intangibility increased perceived risk, whereas knowledge and mental intangibility decreased the perceived risk. However, the expected moderating effect of knowledge on difficulty of evaluation, especially the hypothesized interaction between knowledge and generality, was not found in her study.

Therefore, in this study, the direct relationship between knowledge, difficulty of evaluation, and perceived risk will be studied. Moreover, the moderating influence of knowledge will be retested. In addition, the moderating effect of knowledge will be studied from the brand and generic category perspectives. As previously discussed, since the brand serves primarily as a risk reducer and a reducer of difficulty of evaluation, the moderating effect of knowledge will be perceived less in a brand context than in a generic context.

Thus, it is hypothesized that:

H8: Knowledge is a moderator that moderates the relationships between generality, physical intangibility and mentally intangibility with a) difficulty of evaluation and b) perceived risk

H9: The more knowledgeable a consumer perceives himself to be, 1) the less difficult a product/service is to be evaluated. 2) the less risky a product/service is to be perceived

H10: The moderating effects of knowledge on a) difficulty of evaluation and b) perceived risk at a generic product-category level will be greater than those at a brand-level.

ii. Involvement

1. The construct

Involvement has been one of the important concepts used to explain the variation of decision processes of consumers (Lastovicka and Gardner 1979, Bloch 1981, Laurent and Kapferer 1985, McQuarrie and Munson 1986, 1991, Higie and Feick 1988, Jain and Scrinivasan 1990, Ghabi 1998). Moreover, McDougall (1987) also pointed out that product evaluation was strongly related to involvement. However, important as it was in understanding the concept of consumer decision making, there was no consistent definition for involvement among previous literature.

Lastovicka (1979) referred to involvement as a two-component construct, which was composed of normative importance and commitment. Lastovicka (1979) defined normative importance as to how individual value was linked to product category, while commitment as one's status on an issue. Nantel and Robillard (1990) agreed that involvement was related to personal interest, however, they rejected the commitment aspect for it is usually tied to brand loyalty, which was believed to be irrelevant to product

involvement. Bloch (1981) also supported the thought that involvement was linked to individual interest and value. So did Zeichkowsky (1985a). Other researchers argued that the construct was multidimensional rather than uni-dimensional (Finn 1983, Nantel and Robillard 1990, Ghabi 1998). For instance, Ghabi (1998) proposed a three-approach idea to further understand involvement. The three approaches were cognitive approach, motivation approach and response approach. The cognitive approach explained the linkage between the individual and an object or activity. It was conceived as a durable and continuous link and, therefore, integrated with the notion of experience. Motivation was evoked by one or more stimuli. Therefore, under the motivation approach, involvement was a synonym of importance, interest, attachment, motivation and stimulation of an object and believed to be influential in consumer behavior. The response approach reflected the characteristics of mental or behavioral responses that were generated from stimuli.

Furthermore, Zaichkowsky (1985) concluded that involvement had been diversely defined and measured due to its "different applications." In fact, involvement, applied under various objectives, led to different responses such as response to products (Howard and Sheth 1969; Hupfer and Gardner 1971), response to advertisements (Krugman 1977) and to purchase decisions (Clarke and Belk 1978). Therefore, involvement with products was defined as a linkage with greater perception of attribute differences, product importance and greater brand choice commitment (Howard and Sheth 1969). Involvement with advertisements was hypothesized as to be tied more to consumers' counter-arguments to advertisements (Wright 1074). Involvement with purchases was described

as related to more information search and time spending in making a right selection (Clarke and Belk 1978).

Thus, measurements for involvement differed according to its applications (see table 1). For example, researchers used several methods to measure involvement with products (Sheth and Venktesen 1968, Hupfer and Gardner 1971, Cohen and Golbery 1970, Ray 1973), and used a five-point scale to measure degree of attention to advertisements (Wright 1973). Researchers also administrated Likert statements to measure involvement at a broader level (Lastovicka and Gardner 1978, Traylor 1981). In general, researchers used the resulting behaviors as indicators of the level of involvement studied (Zaichkowshy 1985). For the purpose of developing a scale, Zaichkowsky (1985) defined involvement as "a person's perceived relevance of the objects based on inherent needs, values, and interests." This definition, as the author stated, might apply to the above-mentioned three levels of involvement. Therefore, based on the definition proposed, Zaichkowsky (1985) empirically developed the "personal involvement inventory" – a scale used to measure a one's product involvement. Together with other scholars, Laurent and Kapferer (1985) they believed that there was more than one type of involvement in consumer research as different antecedents of involvement would result in different corresponding behaviors (Laurent and Kapferer 1985).

Table 2: Summary of measurements of involvement according to its applications

Involvement with advertisements	5-point scale to measure the degree of attention towards advertisements (Wright 1973)
Other methods	Rank-ordering products (Sheth and Venkatesen 1968)
	Rating products on 8-point concentric scale related to the importance associated with subject's life (Hupfer and Gardner 1971)
	Ask the importance of a particular brand (Cohen and Golbery 1970)
	Number of times that subject reports "don't know" to series of brands (Ray 1973)
Broader level	It means and matter a lot to me, or it is important to me (Lastovicka and Gardner 1978, Traylor 1981)

Source: *Laurent, Gilles and Jean-Noël Kapferer (1985), "Measuring Consumer Involvement Profiles," Journal of Marketing Research, Vol. 22 (February), pp. 41-53*

It was clear that researchers tend to avoid using the word "involvement" alone in their studies. Rather, they preferred to limit the scope of this construct by simply implying "some distinctions between types of involvement" (Laurent and Kapferer, 1985). For example, Sheriff and Cantril (1947) and Engel and Blackwell (1978) both utilized the term "ego involvement" to emphasize in a sense the personal and emotional aspect of involvement. Moreover, in 1977, Rothschild differentiated enduring involvement from situational involvement based on the fact that enduring involvement reflected individual's general concern towards a product class while situational involvement stemmed from situational-stimulated purchase behaviors.

Laurent and Kapferer (1985) strongly suggested that the construct was not "unitary" but rather a construct with diversified levels. The levels of the construct depended on both users' views of the concept and research conditions set up for its manipulation and measurement. After their empirical study on 14 product categories, they concluded that as though the factors of involvement might be correlated, each facet of the

construct bears some specific information. Thus, Laurent and Kapferer (1985) postulated that involvement theory might have been oversimplified because involvement "does not systematically lead to expected differences in behavior." Instead, the differences in behavior depended greatly on the antecedents of involvement. The authors suggested then that an "involvement profile" should be used rather than a single indicator of involvement in marketing research. They believed that the involvement profile might serve as a better measurement in specifying the relationship between consumers and product categories.

In summary, many researchers have agreed that involvement is a multi-dimensional construct rather than a uni-dimensional one. Please refer to table 3 for more details.

Table 3: Summary table on the multi-dimensional involvement

	Dimensions of Involvement proposed
Lastovicka and Gardner (1979)	• familiarity, commitment, normative importance
Bloch, 1981	• enjoyment, readiness to talk to others about it • interest, self-expression, attachment
Laurent and Kapferer, 1985	• importance/risk of the product class, probability of a mispurchase, symbolic/sign facet, hedonic value, interest
McQuarrie and Munson, 1986	• importance, pleasure/hedonic value, risk
McQuarrie and Munson, 1991	• Importance, interest
Higie and Feick, 1988	• hedonic value, self-expression
Jain and Srinivasan, 1990	• importance/risk, probability of a mispurchase, symbolic/sign facet, hedonic value, interest/relevance

Source: Bearden, William O., Richard G. Netemeyer and Mary F. Mobley (1993), Handbook of Marketing Scales, Multi-Item Measures for Marketing and Consumer Behavior Research, SAGE Publications.

2. Involvement and intangibility

McDougall (1987) found that apart from intangibility, involvement was significantly related to product evaluation. Goutaland (1999) revealed more findings from her empirical study indicating that involvement was positively associated with difficulty of evaluation and perceived risk. Moreover, involvement interacted with mental intangibility and generality. These interactions, though unexpected, negatively affected difficulty of evaluation. Involvement also interacted with physical intangibility and generality when tested upon its impact on perceived risk. The finding was interesting in that involvement and physical intangibility negatively affected perceived risk, whereas involvement and generality positively affected the construct. Therefore, in this study, the moderating and predicting influence of involvement will be tested. Furthermore, the moderating effect of involvement will be also studied from the brand and generic category perspectives.

Therefore, based on the above literature review, it is hypothesized that:

H11: Involvement is a moderator that moderates the relationships between generality, physical intangibility and mentally intangibility with a) difficulty of evaluation and b) perceived risk

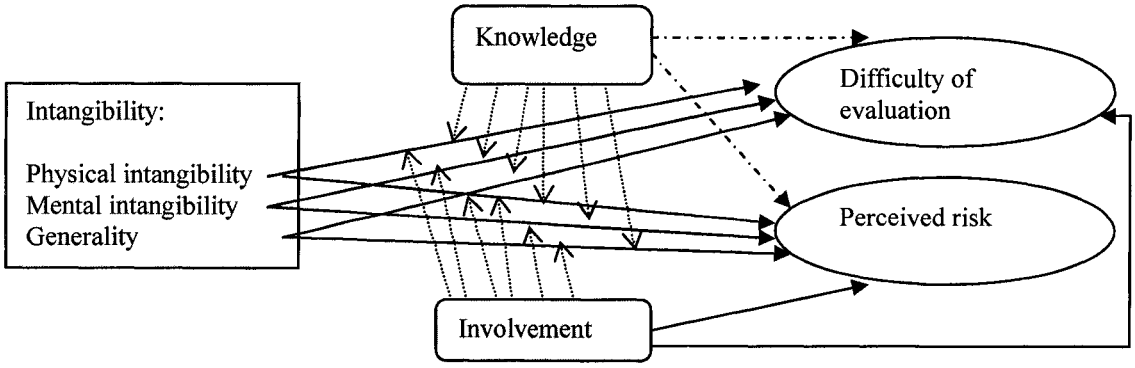
H12: the more involving a product/service is to a consumer, 1) the more difficult a product/service is to be evaluated. 2) the more risky a product/service is to be perceived

H13: The moderating effects of involvement on a) difficulty of evaluation and b) perceived risk at the product-category level will be greater than those at the brand-level.

IV. Summary of hypotheses and proposed model

Table 4: Summary of hypotheses

		hypotheses
Intangibility (brand vs. generic perspective)		**H1**: The degree of generality is higher in generic category choices than in brand-level choices. **H2**: The degree of mental intangibility for generic category level choices is higher than that for brand level choices. **H3**: The degree of physical intangibility in generic category level choices is a) higher than it on brand level choices (especially for services) b) similar to it on brand level choices (especially for products)
Difficulty of evaluation and perceived risk	**With intangibility**	**H4**: The more mentally intangible a product/service is, a) the more difficult it is to be evaluated, b) the more risky it is perceived **H5:** The more general a product/service is, a) the more difficult it is to be evaluated, b) the more risky it is perceived **H6**: The more physical intangible a product/service is, a) the more difficult it is to be evaluated, b) the more risky it is perceived
	With Intangibility from brand and generic perspectives	**H7**: The impact of intangibility of product-category level choice on a) difficulty of evaluation and b) perceived risk is greater than that of brand-level choice.
Knowledge		**H8:** Knowledge is a moderator that moderates the relationships between generality, physical intangibility and mentally intangibility with a) difficulty of evaluation and b) perceived risk **H9**: the more knowledgeable a consumer perceives himself, 1) the less difficult a product/service is to be evaluated. 2) the less risky a product/service is to be perceived
	With difficulty of evaluation and perceive risk from brand vs. generic perspectives	**H10**: The moderating effects of knowledge on a) difficulty of evaluation and b) perceived risk at product-category level will be greater than those at brand-level.
Involvement		**H11**: Involvement is a moderator that moderates the relationships between generality, physical intangibility and mentally intangibility with a) difficulty of evaluation and b) perceived risk **H12**: the more involving a product/service is to a consumer, 1) the more difficult a product/service is to be evaluated. 2) the more risky a product/service is to be perceived
	With difficulty of evaluation and perceive risk from brand vs. generic perspectives	**H13:** The moderating effects of involvement on a) difficulty of evaluation and b) perceived risk at product-category level will be greater than those at brand-level.



Legend: Positive relations (H4, H5, H6, H12)
Moderating effects (H8, H11)
Negative effects (H9)
Shaded areas represent differences between brand and generic perspectives (H1, H2, H2, H7, H10, and H13)

Figure 6: model structure as proposed

METHODOLOGY

I. Research design

This research was designed to: first, test the generalizability of the three previously discovered dimensions of intangibility by Laroche et al (2001), and to study the relationship of the three-dimensions of intangibility with perceived risk and difficulty of evaluation. In addition, the moderating roles of involvement and knowledge between intangibility on difficulty of evaluation and perceived risk are to be studied as assumed.

Second, as an extension from previous studies, this research incorporates brand and product category perspectives and intends to explore how the two perspectives would affect the above-mentioned relationships among the proposed constructs. More specifically, the research aims at studying how generality, as well as mental intangibility affects consumers' perceived risk and difficulty of evaluation and the degree of their influence. This study is a cross-sectional study regardless of time effects.

II. Research instrument

i. Product/Service selected

One essential criterion in selecting products/services is to ensure enough variability for the study of intangibility. Products/services must also be selected based on their suitability to the student population, the chosen sample population in this study, to enable the two moderating constructs to be measurable.

Unlike previous research, in which brand effects were ignored, the influence of product category as opposed to brands is expected to be strong in this study. Therefore,

related brands were selected according to each product category. Again, the brands were selected to suit to sample population as much as possible.

Table 5 lists the products/services and brands selected for this study. Among them, jeans and computers are relatively more tangible products than an Internet browser and a music disc, while pizzeria dinner is deemed to be a more tangible service than a chequing account.

Table 5: Products/services and brands selected

	Generic product category	Brand used
Product	Jeans	Levi's jeans
	Computer	IBM computer
	Music compact disc	Beatles' CD
	Internet browser	Netscape Internet browser software
Service	Pizzeria dinner	Pizza Hut's pizzeria dinner
	Chequing account	Royal Bank's chequing account

ii. Design of Questionnaire

All the questionnaires contained two parts. The first part included measures of all proposed constructs for one tangible product, one less tangible product and one service. Measures were the same throughout the questionnaire, and only the names of the product/service studied changed. The second part was designed to capture demographic data. Questions regarding age, gender, level of studies, on-campus status, language and cultural background were asked in this part.

Sixteen versions of the questionnaire were developed. The first 8 versions (#1 to #8) were fundamental. Among them, four versions were designed for the branded products and the branded service while the other four were for the general products/services selected. The other eight versions had simply the order of the products/services reversed. Among each group of the eight questionnaires, four (two for brands and two for generic products/services) were designed for the on-line purchase environment while the remaining four were designed for the off-line purchase condition. All versions of the questionnaire were identical in terms of construct measurement and demographic questions except for the different products/services studied. The on-line condition questionnaires had some additional questions concerning on-line purchases.

The structured questionnaires were numbered to facilitate data gathering and statistical analysis. All the questionnaires were written in English given that the location of the sample population was at an English speaking university. During the questionnaire distribution process, any student who had difficulty in understanding any particular word was able to raise questions and receive on-the spot help. All the questionnaires ranged from 12 to 15 pages.

Table 6: The sixteen versions of the questionnaire

Number of questionnaires	Products and service included	Online offline purchase	Brand/ generic category
Questionnaire 1	Levi's Jeans, Pizza Hut's Pizza, Netscape Software	Online	brand
Questionnaire 2	An IBM Computer, Royal Bank Chequing Account, A Beatles' CD	Online	brand
Questionnaire 3	A Pair of Jeans, A Pizzeria Dinner, Internet browser	Online	generic
Questionnaire 4	A Computer , A Chequing Account, A CD	Online	generic
Questionnaire 5	Levi's Jeans, Pizza Hut's Pizza, Netscape Software	Offline	brand
Questionnaire 6	An IBM Computer, Royal Bank Chequing Account, A Beatles' CD	Offline	brand
Questionnaire 7	A Pair of Jeans, A Pizzeria Dinner, Internet browser	Offline	generic
Questionnaire 8	A Computer, A Chequing Account, A CD	Offline	generic
Questionnaire 9	Netscape Software, Pizza Hut's Pizza, Levi's Jeans	Online	brand
Questionnaire 10	A Beatles' CD, Royal Bank Chequing Account, An IBM Computer	Online	brand
Questionnaire 11	Internet browser, A Pizzeria Dinner, A Pair of Jeans	Online	generic
Questionnaire 12	A CD , A Chequing Account, A Computer	Online	generic
Questionnaire 13	Netscape Software, Pizza Hut's Pizza, Levi's Jeans	Offline	brand
Questionnaire 14	A Beatles' CD, Royal Bank Chequing Account, An IBM Computer	Offline	brand
Questionnaire 15	Internet browser, A Pizzeria Dinner, A Pair of Jeans	Offline	generic
Questionnaire 16	A CD , A Chequing Account, A Computer	Offline	generic

III. Measures used

i. Three dimensions of intangibility

The measures for the three dimensions of intangibility were adopted from Laroche et al. (2001). The items included are shown in table 7.

Table 7: Measures of intangibility

Factors	Measures	Alpha
Physical intangibility	P1:This item is very easy to see and touch	Cronbach's alpha is 0.74 Improved alpha is 0.85 after P3 is removed
	P2: I can physically grasp this item	
	P3: This item evokes different images	
	P4: This item is very tangible	
Generality	G1: I feel that this item is: "1=very accessible to my senses" to "9=not accessible to my senses at all"	Cronbach's alpha is 0.61 Improved alpha is 0.68 after G1is removed
	G2: I feel this item is: "1=very abstract" to "9=very concrete"	
	G3: I feel that this item is: "1=very general" to "9=very specific"	
Mental intangibility	M1: I need more information about this item in order to make myself a clear idea of what it is	Cronbach's alpha is 0.86
	M2: I have a clear picture of this item	
	M3: The image of this item comes to my mind right away	
	M4: This is not the sort of item that is easy to picture	
	M5: This is a difficult item to think about	

Source: Laroche, Bergeron, and Goutaland (2001), "A three-dimensional scale of intangibility," Journal of Services Research, Aug 2001; Vol. 4, Iss. 1; pg. 26, 13 pgs

ii. Difficulty of evaluation

Items for this construct were selected from a recent research work and started with the following general statement "Given that I have to acquire a product ("a product on the Internet" for on-line versions), choosing among the available brands will be" ("evaluating the product/service will be" for the on-line and brand versions). The statement was followed with four items on a 1 to 9 scale, with 1 representing very difficult, problematic, complex, and complicated, and 9 as very easy, not problematic, not complex at all, and simple.

iii. Perceived Risk

Perceived risk was classified into five categories, namely, financial risk, psychological risk, performance risk, social risk and time risk. Overall risk was measured in Stone and Gronhaug's (1993) research. These Likert scales were also used in Gharbi (1998)'s study. However, minor modifications were made in order to adapt the content to the questionnaire, and some items were removed while some others were added (see table 8).

Table 8: Items removed/added to measure perceived risk

	Items added	Items removed
overall risk	"I will incur some risk if I buy a *given product* in the next twelve months"	"When all is said and done, I really feel that the purchase of a personal computer within the next twelve months poses problems for me that I just don't need".
	"A *given product* is a very risky purchase"	
social risk	"If I bought a *given product*, I would be held in higher esteem by my family"	"The thought of buying a personal computer within the next twelve months for use at home causes me concern because some friends would think I was just being showy"
financial risk	"Purchasing a *given product* could involve important financial losses".	"My purchasing a personal computer within the next twelve months for use at home would be a bad way to spend money"
Physical risk	Items were deleted in this research since neither the products nor the services studied in this research fell highly in this dimension	
Performance risk, psychological risk, time risk	Items were used with minor verbal changes in order to fit the questionnaire designed for this research	

iv. Experience and knowledge

In line with the literature review, experience and knowledge were measured on practical experience and subjective knowledge only. Items were adapted from Park, Mothersbaugh and Feick (1994)'s research. Items to measure experience were taken from

Oliver and Bearden (1983)'s study. However, since their third item overlapped with Park et al (1994)'s, it was dropped from the research. An item from Biehal (1983)'s study was included as a complementary item in order to measure the construct. However, the statement was modified slightly from "I don't have much experience making this kind of decision" to "I don't have much experience buying a given product." In addition, further modifications and removals were made to ensure a better fit to the questionnaires.

v. Involvement

Having tested involvement as a uni-dimensional construct, Goutaland (1999) took the relevant scales from Zaichkowsky (1985) and reduced the 20-item measure to 11 items based on Mittal (1989)'s arguments. Therefore, 5 items were adopted from Goutaland (1999)'s 11-item measurement for involvement. Please refer to table 9 for details.

Table 9: Goutaland's 11-Item Scale of Involvement

You perceive this product as:	Selected items:
1. important – unimportant 2. of no concern – of concern to me 3. means a lot to me – means nothing to me 4. useless – useful 5. valuable – worthless 6. matters to me – means nothing to me 7. significant – insignificant 8. vital – superfluous 9. boring – interesting 10. essential – nonessential 11. undesirable – desirable	1. important – unimportant 2. significant – insignificant 3. valuable – not valuable 4. matters a lot to me – doesn't matter to me 5. means a lot to me – means nothing to me

Source:: Goutaland, Christine (1999), "Product and service intangibility: a study of its dimensions and consequences on product/service evaluation", Master Thesis, Concordia University / Christine Goutaland

IV. Pretest of the Questionnaires

Each version of the questionnaire was pretested with a small group of students. The pretest took place either in study rooms, computer labs or in the library or classrooms. Instructions were given before the filling out of the questionnaire. After completion, participants were encouraged to provide any comments and/or feedback regarding the format and wording of the questionnaire. All feedback and comments were recorded and discussed after questionnaire collection. Minor modifications on question wording and/or phrase clarity and spelling were made accordingly. Moreover, familiarity of the products/brands studied was also tested during the preliminary test. It was concluded that the brands chosen were adequate and well known among participants.

V. Sample description and data collection

A convenient sample was chosen for this study. As previously mentioned, the sample population was mainly from an English university in Montreal, Canada.

Eight hundred questionnaires (50 copies for each version) were distributed in thirty-five classes on both the Sir George Williams and Loyola campus. Although all classes were from the John Molson School of Business, it did not mean that 100% of the respondents were from the commerce faculty, since some participants could have belonged to other faculties of the university, however, faculty distinction among respondents was not assumed to have an effect and was irrelevant to this study.

The eight hundred questionnaires were randomly shuffled to ensure randomness in the data collection. The researchers first approached professors for permission to

distribute questionnaires in their classes. Once allowed, the researchers then went to the classrooms at specified times and started with a brief self-introduction. Participants were kept blind as to the purpose of the research. If required, the researchers disclosed it only after the completed questionnaires were collected. Participants were told that the participation was totally voluntary. In a few classes, professors encouraged participation by giving extra course credit. Nevertheless, participation was all voluntary.

All the questionnaires were collected by the researchers. 6.3% of the questionnaires were distributed to master students, and the rest to undergraduate students. Out of the eight hundred questionnaires, 783 were completed given a response rate of 97.9%.

ANALYSIS

1. About the sample

i. Description of the sample

As shown in table 10, a total of 783 usable questionnaires were collected and, generally speaking, the sixteen versions were evenly distributed.

Table 10: Number of completed questionnaires by version

	Version Number	Frequency
Generic categories	Questionnaire 3	50
	Questionnaire 4	50
	Questionnaire 7	49
	Questionnaire 8	48
	Questionnaire 11	48
	Questionnaire 12	48
	Questionnaire 15	48
	Questionnaire 16	50
Brand categories	Questionnaire 1	50
	Questionnaire 2	48
	Questionnaire 5	49
	Questionnaire 6	50
	Questionnaire 9	49
	Questionnaire 10	48
	Questionnaire13	48
	Questionnaire 14	50
Total	16	783

Table 11: Number of respondents by online/offline and brand/generic categories

	GENERIC	BRAND	Total
ONLINE	196	195	391
OFFLINE	195	197	392
Total	391	392	783

ii. Demographic profile

Table 12: Frequency distribution of age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15-20 years	199	25.4	25.8	25.8
	21-25 years	456	58.2	59.1	84.8
	26-30 years	71	9.1	9.2	94.0
	31 + years	46	5.9	6.0	100.0
	Total	772	98.6	100.0	
Missing	System	11	1.4		
Total		783	100.0		

Table 12 shows that among the 783 respondents, the number of missing values was 1.4% (11) of the total sample. Out of the 772 valid responses, over half of them (59.1%) were concentrated in the 21 to 25 age group, which is a normal age distribution for university students. The second group of respondents (25.8%) contained students aged 20 or under. This is also a sound demographic descriptive since this group represents the first-year university students. The rest of the respondents whose ages were between 26 and 30 or above, accounted for only 9.2% and 6.0%, respectively. These results are reasonable when considering the students' status. Since most of the respondents were approached during day classes, there were not many part-time students whose ages would have most likely been above 26.

Table 13: Frequency distribution of gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	324	41.4	46.4	46.4
	Female	375	47.9	53.6	100.0
	Total	699	89.3	100.0	
Missing	System	84	10.7		
Total		783	100.0		

Valid responses available for gender were 699 (see table 13). The above statistics show that generally speaking, males and females were fairly evenly distributed. Although there are eighty-four missing responses, the large sample size of 699 valid responses would still enable a cross-gender study.

Table 14: Frequency distribution of level of studies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Undergraduate	717	91.6	93.7	93.7
	graduate	48	6.1	6.3	100.0
	Total	765	97.7	100.0	
Missing	System	18	2.3		
Total		783	100.0		

Out of the 765 total valid responses, an overwhelming 93.7% were undergraduate students, while the rest 6.3% were graduate students. This can be explained by the questionnaire distribution process which took place in undergraduate classes. Very few graduate classes were used due to their small size (see table 14).

Table 15: Frequency distribution of part-time/full-time status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Full-time	582	74.3	84.3	84.3
	Part-time	108	13.8	15.7	100.0
	Total	690	88.1	100.0	
Missing	System	93	11.9		
Total		783	100.0		

Out of the 690 valid responses, 84.3% (582 respondents) were full-time students. The rest 15.7% (108 respondents) were part-time students. The distribution difference between the two groups can be explained by the fact that most of the classes were

approached during day time which are usually attended by very few part-time students. Missing values represented 11.9% (93) of the total 783 sample population (see table 15).

iii. Language spoken

Table 16 shows the means of the percentage of English, French, and other language spoken by the students.

Table 16: Descriptive statistics for language used by respondents

Name of Items	N	Range	Minimum	Maximum	Mean	Std. Deviation
With relatives—English	768	100	0	100	53.33	36.49
With relatives—French	766	100	0	100	21.07	30.41
With relatives—Other	768	100	0	100	25.65	34.04
Watching television--English	766	100	0	100	83.14	21.34
Watching television--French	765	95	0	95	12.92	19.13
Watching television--Other	764	92	0	92	3.97	11.93
Listening to radio—English	759	100	0	100	83.24	22.57
Listening to radio—French	759	100	0	100	13.50	20.55
Listening to radio—Other	757	100	0	100	3.27	12.08
Reading newspapers—English	763	100	0	100	76.96	27.67
Reading newspapers—French	763	100	0	100	18.73	25.82
Reading newspapers—Other	763	100	0	100	4.31	14.25
Valid N (listwise)	751					

It is apparent from the statistics that English was the language mostly used by the respondents. In general, respondents spoke 53.33% of the English with relatives; English was used 83.14% to watch television; 83.24% to listen to radio; and 76.96% to read newspapers. These results are to be expected since the research was conducted in an English speaking university, where the language used in class and by school media was English. The percentage of French and other languages spoken with relatives were relatively high. For watching television, listening to radio and reading newspaper, French was the second most frequently used language. The use of other languages on these aspects was much lesser. All the above results reflect Montreal's cultural diversity. The

standard deviation for English, French and other languages spoken with relatives was relatively high compared to the other items. However, this is not difficult to explain as cultural diversity and language differences both greatly affect respondents' communications with their relatives.

iv. Culture study

Table 17: Descriptive Statistics for Culture questions

	N	Range	Minimum	Maximum	Mean	Std. Deviation
I consider myself to be Anglophone	751	8	1	9	6.26	3.01
I consider myself to be Francophone	743	8	1	9	3.75	3.06
I consider myself to be Allophone	722	8	1	9	4.13	3.30
My parents are Anglophones	743	8	1	9	4.19	3.45
My parents are Francophones	742	8	1	9	3.28	3.21
My parents are Allophones	731	8	1	9	4.90	3.62
All my close friends are Anglophones	747	8	1	9	6.13	2.81
All my close friends are Francophones	740	8	1	9	3.90	2.80
All my close friends are Allophones	731	8	1	9	4.31	3.02
Valid N (listwise)	701					

Based on a 9-point Likert scale where 1 equals to being the lowest degree of agreement and 9 being the highest degree of agreement, most respondents considered themselves as Anglophones. This conclusion can be supported from their self-evaluations that in general, the mean value for the self-identification as Anglophone is 6.26, almost double than that as Francophone (3.75) and Allophone (4.13). Most respondents' best friends are more Anglophone (6.13) than Francophone (3.90) or Allophone (4.31). Cultural diversity among respondents' families and friends is again evident in the summary statistics. In this case, standard deviations for Allophone items are the highest indicating a wide distribution of respondents' responses regarding this aspect.

II. Factor analysis and reliability study

Before testing the hypotheses, an exploratory factor analysis was conducted to verify the existence of the dimensions proposed in the literature review, and to examine the reliability of the measurements used for the constructs.

First, a factor analysis was conducted on all items used to measure the three dimensions of intangibility, the five types of perceived risk, and the constructs of knowledge, involvement and difficulty of evaluation. To verify the existence of these eleven construct, a factor analysis using principal component extraction and Oblimin rotation was run fixing the number of factors extracted at eleven. The initial output showed that two items used to measure mental intangibility, mental 16 (The image of a _____ comes to my mind right away) and mental 17 (I have a clear picture of a _____), loaded together with items designed to measure generality and other factors. Therefore, these two items were deleted, and the factor analysis was re-run. The final statistical results for this analysis are presented in table 18:

Table 18: Results of the factor analysis

Construct studied	Items	% of Variance	Loading	Alpha
Intangibility	***Physical intangibility (factor 5)***	5.635		.8276 .7747
	Phys 11: I can physically grasp _____		.941	
	Phys 12: _____ are physically very tangible		.898	
	Phys 10: _____ is very easy to see and touch		.797	
	Mental intangibility (factor 7)	4.129		.9109
	Mental 20: This is not the sort of ___ that is easy to picture		.879	
	Mental 19: This is a difficult ____ to think about		.873	
	Mental 18: I need more information about _____ to get a clear idea (image) of what it is		.663	
	Generality (factor 8)	2.602		.8668
	Gen 14: It is not difficult to give a precise description of a ____		.925	
	Gen 15: It is easy to describe many features related to a _____		.907	
	Gen 13: I could easily explain many features associated with		.850	

Perceived risk	***Time risk (factor 1)*** TRISK38: Purchasing a ____ will involve important time losses TRISK37: Purchasing a ___ will lead to an inefficient use of my time TRISK39: The demands on my schedule are such that purchasing a ___ concerns me because it would impose even greater time pressure on me.	25.455	.970 .933 .775	.9382
	Social risk (factor 4) SRISK44: If I used a ____, I would be held in higher esteem by my family SRISK43: If I used a ____, I would be held in higher esteem by my friends SRISK45: Purchasing a ____ within the next twelve months would cause me to be considered as foolish by some people whose opinion I value	6.789	.968 .960 .548	.8705
	Performance risk (factor 9) PRISK41: As I consider the purchase of a ___ in the near future, I worry about whether it will really "perform" as well as it is supposed to PRISK42: The thought of purchasing a _____ causes me to be concerned for how really reliable that product will be PRISK40: If I were to purchase a ____ within the next twelve months, I would be concerned that the brand will not provide the level of benefits that I would be expecting	2.420	.939 .814 .596	.9094
	Psychological risk (factor 10) YRISK48: The thought of purchasing a ____ causes me to experience unnecessary tension YRISK47: The thought of purchasing a ____ makes me feel psychologically uncomfortable YRISK46: The thought of purchasing a ____ gives me a feeling of unwanted anxiety	2.307	.919 .914 .913	.9673
	Financial risk (factor 11) FRISK35: Purchasing a ___ could involve important financial losses FRISK34: If I bought a ___ for myself within the next twelve months, I would be concerned that this financial investment would be wise FRISK36: If I bought a ___ for myself within the next twelve months, I would be concerned that I would not get my money's worth	1.908	.900 .863 .758	.9144
Difficulty of evaluation	***Difficulty of evaluation (factor 6)*** Given that I have to buy a ___ , evaluating a ___ will be: DIFF24: Very complicated to not complicated at all DIFF23: Very complex to very simple DIFF22: Very problematic to not problematic at all DIFF21: Very difficult to very easy	5.104	.942 .936 .902 .861	.9524
Knowledge	***Knowledge (factor 2)*** KNOW6: Compared to experts in this area, my knowledge of a _____ is KNOW4: Would you consider yourself uninformed or informed about a____ KNOW3: In general, my knowledge of a ____ is KNOW5: Compared to my friends and acquaintance, my knowledge of a ____ is INFO8: The global information search I have performed on _____ is EXP9: I don't have much experience purchasing _____ EXP7: I use ___ (never to very often)	16.399	.842 .835 .807 .800 .719 .583 .536	0.8907
Involvement	***Involvement (factor 3)*** I perceive a ____ is: INV26: Very significant to very insignificant INV25: Very important to very unimportant	9.105	.951 .941	0.9447

	INV27: Very valuable to not valuable at all A ____ is		.923	
	INV28: Matters a lot to me to doesn't matter to me		.838	
	INV29: Means a lot to me to means nothing to me		.828	

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

The factor analysis shows eleven distinct dimensions as posited, i.e., physical intangibility, mental intangibility, generality, financial risks, social risks, time risks, psychological risks, performance risks, involvement and knowledge. Among them, time risk explained most of the variance (25.455%), followed by knowledge (16.399%), and involvement (9.105%). Moreover, all items loaded highly on the expected factor. The coefficient alpha for each construct was over 0.82 indicating highly reliable measures. Only the third item of social risk (SRISK45: Purchasing a ____ within the next twelve months would cause me to be considered as foolish by some people whose opinion I value) and the seventh item of knowledge (EXP 7: I use ___ (never to very often)) cross-loaded with other factors. SRISK 45 had a cross loading of 0.324 with psychological risk and EXP7 had a cross loading of 0.391 with involvement. Nevertheless, these loadings were low. We can thus conclude that the measures adequately represent the constructs.

III. Test of hypotheses

i. T-test

Before starting the hypothesis testing, the data file was rearranged. The data file used for the factor analysis was based on the 783 respondents. However, to conduct the following analyses across products and services, the data file needed to be rearranged by products and services. Instead of using respondents as a basis of analysis, now, each single product and service studied became a unit. This enlarged the sample size to 2,349,

since there were three products and services on each questionnaire. Thus, there were 2,349 (783 respondents*3 products and service) responses for the twelve products and services studied.

Moreover, to facilitate the interpretation, some scales were reversed before the analysis to associate high scale values with high construct values, as such higher values reflect higher intangibility, and likewise for risk, difficulty of evaluation, knowledge and involvement.

Next, t-tests were conducted in order to test hypotheses 1 to 3. The statistical results for the t-tests are presented in Tables 19 and 20:

Table 19: Mean comparisons for generality by services and products (H1)

		Generic category or brand	N	Mean	Std. Deviation	*Analysis*	t-test for Equality of Means		Sig. (2-tailed)
							t	df	
Generality	**Services**	***Generic category***	583	4.2662	2.33299	*Equal variances assumed*	-1.615	1159	.107
		brand	578	4.4934	2.45883	*Equal variances not assumed*	-1.615	1154.690	.107
	Products	***Generic category***	584	2.8998	1.75492	*Equal variances assumed*	-8.505	1163	.000
		brand	581	3.9085	2.26232	*Equal variances not assumed*	-8.500	1092.704	.000

Table 20: Mean comparisons for mental intangibility by services and products (H2)

		Generic category or brand	N	Mean	Std. Deviation	*Analysis*	t-test for Equality of Means		Sig. (2-tailed)
							t	df	
Mental intangibility	**Services**	***Generic category***	583	3.9680	2.31397	*Equal variances assumed*	1.118	1159	.264
		brand	578	3.8183	2.24485	*Equal variances not assumed*	1.118	1158.455	.264
	Products	***Generic category***	584	2.3587	1.77449	*Equal variances assumed*	-6.732	1163	.000
		brand	581	3.1033	1.99462	*Equal variances not assumed*	-6.730	1146.074	.000

Table 21: Mean comparisons for physical intangibility by services and products (H3a, H3b)

		Generic category or brand	N	Mean	Std. Deviation	*Analysis*	t-test for Equality of Means		Sig. (2-tailed)
							t	df	
Physical intangibility	**Services**	***Generic category***	584	5.8410	2.92761	*Equal variances assumed*	5.208	1160	.000
		brand	578	4.9495	2.90699	*Equal variances not assumed*	5.209	1159.988	.000
	Products	***Generic category***	585	1.8772	1.42249	*Equal variances assumed*	-6.026	1163	.000
		brand	580	2.4397	1.74812	*Equal variances not assumed*	-6.020	1113.124	.000

Note: shaded areas represent findings that support the hypotheses

Only **H3a** (i.e., for services, the degree of physical intangibility in the generic category level is higher than in brand level) is **supported**. The above result (see shaded area in Table 21) shows that, for services, the mean value for physical intangibility in a generic level is higher than that in a brand level.

However, for generality and mental intangibility (especially for products), the mean values in the brand context are greater than those in a generic context representing that the branded services/products are perceived more intangible than the generic services/products. To services under mental intangibility, the mean difference is not

significant (=0.264) though the mean value of branded services are higher than generic ones. Obviously, these findings are contrary to the literature review and all past studies in services marketing. This might due to the following reasons: 1) the online/offline purchase scenario, with respondents lacking experience on online purchases, 2) the kinds of products and services selected. First, since half of the data collected was for the online purchase situation, it is possible that respondents' perceived intangibility may be greatly influenced by the online context. Second, several "virtual products" were selected in this research, such as Internet web browser and CD. Results for these specific products might affect the overall results. Hence, in order to further test the above reasoning, the same analysis was run for each individual product/service studied. Results are presented in Tables 22, 23 and 24:

Table 22: T-test results for each product and service (generality)

	Product (generic vs. brand)		***Product (generic vs. brand)***		***Service (generic vs. brand)***	
	Jean	Levi's jean	Internet browser	Netscape internet browser	Pizzeria dinner	Pizza Hut's pizzeria dinner
Mean	2.4570	3.5113	4.7752	5.5349	3.3540	2.8308
Std. deviation	1.48980	1.96797	2.28529	2.23507	2.34861	1.89875
t-value (Equal variance)	-5.938		-3.301		2.417	
Sig. (1-talied) (Equal variance)	.000		.001		.008	
	Product (generic vs. brand)		***Product (generic vs. brand)***		***Service (generic vs. brand)***	
	Computer	IBM computer	Compact Disk	Beatles' CD	Chequing account	Royal Bank's chequing account
Mean	3.2423	3.9607	2.9966	4.2491	4.6889	5.1451
Std. deviation	1.86994	2.17508	1.79585	2.55268	2.11227	2.29576
t-value (Equal variance)	-3.502		-5.590		-2.037	
Sig. (1-talied) (Equal variance)	.001		.000		.021	

Note: shaded areas represent findings that support the hypotheses

Table 23: T-test results for each product and service (mental intangibility)

	Product (generic vs. brand)		***Product (generic vs. brand)***		***Service (generic vs. brand)***	
	Jean	Levi's jean	Internet browser	Netscape internet browser	Pizzeria dinner	Pizza Hut's pizzeria dinner
Mean	2.2595	2.8116	4.1692	4.7719	3.2646	2.5932
Std. deviation	1.77546	1.87369	2.42017	2.31055	2.33096	1.67686
t-value (Equal variance)	-2.972		-2.498		3.262	
Sig. (1-talied) (Equal variance)	.001		.006		.001	
	Product (generic vs. brand)		***Product (generic vs. brand)***		***Service (generic vs. brand)***	
	Computer	IBM computer	Compact Disk	Beatles' CD	Chequing account	Royal Bank's chequing account
Mean	2.5655	3.3701	2.2491	3.1237	4.4691	4.1174
Std. deviation	1.85702	2.08454	1.67625	1.98922	2.00874	2.12922
T-value (Equal variance)	-4.030		-4.683		1.671	
Sig. (1-talied) (Equal variance)	.000		.000		.048	

Note: shaded areas represent findings that support the hypotheses

Table 24: T-test results for each product (physical intangibility)

	Product (generic vs. brand)							
	Jean	Levi's jean	Internet browser	Netscape internet browser	Computer	IBM computer	CD	Beatles' CD
Mean	1.7388	2.2934	6.8940	6.0462	2.2781	2.4880	1.6120	2.5361
Std. deviation	1.16424	1.64307	2.27797	2.31756	1.75799	1.60315	1.17650	1.97308
t-value (Equal variance)	-3.829		3.624		-1.232		-5.614	
Sig. (1-talied) (Equal variance)	.000		.000		.109		.000	

Note: shaded areas represent findings that support the hypotheses

The above analysis shows that generally speaking, H1 (i.e., the degree of generality is higher in a generic category context than in a brand one) held true for the

pizzeria dinner; and H2 (i.e., the degree of mental intangibility is higher in a generic category context than in a brand one) held true for the two services namely the pizzeria dinner and the chequing account service. In summary, mental intangibility proved to be lower in the brand context for both services; and generality for the pizzeria dinner.

However, for all the **products** selected in this study, **H1 and H2 were not supported**. Results indicate that contrary to what was hypothesized, the brand level context yielded higher mean values for intangibility than the generic one. The same pattern repeated across all the products for mental intangibility, generality, and physical intangibility (except for Internet browser). Therefore, results show that brand and intangibility are unexpectedly positively related. This surprising result may also be due to the Internet influence. Hence, it is suggested that future research should further explore this aspect.

ii. Regression analysis

Regression analysis was used to test the remaining hypotheses (H4 to H13). Multiple regression analysis is a widely used research method to test the relationship between a dependent variable with various independent variables. Hence, this method was used in order to verify the hypotheses proposed. To minimize multicolinearity effects, a step-wise method was applied in this case.

1. Analysis of the three dimensions of intangibility, knowledge, and involvement with ***difficulty of evaluation*** *(H4a, H5a, H6a, H9a, H12a).*

Table 25: Regression analysis results for difficulty of evaluation

	Adjusted R Square	F	Sig.
Regression	.147	81.852	.000

	Unstandardized Coefficients	Standardized Coefficients	T-Value	Sig.
(Constant)	3.636		17.862	.000
GENERALITY	.173	.178	6.551	.000
KNOWLEDGE	-.238	-.207	-8.429	.000
INVOLVEMENT	9.239E-02	.094	4.426	.000
MENTAL INTANGIBILITY	8.091E-02	.079	3.600	.000
PHYSICAL INTANGIBILITY	3.925E-02	.051	2.157	.015

Note: shaded area represents the one-way significance

The above statistics show that generality, mental intangibility, physical intangibility, knowledge, and involvement, are all significantly related to difficulty of evaluation (based on $p \leq 0.01$). Thus, **H4a, H5a, H6a, H9a, H12a are all supported**.

*2. Analysis of the three dimensions of intangibility, knowledge, and involvement with **perceived risks** (H4b, H5b, H6b, H9b, H12b).*

*1) Analysis of the three dimensions of intangibility, knowledge, and involvement with **time risk***

Table 26: Regression analysis results for time risk

	Adjusted R Square	F	Sig.
Regression	.066	56.741	.000

	Unstandardized coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	4.128		24.274	.000
KNOWLEDGE	-.162	-.142	-6.205	.000
MENTAL INTANGIBILITY	.120	.118	5.643	.000
INVOLVEMENT	-9.163E-02	-.094	-4.274	.000

2) Analysis of the three dimensions of intangibility, knowledge, and involvement with **social risk**

Table 27: Regression analysis results for social risk

	Adjusted R Square	F	Sig.
Regression	.032	20.308	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	1.682		14.231	.000
MENTAL INTANGIBILITY	.127	.160	6.864	.000
INVOLVEMENT	7.566E-02	.099	4.727	.000
PHYSICAL INTANGIBILITY	-5.542E-02	-.092	-3.687	.000
GENERALITY	5.048E-02	.067	2.563	.010

*3) Analysis of the three dimensions of intangibility, knowledge, and involvement with **psychological risk***

Table 28: Regression analysis results for psychological risk

	Adjusted R Square	F	Sig.
Regression	.035	29.582	.000

	Unstandardized coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	2.189		10.987	.000
MENTAL INTANGIBILITY	.132	.137	5.964	.000
GENERALITY	4.818E-02	.052	2.035	.021
KNOWLEDGE	-4.857E-02	-.045	-1.861	.031

Note: shaded area represents the one-way significance

*4) Analysis of the three dimensions of intangibility, knowledge, and involvement with **financial risk***

Table 29: Regression analysis results for financial risk

	Adjusted R Square	F	Sig.
Regression	.049	41.228	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	3.471		19.715	.000
MENTAL INTANGIBILITY	.139	.134	6.321	.000
KNOWLEDGE	-.188	-.161	-6.955	.000
INVOLVEMENT	8.990E-02	.090	4.050	.000

5) Analysis of the three dimensions of intangibility, knowledge, and involvement with ***performance risk***

Table 30: Regression analysis results for performance risk

	Adjusted R Square	F	Sig.
Regression	.034	42.050	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	4.251		25.171	.000
MENTAL INTANGIBILITY	.125	.120	5.609	.000
KNOWLEDGE	-.129	-.110	-5.137	.000

6) ***Summary*** *of the standardized coefficients and significance of the above five analyses for the three dimensions of intangibility, knowledge, and involvement with perceived risk*

Table 31: Regression analysis results for intangibility, knowledge and involvement with five types of risks

	Time risk	Social risk	Psychological risk	Financial risk	Performance risk
Physical intangibility		-.092*			
Mental intangibility	.118 *	.160*	.137*	.134*	.120*
Generality		.067**	.052***		
Knowledge	-.142*		-.045***	-.161*	-.110*
Involvement	-.094*	.099*		.090*	

Significant level: * ≤.001, **≤.01, ***≤.05

Note: shaded area represents the one-way significance

Table 31 shows that **H4b** (mental intangibility) was **fully supported** across all five types of risks. **H5b** (generality) was **supported** for social risk and psychological risk. For the other three risks, generality was not found to be significantly related to perceived risk. Physical intangibility was found to be significantly negatively related to social risk only. This finding was not consistent with H6b which hypothesized physical intangibility to be positively related to perceived risk.

The hypothesized relationship between knowledge and perceived risk was also proved for all types of risk with the exception of social risk. Hence, **H9b is supported**.

Finally, the hypothesized relationship between involvement and perceived risk was found only for social risk and financial risk. For time risk, the relationship was found to be negative which is in the opposite direction to what was hypothesized. Therefore, **H12b is partially supported.**

3. Analysis of the moderating effects of knowledge and involvement on ***difficulty of evaluation*** *(H8a and H11a)*

Table 32: Regression analysis results for difficulty of evaluation

	Adjusted R Square	F	Sig.
Regression	.149	69.356	.000

	Unstandardized Coefficients	Standardized Coefficients	T-Value	Sig.
(Constant)	3.273		13.014	.000
Knowledge	-.161	-.140	-3.811	.000
Knowledge and Mental intangibility	-2.255E-02	-.112	-2.450	.007

Table 32 shows that knowledge interacts with mental intangibility in reducing difficulty of evaluation. This moderating effect can be explained by looking at Figure 7. Involvement, however, was found to have no interaction with any of the three dimensions of intangibility. Hence, **H8a is supported, whereas H11a is not**.

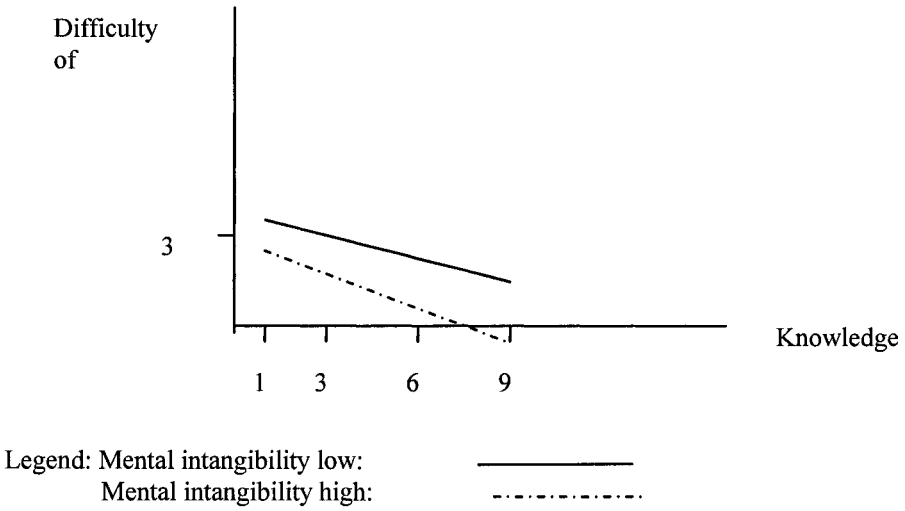


Figure 7: Interaction of knowledge and mental intangibility on difficulty of evaluation

Figure 7 explains how knowledge interacts with mental intangibility to reduce difficulty of evaluation. When knowledge is low (knowledge =1) and mental intangibility is low, consumer evaluation difficulty is higher than when knowledge is low but mental intangibility is high. When knowledge is high (knowledge =9) and mental intangibility is low, consumers' evaluation difficulty is higher than when knowledge is high but mental intangibility is high.

*4. Analysis of the moderating effects of knowledge and involvement on the **five types of perceived risk** (H8b and H11b)*

*1) Analysis of the three dimensions of intangibility, knowledge, involvement and interaction relationship with **time risk***

Table 33: Regression analysis results for time risk

	Adjusted R Square	F	Sig.
Regression	.077	33.875	.000

	Unstandardized coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	3.569		12.934	.000
Knowledge	-.232	-.204	-4.689	.000
Involvement and generality	-4.838E-02	-.292	-5.478	.000
Involvement	8.670E-02	.089	2.215	.013
Knowledge and generality	1.999E-02	.086	1.874	.030

Table 33 shows that knowledge and involvement interact with generality under time risk. Their interactions can be further demonstrated by the following figures:

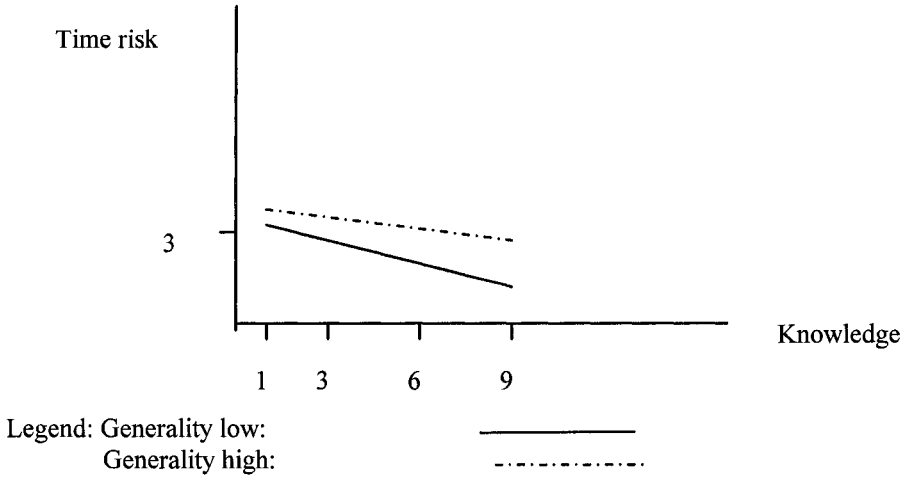


Figure 8: Interaction of knowledge and generality on time risk

Figure 8 indicates that when knowledge is low (knowledge =1) and generality is high, consumer perceived time risk is greater than when knowledge is low and generality is low. When knowledge is high (knowledge =9) and generality is high, consumer perceived time risk is greater than when knowledge is high but generality is low.

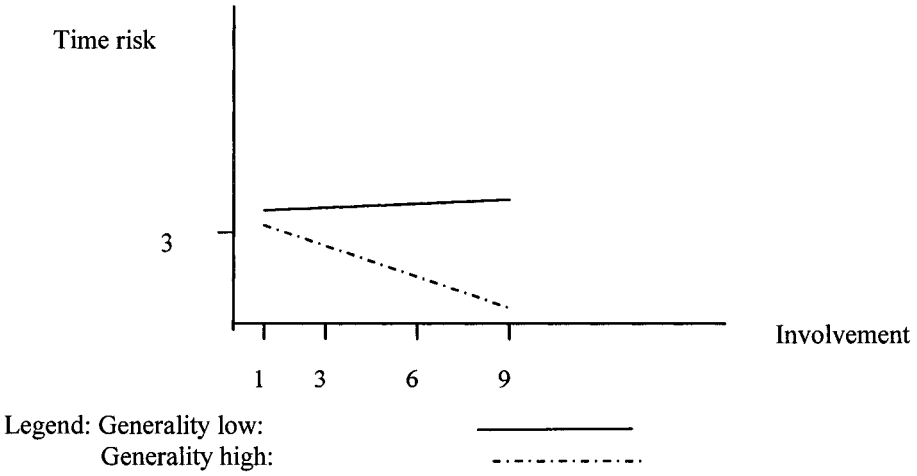


Figure 9: Interaction of involvement and generality on time risk

Figure 9 shows that when involvement is low (=1) and generality is low, consumer perceived time risk is greater than when involvement is low but generality is high. When involvement is high (=9) and generality is low, consumer perceived time risk is greater than when involvement is high but generality is high.

2) Analysis of the three dimensions of intangibility, knowledge, involvement and interaction relationship with ***social risk***

Table 34: Regression analysis results for social risk

	Adjusted R Square	F	Sig.
Regression	.050	16.420	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	1.934		9.695	.000
Knowledge and mental intangibility	4.641E-02	.296	5.343	.000
Involvement and generality	1.258E-02	.097	3.110	.001
Involvement and physical intangibility	-1.827E-02	-.193	-3.235	.001
Knowledge	-.173	-.194	-4.413	.000
Involvement	.189	.247	5.786	.000
Involvement and mental intangibility	-2.996E-02	-.222	-3.799	.000
Knowledge and physical intangibility	8.077E-03	.296	1.356	.009

Table 34 indicates that knowledge interacts with mental intangibility and physical intangibility under social risk. At the same time, involvement interacts with all the three dimensions of intangibility.

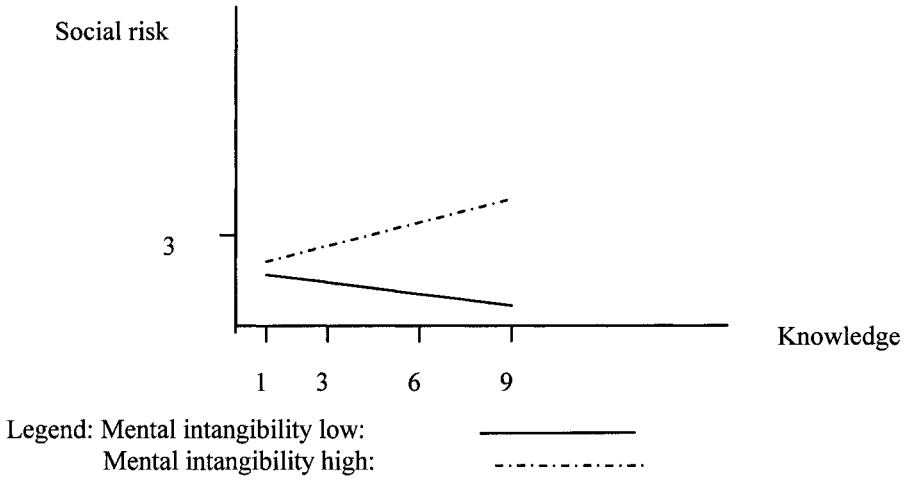


Figure 10: Interaction of knowledge and mental intangibility on social risk

Figure 10 shows that when consumer knowledge is low (knowledge =1) and mental intangibility is high, consumers' perceived social risk is greater than when knowledge is low and mental intangibility is low. On the other hand, when knowledge is high (knowledge =9) and mental intangibility is high, consumers' perceived social risk is greater than when knowledge is high but mental intangibility is low.

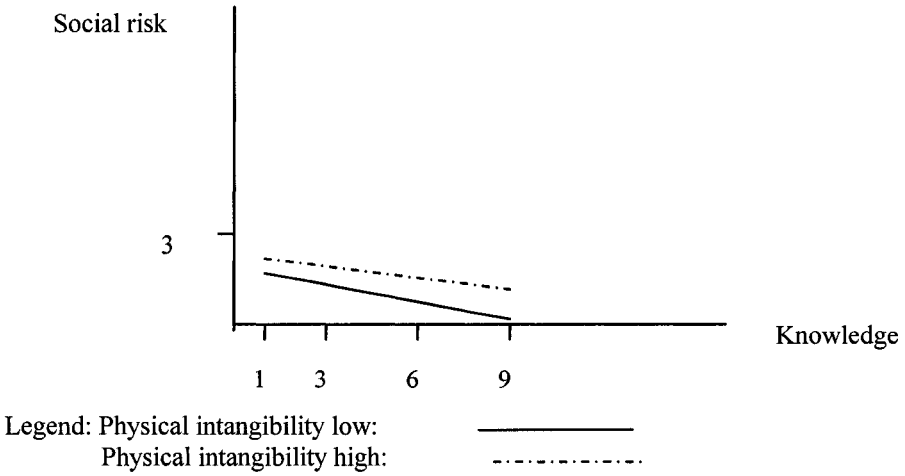


Figure 11: Interaction of knowledge and physical intangibility on social risk

The above figure indicates that when knowledge is low (knowledge =1) and physical intangibility is high, consumer perceived social risk is greater than when knowledge is low and physical intangibility is low. When knowledge is high (knowledge =9) and physical intangibility is high, consumer perceived social risk is greater than when knowledge is high but physical intangibility is low.

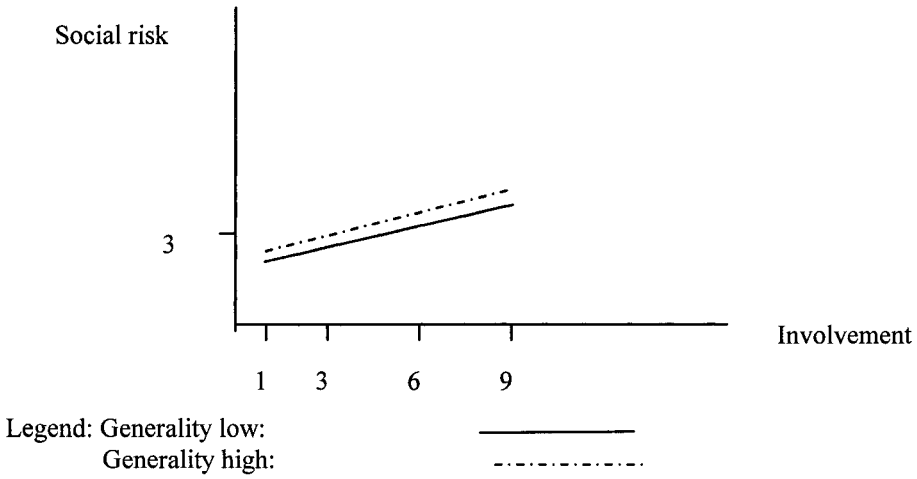


Figure 12: Interaction of involvement with generality on social risk

Figure 12 shows that when involvement is low (involvement =1) and generality is high, consumers' perceived social risk is greater than when involvement is low and generality is low. When involvement is high (involvement =9) and generality is high, consumers' perceived social risk is greater than when involvement is high but generality is low.

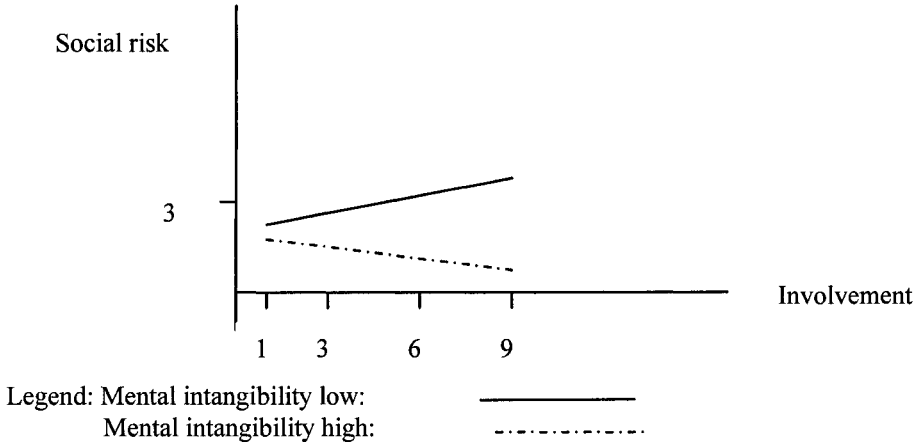


Figure 13: Interaction of involvement with mental intangibility on social risk

Figure 13 indicates that when involvement is low (involvement =1) and mental intangibility is low, consumers' perceived social risk is greater than when involvement is low but mental intangibility is high. When involvement is high (involvement =9) and mental intangibility is low, consumers' perceived social risk is greater than when involvement is high and mental intangibility is high.

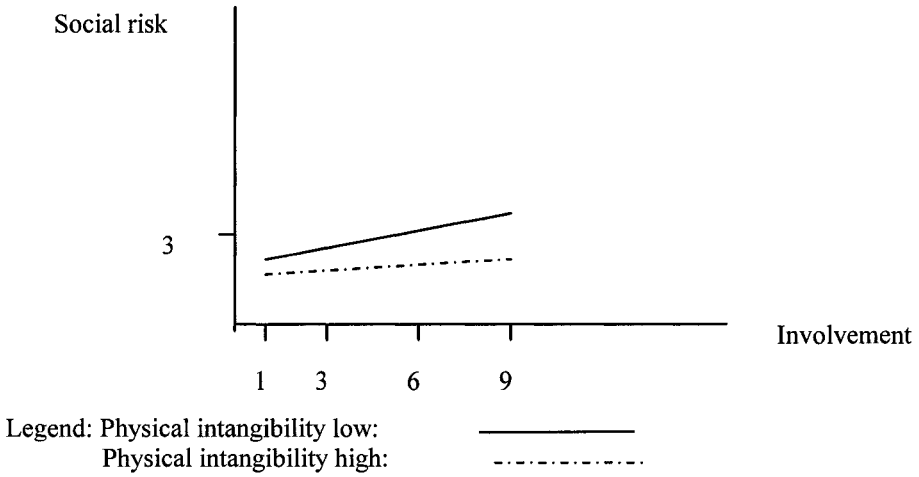


Figure 14: Interaction of involvement with physical intangibility on social risk

Figure 14 shows that when involvement is low (involvement =1) and physical intangibility is low, consumers' perceived social risk is greater than when involvement is low but physical intangibility is high. When involvement is high (involvement =9) and physical intangibility is low, consumers' perceived social risk is greater than when involvement is high and physical intangibility is high.

3) Analysis of the three dimensions of intangibility, knowledge, involvement and interaction relationship with ***psychological risk***

Table 35: Regression analysis results for psychological risk

	Adjusted R Square	F	Sig.
Regression	.045	14.729	.000

	Unstandardized coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	1.763		6.459	.000
Involvement and physical intangibility	-2.390E-02	-.208	-3.677	.000
Involvement	.185	.198	4.730	.000
Knowledge	-.145	-.134	-3.231	.001
Knowledge and mental intangibility	2.475E-02	.130	2.423	.007
Involvement and mental intangibility	-2.208E-02	-.135	-2.343	.009

Table 35 indicates that for psychological risk, knowledge interacts with mental intangibility while involvement interacts with both mental intangibility and physical intangibility.

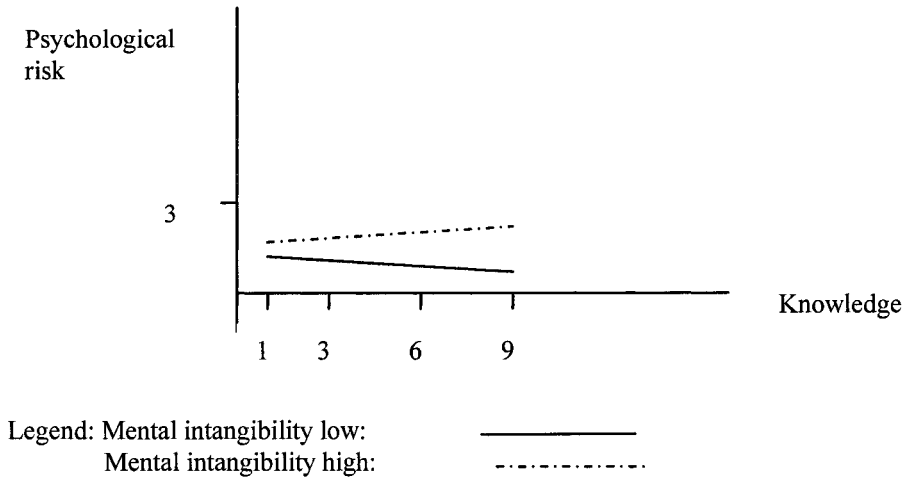


Figure 15: Interaction of knowledge with mental intangibility on psychological risk

Figure 15 indicates that when knowledge is low (knowledge =1) and mental intangibility is high, consumers' perceived psychological risk is greater than when knowledge is low and mental intangibility is low. When knowledge is high (knowledge =9) and mental intangibility is high, consumers' perceived psychological risk is greater than when knowledge is high and mental intangibility is low.

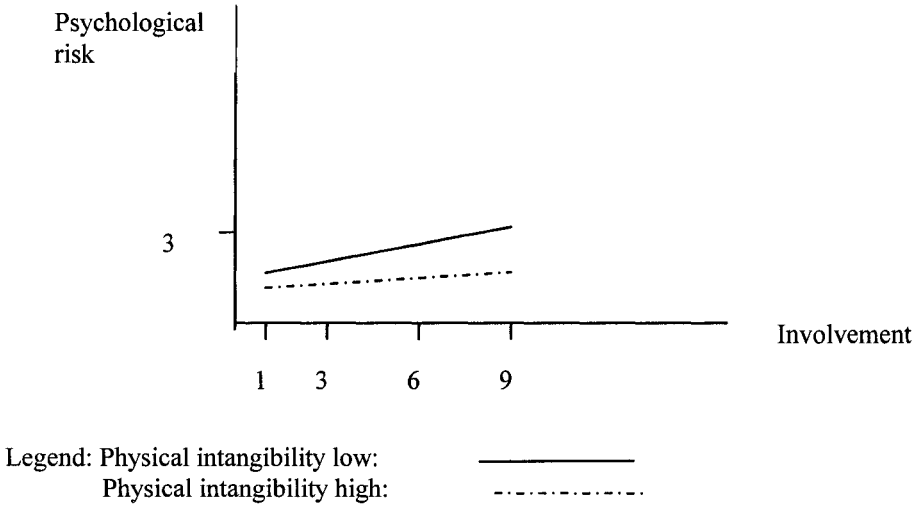


Figure 16: Interaction of involvement with physical intangibility on pyschological risk

Figure 16 indicates that when involvement is low (involvement =1) and physical intangibility is low, consumers' perceived psychological risk is greater than when involvement is low but physical intangibility is high. When involvement is high (involvement =9) and physical intangibility is low, consumers' perceived psychological risk is greater than when involvement is high and physical intangibility is high.

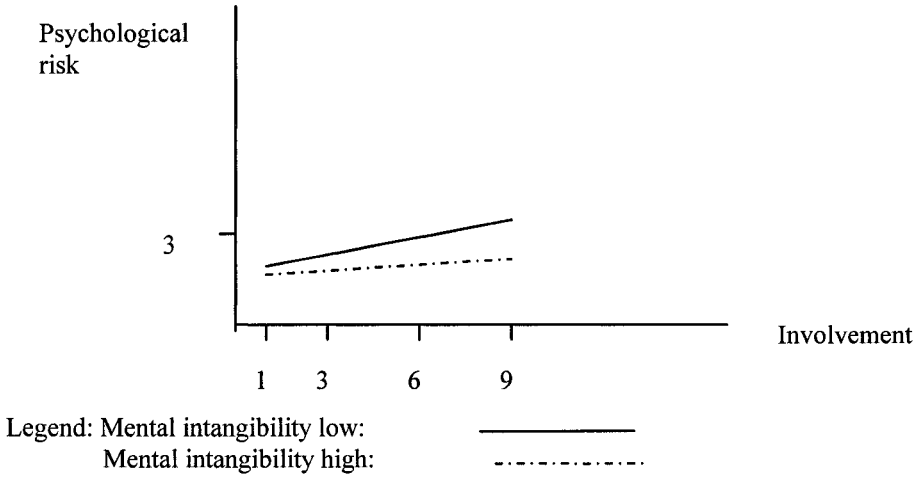


Figure 17: Interaction of involvement with mental intangibility on psychological risk

Figure 17 indicates that when involvement is low (involvement =1) and mental intangibility is low, consumer perceived psychological risk is greater than when involvement is low but mental intangibility is high. When involvement is high (involvement =9) and mental intangibility is low, consumer perceived psychological risk is greater than when involvement is high and mental intangibility is high.

4) Analysis of the three dimensions of intangibility, knowledge, involvement and interaction relationship with ***financial risk***

Table 36: Regression analysis results for financial risk

	Adjusted R Square	F	Sig.
Regression	.059	30.242	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	2.911		13.146	.000
Involvement	.210	.210	6.472	.000
Involvement and physical intangibility	-3.255E-02	-.263	-4.901	.000

For financial risk, involvement interacts with physical intangibility. However, knowledge doesn't moderate any of the dimensions of intangibility with financial risk.

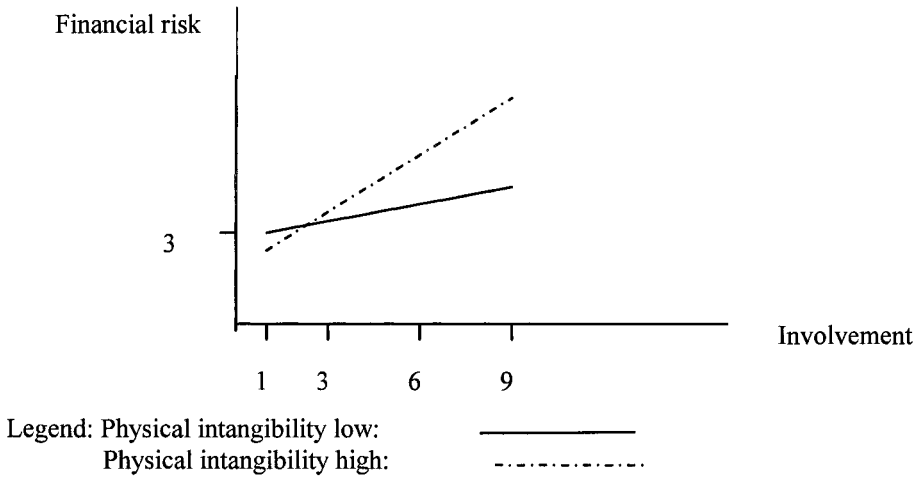


Figure18: Interaction of involvement and physical intangibility on financial risk

Figure 18 indicates that when involvement is low (involvement =1) and physical intangibility is low, consumers' perceived financial risk is greater than when involvement is low but physical intangibility is high. However, when involvement is high (involvement =9) and physical intangibility is high, consumers' perceived financial risk is greater than when involvement is high but physical intangibility is low.

5) Analysis of the three dimensions of intangibility, knowledge, involvement and interaction relationship with ***performance risk***

Table 37: Regression analysis results for performance risk

	Adjusted R Square	F	Sig.
Regression	.041	21.321	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	3.635		16.137	.000
Involvement and physical intangibility	-3.152E-02	-.253	-4.666	.000
Involvement	.111	.110	3.352	.001

Similar to financial risk, only involvement functions as moderator between physical intangibility and performance risk. Knowledge doesn't moderate.

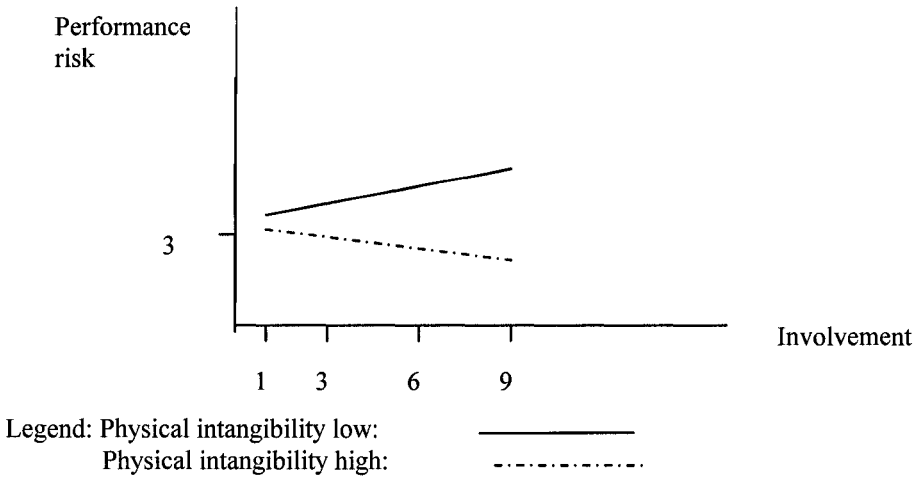


Figure 19: Interaction of involvement and physical intangibility on performance risk

Figure 19 indicates that when involvement is low (involvement =1) and physical intangibility is low, consumers' perceived performance risk is greater than when involvement is low but physical intangibility is high. On the other hand, when

involvement is high (involvement =9) and physical intangibility is low, consumers' perceived performance risk is greater than when involvement is high and physical intangibility is high.

*6) **Summary** of the standardized coefficients and significance of the above five analyses on the moderating effects of knowledge and involvement between intangibility and perceived risk*

Table 38: Summary for the moderating effects of knowledge and involvement on the three dimensions of intangibility and the five types of risks

	Time risk	Social risk	Psychological risk	Financial risk	Performance risk
Knowledge	-.204*	-.194*	-.134*	-.160*	-.102*
Knowledge and Physical intangibility		.296**			
Knowledge and Mental intangibility		.296*	.130**		
Knowledge and generality	.086***				
Involvement	.089**	.247*	.198*	.210*	.110*
Involvement and Physical intangibility		-.193*	-.208*	-.263*	-.253*
Involvement and Mental intangibility		-.222*	-.135**		
Involvement and generality	-.292*	.097*			

Significant level: * ≤.001, **≤.01, ***≤.05,

H8b and H11b are supported. Overall, knowledge moderates mental intangibility and time risk; mental intangibility and physical intangibility with social risk; and mental intangibility with psychological risk. Meanwhile, involvement moderates generality with time risk; mental intangibility, physical intangibility and generality with social risk; mental intangibility and physical intangibility with psychological risk; and physical intangibility with performance and financial risk.

Generally speaking, first, when knowledge is low but the intangibility (i.e., physical intangibility, mental intangibility and generality) is high, or when knowledge is high and the intangibility is high, respondents' perceived risk (i.e., time, social and psychological risk) is high. However, when knowledge is low and intangibility is low, or when knowledge is high but the intangibility is low, respondents' perceived risk is low.

Second, when involvement is low and and the intangibility (i.e., physical intangibility, mental intangibility and generality) is low, or when involvement is high but the intangibility is low, respondents' perceived risk (i.e., time, social, psychological and performance risk) is high. However, when involvement is low but intangibility is high, or when involvement is high and the intangibility is high, respondents' perceived risk is low.

The above-mentioned moderating influence of involvement holds true for most of the cases except for mental intangibility on social risk and physical intangibility on financial risk. The moderating effect of involvement with mental intangibility on social risk is similar to the moderating pattern of knowledge. Whereas the moderating effect of involvement with physical intangibility on financial risk is quite different in that financial risk is perceived high when involvement is low and physical intangibility is low, or when involvement is high and physical intangibility is high.

5. Comparison between the brand and the generic product categories on the three dimensions of intangibility with ***difficulty of evaluation*** *(H7a)*

This analysis is conducted in the same way as in the previous regression analyses with the only difference that data on the generic product category are used for the generic analysis whereas data on the brand context are used for the brand analysis.

1). Analysis of the three dimensions of intangibility with difficulty of evaluation from ***a generic perspective***

Table 39: Regression analysis results for intangibility on difficulty of evaluation from a generic perspective

Generic	Adjusted R Square	F	Sig.
Regression	.122	82.412	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	2.795		23.085	.000
GENERALITY	.321	.311	9.258	.000
PHYSICAL INTANGIBILITY	4.743E-02	.064	1.908	.057

2) Analysis of the three dimensions of intangibility with difficulty of evaluation from ***a brand perspective***

Table 40: Regression analysis results for intangibility on difficulty of evaluation from a brand perspective

Brand	Adjusted R Square	F	Sig.
Regression	.141	97.570	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	2.267		17.196	.000
GENERALITY	.249	.267	8.661	.000
MENTAL INTANGIBILITY	.173	.168	5.440	.000

3). Summary of the above findings and comparisons

Table 41: Comparison of the three dimensions of intangibility on difficulty of evaluation from generic and brand perspectives

	Difficulty of evaluation	
	Generic	Brand
Physical intangibility	.064***	
Mental intangibility		.168*
Generality	.311*	.267*

Significant level: * ≤.001, **≤.01, ***≤.05

Note: the shaded areas represent the findings that support the hypotheses

Results in Table 41 show that for generality, the brand category has lesser effect on difficulty of evaluation than the generic one. The same relationship exists for physical intangibility. However, for mental intangibility, the effect is not supported. Therefore, in summary, **H7a is supported for two dimensions of intangibility only** (i.e., generality and physical).

*6. Comparison between brand and generic product categories of the three dimensions of intangibility with **perceived risk** (H7b)*

*1). Analysis based on **generic** product category*

In this part, the analysis will be first separated into the five types of perceived risk. Then, the same analysis will be presented in the same order for the brand level. Finally, a summary table will be presented, followed by a discussion.

(1). Analysis of **time risk**

Table 42: Regression analysis results for intangibility and time risk from a generic perspective

	Adjusted R Square	F	Sig.
Regression	.036	22.859	.000

	Unstandardized coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	2.412		18.445	.000
MENTAL INTANGIBILITY	.123	.124	3.899	.000
GEN	.105	.104	3.269	.001

(2). Analysis of **social risk**

Table 43: Regression analysis results for intangibility and social risk from a generic perspective

	Adjusted R Square	F	Sig.
Regression	.040	17.116	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	1.879		17.691	.000
MENTAL INTANGIBILITY	.129	.161	4.976	.000
GEN	.103	.127	3.472	.001
PHYSICAL INTANGIBILITY	-6.267E-02	-.107	-3.006	.003

(3). Analysis of **psychological risk**

Table 44: Regression analysis results for intangibility and psychological risk from a generic perspective

	Adjusted R Square	F	Sig.
Regression	.043	27.591	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	1.772		13.534	.000
MENTAL INTANGIBILITY	.127	.127	4.004	.000
GEN	.125	.123	3.883	.000

(4). Analysis of **financial risk**

Table 45: Regression analysis results for intangibility and financial risk from a generic perspective

	Adjusted R Square	F	Sig.
Regression	.039	16.764	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	2.818		20.580	.000
GEN	.167	.159	4.353	.000
MENTAL INTANGIBILITY	.130	.126	3.874	.000
PHYSICAL INTANGIBILITY	-6.690E-02	-.089	-2.490	.013

(5). Analysis of **performance risk**

Table 46: Regression analysis results for intangibility and performance risk from a generic perspective

	Adjusted R Square	F	Sig.
Regression	.025	11.057	.000

	Unstandardized coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	3.691		25.894	.000
MENTAL INTANGIBILITY GEN	.119	.112	3.421	.001
PHYSICAL INTANGIBILITY	.136	.126	3.415	.001
	-7.034E-02	-.091	-2.515	.012

*2). Analysis based on **brand** level*

(1). Analysis of **time risk**

Table 47: Regression analysis results for intangibility and time risk from a brand perspective

	Adjusted R Square	F	Sig.
Regression	.035	22.366	.000

	Unstandardized coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	2.547		18.045	.000
MENTAL INTANGIBILITY GEN	.140	.135	4.129	.000
	8.067E-02	.086	2.626	.009

(2). Analysis of **social risk**

Table 48: Regression analysis results for intangibility and social risk from a brand perspective

	Adjusted R Square	F	Sig.
Regression	.013	8.812	.000

	Unstandardized coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	2.315		22.749	.000
MENTAL INTANGIBILITY	.103	.130	4.163	.000
PHYSICAL INTANGIBILITY	-4.026E-02	-.064	-2.049	.041

(3). Analysis of **psychological risk**

Table 49: Regression analysis results for intangibility and psychological risk from a brand perspective

	Adjusted R Square	F	Sig.
Regression	.029	36.042	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	1.972		17.946	.000
MENTAL INTANGIBILITY	.162	.173	6.004	.000

(4). Analysis of **financial risk**

Table 50: Regression analysis results for intangibility and financial risk from a brand perspective

	Adjusted R Square	F	Sig.
Regression	.037	45.564	.000

	Unstandardized coefficients	Standardized Coefficients	T-values	Sig.
(Constant)	2.650		.000	.000
MENTAL INTANGIBILITY	.203	.193	.000	.000

(5). Analysis of **performance risk**

Table 51: Regression analysis results for intangibility and performance risk from a brand perspective

	Adjusted R Square	F	Sig.
Regression	.041	26.116	.000

	Unstandardized coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	2.978		23.054	.000
MENTAL INTANGIBILITY	.180	.176	5.733	.000
PHYSICAL INTANGIBILITY	4.879E-02	.060	1.956	.051

3). Summary of the above findings

Table 52: Comparison of the three dimensions of intangibility and perceived risk from a generic and brand perspective

	Time risk		Social risk		Psychological risk		Financial risk		Performance risk	
	generic	Brand	generic	Brand	generic	Brand	generic	Brand	generic	Brand
Physical intangibility			-.107**	-.064***			-.089**		-.091**	.060***
Generality	.104*	.086**	.127*		.123*		.159*		.126*	
Mental intangibility	.124*	.135*	.161*	.130*	.127*	.173*	.126*	.193*	.112*	.176*

Significant level: * ≤.001, **≤.01, ***≤.05

Note: shaded areas represent findings that support the hypotheses

H7b is partially supported. Looking at the magnitude of the standardized coefficients, the above statistics show that the hypothesized relation (**H7b**: i.e., the impact of intangibility in the generic category context on perceived risk is greater than that in a brand context) **holds true for generality**. In every type of risk, the coefficients of generality at the generic level are all greater than those at the brand level, and all the coefficients are positive. Therefore, it can be inferred that generality is positively related to perceived risk. This finding is in line with H5b.

Meanwhile, for mental intangibility, the effect is opposite to what had been hypothesized in H7b, as it appears to have greater impact at the brand level than at the generic level except for social risk, for which the comparison between generic and brand is consistent with the hypothesis.

For physical intangibility, the absolute values of the coefficients at the generic level are greater than those at the brand level. Therefore, **H7b holds true for physical intangibility** on social, financial and performance risk

*7. Comparison between the brand and the generic product/service category for the moderating effects of knowledge and involvement on **difficulty of evaluation** (H10a and H13a)*

1). Analysis based on the generic product category

Table 53: Regression analysis results for the moderating effects of knowledge and involvement on difficulty of evaluation from a generic perspective

Generic	Adjusted R Square	F	Sig.
Regression	.191	56.209	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	4.425		12.786	.000
KNOWLEDGE GEN	-.381	-.311	-9.643	.000
INVOLVEMENT PHYSICAL INTANGIBILITY	.142	.137	3.698	.000
INVOLVEMENT PHYSICAL INTANGIBILITY	.182	.181	4.372	.000
	.194	.262	3.356	.001
	-2.259E-02	-.207	-2.599	.009

*2.) Analysis based on **brand** level*

Table 54: Regression analysis results for the moderating effects of knowledge and involvement on difficulty of evaluation from a brand perspective

Brand	Adjusted R Square	F	Sig.
Regression	.151	70.646	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	2.487		17.367	.000
generality	.206	.221	6.720	.000
Mental intangibility	.290	.282	6.579	.000
Knowledge and Mental intangibility	-3.262E-02	-.144	-3.814	.000

3). Summary of above finding and comparisons:

Table 55: Comparison for the moderating effects of knowledge and involvement on difficulty of evaluation from the generic and the brand perspectives

	Difficulty of evaluation	
	Generic	Brand
Knowledge	-.311*	
Knowledge and Physical intangibility		
Knowledge and Mental intangibility		-.144*
Knowledge and generality		
Involvement	.181*	
Involvement and Physical intangibility	-.207**	
Involvement and Mental intangibility		
Involvement and generality		

Significant level: * ≤.001, **≤.01, ***≤.05

Note: the shaded areas represent the findings that support the hypotheses

A comparison on the magnitude of the coefficients shows that the hypothesized greater moderating effects of knowledge and involvement in a generic context (H10a and H13a) holds true only for involvement and physical intangibility. Therefore, **H13 is supported.** However, results show that knowledge's moderating influence with mental intangibility on difficulty of evaluation in a brand context is greater than that in a generic context. This finding is contrary to the hypothesis H10a. Therefore, H10 is not supported.

8. Comparison between brand and generic product category for the moderating effects of knowledge and involvement on ***perceived risk*** *(H10b and H13b)*

*1). Analysis based on the **generic** product category*

In this part, the analysis will first be separated into five parts in the order of five types of perceived risk. Then, the same analysis will be presented in the same order for the brand level study. Finally, a summary table will be presented, followed by a discussion.

(1). Analysis of **time risk**

Table 56: Regression analysis results for the moderating effects of knowledge and involvement on time risk from the generic perspective

	Adjusted R Square	F	Sig.
Regression	.086	19.347	.000

	Unstandardized coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	2.820		7.637	.000
Knowledge	-.182	-.153	-4.884	.000
Mental intangibility	.234	.236	3.205	.001
Involvement and Mental intangibility	-2.509E-02	-.156	-1.995	.046
Involvement	.183	.187	3.585	.000
Involvement and Physical intangibility	-4.408E-02	-.415	-4.698	.000
Physical intangibility	.253	.350	4.273	.000

(2). Analysis of **social risk**

Table 57: Regression analysis results for the moderating effects of knowledge and involvement on social risk from the generic perspective

	Adjusted R Square	F	Sig.
Regression	.064	12.464	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	1.526		4.688	.000
MENTAL INTANGIBILITY	.177	.222	2.543	.011
KNOWLEDGEGEN	2.421E-02	.136	4.168	.000
KNOWLEDGE	-1.163E-02	-.113	-3.357	.001
PHYSICAL INTANGIBILITY INVOLVEMENT	.195	.246	4.888	.000
INVOLVEMENT AND MENTAL INTANGIBILITY	-4.828E-02	-.371	-4.631	.000
KNOWLEDGE AND MENTAL INTANGIBILITY	4.130E-02	.284	3.482	.001
KNOWLEDGE	-.147	-.152	-2.854	.004

(3). Analysis of **psychological risk**

Table 58: Regression analysis results for the moderating effects of knowledge and involvement on psychological risk from the generic perspective

	Adjusted R Square	F	Sig.
Regression	.069	13.429	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	1.524		4.062	.000
MENTAL INTANGIBILITY	.277	.279	3.745	.000
KNOWLEDGE	-.163	-.136	-4.154	.000
INVOLVEMENT	-3.669E-02	-.344	-3.855	.000
PHYSICAL INTANGIBILITY INVOLVEMENT	.246	.250	4.759	.000
PHYSICAL INTANGIBILITY	.206	.284	3.366	.001
INVOLVEMENT AND MENTAL INTANGIBILITY	-3.029E-02	-.187	-2.366	.018
KNOWLEDGEGEN	1.416E-02	.064	1.972	.049

(4). Analysis of **financial risk**

Table 59: Regression analysis results for the moderating effects of knowledge and involvement on financial risk from the generic perspective

	Adjusted R Square	F	Sig.
Regression	.097	21.869	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	3.081		8.060	.000
KNOWLEDGE	-.302	-.243	-7.816	.000
INVOLVEMENT	.341	.335	6.467	.000
MENTAL INTANGIBILITY	.243	.236	3.214	.001
INVOLVEMENT PHYSICAL INTANGIBILITY	-3.497E-02	-.316	-3.600	.000
PHYSICAL INTANGIBILITY	.159	.211	2.590	.010
INVOLVEMENT AND MENTAL INTANGIBILITY	-2.326E-02	-.139	-1.786	.074

(5). Analysis of **performance risk**

Table 60: Regression analysis results for the moderating effects of knowledge and involvement on performance risk from the generic perspective

	Adjusted R Square	F	Sig.
Regression	.061	19.987	.000

	Unstandardized coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	4.951		12.722	.000
Knowledge	-.145	-.113	-2.233	.026
Mental intangibility	.236	.221	2.876	.004
Knowledge and Physical intangibility	-9.094E-03	-.066	-2.166	.031
Knowledge and Mental intangibility	-2.743E-02	-.141	-1.858	.063

*2). Analysis based on **brand** level*

(1). Analysis of **time risk**

Table 61: Regression analysis results for the moderating effects of knowledge and involvement on time risk from the brand perspective

	Adjusted R Square	F	Sig.
Regression	.074	32.264	.000

	Unstandardized coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	4.663		26.318	.000
KNOWLEDGE	-.236	-.200	-6.036	.000
INVOLVEMENT	-.154	-.147	-4.755	.000
KNOWLEDGE AND MENTAL INTANGIBILITY	2.984E-02	.130	4.267	.000

(2). Analysis of **social risk**

Table 62: Regression analysis results for the moderating effects of knowledge and involvement on social risk from the brand perspective

	Adjusted R Square	F	Sig.
Regression	.049	13.008	.000

	Unstandardized coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	2.055		14.876	.000
KNOWLEDGE AND MENTAL INTANGIBILITY	5.263E-02	.301	4.877	.000
INVOLVEMENT	.220	.276	5.151	.000
KNOWLEDGE INVOLVEMENT	-.175	-.195	-3.844	.000
PHYSICAL INTANGIBILITY	-1.123E-02	-.101	-2.782	.005
INVOLVEMENT AND MENTAL INTANGIBILITY	-1.880E-02	-.133	-1.898	.058

(3). Analysis of **psychological risk**

Table 63: Regression analysis results for the moderating effects of knowledge and involvement on psychological risk from the brand perspective

	Adjusted R Square	F	Sig.
Regression	.029	36.042	.000

	Unstandardized Coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	1.972		17.946	.000
Mental intangibility	.162	.173	6.004	.000

(4). Analysis of **financial risk**

Table 64: Regression analysis results for the moderating effects of knowledge and involvement on financial risk from the brand perspective

	Adjusted R Square	F	Sig.
Regression	.043	27.213	.000

	Unstandardized coefficients	Standardized Coefficients	T-values	Sig.
(Constant)	3.208		14.186	.000
MENTAL INTANGIBILITY	.173	.165	5.491	.000
KNOWLEDGE	-.105	-.088	-2.927	.003

(5). Analysis of **performance risk**

Table 65: Regression analysis results for the moderating effects of knowledge and involvement on performance risk from the brand perspective

	Adjusted R Square	F	Sig.
Regression	.063	27.404	.000

	Unstandardized coefficients	Standardized Coefficients	T-value	Sig.
(Constant)	3.003		23.511	.000
MENTAL INTANGIBILITY	.171	.168	5.521	.000
PHYSICAL INTANGIBILITY	.200	.247	5.338	.000
INVOLVEMENT PHYSICAL INTANGIBILITY	-3.406E-02	-.238	-5.361	.000

3). Summary of the above findings

Table 66: Comparison of the moderating effects of knowledge and involvement on perceived risk from the generic and brand perspectives

	Time risk		Social risk		Psychological risk		Financial risk		Performance risk	
	generic	Brand	generic	Brand	generic	Brand	generic	Brand	generic	Brand
Knowledge	-.153*	-.200*	-.152**	-.195*	-.136*		-.243*	-.088**	-.113***	
Knowledge and physical intangibility			-.113*						-.066***	
Knowledge and Mental intangibility		.130*	.284*	.301*					-.141****	
Knowledge and generality			.136*		.064***					
Involvement	.187*	-.147*	.246*	.276*	.250*		.335*			
Involvement and Physical intangibility	-.415*			-.101**	-.344*		-.316*			-.238*
Involvement and Mental intangibility	-.156***		-.371*	-.133**	-.187**		-.139****			
Involvement and generality										

Significant level: * ≤.001, **≤.01, ***≤.05, ****≤.1

Note: the shaded areas represent the findings that support the hypotheses

H10b and H13b were partially supported. In summary, the impact of the moderating effects of knowledge as hypothesized were present with physical intangibility and generality for social risk; with generality for psychological risk; and with physical and mental intangibility for performance risk. Moreover, the hypothesized impact of the moderating effects of involvement existed with physical and mental intangibility for time risk; with mental intangibility for social risk; with mental and physical intangibility for psychological risk; and with the same two dimensions for financial risk. However, the moderating effects of involvement and generality were not found to be significant.

DISCUSSION

Although some of the hypotheses were not supported, most of the hypotheses were supported or partially supported (please refer to the table below, also see Appendix 3 for the tested model).

Table 67: Summary of hypotheses supported

Hypotheses	Results	
H1: The degree of generality is higher in generic category choices than in brand-level choices.	***H1 is true to services*** H1is not supported for products	
H2: The degree of mental intangibility for generic category level choices is higher than that for brand level choices.	***H2 is true to services*** H2 is not supported for products	
H3: The degree of physical intangibility in generic category level choices is a) higher than it on brand level choices (especially for services) b) similar to it on brand level choices (especially for products)	***H3a is supported*** H3b is not supported	
H4: The more mentally intangible a product/service is, a) the more difficult it is to be evaluated, b) the more risky it is perceived	***H4a is supported*** ***H4b is supported*** *(5 types of risk)*	
H5: The more general a product/service is, a) the more difficult it is to be evaluated, b) the more risky it is perceived	***H5a is supported*** ***H5b is supported*** *(social & psychological risk)*	
H6: The more physical intangible a product/service is, a) the more difficult it is to be evaluated, b) the more risky it is perceived	***H6a is supported*** H6b is not supported	
H7: The impact of intangibility of product-category level choice on a) difficulty of evaluation and b) perceived risk is greater than that of brand-level choice.	**H7a: partially supported**	Physical intangibility √ Generality √ Mental intangibility X
	H7b: partially supported	Physical intangibility √ Generality √ Mental intangibility with social risk √
H8: Knowledge is a moderator that moderates the relationships between generality, physical intangibility and mentally intangibility with a) difficulty of evaluation and b) perceived risk	**H8a: partially supported**	Physical intangibility X Generality X Mental intangibility √
	H8b is supported	
H9: The more knowledgeable a consumer perceives himself, a) the less difficult a product/service is to be evaluated. b) the less risky a product/service is to be perceived	***H9a is supported*** ***H9b is supported***	
H10: The moderating effects of knowledge on a) difficulty of evaluation and b) perceived risk at generic product-category level will be greater than those at brand-level.	H10a is not supported	
	H10b is partially supported	Physical intangibility √ Generality √ Mental intangibility X (time and social risk Mental intangibility √ (performance risk)
H11: Involvement is a moderator that moderates the relationships between generality, physical intangibility and mentally intangibility with a) difficulty of evaluation and b) perceived risk	H 11a is not supported ***H11b is supported***	
H12: the more involving a product/service is to a consumer, a) the more difficult a product/service is to be evaluated. b) the more risky a product/service is to be perceived	*H12a is supported* *H12b is supported (except for time risk)*	
H13: The moderating effects of involvement on a) difficulty of evaluation and b) perceived risk at product-category level will be	***H13a is supported***	
	H13b is	Mental intangibility √

greater than those at brand-level.	***partially supported***	Generality X Physical intangibility with time, psychological and financial risk √

Legend: √: hypothesis supported
X: hypothesis not supported

I. Intangibility (H1 to H7)

i. Discussion on H1 to H2:

First, the proposed differences between the generic and the brand perspectives for the three dimensions of intangibility (H1 to H2) held true for services. Physical intangibility, and mental intangibility for both the chequing account and the pizzeria dinner (services studied) are perceived to be lower in the brand approach as opposed to the generic approach. Generality shows the same result for the pizzeria dinner. However, for the chequing account, the result showed that a Royal Bank chequing account is perceived more general than a generic chequing account. Similar results appeared for products. For almost all the products studied (i.e., jeans, Internet browser, computer and CD), the brand increases consumer perceived intangibility (physical intangibility, mental intangibility and generality). These findings were unexpected.

According to Goutaland (1999), a chequing account was a more intangible service than a pizzeria dinner. Physical intangibility and mental intangibility were the major influential factors for consumer's perception of the service. However, respondents rated this service more specific than a pizzeria dinner. A pizzeria dinner, on the contrary, was perceived less mentally and physically intangible than a chequing account but more general (Goutaland 1999). Therefore, one possible explanation is that the specific nature of the service (i.e., chequing account) reduces the impact of the brand context on consumers' perceived

generality compared with the generic context. Moreover, the designed online purchase scenario might have also eliminated the influence of the brand context. It is generally agreed that Internet increases the possibility of consumers accessing detailed and specific information on products and services (Alba et al. 1997, Berthon, Pitt, Katsikeas and Berthon 1999, Hoffman and Novak 1996, Thakor, Borsuk-Shtevi and Kalamas 2002). Thus, online purchases might greatly reduce consumers' perceived generality especially under a generic context. However, online effects might not be as great in a brand context because the brand itself functions as generality-reducer. Therefore, it can be inferred that the Internet influence on reducing generality is greater under the generic context than under the brand context. This rationale might explain why the branded chequing account is statistically more general than the generic chequing account.

On the other hand, explanations for the unexpected intangibility results on products face the same argument that the Internet reduces generality and mental intangibility, especially in a generic context. This is also achieved through the Internet efficiency in distributing product-related information to consumers (Berthon, Pitt, Katsikeas and Berthon 1999, Hoffman and Novak 1996).

It is interesting to note that physical intangibility was rated significantly greater in the brand context than in the generic one for all products except the Internet browser. Contrary to the hypothesis that physical intangibility of products would not be affected by brand-generic context, results showed that differences do exist between the two perspectives. Jeans, a computer and a CD are physically more intangible, whereas an Internet browser is more tangible under the brand context.

Goutaland (1999) found that the Internet browser was the most physically intangible product in her research. Its rating on physical intangibility was almost as high as that of a service (i.e., charter flight for a vacation). Some researchers even grouped Internet browsers into the service category based on its high intangibility as compared to the rest of the products. Thus, it is not surprising to find that the Internet browser followed the same pattern on physical intangibility as the services studied on the brand-generic comparison.

All the other three products (i.e., Jeans, computer and CD) were perceived more physically intangible from a brand perspective than a generic perspective. This may again be due to the underlying impact of the Internet. As Filip Bartos (2002) found that Internet might increase consumer perceived physical intangibility because it enabled consumers to focus on past experience with the goods or services. Therefore, it is logical to assume that the Internet enhances perceived physical intangibility. Previously, it was hypothesized that physical intangibility would not be affected by brand-generic perspectives. However, results showed that this surprising finding might be due to respondents' online purchase experience. Further analysis revealed that respondents' online purchase frequency of generic products was higher than that of brand products (see appendix 4). Therefore, when asked about the physical intangibility of a generic product, respondents might have been much more accurate in their rating than when dealing with a branded product with which they had less real-world experience. Thus, in this study, Internet purchase might have consequently increased respondents' perceived physical intangibility of branded products.

In summary, H1 and H2 were generally supported for services, but, they were not supported for products. Moreover, H3a was supported, but not H3b.

ii. Discussion on H4 to H6

Second, H4 to H6 tested the influences of the two perspectives on difficulty of evaluation and perceived risk. H4a, H5a, H6a were supported. Therefore, it is concluded that the three dimensions of intangibility are positively related with difficulty of evaluation. This finding supports the relationships revealed in previous studies (Goutaland 1999, Zeithamal 1981).

H4b was supported across the five types of risks, and H5b was supported for social and psychological risks. The above findings were not surprising. Goutaland (1999) found the same relationship between mental intangibility and perceived risk. In her study, Goutaland (1999) conceptualized the construct as overall perceived risk; while in this study, the analysis was conducted for the five types of risk. The finding that generality only affects social and psychological risks may also answer Goutaland (1999)'s result as to why overall perceived risk was not found significantly related to generality.

Though traditionally it was considered that physical intangibility was positively associated to perceived risk (Davis, Gultinan and Jones 1979; Bateson 1979, Zeithaml 1981; Murray and Schlacter 1990; Murray 1991; Mitchell and Greatorex 1993), Goutaland (1999) found no impact of physical intangibility on perceived risk. The same finding was confirmed in this study for the four types of risk except social risk. Results indicated that physical intangibility was negatively related to social risk in a sense that the more physically intangible a product/service is, the less risky it is perceived. However, this finding is contrary to H6b. One explanation may lie on the nature of the products studied. Most of the products are virtual products such as Internet browser and CD. These products are perceived physically more intangible than traditional products (Goutaland 1999); and most of all, these products

are popular among the sample population. Therefore, the more physically intangible a product is, the more likely the product is a virtual product, and the more acceptances a consumer will gain among his/her friends and peers. Hence, it is not surprising that physical intangibility reduces perceived social risk in this study.

Briefly, H4, H5, and H6a are supported, while H6b is not.

iii. Discussion on H7

Third, the hypothesized difference of intangibility between brand and generic perspectives on difficulty of evaluation (H7a) was partially supported. The hypothesized relationship to physical intangibility and generality were supported. However, for mental intangibility, results showed an opposite direction. It appears that a product/service is perceived more mentally intangible in a brand context than in a generic one. This finding is contrary to general belief that the brand reduces evaluation difficulty (Montgomery and Wernerfelt 1992, Rubin 1990, Wernerfelt 1988, Erdem 1998, Berry 2000). Since the regression results showed the same pattern as the t-test results where mental intangibility was perceived higher in the brand context as opposed to products, it is therefore possible to attribute this unexpected result to the Internet influence.

As previously argued, the Internet reduces perceived mental intangibility and it also reduces difficulty of evaluation because the Internet makes the purchase-related information available to consumers and therefore, facilitates comparisons of purchase alternatives (Alba et al. 1997). Hence, it can be inferred that the Internet impact on difficulty of evaluation is greater in a generic context, whereas in a brand context, the brand functions as the major difficulty-reducer. However, the above explanation needs to be further studied. Filip Bartos

(2002) found that the differences of online and offline difficulty of evaluation were statistically significant in generic product/service purchases such as pizza, jean, computer and Internet browser; while to jeans and chequing accounts, no significant difference was found. Therefore, it is suggested that further research to explore the influence of Internet purchase on branded products/services.

H7b was fully supported for physical intangibility and generality. The hypothesized relationship with generality appeared across all five types of risk. However, there was no such relationship for time and psychological risks with physical intangibility.

The hypothesized relationship for mental intangibility was supported under social risk. However, under the other four types of risk, results were opposite to what was expected.

Hence, it is concluded that H7b was supported except for mental intangibility under time, psychological, financial and performance risk. Once again, the Internet may play a role in explaining these unexpected results as previously argued.

II. Knowledge and Involvement (H8 to H13)

i. Direct relationship (H9 and H12)

The direct relationship between knowledge, involvement and difficulty of evaluation and perceived risk were supported (H9a, H9b, H12a, H12b) except for involvement and time risk. Results showed that the more involving a product/service is to consumers, the less time risky it is perceived. Many researchers believe that involvement is linked to personal interest and value (Lastovicka 1979, Bloch 1981, Zeichkowshy 1985). Hence, one may argue that when a consumer is motivated and willing to spend time on the purchase-related information

search, the more involved a consumer is with the purchase decision and the less time risk is perceived.

The direct relationships between knowledge, involvement and difficulty of evaluation and perceived risk have been supported by other studies (McDougall 1987, Finn 1985, Havlena and DeSarbo 1990, Goutaland 1999).

ii. Moderating effects (H8 and H11)

First, knowledge was found to moderate mental intangibility and difficulty of evaluation (H8a). For risk, knowledge interacted with each one of the three dimensions of intangibility (H8b). To be more precise, knowledge interacted with physical intangibility for social risk; with mental intangibility for social and psychological risk; and with generality for time risk.

The interaction between mental intangibility and knowledge was not found in Goutaland (1999)'s study. However, our finding is not surprising. Many scholars agree that consumer knowledge is accumulated from product related information search and experience (Anderson, Engledow and Becker 1979, Bettman 1980, Park and Lessing 1981, Keil and Layton 1981). Ghabi (1998) also proposed that consumer experience included a mental dimension that was associated with information usage and product/service exposure. Therefore, it can be concluded that knowledge would interact with mental intangibility. Moreover, consumers perceive higher evaluation difficulty when their knowledge is low and mental intangibility is low, and when their knowledge is high but mental intangibility is low.

The proposed interactions between knowledge and generality, and physical intangibility on difficulty of evaluation were not found. This is not difficult to explain. For

instance, a very experienced consumer has a good set of product/service related knowledge (objective knowledge). Hence, physical intangibility and generality will not affect the evaluation process since they neither increase the consumer's processing efforts nor reduce the consumer's objective knowledge to perform the evaluation (Wendler 1983).

On the other hand, knowledge moderates the three dimensions of intangibility on perceived risk (i.e., time, social and psychological risk). Cox (1967) pointed out that one component of perceived risk was subjective uncertainty based on an individual's experience. Therefore, it can be explained that even though a consumer has a good set of objective knowledge, his/her self-perception and confidence of the knowledge (subjective knowledge) will be affected by the product/service intangibility. Consequently, this subjective uncertainty results in a greater perceived risk on a purchase decision.

It was unexpected to find that there was no moderating effect of involvement with intangibility and difficulty of evaluation (H11a). This result is contrary to McDougall (1987) and Goutaland (1999)'s studies. McDougall (1987) found that product involvement moderated between intangibility (i.e., physical intangibility) and difficulty of evaluation. Moreover, Goutaland (1999) also found that involvement negatively moderated between mental intangibility, generality and difficulty of evaluation.

A possible explanation is that Internet purchase affects consumer purchase involvement, and such an effect outweighs the moderating effects proposed. Clarke and Belk (1978) described purchase involvement as consumer involvement related to information search and time spent in making a correct decision. Therefore, consumer involvement required for a purchase will be greatly increased in an online purchase situation where consumers will spend more time and efforts in screening information distributed through the

Internet. Consequently, consumers can easily evaluate and choose among purchase alternatives. As a result, the proposed moderating effects of involvement with intangibility are much less influential as compared with the effect of the Internet, which is possibly why we found no significant effect in this study.

Meanwhile, supporting H11b, results showed that involvement moderates the three dimensions of intangibility on all the five types of risks. These findings are consistent with Goutaland (1999)'s. Overall, when intangibility is low (i.e., mental intangibility, physical intangibility, and generality), and the higher the involvement, the greater the perceived risk except for involvement with generality on social risk and involvement with physical intangibility on financial risk. With generality, when generality is high, and the higher the involvement, the greater the social risk. With physical intangibility, perceived financial risk is higher when involvement is low and physical intangibility is low, and when involvement is high and physical intangibility is high.

It is said that the more involved a consumer is with a product/service, the greater perceptions he/she will obtain on attribute differences, product importance and brand commitment (Howard and Sheth 1969). Thus, under this situation, even though a product/service is perceived as general, the increasing consumer's product involvement will decrease his/her perceived time risk during the purchase. On the other hand, social risk goes beyond individual interests and value to social interests and peer's value. Therefore, when the product/service is perceived too general, a consumer will be very much concerned about the possible social consequences if he/she makes a wrong decision especially when he/she is very involved in the purchase.

iii. Differences between the brand and generic perspectives on the moderating effects of knowledge and involvement (H10 and H13)

First, results showed that knowledge moderates mental intangibility to reduce difficulty of evaluation. However, this moderating effect is perceived greater at a brand level than at a generic level. Thus, H10a is not supported. It is not difficult to explain. Like H7 where mental intangibility also appeared higher in the brand context, H10a is also very likely to be affected by Internet purchase. As previously argued, the Internet and brand may both function as an evaluation difficulty reducer. Therefore, the degree of difficulty reduction from Internet purchase in a generic context is greater than that from a brand context. It might be concluded that other than brand, Internet purchase reduces consumer perceived evaluation difficulty. This effect is especially influential in a generic approach.

H10b was partially supported. The hypothesized difference between brand and generic perspectives was supported by the interactions of knowledge with physical intangibility, knowledge with generality, and knowledge with mental intangibility for performance risk. However, for time and social risks, the moderating effects of knowledge with mental intangibility are greater in a brand context. Results showed that the greater the knowledge and mental intangibility, the greater the time and social risks perceived in a brand context. These findings are surprising. However, one possible explanation is still that the degree of risk reduced by Internet purchase is greater in a generic context than in a brand one. Another explanation may stem from previous findings (Goutaland 1999) that products are perceived more general, more mentally and physically intangible in a generic context. Since data for both products and services are used in the generic-brand comparison, it is possible that effects are confounded.

H13a was supported. Results showed that involvement moderates physical intangibility in reducing difficulty of evaluation. The moderating effect is greater in a generic context than in a brand context. This result was expected because brand is recognized as a major approach to reduce perceived risk (Roselius 1971, Sheth and Venkatesan 1968, Wernerfelt 1988). Hence, the moderating effect of involvement and physical intangibility is expected to be greater in a generic perspective.

H13b was partially supported. Results showed that involvement interacts with mental intangibility to reduce risk, and its moderating effect is greater in a generic context. Such interactions were not significant between involvement and generality. However, the moderating effects of involvement and physical intangibility supported the hypothesized differences but only for time risk, psychological risk and financial risk. Under performance risk and social risk, the moderating effects were greater in a brand context. Again, the Internet and product intangibility may explain the above-unexpected findings. Future research should explore further this field.

FUTURE RESEARCH AND LIMITATION

This study is fruitful in the following aspects. First, this research supports the finding that intangibility is a three-dimensional construct and the measures of the constructs are very reliable.

As presented in the literature review, the brand is recognized as a major intangibility-reducer especially for services. This proposition is confirmed in this study. Brand reduces consumer perceived physical intangibility, mental intangibility, and generality of services. However, this proposition is not supported for products. One assumption is that the Internet affects consumers' perceived intangibility and its effect on reducing the intangibility is greater in the generic perspective than the brand perspective. Therefore, future research may concentrate on how Internet purchases will affect consumer perceived intangibility of products, particularly virtual products. Future research may also compare the Internet effect on branded products. Future research may also consider to include Internet as a moderator in our model.

Brand also reduces consumer perceived evaluation difficulty and purchase-related risk. This conclusion is especially true for products/services with high perceived physical intangibility and generality. Compared to generic products/services, physical intangibility and generality of branded products/services reduce consumer evaluation difficulty and perceived risk. However, mental intangibility of branded products/services only helps reduce perceived social risk. Therefore, future research may also further explore this finding to see if there are other factors that influence mental intangibility besides brand.

In addition, brand also reduces the moderating effects of knowledge and involvement in the model. However, this effect is not significant with knowledge and the three dimensions of intangibility for difficulty of evaluation, knowledge and mental intangibility for time and social risks, involvement with generality for the five types of risk, and involvement with physical intangibility for social and performance risks. Future research may also explore the reasons for the above findings by studying individual products or services.

Second, knowledge and involvement are found to moderate intangibility on evaluation difficulty and perceived risk. Knowledge and involvement also directly affect consumer evaluation difficulty and perceived risk. Future research may also study the moderating effects of knowledge and involvement with each dimensions of intangibility when Internet is included as another moderator.

This research also has many limitations. First, the sample population used for the study is not representative. Even though a student sample is generally literate with online purchases, it doesn't represent the whole consumer market. Future research is suggested to select aged consumers who are experienced with online purchases. Second, the products and services used in this study are limited. There are many virtual products and tangible services that can be studied. Therefore, it is recommended that future research focuses on other products and services. Moreover, it is shown in the study that virtual products (e.g., Internet browser) exhibited similar intangibility as services. Therefore, future research may also focus on this group of virtual products.

Third, the online items used in the questionnaire can be further improved. For example, the second item in the online-brand questionnaire asked respondents "how many times have you purchased a (brand) ____ online in the past?" The answer to this question

varies from 300 to 0 (see appendix 4). Therefore, one can argue that the accuracy of this data is questionable because of respondents' memory. Future research can specify "past" by providing a time limit such as "in the past one year", or "in the past half a year".

Fourth, generally, the distribution of online purchase frequency of branded products is considerably lower than that of generic products (see appendix 4). The distribution difference may result in some degree of data screwness. This may explain why the means of branded products were higher than those of generic products in the t-test. Therefore, future research should control the above mentioned distribution differences.

MANAGERIAL IMPLICATION

This exploratory study has many managerial, as well as theoretical, implications.

First, the tested model (see appendix 3) shows that the three dimensions of intangibility all affect consumer difficulty of evaluation and perceived risk. This finding is important. It is therefore suggested that marketers should rate their products/services offered on an intangibility scale for physical intangibility, mental intangibility, and generality. From the scale, marketers will be able to determine the most influential dimension of intangibility and therefore, design marketing strategies accordingly. For example, the Internet browser is perceived physically more intangible than mentally. Therefore, marketers can reduce consumers' perceived risk and evaluation difficulty by decreasing perceived physical intangibility. At the same time, marketers should also bear in mind that mental intangibility, along with generality, may also affect consumers' perception. Hence, marketers will be better off if their designed marketing strategies will decrease, or at least, not increase mental intangibility and generality.

The individualization on product/service's intangibility is necessary in the sense that each product/service is different, especially when taking virtual products into consideration. Some virtual products follow almost the same pattern as very intangible services on physical intangibility (i.e., Internet browser), while other virtual products (i.e., compact disk) are more characterized as a traditional products in this respect. Such a variance also exists among services. Thus, a simple dichotomy between services and products is not enough. Marketers should not stop after grouping their products/services. They should further acquire an understanding on how physically and mentally intangible and how general their

products/services are. Thus, this study calls for a more comprehensive understanding of the intangibility of products/services among marketers. It is also suggested that before any marketing promotional campaign or strategic planning, marketers should position their products/services on an intangibility map on which they can base all their marketing strategies.

Second, brand is an efficient tool to reduce consumer evaluation difficulty and perceived risk. This is particular true for the services category. Moreover, brand reduces the moderating effects of involvement and knowledge. Therefore, for a branded product/service, marketers can emphasize more on the brand itself rather than spend efforts on other marketing tools, such as sampling, to increase consumer related knowledge and involvement. On the other hand, for a generic product/service, marketers should put more weight on increasing consumer knowledge and involvement in order to reduce consumer perceived evaluation difficulty and perceived risks during a purchase process. In addition, marketers should promote their brand name heavily in their service' offers to consumers. However, the promotion of the brand name might not be as important for products. Therefore, advertising strategies for products should shift their focus from promoting primarily brand awareness and brand image to stimulating consumer involvement and their desire to know more about the products.

Third, brand also efficiently reduces services intangibility in online purchases. Hence, one important theoretical contribution of this study is that brand functions as intangibility reducer in both offline and online purchase situations. Therefore, the branding strategy applied by the service sector is still useful when marketers decide to move into e-commerce. However, this might not so for products especially in an online purchase environment.

Marketers should notice the difference in branding strategy between products and services in an online purchase scenario.

Finally, the five types of perceived risk turn out to have different relationships with different variables in this study. It shows that each of the three dimensions of intangibility, knowledge, involvement, and brand-generic perspectives are associated with different type(s) of perceived risk(s). For example, involvement interacts with mental intangibility in reducing social risk and psychological risk. It also interacts with physical intangibility in reducing all risks except time risk. Knowledge, on the contrary, interacts with generality in increasing perceived time risk. The above findings are also very practical. Like for intangibility, marketers should map their products/services accordingly to different types of risk. This will provide marketers with a clearer picture of which risk is the most commonly perceived in a product/service. Moreover, this will also help marketers in their communication strategies in reducing the perceived specific type(s) of risk(s).

In conclusion, thanks to business creativity and economic development, the consumer market is enriched with various kinds of products and services that are not of the same type as traditionally defined. The appearance of very intangible products and very tangible services, therefore, brings forward challenges to all marketers as to how to communicate the perceived intangible attributes of a virtual product or service, how to position the product/service, and how to reduce consumers' perceived types of risks and evaluation difficulty associated with the purchase. What these challenges entail is a brand-new approach in marketing that suggests that products/services and their intangibility related consequences should be studied in much more detail than ever before.

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APPENDICES

Appendix A: The brand version of the questionnaire

Appendix B: The generic category version of the questionnaire

Appendix C: The tested model

Appendix D: Frequency chart of respondents' reported online purchase experience (X2)

Appendix A: The brand version of the questionnaire

Instructions

To answer the questions, please **circle** the most appropriate number on the scales provided, or **check** the appropriate answer where necessary. Please circle or check ONLY ONE answer per question, and **please answer every question**, since incomplete questionnaires will not be taken into account for the data analysis. Thus, even if you are not sure about what a statement means, please answer to the best of your understanding. Finally, remember that there is no right or wrong answer: this survey intends to study only consumer perceptions.

1. In the first part of this questionnaire, we are going to consider a specific type of product: Levi's Jean

Have you ever heard of the brand, *Levi's Jeans*?

Yes____ No____

Have you ever purchased a pair of *Levi's Jeans*?

Yes____ No____

I would be willing to purchase the *Levi's Jeans* brand.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Compared to other brands of jeans I know, *Levi's Jeans* is my:

Least preferred 1 2 3 4 5 6 7 8 9 Most preferred

I wear *Levi's Jeans*:

Never 1 2 3 4 5 6 7 8 9 Very often

The information search I have performed on *Levi's Jeans* is:

Very weak 1 2 3 4 5 6 7 8 9 Very thorough

I don't have much experience purchasing *Levi's Jeans*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

In general, my knowledge of *Levi's Jeans* is:

Very weak 1 2 3 4 5 6 7 8 9 Very strong

Would you consider yourself uninformed or informed about *Levi's Jeans*?

Very uninformed 1 2 3 4 5 6 7 8 9 Very informed

Compared to my friends and acquaintances, my knowledge of *Levi's Jeans* is:

Weaker 1 2 3 4 5 6 7 8 9 Stronger

Compared to experts in this area, my knowledge of *Levis Jeans* is:

Weaker 1 2 3 4 5 6 7 8 9 Stronger

Levi's Jeans are very easy to see and touch.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I can physically grasp *Levi's Jeans*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Levi's Jeans are physically very tangible.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I could easily explain many features associated with *Levi's Jeans*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

It is not difficult to give a precise description of *Levi's Jeans*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

It is easy to describe many features associated with *Levi's Jeans*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I have a clear picture of *Levi's Jeans*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The image of a pair of *Levi's Jeans* comes to my mind right away.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I need more information about *Levi's Jeans* to get a clear idea (image) of what it is.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

This is a difficult *brand* to think about.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

This is not the sort of *brand* that is easy to picture.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

It is very easy for me to choose *Levi's Jeans* amongst other brands of jeans.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Choosing *Levi's Jeans* amongst other brands of jeans is not very complicated.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

It is not very difficult to find the *Levi's Jeans* that are best for me.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I feel very confused when choosing a pair of *Levi's Jeans* amongst other brands of jeans.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I perceive *Levi's Jeans* as:

very important 1 2 3 4 5 6 7 8 9 very unimportant

very significant 1 2 3 4 5 6 7 8 9 very insignificant

very valuable 1 2 3 4 5 6 7 8 9 not valuable at all

Levi's Jeans:

matter a lot to me 1 2 3 4 5 6 7 8 9 doesn't matter to me

mean a lot to me 1 2 3 4 5 6 7 8 9 means nothing to me

There is a good chance I will make a mistake if I purchase *Levi's Jeans*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I have the feeling that purchasing a pair of *Levi's Jeans* will really cause me lots of trouble.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I will incur some risk if I buy a pair of *Levi's Jeans* in the next 12 months.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

A pair of *Levi's Jeans* is a very risky purchase.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

If I bought a pair of *Levi's Jeans* for myself within the next twelve months, I would be concerned that this financial investment would not be wise.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Purchasing a pair of *Levi's Jeans* could involve important financial losses.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

If I bought a pair of *Levi's Jeans* for myself within the next twelve months, I would be concerned that I would not get my money's worth.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Purchasing a pair of *Levi's Jeans* will lead to an inefficient use of my time.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Purchasing a pair of *Levi's Jeans* will involve important time losses.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The demands on my schedule are such that purchasing *Levi's Jeans* concerns me because it would impose even greater time pressures on me.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

If I were to purchase *Levi's Jeans* within the next twelve months, I would be concerned that the brand will not provide the level of benefits that I would be expecting.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

As I consider the purchase of a pair of *Levi's Jeans* in the near future, I worry about whether it will really "perform" as well as it is supposed to.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The thought of purchasing a pair of *Levi's Jeans* causes me to be concerned for how really reliable that product will be.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

If I wore *Levi's Jeans*, I would be held in higher esteem by my friends.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

If I wore *Levi's Jeans*, I would be held in higher esteem by my family.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Purchasing *Levi's Jeans* within the next twelve months would cause me to be considered as foolish by some people whose opinion I value.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The thought of purchasing *Levi's Jeans* gives me a feeling of unwanted anxiety.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The thought of purchasing *Levi's Jeans* makes me feel psychologically

uncomfortable.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The thought of purchasing *Levi's Jeans* causes me to experience unnecessary tension.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Thank you very much for completing this first part of the questionnaire.

2. *In the second part of this questionnaire, we are going to consider another specific type of product: Pizza Hut's Pizza*

Instructions

To answer the questions, please **circle** the most appropriate number on the scales provided, or **check** the appropriate answer where necessary. Please circle or check ONLY ONE answer per question, and **please answer every question**, since incomplete questionnaires will not be taken into account for the data analysis. Thus, even if you are not sure about what a statement means, please answer to the best of your understanding. Finally, remember that there is no right or wrong answer: this survey intends to study only consumer perceptions.

Have you ever heard of the brand *Pizza Hut*?

Yes____ No____

Have you ever purchased a *Pizza Hut Pizza*?

Yes____ No____

I would be willing to purchase a *Pizza Hut Pizza*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Compared to other brands of jeans I know, *Pizza Hut Pizza* is my:

Least preferred 1 2 3 4 5 6 7 8 9 Most preferred

I eat *Pizza Hut Pizza*:

Never 1 2 3 4 5 6 7 8 9 Very often

The information search I have performed on *Pizza Hut Pizza* is:

Very weak 1 2 3 4 5 6 7 8 9 Very thorough

I don't have much experience purchasing *Pizza Hut Pizza*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

In general, my knowledge of *Pizza Hut Pizza* is:

Very weak 1 2 3 4 5 6 7 8 9 Very strong

Would you consider yourself uninformed or informed about *Pizza Hut Pizza*?

Very uninformed 1 2 3 4 5 6 7 8 9 Very informed

Compared to my friends and acquaintances, my knowledge of *Pizza Hut Pizza* is:

Weaker 1 2 3 4 5 6 7 8 9 Stronger

Compared to experts in this area, my knowledge of *Pizza Hut Pizza* is:

Weaker 1 2 3 4 5 6 7 8 9 Stronger

Pizza Hut Pizza is very easy to see and touch.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I can physically grasp *Pizza Hut Pizza*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Pizza Hut Pizza is physically very tangible.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I could easily explain many features associated with *Pizza Hut Pizza*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

It is not difficult to give a precise description of *Pizza Hut Pizza.*

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

It is easy to describe many features associated with *Pizza Hut Pizza*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I have a clear picture of *Pizza Hut Pizza*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The image of a *Pizza Hut Pizza* comes to my mind right away.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I need more information about *Pizza Hut Pizza* to get a clear idea (image) of what it

is.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

This is a difficult *brand* to think about.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

This is not the sort of *brand* that is easy to picture.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

It is very easy for me to choose *Pizza Hut Pizza* amongst other brands of pizza.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Choosing *Pizza Hut Pizza* amongst other brands of pizza is not very complicated.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

It is not very difficult to find the *Pizza Hut Pizza* that is best for me.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I feel very confused when choosing *Pizza Hut Pizza* amongst other brands of pizza.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I perceive *Pizza Hut Pizza* as:

very important 1 2 3 4 5 6 7 8 9 very unimportant

very significant 1 2 3 4 5 6 7 8 9 very insignificant

very valuable 1 2 3 4 5 6 7 8 9 not valuable at all

Pizza Hut Pizza:

matters a lot to me 1 2 3 4 5 6 7 8 9 doesn't matter to me

means a lot to me 1 2 3 4 5 6 7 8 9 means nothing to me

There is a good chance I will make a mistake if I purchase *Pizza Hut Pizza*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I have the feeling that purchasing *Pizza Hut Pizza* will really cause me lots of trouble.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I will incur some risk if I buy *Pizza Hut Pizza* in the next 12 months.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Pizza Hut Pizza is a very risky purchase.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

If I bought *Pizza Hut Pizza* for myself within the next twelve months, I would be concerned that this financial investment would not be wise.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Purchasing *Pizza Hut Pizza* could involve important financial losses.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

If I bought *Pizza Hut Pizza* for myself within the next twelve months, I would be concerned that I would not get my money's worth.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Purchasing *Pizza Hut Pizza* will lead to an inefficient use of my time.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Purchasing *Pizza Hut Pizza* will involve important time losses.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The demands on my schedule are such that purchasing *Pizza Hut Pizza* concerns me because it would impose even greater time pressures on me.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

If I were to purchase *Pizza Hut Pizza* within the next twelve months, I would be concerned that the brand will not provide the level of benefits that I would be expecting.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

As I consider the purchase of *Pizza Hut Pizza* in the near future, I worry about whether it will really "taste" as well as it is supposed to.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The thought of purchasing *Pizza Hut Pizza* causes me to be concerned for how really reliable that product will be.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

If I ate *Pizza Hut Pizza*, I would be held in higher esteem by my friends.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

If I ate *Pizza Hut Pizza*, I would be held in higher esteem by my family.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Purchasing *Pizza Hut Pizza* within the next twelve months would cause me to be

considered as foolish by some people whose opinion I value.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The thought of purchasing *Pizza Hut Pizza* gives me a feeling of unwanted anxiety.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The thought of purchasing *Pizza Hut Pizza* makes me feel psychologically uncomfortable.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The thought of purchasing *Pizza Hut Pizza* causes me to experience unnecessary tension.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Thank you very much for completing this second part of the questionnaire.

*3. In the third part of this questionnaire, we are going to consider another specific type of product: ___Netscape Software_*

Instructions

To answer the questions, please **circle** the most appropriate number on the scales provided, or **check** the appropriate answer where necessary. Please circle or check ONLY ONE answer per question, and **please answer every question**, since incomplete questionnaires will not be taken into account for the data analysis. Thus, even if you are not sure about what a statement means, please answer to the best of your understanding. Finally, remember that there is no right or wrong answer: this survey intends to study only consumer perceptions.

Have you ever heard of the brand *Netscape*?

Yes____ No____

Have you ever obtained any *Netscape Software*?

Yes____ No____

I would be willing to obtain the *Netscape Software* brand.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Compared to other brands of Internet navigators I know, *Netscape Software* is my:

Least preferred 1 2 3 4 5 6 7 8 9 Most preferred

I use *Netscape Software*:

Never 1 2 3 4 5 6 7 8 9 Very often

When acquiring the software, the information search I have performed on *Netscape Software* is:

Very weak 1 2 3 4 5 6 7 8 9 Very thorough

I don't have much experience obtaining *Netscape Software*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

In general, my knowledge of *Netscape Software* is:

Very weak 1 2 3 4 5 6 7 8 9 Very strong

Would you consider yourself uninformed or informed about *Netscape Software*?

Very uninformed 1 2 3 4 5 6 7 8 9 Very informed

Compared to my friends and acquaintances, my knowledge of *Netscape Software* is:

Weaker 1 2 3 4 5 6 7 8 9 Stronger

Compared to experts in this area, my knowledge of *Netscape Software* is:

Weaker 1 2 3 4 5 6 7 8 9 Stronger

Netscape Software is very easy to see and touch.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I can physically grasp *Netscape Software*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Netscape Software is physically very tangible.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I could easily explain many features associated with the *Netscape Software*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

It is not difficult to give a precise description of *Netscape Software*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

It is easy to describe many features associated with *Netscape Software*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I have a clear picture of *Netscape Software*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The image of the *Netscape Software* comes to my mind right away.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I need more information about *Netscape Software* to get a clear idea (image) of what it is.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

This is a difficult *brand* to think about.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

This is not the sort of *brand* that is easy to picture.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

It is very easy for me to choose *Netscape Software* amongst other brands of Web navigator software.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Choosing *Netscape Software* amongst other brands of Web navigator software is not very complicated.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

It is not very difficult to find the *Netscape Software* that is best for me.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I feel very confused when choosing *Netscape Software* amongst other brands of Web navigator software.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I perceive *Netscape Software* as:

very important 1 2 3 4 5 6 7 8 9 very unimportant

very significant 1 2 3 4 5 6 7 8 9 very insignificant

very valuable 1 2 3 4 5 6 7 8 9 not valuable at all

Netscape Software:

matters a lot to me 1 2 3 4 5 6 7 8 9 doesn't matter to me

means a lot to me 1 2 3 4 5 6 7 8 9 means nothing to me

There is a good chance I will make a mistake if I obtain *Netscape Software*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I have the feeling that obtaining *Netscape Software* will really cause me lots of trouble.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

I will incur some risk if I obtain *Netscape Software* in the next 12 months.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Netscape Software is a very risky acquisition.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

If I obtained *Netscape Software* for myself within the next twelve months, I would be concerned that this financial investment would not be wise.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Obtaining *Netscape Software* could involve important financial losses.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

If I obtained *Netscape Software* for myself within the next twelve months, I would be concerned that I would not get my money's worth.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Obtaining *Netscape Software* will lead to an inefficient use of my time.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Obtaining *Netscape Software* will involve important time losses.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The demands on my schedule are such that obtaining *Netscape Software* concerns me because it would impose even greater time pressures on me.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

If I were to obtain *Netscape Software* within the next twelve months, I would be concerned that the brand will not provide the level of benefits that I would be expecting.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

As I consider the acquisition of *Netscape Software* in the near future, I worry about whether it will really "perform" as well as it is supposed to.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The thought of obtaining *Netscape Software* causes me to be concerned for how really reliable that product will be.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

If I used *Netscape Software*, I would be held in higher esteem by my friends.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

If I used *Netscape Software*, I would be held in higher esteem by my family.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Obtaining *Netscape Software* within the next twelve months would cause me to be considered as foolish by some people whose opinion I value.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The thought of obtaining *Netscape Software* gives me a feeling of unwanted anxiety.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The thought of obtaining *Netscape Software* makes me feel psychologically uncomfortable.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The thought of obtaining *Netscape Software* causes me to experience unnecessary tension.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Thank you very much for completing this third part of the questionnaire.

Finally, could you please complete this last section (again, all information remains confidential):

Your Age: □ 15-20 years
□ 21-25 years
□ 26-30 years
□ 31 +years

Your Gender: □ male
□ female

Level of Studies: □ undergraduate
□ graduate

Status: □ Full-time
□ Part-time

We would like to know the extent to which you use English, French, and other languages in your normal activities. Please give a distribution in percent of time from 0 (never) to 100 (all the time).

	English	French	Other ( )	Total
Watching television	_____%	_____%	_____%	100%
Listening to radio	_____%	_____%	_____%	100%
Reading newspapers	_____%	_____%	_____%	100%
Reading magazines/books	_____%	_____%	_____%	100%

Please indicate your degree of agreement with the following statements (circle the number that best reflects your degree of agreement - 1 being the lowest degree of agreement and 9 being the highest degree of agreement).

I consider myself to be Anglophone	1	2	3	4	5	6	7	8	9
I consider myself to be Francophone	1	2	3	4	5	6	7	8	9
I consider myself to be Allophone*	1	2	3	4	5	6	7	8	9
My parents are Anglophone	1	2	3	4	5	6	7	8	9
My parents are Francophone	1	2	3	4	5	6	7	8	9
My parents are Allophone*	1	2	3	4	5	6	7	8	9
All my closest friends are Anglophone	1	2	3	4	5	6	7	8	9
All my closest friends are Francophone	1	2	3	4	5	6	7	8	9
All my closest friends are Allophone*	1	2	3	4	5	6	7	8	9

** Other than Anglophone (s) or Francophone (s). Use the one that applies to you.*

Thank You!

Appendix B: The generic category version of the questionnaire

Instructions

To answer the questions, please **circle** the most appropriate number on the scales provided, or **check** the appropriate answer where necessary. Please circle or check ONLY ONE answer per question, and **please answer every question**, since incomplete questionnaires will not be taken into account for the data analysis. Thus, even if you are not sure about what a statement means, please answer to the best of your understanding. Finally, remember that there is no right or wrong answer: this survey intends to study only consumer perceptions.

1. In the first part of this questionnaire, we are going to consider a specific type of product: A Computer

I use *a computer*: Never 1 2 3 4 5 6 7 8 9 Very often

When making a purchase, the information search I have performed on *computers* is:

Very weak 1 2 3 4 5 6 7 8 9 Very thorough

I don't have much experience purchasing *computers*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

In general, my knowledge of *computers* is:

Very weak 1 2 3 4 5 6 7 8 9 Very strong

Would you consider yourself uninformed or informed about *computers*?

Very uninformed 1 2 3 4 5 6 7 8 9 Very informed

Compared to my friends and acquaintances, my knowledge of *computers* is:

Weaker 1 2 3 4 5 6 7 8 9 Stronger

Compared to experts in this area, my knowledge of *computers* is:

Weaker 1 2 3 4 5 6 7 8 9 Stronger

	Strongly disagree	Strongly agree
This product is very easy to see and touch.	1 2 3 4 5 6 7 8 9	

I can physically grasp *this product.*	1 2 3 4 5 6 7 8 9
This product is very physically tangible.	1 2 3 4 5 6 7 8 9
I could easily explain many features associated with *this product.*	1 2 3 4 5 6 7 8 9
It is not difficult to give a precise description of *this product.*	1 2 3 4 5 6 7 8 9
It is easy to describe many features associated with *this product.*	1 2 3 4 5 6 7 8 9
I have a clear picture of *this product.*	1 2 3 4 5 6 7 8 9
The image of *this product* comes to my mind right away.	1 2 3 4 5 6 7 8 9
I need more information about *this product* to get a clear idea (image) of what it is.	1 2 3 4 5 6 7 8 9
This is a difficult *product* to think about.	1 2 3 4 5 6 7 8 9
This is not the sort of *product* that is easy to picture.	1 2 3 4 5 6 7 8 9
It is very easy for me to choose *this product.*	1 2 3 4 5 6 7 8 9
Choosing *this product* is not very complicated.	1 2 3 4 5 6 7 8 9
It is not very difficult to find the *product* that is best for me.	1 2 3 4 5 6 7 8 9
I feel very confused when choosing *this product.*	1 2 3 4 5 6 7 8 9

I perceive *computers* as:

very important	1 2 3 4 5 6 7 8 9	very unimportant
very significant	1 2 3 4 5 6 7 8 9	very insignificant
very valuable	1 2 3 4 5 6 7 8 9	not valuable at all

This product:

matters a lot to me	1 2 3 4 5 6 7 8 9	doesn't matter to me
means a lot to me	1 2 3 4 5 6 7 8 9	means nothing to me

	Strongly disagree	Strongly agree
There is a good chance I will make a mistake if I purchase *a computer.*	1 2 3 4 5 6 7 8 9	

I have the feeling that purchasing *a computer* will really cause me lots of trouble.	1 2 3 4 5 6 7 8 9
I will incur some risk if I buy *a computer* in the next 12 months.	1 2 3 4 5 6 7 8 9
A computer is a very risky purchase.	1 2 3 4 5 6 7 8 9
If I bought *a computer* for myself within the next twelve months, I would be concerned that this financial investment would not be wise.	1 2 3 4 5 6 7 8 9
Purchasing *a computer* could involve important financial losses.	1 2 3 4 5 6 7 8 9
If I bought *a computer* for myself within the next twelve months, I would be concerned that I would not get my money's worth.	1 2 3 4 5 6 7 8 9
Purchasing *a computer* will lead to an inefficient use of my time.	1 2 3 4 5 6 7 8 9
Purchasing *a computer* will involve important time losses.	1 2 3 4 5 6 7 8 9
The demands on my schedule are such that purchasing *a computer* concerns me because it would create even more time pressures on me.	1 2 3 4 5 6 7 8 9
If I were to purchase *a computer* within the next twelve months, I would be concerned that the item will not provide the level of benefits that I would be expecting.	1 2 3 4 5 6 7 8 9
As I consider the purchase of *a computer* soon, I worry about whether it will really "perform" as well as it is supposed to.	1 2 3 4 5 6 7 8 9
The thought of purchasing *a computer* causes me to be concerned for how really reliable that product will be.	1 2 3 4 5 6 7 8 9
If I bought *a computer*, I would be held in higher esteem by my friends.	1 2 3 4 5 6 7 8 9
If I bought *a computer*, I would be held in higher esteem by my family.	1 2 3 4 5 6 7 8 9
Purchasing *a computer* within the next twelve months would cause me to be considered as foolish by some people whose opinion I value.	1 2 3 4 5 6 7 8 9
The thought of purchasing *a computer* gives me a feeling of unwanted anxiety.	1 2 3 4 5 6 7 8 9

The thought of purchasing *a computer* makes me feel psychologically uncomfortable. 1 2 3 4 5 6 7 8 9

The thought of purchasing *a computer* causes me to experience unnecessary tension. 1 2 3 4 5 6 7 8 9

Thank you very much for completing the first part of the questionnaire

2. *In the second part of this questionnaire, we are going to consider another specific type of product: A Checking Account*

Instructions

To answer the questions, please **circle** the most appropriate number on the scales provided, or **check** the appropriate answer where necessary. Please circle or check ONLY ONE answer per question, and **please answer every question**, since incomplete questionnaires will not be taken into account for the data analysis. Thus, even if you are not sure about what a statement means, please answer to the best of your understanding. Finally, remember that there is no right or wrong answer: this survey intends to study only consumer perceptions.

I have used *a checking account* in the past:

Never 1 2 3 4 5 6 7 8 9 Very often

When making a choice, the information search I have performed on *checking accounts* is:

Very weak 1 2 3 4 5 6 7 8 9 Very thorough

I don't have much experience choosing *a checking account.*

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

In general, my knowledge of *checking accounts* is:

Very weak 1 2 3 4 5 6 7 8 9 Very strong

Would you consider yourself uninformed or informed about *checking accounts*?

Very uninformed 1 2 3 4 5 6 7 8 9 Very informed

Compared to my friends and acquaintances, my knowledge of *checking accounts* is:

Weaker 1 2 3 4 5 6 7 8 9 Stronger

Compared to experts in this area, my knowledge of *checking accounts* is:

Weaker 1 2 3 4 5 6 7 8 9 Stronger

	Strongly disagree								Strongly agree
This service is very easy to see and touch.	1	2	3	4	5	6	7	8	9
I can physically grasp *this service*.	1	2	3	4	5	6	7	8	9
This service is very physically tangible.	1	2	3	4	5	6	7	8	9
I could easily explain many features associated with *this service*.	1	2	3	4	5	6	7	8	9
It is not difficult to give a precise description of *this service*.	1	2	3	4	5	6	7	8	9
It is easy to describe many features associated with *this service*.	1	2	3	4	5	6	7	8	9
I have a clear picture of *this service*.	1	2	3	4	5	6	7	8	9
The image of *this service* comes to my mind right away.	1	2	3	4	5	6	7	8	9
I need more information about *this service* to get a clear idea (image) of what it is.	1	2	3	4	5	6	7	8	9
This is a difficult *service* to think about.	1	2	3	4	5	6	7	8	9
This is not the sort of *service* that is easy to picture.	1	2	3	4	5	6	7	8	9
It is very easy for me to choose *this service*.	1	2	3	4	5	6	7	8	9
Choosing *this service* is not very complicated.	1	2	3	4	5	6	7	8	9
It is not very difficult to find *the service* that is best for me.	1	2	3	4	5	6	7	8	9
I feel very confused when choosing *this service*.	1	2	3	4	5	6	7	8	9

I perceive *a checking account* as:

very important	1	2	3	4	5	6	7	8	9	very unimportant
very significant	1	2	3	4	5	6	7	8	9	very insignificant
very valuable	1	2	3	4	5	6	7	8	9	not valuable at all

This service:

matters a lot to me	1	2	3	4	5	6	7	8	9	doesn't matter to me
means a lot to me	1	2	3	4	5	6	7	8	9	means nothing to me

	Strongly disagree								Strongly agree
There is a good chance I will make a mistake in choosing *a checking account*.	1	2	3	4	5	6	7	8	9
I have the feeling that choosing *a checking account* will really cause me lots of trouble.	1	2	3	4	5	6	7	8	9
I will incur some risk if I use *a checking account* in the next 12 months.	1	2	3	4	5	6	7	8	9
A checking account is a very risky purchase.	1	2	3	4	5	6	7	8	9
If I chose *a checking account* for myself within the next twelve months, I would be concerned that this financial investment would not be wise.	1	2	3	4	5	6	7	8	9
Choosing *a checking account* could involve important financial losses.	1	2	3	4	5	6	7	8	9
If I chose *a checking account* for myself within the next twelve months, I would be concerned that I would not get my money's worth.	1	2	3	4	5	6	7	8	9
Choosing *a checking account* will lead to an inefficient use of my time.	1	2	3	4	5	6	7	8	9
Choosing *a checking account* will involve important time losses.	1	2	3	4	5	6	7	8	9
The demands on my schedule are such that choosing *a checking account* concerns me, because it would create even more time pressures on me.	1	2	3	4	5	6	7	8	9
If I were to choose *a checking account* within the next twelve months, I would be concerned that the item will not provide the level of benefits that I would be expecting.	1	2	3	4	5	6	7	8	9
As I consider the use of *a checking account* soon, I worry about whether it will really "perform" as well as it is supposed to.	1	2	3	4	5	6	7	8	9
The thought of using *a checking account* causes me to be concerned for how really reliable that service will be.	1	2	3	4	5	6	7	8	9
If I chose *a checking account*, I would be held in higher esteem by my friends.	1	2	3	4	5	6	7	8	9
If I chose *a checking account*, I would be held in higher esteem by my family.	1	2	3	4	5	6	7	8	9
Choosing *a checking account* within the next twelve months would cause me to be considered	1	2	3	4	5	6	7	8	9

as foolish by some people whose opinion I value.

The thought of choosing *a checking account* gives me a feeling of unwanted anxiety. 1 2 3 4 5 6 7 8 9

The thought of choosing *a checking account* makes me feel psychologically uncomfortable. 1 2 3 4 5 6 7 8 9

The thought of choosing *a checking account* causes me to experience unnecessary tension. 1 2 3 4 5 6 7 8 9

Thank you very much for completing the second part of the questionnaire

3. *In the third part of this questionnaire, we are going to consider another specific type of product: A CD*

Instructions

To answer the questions, please **circle** the most appropriate number on the scales provided, or **check** the appropriate answer where necessary. Please circle or check ONLY ONE answer per question, and **please answer every question**, since incomplete questionnaires will not be taken into account for the data analysis. Thus, even if you are not sure about what a statement means, please answer to the best of your understanding. Finally, remember that there is no right or wrong answer: this survey intends to study only consumer perceptions.

I use *CD's*: Never 1 2 3 4 5 6 7 8 9 Very often

When making a purchase, the information search I have performed on *a CD* is:

Very weak 1 2 3 4 5 6 7 8 9 Very thorough

I don't have much experience purchasing *CD's*.

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

In general, my knowledge of *CD's* is:

Very weak 1 2 3 4 5 6 7 8 9 Very strong

Would you consider yourself uninformed or informed about *CD's*?

Very uninformed 1 2 3 4 5 6 7 8 9 Very informed

Compared to my friends and acquaintances, my knowledge *CD's* is:

Weaker 1 2 3 4 5 6 7 8 9 Stronger

Compared to experts in this area, my knowledge of *CD's* is:

Weaker 1 2 3 4 5 6 7 8 9 Stronger

	Strongly disagree								Strongly agree
This product is very easy to see and touch.	1	2	3	4	5	6	7	8	9
I can physically grasp *this product.*	1	2	3	4	5	6	7	8	9
This product is very physically tangible.	1	2	3	4	5	6	7	8	9
It is not difficult to give a precise description of *this product.*	1	2	3	4	5	6	7	8	9
It is easy to describe many features associated with *this product.*	1	2	3	4	5	6	7	8	9
It is very easy for me to choose *this product.*	1	2	3	4	5	6	7	8	9
I have a clear picture of *this product.*	1	2	3	4	5	6	7	8	9
The image of *this product* comes to my mind right away.	1	2	3	4	5	6	7	8	9
I need more information about *this product* to get a clear idea (image) of what it is.	1	2	3	4	5	6	7	8	9
This is a difficult *product* to think about.	1	2	3	4	5	6	7	8	9
This is not the sort of *product* that is easy to picture.	1	2	3	4	5	6	7	8	9
I could easily explain many features associated with *this product.*	1	2	3	4	5	6	7	8	9
Choosing *this product* is not very complicated.	1	2	3	4	5	6	7	8	9
It is not very difficult to find the *product* that is best for me.	1	2	3	4	5	6	7	8	9
I feel very confused when choosing *this product.*	1	2	3	4	5	6	7	8	9

I perceive *CD's* as:

very important	1	2	3	4	5	6	7	8	9 very unimportant
very significant	1	2	3	4	5	6	7	8	9 very insignificant
very valuable	1	2	3	4	5	6	7	8	9 not valuable at all

This product:

matters a lot to me	1	2	3	4	5	6	7	8	9 doesn't matter to me
means a lot to me	1	2	3	4	5	6	7	8	9 means nothing to me

	Strongly disagree								Strongly agree
There is a good chance I will make a mistake if I purchase *a CD.*	1	2	3	4	5	6	7	8	9
I have the feeling that purchasing *a CD* will really cause me lots of trouble.	1	2	3	4	5	6	7	8	9
I will incur some risk if I buy *a CD* in the next 12 months.	1	2	3	4	5	6	7	8	9
A CD is a very risky purchase.	1	2	3	4	5	6	7	8	9
If I bought *a CD* for myself within the next twelve months, I would be concerned that this financial investment would not be wise.	1	2	3	4	5	6	7	8	9
Purchasing *a CD* could involve important financial losses.	1	2	3	4	5	6	7	8	9
If I bought *a CD* for myself within the next twelve months, I would be concerned that I would not get my money's worth.	1	2	3	4	5	6	7	8	9
Purchasing *a CD* will lead to an inefficient use of my time.	1	2	3	4	5	6	7	8	9
Purchasing *a CD* will involve important time losses.	1	2	3	4	5	6	7	8	9
The demands on my schedule are such that purchasing *a CD* concerns me, because it would create even more time pressures on me.	1	2	3	4	5	6	7	8	9
If I were to purchase *a CD* within the next twelve months, I would be concerned that the item will not provide the level of benefits that I would be expecting.	1	2	3	4	5	6	7	8	9
As I consider the purchase of *a CD* soon, I worry about whether it will really "perform" as well as it is supposed to.	1	2	3	4	5	6	7	8	9
The thought of purchasing *a CD* causes me to be concerned for how really reliable that product will be.	1	2	3	4	5	6	7	8	9
If I bought *a CD*, I would be held in higher esteem by my friends.	1	2	3	4	5	6	7	8	9
If I bought *a CD*, I would be held in higher esteem by my family.	1	2	3	4	5	6	7	8	9
Purchasing *a CD* within the next twelve months would cause me to be considered as foolish by some people whose opinion I value.	1	2	3	4	5	6	7	8	9

The thought of purchasing *a CD* gives me a feeling of unwanted anxiety.	1 2 3 4 5 6 7 8 9
The thought of purchasing *a CD* makes me feel psychologically uncomfortable.	1 2 3 4 5 6 7 8 9
The thought of purchasing *a CD* causes me to experience unnecessary tension.	1 2 3 4 5 6 7 8 9

Thank you very much for completing this third part of the questionnaire.

Finally, could you please complete this last section (again, all information remains confidential):

Your Age: □ 15-20 years
□ 21-25 years
□ 26-30 years
□ 31 +years

Your Gender: □ male
□ female

Level of Studies: □ undergraduate
□ graduate

Status: □ Full-time
□ Part-time

We would like to know the extent to which you use English, French, and other languages in your normal activities. Please give a distribution in percent of time from 0 (never) to 100 (all the time).

	English	**French**	**Other ( )**	**Total**
Watching television	_____%	_____%	_____%	100%
Listening to radio	_____%	_____%	_____%	100%
Reading newspapers	_____%	_____%	_____%	100%
Reading magazines/books	_____%	_____%	_____%	100%

Please indicate your degree of agreement with the following statements (circle the number that best reflects your degree of agreement - 1 being the lowest degree of agreement and 9 being the highest degree of agreement).

I consider myself to be Anglophone	1 2 3 4 5 6 7 8 9
I consider myself to be Francophone	1 2 3 4 5 6 7 8 9
I consider myself to be Allophone*	1 2 3 4 5 6 7 8 9
My parents are Anglophone	1 2 3 4 5 6 7 8 9

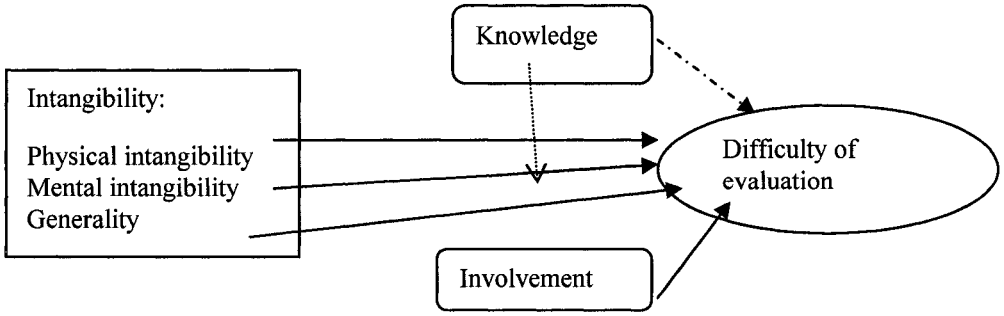
My parents are Francophone	1	2	3	4	5	6	7	8	9
My parents are Allophone*	1	2	3	4	5	6	7	8	9
All my closest friends are Anglophone	1	2	3	4	5	6	7	8	9
All my closest friends are Francophone	1	2	3	4	5	6	7	8	9
All my closest friends are Allophone*	1	2	3	4	5	6	7	8	9

** Other than Anglophone (s) or Francophone (s). Use the one that applies to you.*

Thank You!

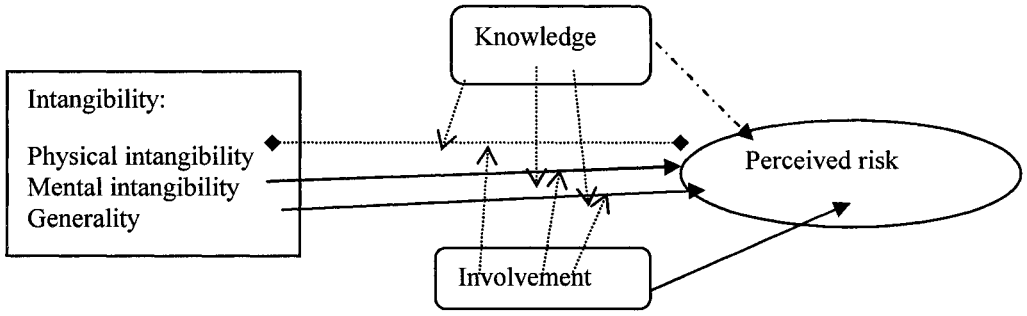
Appendix C: The tested model

I. Intangibility with difficulty of evaluation: (H4a, H5a, H6a, H8a, H9a, H11a, H12a)



Legend: Positive relations (H4, H5, H6, H12)
Moderating effects (H8, H11)
Negative effects (H9)

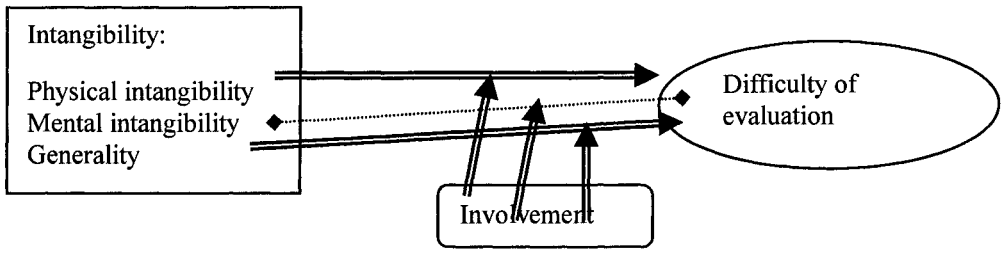
II. Intangibility with perceived risk: (H4b, H5b, H6b, H8b, H9b, H11b, H12b)



Legend: Positive relations (H4, H5, H6, H12)
Moderating effects (H8, H11)
Negative effects (H9)
No effect

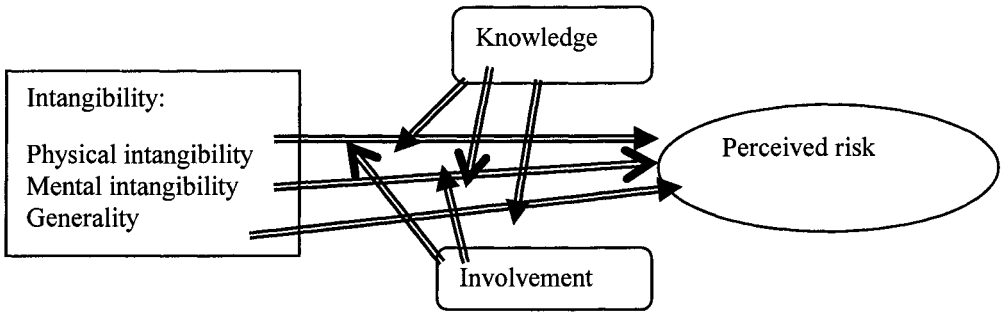
III. Brand and generic comparison (H7, H10 and H13)

i. Generic approach with difficulty of evaluation (H7a, H10a and H13a)



Legend: The proposed difference between generic and brand approach exists ⟹
The proposed difference is partially supported ⟹
No effect ◆·····◆

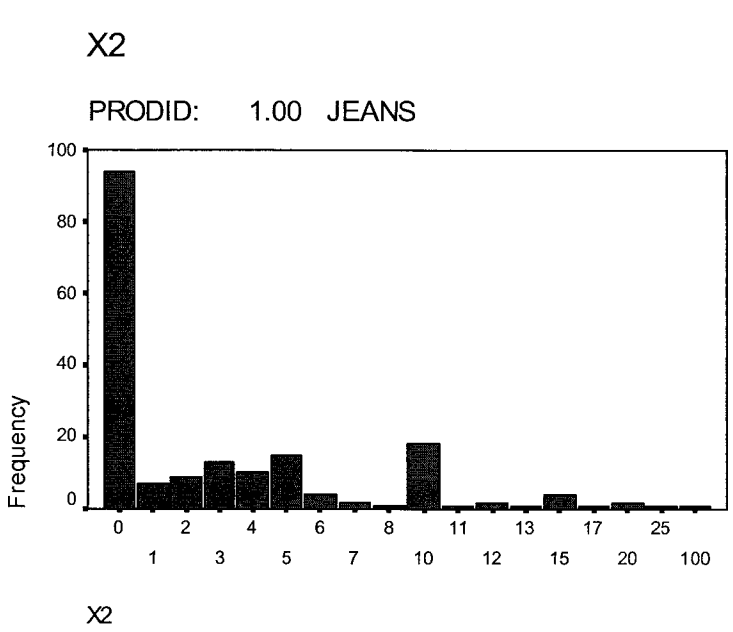
ii. Generic approach with perceived risk (H7b, H10b and H13b)



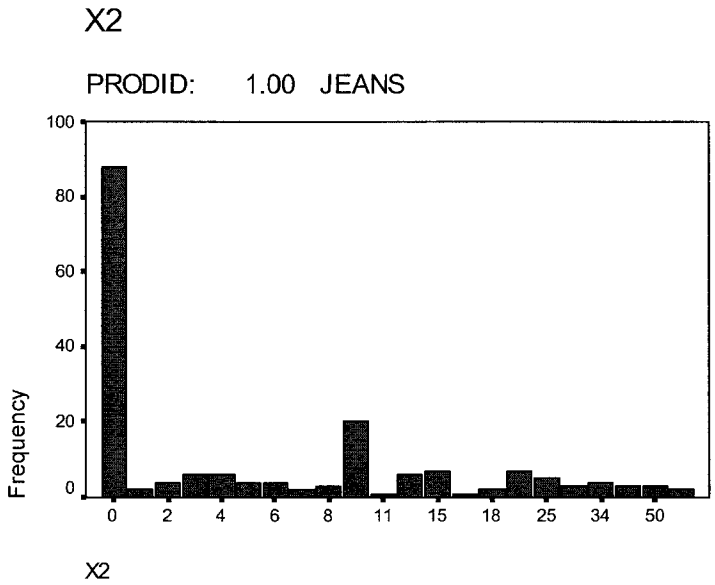
Legend: The proposed difference between generic and brand approach exists ⟹
The proposed difference is partially supported ⟹
No effect ◆·····◆

Appendix D: Frequency chart of respondents' reported online purchase experience (X2)

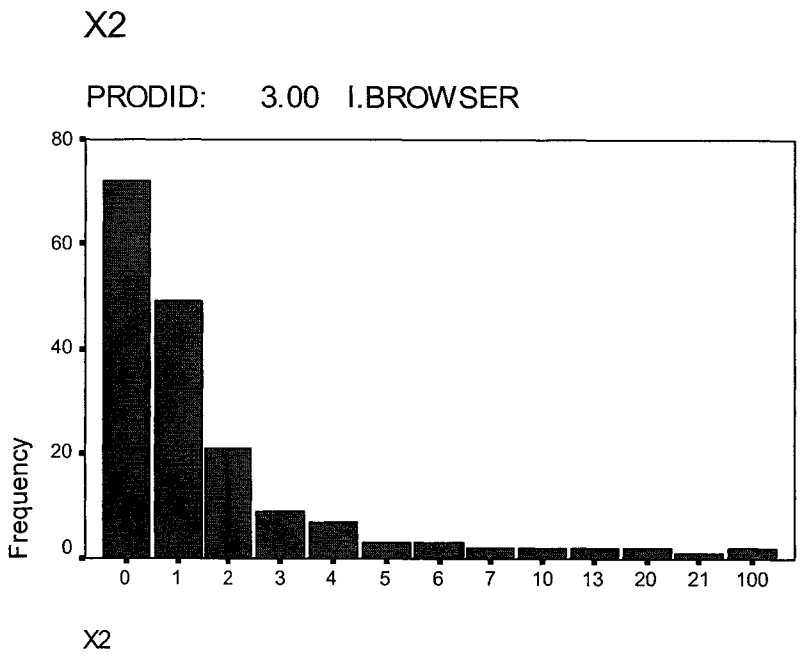
Ia: Levi's Jean (brand perspective)



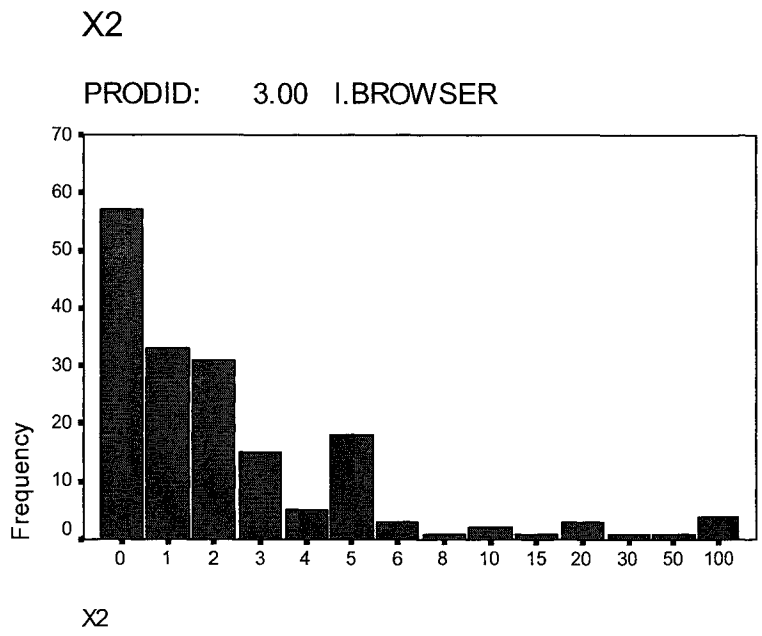
Ib: Jean (generic perspective)



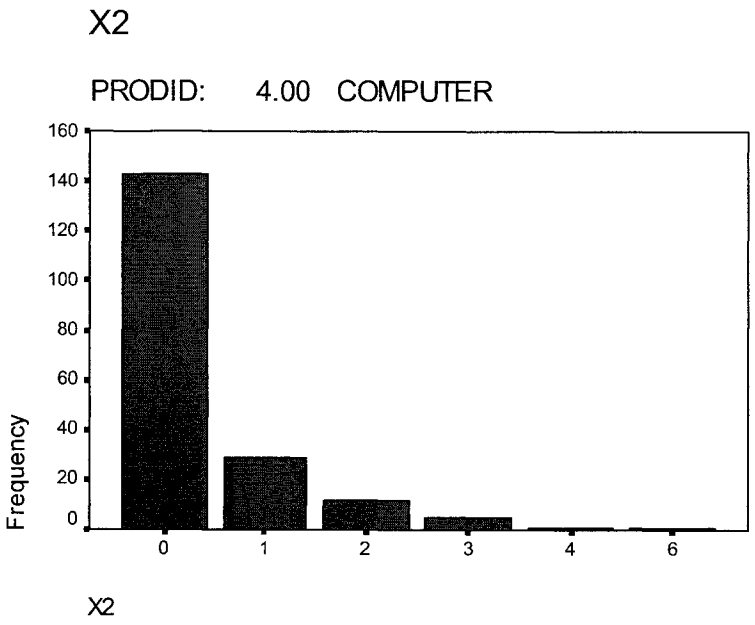
IIa: Netscape Internet browser (brand perspective)



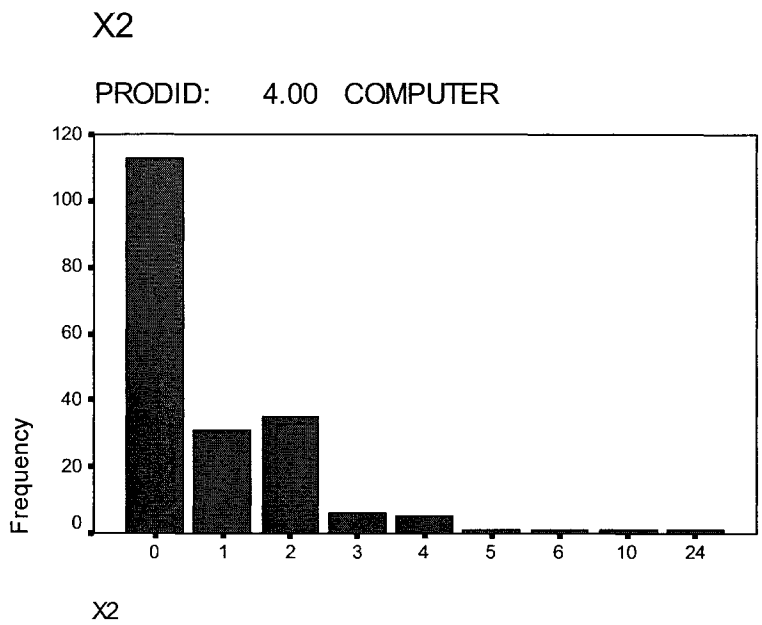
IIb: Internet browser (generic perspective)



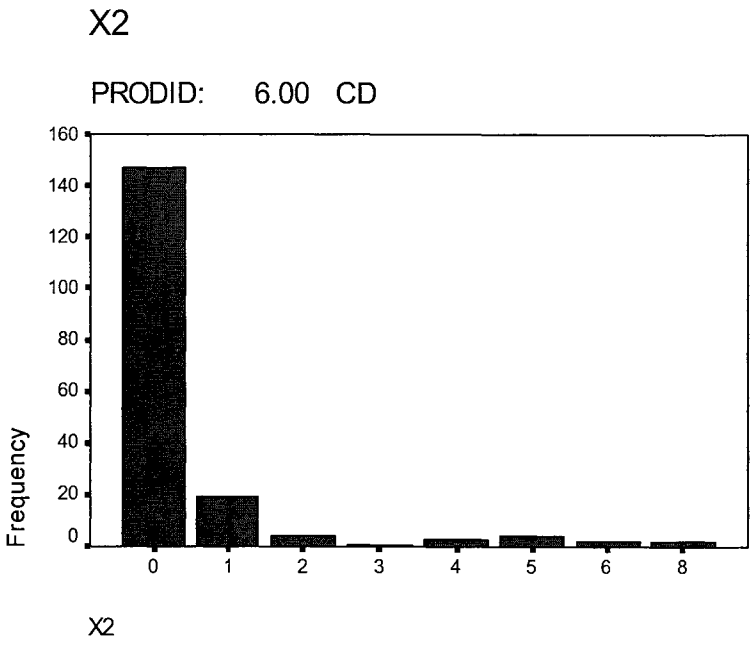
IIIa: IBM Computer (brand perspective)



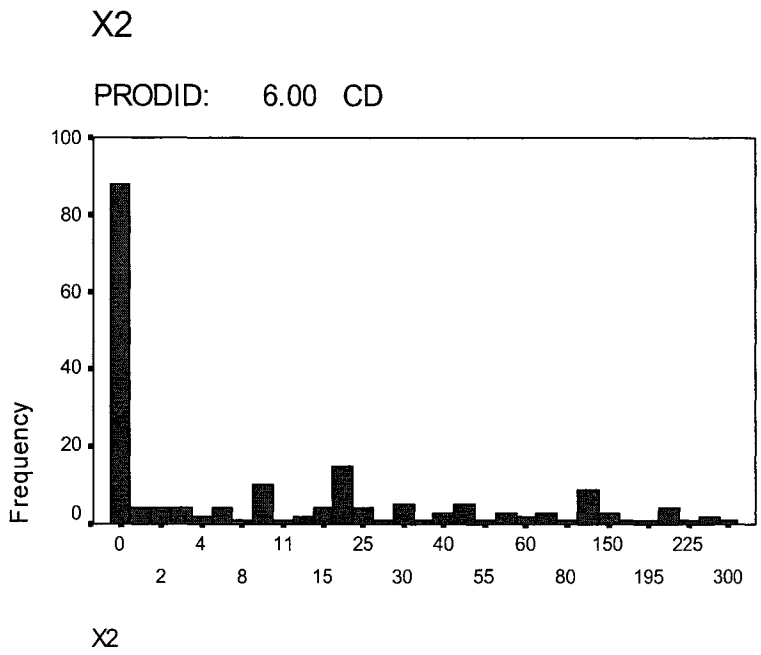
IIIb: Computer (generic perspective)



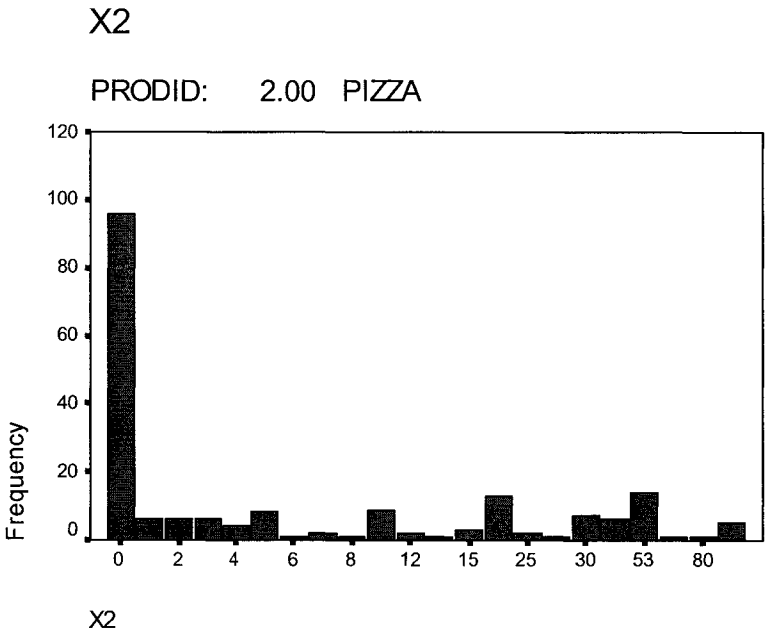
IVa: Beatles' Compact disc (brand perspective)



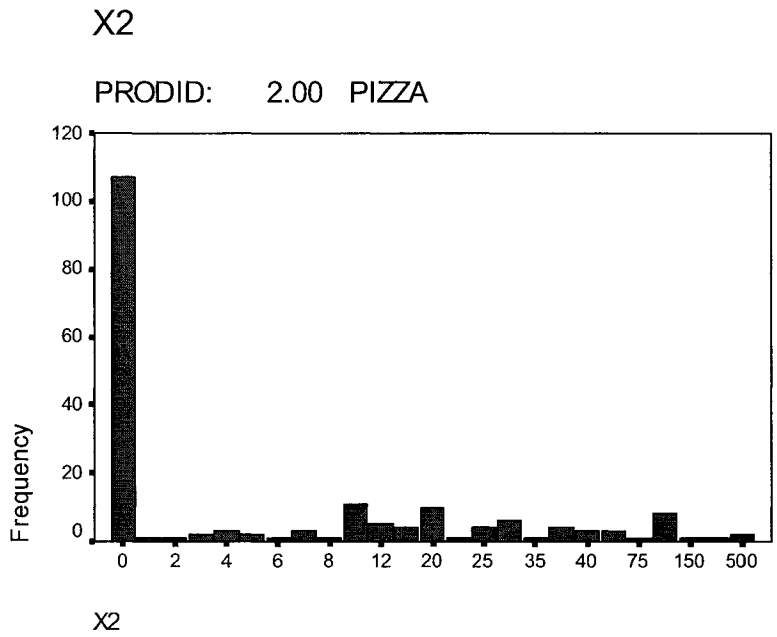
IVb: Compact disc (generic perspective)



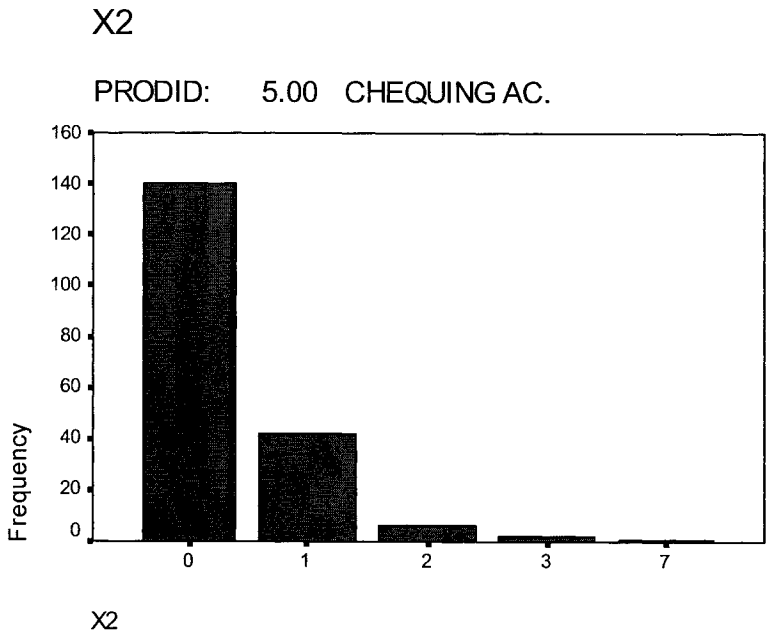
Va: Pizza Hut's Pizzeria Dinner (brand perspective)



Vb: Pizzeria dinner (generic perspective)



VIa: Royal Bank's Chequing account (brand perspective)



VIb: Chequing account (generic perspective)