

## **INFORMATION TO USERS**

**This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.**

**The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.**

**In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.**

**Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.**

**ProQuest Information and Learning  
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA  
800-521-0600**

**UMI<sup>®</sup>**



**AN EMPIRICAL EXAMINATION OF A MULTIDIMENSIONAL  
INTANGIBILITY CONSTRUCT AND ITS IMPLICATIONS ON RISK AND  
PRODUCT EVALUATION:  
AN ONLINE / OFFLINE COMPARISON**

**Filip Bartos**

**A Thesis  
in  
The John Molson School of Business**

**Presented in Partial Fulfillment of the Requirements  
For the Degree of Master of Science in Administration at  
Concordia University  
Montreal, Quebec, Canada**

**December 2002**

**© Filip Bartos, 2002**



**National Library  
of Canada**

**Acquisitions and  
Bibliographic Services**

**385 Wellington Street  
Ottawa ON K1A 0N4  
Canada**

**Bibliothèque nationale  
du Canada**

**Acquisitions et  
services bibliographiques**

**385, rue Wellington  
Ottawa ON K1A 0N4  
Canada**

*Your file Votre référence*

*Our file Notre référence*

**The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.**

**The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.**

**L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.**

**L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.**

**0-612-77668-9**

**Canada**



## **ABSTRACT**

### **AN EMPIRICAL EXAMINATION OF A MULTIDIMENSIONAL INTANGIBILITY CONSTRUCT AND ITS IMPLICATIONS ON RISK AND PRODUCT EVALUATION: AN ONLINE / OFFLINE COMPARISON**

**Filip Bartos**

Intangibility has long been studied as a unidimensional construct with the focus being placed upon the physical element. Our study explored the effects of three unique intangibility dimensions on a consumer's ability to evaluate products and services, and the risk associated with the purchase situation. Our investigation examined the effects on five dimensions of risk, and incorporated consumer involvement and experience levels as moderating variables.

We studied these relationships in purchase environments that included both traditional bricks and mortar retail mediums and the Internet. This allowed for an exploratory comparison of the effects and relationships that exist between intangibility and its consequences.

We were able to confirm the existence of three unique dimensions of intangibility, namely, physical intangibility, generality, and mental intangibility. The existence of these three dimensions is of particular importance given the growing phenomenon of physical intangibility across many services and products. Technology in general, and the Internet in particular, has provided a means of eliminating any corporeal entity of many products and services that were previously reliant upon physical cues as a means of evaluation. Our research has suggested that increased intangibility raises the uncertainty

**and difficulty of evaluation as well as the risk that the consumer is faced with when making an online purchase decision. Online marketers must thus focus their efforts on diminishing mental intangibility and generality, given the physically prohibitive purchasing medium that the Internet currently is.**

## **ACKNOWLEDGEMENTS**

I would like to begin by thanking my supervisor, Dr. Michel Laroche, who's confidence in me gave me the freedom to explore the topics that were of greatest interest. His guidance was there when needed, and made the whole process a pleasurable one. Thank you for having brought this phenomenal topic to my attention. It was a privilege to work under your supervision.

Next, I would like to thank Dr. Chandra and Dr. McDougall, members of my committee, who volunteered their time and lent their expertise. I would also like to thank Dr. Beaudry who chaired the committee, and made my defense a pleasurable one. I also extend my thanks to Professors Lam and Soroka. Without their support and belief in my abilities, I would never have had the opportunity to participate in the Masters program.

I am also very thankful to Heather Thomson, Karen Fada and the rest of the staff at the MSc. Office. I always felt as though I had an entire team that was rooting for my successful completion of the program, and you have all offered help and words of encouragement when they were needed. Thank you all.

I would also like to thank Isabelle Miodek, who helped me along when the last minute rush began. I cannot thank you enough for having set aside your own busy schedule on so many occasions in order for me to meet the tight deadlines that had been set. I also am grateful to Dr. Jasmin Bergeron for having helped me throughout the process. Your prompt replies to my many questions and your help with the initial stages of the research were invaluable. I thank you for having taken an interest in the work and my successful completion of this program. I must also thank soon to be Dr. Mark Cleveland whose willingness to discuss all things under the sun was just the thing I

needed on many of those long days of work. I would also like to extend thanks to the entire faculty at JMSB that made their classes available for data collection.

I must thank Dr. Chandra once again, for having allowed me to work with him on several of his own projects. Your genuine interest in my thoughts and opinions was the greatest compliment I could have hoped for.

I thank my parents for having not only sponsored twenty years of education, but also for their commitment to keeping me sane throughout that time. Your help and encouragement has allowed me to achieve even the most farfetched of dreams. Thank.

I would also like to thank the Bonaccio family for their support during the thesis-writing portion of the program. Silvia, despite being many miles away, I always felt that I had a shoulder to lean on. I could always count on you to take the time to listen and help, irrespective of the time pressures that you yourself faced. Finally, and most importantly, thank you for sharing your love when it was most needed.

Next, I must thank Carrie for having gotten me interested in the program in the first place. Without your help and push, I would never have even thought of applying for this program – for that I am forever indebted to you. Your help and kind words (on the good days) allowed me to successfully complete the academic journey you started.

As well, I would like to thank Dave and Diane, my brother and sister-in-law, for having opened up their home when I needed a place to relax and unwind. Your support was important, and I am sure that without the haven that the time spent with you represented, I would still be spinning my wheels.

Finally, I thank Mark and Matt for their friendship that made studying just a little bit easier.

## TABLE OF CONTENTS

<b>INTRODUCTION.....</b>	<b>1</b>
<b>1. DISTINGUISHING BETWEEN PRODUCTS AND SERVICES.....</b>	<b>1</b>
<b>2. THE INTERNET AND INTANGIBILITY.....</b>	<b>2</b>
<b>3. THE CONSEQUENCES OF INTANGIBILITY.....</b>	<b>3</b>
<b>CHAPTER 1 - LITERATURE REVIEW.....</b>	<b>4</b>
<b>1. TANGIBILITY.....</b>	<b>4</b>
<i>1.1 Intangibility: Unidimensional to Multidimensional Construct.....</i>	<i>7</i>
<i>1.2 The Tangibility of Goods Versus Services.....</i>	<i>10</i>
1.2.1 Simultaneity of Production and Consumption.....	12
1.2.2 Perishability.....	12
1.2.3 Nonstandardization.....	12
1.2.4 Absence of Ownership.....	13
<i>1.3 Measurement of Tangibility.....</i>	<i>14</i>
<b>2. THE CONSEQUENCES OF INTANGIBILITY.....</b>	<b>16</b>
<i>2.1 Intangibility as a Precursor to Difficulty of Evaluation.....</i>	<i>16</i>
2.1.1 Perceived Evaluation Difficulty.....	16
2.1.2 Perceived Processing Effort.....	21
2.1.3 Certainty of Evaluation.....	21
<i>2.2 Perceived Risk.....</i>	<i>22</i>
2.2.1 Risk: The Sum of Uncertainty and Consequences of an Outcome.....	23
2.2.2 Six Types of Risk.....	25
2.2.3 The Reduction of Risk.....	26
2.2.4 Inherent and Handled Risk.....	27
2.2.5 The Person or Trait Perspective.....	27
2.2.6 The Object Point of View: The Type of Product or Product Risk.....	28
2.2.7 Information Search.....	29
2.2.8 The Mode of Purchase (Distribution Channel).....	31
<b>3. OTHER VARIABLES INFLUENCING PRODUCT EVALUATION.....</b>	<b>33</b>
<i>3.1 Knowledge.....</i>	<i>33</i>
3.1.1 Experience.....	33
3.1.2 Familiarity.....	34
3.1.3 Experience and Its Effects.....	36
3.1.4 Expertise.....	37
3.1.5 Cognitive Effort and Automaticity.....	38
3.1.6 Cognitive Structures.....	38

3.1.7 Ability for Analysis.....	39
3.1.8 Elaboration.....	40
3.1.9 Memory.....	41
3.1.10 Measurement of Knowledge.....	41
3.1.11 Objective or subjective Evaluations of Knowledge.....	42
<b>3.2 Involvement.....</b>	<b>43</b>
3.2.1 Involvement: Cognitive, Motivation and Response-Based Approach.....	45
3.2.2 Stimulus Centered View.....	46
3.2.3 Subject Centered View.....	47
3.2.4 Interest/Importance.....	47
3.2.5 Goals and Consequences.....	48
3.2.6 Commitment.....	48
3.2.7 Response Centered View.....	49
3.2.8 Dimensions of Involvement.....	50
<b>4. THE INTERNET.....</b>	<b>52</b>
4.1 The Internet and Tangibility.....	53
4.2 The Internet : Services Vs. Products.....	55
4.3 The Internet and Perceived Difficulty of Evaluation.....	60
4.4 The Internet and Risk.....	62
4.4.1 Trust.....	62
4.4.1.1 calculus, knowledge and identification based trust.....	64
4.5 The Internet and Information Search.....	65
4.5.1 External Memory.....	66
4.5.2 Consideration Sets.....	67
4.6 Knowledge of The Internet.....	68
4.7 Brand Effects on The Internet.....	69
<b>5. HYPOTHESES.....</b>	<b>71</b>
5.1 Intangibility.....	71
5.2 Consequences of Intangibility.....	71
5.3 The Role of Experience.....	73
5.4 The Role of Involvement.....	75
5.5 Services Versus Goods.....	76
5.6 The Effect of The Internet on Intangibility.....	78
5.7 The Internet's Effects on The Consequences of Intangibility.....	79
5.8 Online Purchasing Experience Effects.....	80
5.9 The Internet's Effects.....	81
<b>CHAPTER 2 – METHODOLOGY.....</b>	<b>85</b>
<b>1. RESEARCH DESIGN.....</b>	<b>85</b>
1.1 Chosen Product Descriptions.....	85
1.2 Sample Description.....	87
1.3 Survey Instrument.....	88
1.4 Measurement of The Concepts.....	90

1.4.1 <i>Physical Intangibility</i> .....	90
1.4.2 <i>Generality</i> .....	90
1.4.3 <i>Mental Intangibility</i> .....	91
1.4.4 <i>Difficulty of Evaluation</i> .....	91
1.4.5 <i>Risk</i> .....	92
1.4.6 <i>Experience and Knowledge</i> .....	93
1.4.7 <i>Involvement</i> .....	94
<b>2. ANALYSES AND RESULTS</b> .....	<b>96</b>
<b>2.1 General Comments</b> .....	<b>96</b>
2.1.1 <i>Demographic Data</i> .....	96
2.1.2 <i>Overall Sample</i> .....	101
<b>2.2 Data Reduction</b> .....	<b>101</b>
2.2.1 <i>Factor Analysis</i> .....	101
<b>2.3 Regressions</b> .....	<b>106</b>
<b>2.4 T-Tests</b> .....	<b>108</b>
<b>2.5 Regression Results</b> .....	<b>109</b>
2.5.1 <i>Financial Risk</i> .....	109
2.5.2 <i>Time Risk</i> .....	110
2.5.3 <i>Performance Risk</i> .....	111
2.5.4 <i>Social Risk</i> .....	112
2.5.5 <i>Psychological Risk</i> .....	113
2.5.6 <i>Difficulty of Evaluation</i> .....	114
<b>2.6 T-Test Results</b> .....	<b>115</b>
<b>CHAPTER 3 - HYPOTHESIS DISCUSSION</b> .....	<b>119</b>
<b>1. HYPOTHESES</b> .....	<b>119</b>
1.1 <i>Intangibility</i> .....	119
1.2 <i>Consequences of Intangibility</i> .....	121
1.3 <i>The Role of Experience</i> .....	128
1.4 <i>The Role of Involvement</i> .....	136
1.5 <i>Services Versus Goods</i> .....	146
1.6 <i>The Effect of The Internet on Intangibility</i> .....	162
1.7 <i>The Internet's Effects on The Consequences of Intangibility</i> .....	166
1.8 <i>Online Purchasing Experience Effects</i> .....	176
1.9 <i>The Internet's Effects</i> .....	178
<b>2. OTHER RESULTS</b> .....	<b>182</b>
2.1 <i>Financial Risk</i> .....	182
2.2 <i>Time Risk</i> .....	183
2.3 <i>Performance Risk</i> .....	185
2.4 <i>Social Risk</i> .....	187
2.5 <i>Psychological Risk</i> .....	189
2.6 <i>Difficulty of Evaluation</i> .....	190
2.7 <i>Offline Services vs. Offline Products</i> .....	191

<b>2.8 Online Services vs. Online Products.....</b>	<b>191</b>
<b>2.9 Online vs. Offline.....</b>	<b>191</b>
<b>CHAPTER 5 – CONCLUSION.....</b>	<b>193</b>
<b>1. THEORETICAL IMPLICATIONS.....</b>	<b>193</b>
<b>2. LIMITATIONS AND FUTURE RESEARCH.....</b>	<b>197</b>
<b>3. MANAGERIAL IMPLICATIONS.....</b>	<b>200</b>
<b>BIBLIOGRAPHY.....</b>	<b>203</b>
<b>APPENDICES.....</b>	<b>213</b>



## LIST OF TABLES AND FIGURES

<b>Table 1 - Components used in the multidimensional measurement of involvement.....</b>	<b>51</b>
<b>Table 2 - Dimensions Affecting Relative Attractiveness to Consumers of Alternative Retail Formats.....</b>	<b>61</b>
<b>Table 3 - Goutaland's 11-Item Scale of Involvement.....</b>	<b>95</b>
<b>Table 4 - Questionnaire Version Frequency.....</b>	<b>97</b>
<b>Table 5 - Age.....</b>	<b>97</b>
<b>Table 6 - Gender.....</b>	<b>98</b>
<b>Table 7 - Scholastic Level.....</b>	<b>98</b>
<b>Table 8 - Scholastic Status.....</b>	<b>98</b>
<b>Table 9 - Language Use with Relatives, Watching T.V., Listening to The Radio and Reading the Newspaper.....</b>	<b>99</b>
<b>Table 10 - Cultural Makeup.....</b>	<b>100</b>
<b>Table 11 - Missing Values in Demographic Variables.....</b>	<b>101</b>
<b>Table 12 - Factor Analysis Loadings.....</b>	<b>101</b>
<b>Table 13 - Financial Risk Regression.....</b>	<b>110</b>
<b>Table 14 - Time Risk Regression.....</b>	<b>111</b>
<b>Table 15 - Performance Risk Regression.....</b>	<b>112</b>
<b>Table 16 - Social Risk Regression.....</b>	<b>113</b>
<b>Table 17 - Psychological Risk Regression.....</b>	<b>114</b>
<b>Table 18 - Difficulty of Evaluation Regression.....</b>	<b>115</b>
<b>Table 19 - Offline Services Vs. Products T-Tests.....</b>	<b>116</b>
<b>Table 20 - Online Services Vs. Products T-Tests.....</b>	<b>117</b>
<b>Table 21 - Online Vs. Offline T-Tests.....</b>	<b>118</b>
<b>Table 22 - Offline Difficulty of Evaluation.....</b>	<b>157</b>
<b>Table 23 - Offline Financial Risk.....</b>	<b>157</b>
<b>Table 24 - Offline Time Risk.....</b>	<b>158</b>
<b>Table 25 - Offline Performance Risk.....</b>	<b>158</b>
<b>Table 26 - Offline Social Risk.....</b>	<b>159</b>
<b>Table 27 - Offline Psychological Risk.....</b>	<b>159</b>
<b>Table 28 - Online Difficulty of Evaluation.....</b>	<b>160</b>
<b>Table 29 - Online Financial Risk.....</b>	<b>160</b>
<b>Table 30 - Online Time Risk.....</b>	<b>161</b>
<b>Table 31 - Online Performance Risk.....</b>	<b>161</b>
<b>Table 32 - Online Social Risk.....</b>	<b>162</b>
<b>Table 33 - Online Psychological Risk.....</b>	<b>162</b>
<b>Table 34 - Online Vs. Offline Differences in Physical Intangibility.....</b>	<b>163</b>
<b>Table 35 - Online Vs. Offline Differences in Difficulty of Evaluation (Generality).....</b>	<b>167</b>
<b>Table 36 - Online Vs. Offline Differences in Difficulty of Evaluation (Mental Intangibility).....</b>	<b>169</b>
<b>Table 37 - Online Vs. Offline Differences in Perceived Risk.....</b>	<b>171</b>
<b>Table 38 - Experience Level T-Test on Difficulty of Evaluation.....</b>	<b>177</b>
<b>Table 39 - Experience Level T-Test on Perceived Risk.....</b>	<b>178</b>

<b>Table 40 - Online Vs. Offline Brand Effects on Perceived Risk.....</b>	<b>180</b>
<b>Table 41 - Mean Values of Perceived Risk Across the Online and Offline Conditions and the Branded and Generic Conditions.....</b>	<b>181</b>

---

<b>Figure 1 –Tangible and Intangible Product Attributes.....</b>	<b>5</b>
<b>Figure 2 – Layers of Meaning.....</b>	<b>6</b>
<b>Figure 3 – Subjective and Objective Reaction.....</b>	<b>6</b>
<b>Figure 4 – Attribute Qualities.....</b>	<b>18</b>
<b>Figure 5 – Offline Effects on Perceived Risk.....</b>	<b>83</b>
<b>Figure 6 – Offline Effects on Difficulty of Evaluation.....</b>	<b>83</b>
<b>Figure 7 – Online Effects on Difficulty of Evaluation.....</b>	<b>84</b>
<b>Figure 8 – Online Effects on Perceived Risk.....</b>	<b>84</b>
<b>Figure 9 – Knowledge and Mental Intangibility Interaction Effects on Time Risk.....</b>	<b>134</b>
<b>Figure 10 – Knowledge and Mental Intangibility Interaction Effects on Social Risk.....</b>	<b>134</b>
<b>Figure 11 - Online Vs. Offline Differences in Physical Intangibility.....</b>	<b>163</b>
<b>Figure 12 - Online Vs. Offline Differences in Difficulty of Evaluation (Generality).....</b>	<b>168</b>
<b>Figure 13 - Online Vs. Offline Differences in Difficulty of Evaluation (Mental Intangibility).....</b>	<b>170</b>
<b>Figure 14 - Online Vs. Offline Differences in Financial Risk.....</b>	<b>172</b>
<b>Figure 15 - Online Vs. Offline Differences in Time Risk.....</b>	<b>173</b>
<b>Figure 16 - Online Vs. Offline Differences in Performance Risk.....</b>	<b>174</b>
<b>Figure 17 - Online Vs. Offline Differences in Social Risk.....</b>	<b>175</b>
<b>Figure 18 - Online Vs. Offline Differences in Psychological Risk.....</b>	<b>176</b>

## **INTRODUCTION**

### **1. DISTINGUISHING BETWEEN PRODUCTS AND SERVICES**

Services marketing literature has long tried to derive the differentiating factors between goods and services. Although there have been several distinguishing features, goods have primarily been identified by their intangibility (Rathmell 1974; Berry 1980; Zeithaml, Parasuraman and Berry 1985; Rust et al. 1996). The conceptualization of this construct has shifted from a dichotomous distinction, to a fluent continuum that places both goods and services according to the proportions of their properties and dimensions (Shostack 1977; Murray and Schlacter 1990), and finally to a multidimensional conceptualization of the construct which organizes products and services according to several distinct dimensions (Dube-Rioux, Regan and Schmitt 1990; Breivik, Troye and Olsson 1998; Laroche, Bergeron and Goutaland 2001).

This classification system of goods and services has become particularly useful with the increased physical intangibility of both goods and services that is mainly the result of technological advances. Digitized information is increasingly becoming commonplace with the advent of music technology (found in varying degrees in both CD and MP3 form) and software products. Although both of those items are goods, they are fairly physically intangible, being audible only through a CD or MP3 player or visible through a computer terminal (Freiden et al. 1998). Both of these goods are less palpable than a service such as a pizzeria dinner. Evolving technology, and the proliferation of Internet use has necessitated a more complete model of the intangibility construct.

## **2. THE INTERNET AND INTANGIBILITY**

Technology has continued to facilitate the separation of a physical dimension from goods and services. Music can be seen as one of the earliest ways in which a product is “detangibilized”. Transforming from a solely live medium, it has seen its diffusion spread through the aid of various physical mediums that have evolved from the vinyl to the current digitized MP3 format (Hirschman 1980; Freiden et al. 1998). This latest audio format is becoming increasingly representative of products that are being made available through the Internet in increasingly less physically tangible forms. Traditional goods are now being bought and consumed through a medium that allows the transfer of only binary information. Newspapers and books are being purchased and read over the Internet, music is being listened to without ever actually purchasing a physical embodiment of it, movies are being watched and board and computer games are being played without ever touching anything other than a keyboard or mouse.

The distinction of goods and services along a physical continuum is quickly becoming outdated. The transformation of the Internet from a medium that allows the transfer of ideas and information to one that allows the transfer of goods and services necessitates a new approach. It is an intangible medium that by its very nature abstracts any physical entities that are bought, sold or consumed through it. It is currently incapable of conveying cues that would be accessible to three of the five senses, and yet it is being used to sell physically tangible goods whose evaluation is highly dependent upon physical attributes (Alba et al. 1997; Berthon, Pitt, Katsikeas and Berthon 1999). The medium’s limitations have had some companies trying to tangibilize their offerings through the use of experiential, anecdotal and audio-visual information (Berthon, Pitt,

Katsikeas and Berthon 1999), and other companies embracing the innovations that have come about as a result of the evolving use of the Internet, and the resultant “information products” (Freiden et al. 1998).

This inability to differentiate products and services on the basis of physical intangibility alone has made the study of the multidimensional model increasingly important, especially in an online context. One of the main goals of this research is to monitor the effects of an online purchasing environment on the three dimensions of intangibility, namely physical intangibility, generality and mental intangibility.

### **3. THE CONSEQUENCES OF INTANGIBILITY**

Intangibility has often been seen as an antecedent to high levels of difficulty of evaluation (Zeithaml 1981; McDougall 1987; McDougall and Snetsinger 1990) and/or perceived risk (Murray and Schlacter 1990; Murray 1991; Mitchell and Greatedorex 1993). These two consequences are not however immune to outside influences. The Internet’s ability to present a vast database of information and purchase alternatives has been associated with a potential lower difficulty of evaluation (Alba et al. 1997). At the same time, the detangibilizing effects of the Internet, the lack of regulations, the piracy of information and relative newness of the medium is also believed to increase risk (Ratnasingham 1998).

The full effects of the Internet as a purchasing medium on these purchase consequences, coupled with the Internet’s effects on the dimensions of intangibility has not been fully explored as of yet. This research will provide an initial conceptualization of the differences in consumer purchase processes when buying on the Internet.

## **CHAPTER 1 - LITERATURE REVIEW**

### **1. TANGIBILITY**

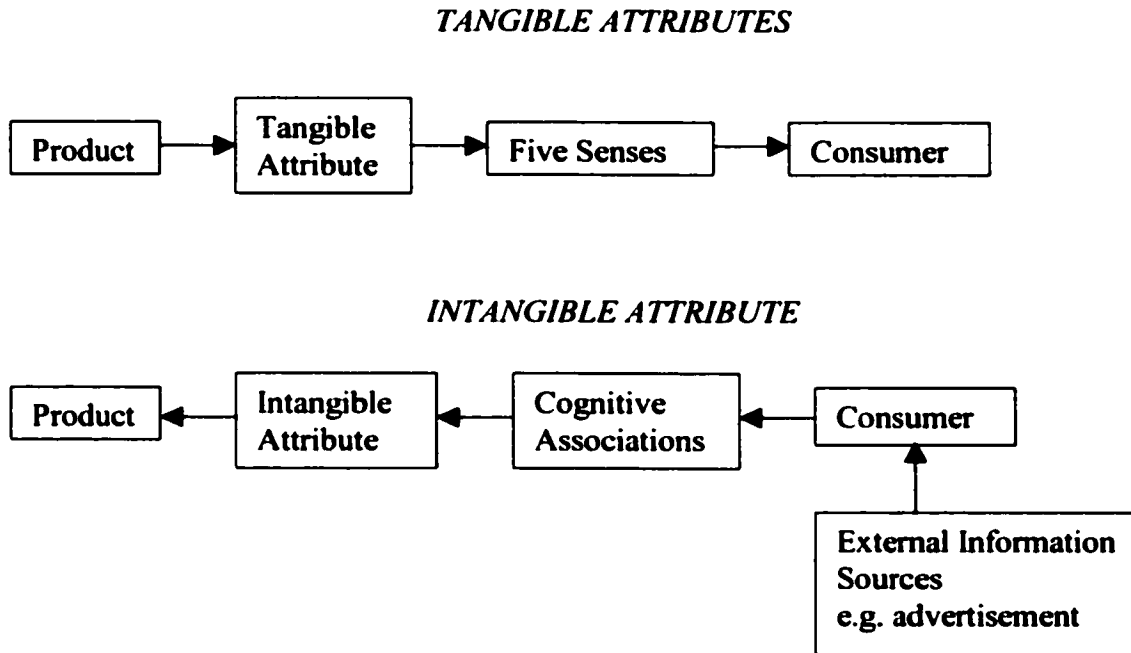
A popular topic of study, product tangibility has seen its definition, conceptualization and measurement changed to accommodate the findings of each new study. It is now commonly held that tangibility refers to the product or service's attribute accessibility through the senses. The tangible attribute must create a stimulus that arises from the product itself, and is palpable enough to be detected by one of the five senses. Hence, a tangible product attribute is one that can be seen, heard, smelled, touched or tasted (Hirschman, 1980).

At the other end of the spectrum, we have those attributes that we would classify as being intangible. Despite lacking any corporeal qualities, these attributes are often used by individuals as a means of classification or comprehension of a product. These attributes exist separately within consumers' minds, and are mentally, as opposed to physically, associated with the product. Intangible attributes are determined by the mind, and are shaped by an individual's experience with them. Contrary to tangible attributes, intangible attributes stem from the individual rather than the product itself (Hirschman, 1980).

These associations that the individual holds with the intangible attributes are believed to be influenced by individual experiences as well as common socialization processes that the majority of the purchasing community is subjected to. This socialization process can be influenced by reference groups, family members and social institutions (i.e. media, churches and schools). It is these commonly held associations

that are easier to explore due to their commonality as well as their predictability (Hirschman, 1980).

**Figure 1 –Tangible and Intangible Product Attributes**

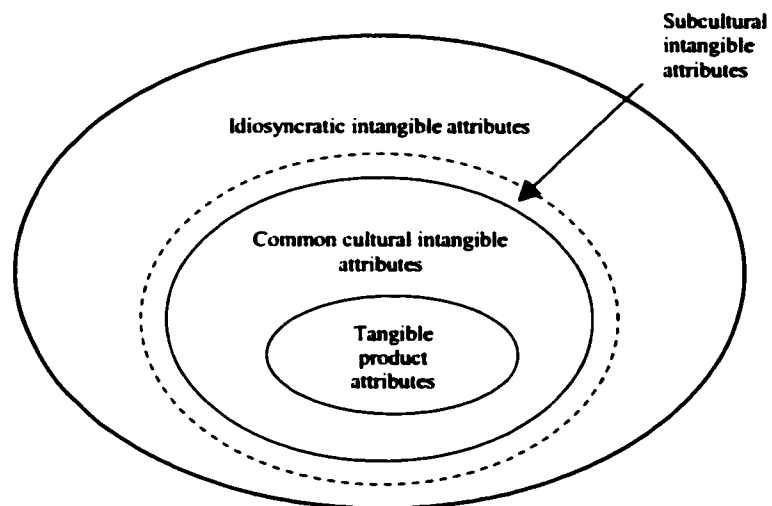


Source: Hirschman, Elizabeth C. (1980), "Attributes of Attributes and Layers of Meaning", *Advances in Consumer Research*, Vol. 7, p.10.

Hirschman (1980) concludes that the meaning that each consumer attributes to a stimulus can be viewed as a tri-level construct. The first level is the meaning derived from the tangible attributes which are objective and stable across individuals and cultures. The second, shared by most, but not all, members of society, is the meaning attributed to intangible attributes associated with the stimuli. The final meaning is that which is uniquely attributed to an intangible attribute by each individual. This level necessarily has much variance across individuals. The final two levels work in conjunction with each other to give full meaning to any intangible attributes that are associated with a stimulus. The author also suggested the possible existence of an

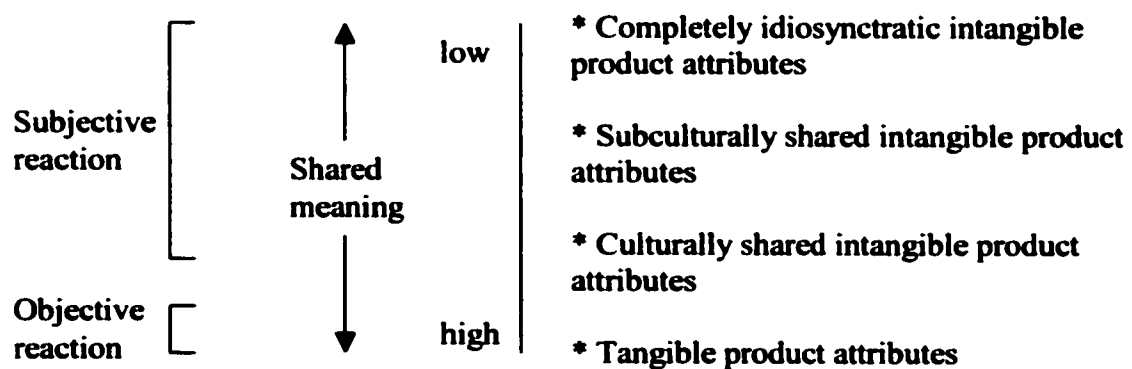
intermediary level of meaning (between the second and third levels) that is prolific within a specific sub-culture or ethnic group. This presents “a continuum of shared meaning ranging from very high or perfect overlap across individuals for the tangible attributes of the product to very low or totally uncorrelated attribute associations at the “idiosyncratic” end of the spectrum” (Hirschman, p. 12, 1980).

**Figure 2 – Layers of Meaning**



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

**Figure 3 – Subjective and Objective Reaction**



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



### ***1.1 Intangibility: Unidimensional to Multidimensional Construct***

The abovementioned conceptualization of the intangibility construct has recently evolved; first to a two-dimensional construct, and most recently to a three-dimensional construct. In 1990, Dube-Rioux, Regan and Schmitt proposed that the intangibility construct should be divided into two related dimensions, *concreteness* and *specificity*. Concreteness refers to the attribute's accessibility to the senses. Can the product attribute be perceived by one of the five senses, allowing for classification along those palpable dimensions? Specificity "refers to subordination, the specificity of a word being inversely related to the number of subordinate words it embraces" (Dube-Rioux, Regan and Schmitt, 1990, p.861). Their analysis showed that although the two dimensions were somewhat intercorrelated, there was enough evidence to justify the study of these two dimensions separately (Dube-Rioux, Regan and Schmitt, 1990).

Subsequent to this research, Breivik, Troye and Olsson (1998) further explored the possibility of intangibility as a two-dimensional construct. Similarly, they separated intangibility along two dimensions: *inaccessibility to the senses* and *generality*. The first, *inaccessibility to the senses*, refers to the degree to which a product or service has attributes that are mentally rather than physically related to the product/service. "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). The second dimension, *generality*, relates to a set of product/service attributes that, when taken into consideration as a set, give a general outcome that is associated with that product/service (e.g., safety of a car). With greater *specificity*, the attributes can be

evaluated on their own (e.g., whether an airbag is available in a car). The higher the inaccessibility to the senses, the greater the degree of subject dependence is involved in the assessment of the attribute (Breivik, Troye and Olsson, 1998).

The most recent manifestation of the intangibility construct revolves around three dimensions: *mental intangibility*, *physical intangibility* and *generality*. Physical *Intangibility* (Inaccessibility to the Senses) is the most familiar component of intangibility that has been referred to most frequently in services marketing (Breivik, Troye and Olsson, 1998). This dimension is the equivalent of inaccessibility to the senses in Breivik, Troye and Olsson's work. It is this dimension that is most commonly cited within the literature as the distinguishing characteristic between products and services (Burton 1990; Zeithaml 1981). This conceptualization is described in Hirschman's (1980) «layers of meaning» paradigm. Hirschman defines tangible attributes as accessible through the senses, while intangible attributes exist only in the mind of the consumer and are mentally, rather than physically, related to the product. 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). However, the difference is a matter of degree since any sense experience requires some mental effort (e.g.. classification) and any mental construction to some extent depend on sense experiences. Hirschman (1980) proposes that tangible and intangible attributes are processed differently: Tangible attributes are processed in a data-driven manner, while intangible attributes are assumed to be processed in a theory-driven mode. Since sense- inaccessible attributes are mentally and not physically tied to the product, they are subject dependent, while tangible attributes

that can be sensed more adequately can be described as object-referent . The notion that the origin of intangible attributes are in the perceiver, while tangible attributes are inherent in the perceived object is consistent with several attribute typologies offered in the literature (Finn 1985, Myers and Shocker 1981, Lefkoff-Hagius and Mason 1993). Myers and Shocker (1981) e.g. proposed that attributes could be divided into product-referent (characteristics), task/outcome-referent (beneficial) and user-referent (image). Lefkoff-Hagius and Mason (1990, 1993) classified characteristics as tangible attributes, while benefits and image attributes were classified as intangible. Furthermore, intangibility in the sense of inaccessability to the senses is closely related to abstractness as defined by Dubè-Rioux, Regan and Schmitt (1990) and lack of touchability as proposed by Flipo (1988).

The second dimension, generality, “refers to how general/specific a consumer perceives a particular product” (Laroche, Bergeron and Goutaland, 2001, p.6). The generality of a product increases as it becomes increasingly difficult for consumers to offer exact definitions, features or outcomes. The authors give the example of a general definition as a hotel being a place where one can sleep. The specificity of the product increases as the consumer is better able to offer exact definitions, features or outcomes. The authors restate the previous example with greater specificity as a hotel being a lodging facility that provides a lobby, a front desk, rooms, cleaning services a restaurant and a gift shop. The authors suggested that this dimension can differentiate between goods as well as services. To that end, they offered examples of general and specific consumer perceptions of computers. At the general end, the computer may be identified as complex machines whose purpose is to facilitate word processing functions. At the

specific end of the spectrum, a computer may be perceived as being a Pentium IV processor with a 20 gigabyte hard drive, 48X CD-ROM and a 17 inch monitor, that can be used for a variety of functions including, but not limited to, creating powerpoint presentations, calculating income taxes, and buying airplane tickets online (Laroche, Bergeron and Goutaland, 2001, p.6).

The third dimension, whose existence Laroche, Bergeron and Goutaland (2001) suggested, is *mental intangibility*. The authors believed that since there was a subject-specific component of intangibility (Hirschman, 1980; Breivik, Troye and Olsson, 1998), a third dimension should be added to the intangibility construct in order to ensure complete and accurate measurement (Laroche, Bergeron and Goutaland, 2001). This third dimension was added in response to the fact that physical tangibility did not ensure a clear mental representation of that product. This is especially true when the individual does not have a great deal of familiarity or experience with it (McDougall and Snetsinger, 1990; Finn 1985).

### ***1.2 The Tangibility of Goods Versus Services***

The distinction between goods and services has been addressed in many scholarly works. Despite all of the attention, very little consensus has been reached as of yet. Services marketing theorists have generally differentiated products and services through intangibility, simultaneity of production and consumption, perishability, nonstandardization and absence of ownership (Zeithaml, Parasuraman and Berry, 1985, Davis et al., 1979; Rathmell, 1974). These classifications have suggested the existence of

an intrinsic difference between goods and services (Bateson 1977, Lovelock 1979; Shostack 1977).

Others have suggested that the differences between goods and services has been somewhat exaggerated by the services marketing literature. It has been suggested by supporters of this notion, that consumers do not make that dichotomous differentiation (between service and good) when making a purchase. Rather, it is suggested that consumers are driven by value-satisfaction (which is independent of the offering's classification as service or product), and that the products which meet these value needs have various degrees of tangibility and service tied in to their consumption (Enis and Roering 1981, Hollander 1979, Levitt 1980, 1981, 1969).

Tangibility has traditionally been used as a means of distinction between goods and services. The construct has been used as a basis of a dichotomous distinction between the two. However, in response to the continuing debate, Murray and Schlacter (1990) suggested that goods and services can be identified along a continuum, as opposed to the previously used diametric classifications. The authors based the use of this continuum on the observation that all products (including both goods and services) "possess common properties, or dimensions" (Murray and Schlacter, 1990, p.53) in different proportions (i.e. intangibility, inseparability and nonstandardization). It was asserted that these common dimensions can be used to create relative positions of both goods and services along a continuum. The relative proportions of the dimensions in the product, as well as their dominance over other product dimensions would determine the positions on the continuum (Murray and Schlacter, 1990). The notion of relative positioning of goods and services on a continuum, based on perceived attribute levels,

has received support in the literature prior to this study (see p. 53 – Shostack 1977; Rathmell 1966)

### *1.2.1 Simultaneity of Production and Consumption*

Production and consumption are features that are associated in the buying process of both goods and services. The traditional order for goods is that they are produced, purchased and finally consumed. For services, they are usually purchased and then produced and consumed simultaneously (Davis et al. 1979; Berry 1980; Zeithaml et al. 1985; Bitner and Zeithaml 1988).

### *1.2.2 Perishability*

Services cannot be inventoried. If they are not consumed at the time of production, they cannot be saved for consumption at a later time (Davis et al. 1979; Bitner and Zeithaml 1988; Lovelock 1991; Rust et al. 1996).

### *1.2.3 Nonstandardization*

It has been asserted that another main difference between services and goods is the producers' inability to ensure consistency in the quality of the individual service encounter. (Rathmell 1974; Eiglier et al. 1977; Parasuraman, Zeithaml and Berry 1985). This inconsistency can be the result of time-to-time (ie. experiencing differences in quality by the same service provider on different encounters) or person-to-person variability (ie. experiencing differences in quality as a result of encounters with different employees of the same service provider) (Hale 1998).

This inability to provide consistency stems directly from the service providers' inability to inventory services. As a result, in times of great demand a time pressure is created to provide the services in a timely fashion, perhaps prompting the providers to spend less time on each individual encounter. Conversely, in times where demand is less, the providers are not constricted in the time that they devote to each service encounter, thereby introducing a certain level of inconsistency into the service encounter. Further introducing variability of service quality is the fact that each service encounter that a consumer has may take place with different employees (Berry 1980; Zeithaml 1981).

This lack of heterogeneity prompted Zeithaml (1981) to suggest that service consumption creates a need for familiarity and experience with a service provider since consumers can never be certain as to the quality of the encounter prior to each service encounter.

It is important to note that the lack of heterogeneity is not reserved solely for services. Some products, namely those that aren't standardized through a mechanical manufacturing process, display variability in quality as well. Conversely, it is shown that certain services offer a fairly high degree of standardization (ie. public services). As such, the labeling of this characteristic as a general distinguishing factor between goods and services must allow for exceptions (Rathmell, 1974).

#### *1.2.4 Absence of Ownership*

Rathmell (1974) suggested that another differentiating factor, other than intangibility, between goods and services was the fact that there was no transfer of ownership when a service is consumed. This is demonstrably different to the purchase and consumption of

a good in which the seller transfers ownership of the good to the buyer. Other authors later adopted this idea and suggested that the consumption of a service results in more of a process or performance whose outcome is an experience rather than possession of an object (Schneider 1988; Berry and Clark 1986).

### ***1.3 Measurement of Tangibility***

According to Garner (1978), tangible product attributes can be categorized under one of the following three headings: dichotomous, multichotomous and multi-leveled.

Dichotomous attributes are measured through their presence or absence. Once present, these attributes can have only one level (an example of such an attribute is a pollution control valve in a car). Multichotomous attributes are always present, and their measurement involves the identification of the attribute's quantity. Multichotomous values are either interval or metric in nature. For example, all cars come with a colour, however, each car may only have one colour value at any given time). These values are not enduring, they are subject to change at different points in time. Multi-leveled stimuli have a "hierarchical distribution of values" (Hirschman, 1980, p.9). This allows the attribute values to be ranked in relation to other values of the same attribute. These values are interval or metric leveled data that can take the form of continuous or discrete value distributions. Hirschman (1980) gives the following examples: the horsepower of a car is a metrically scaled, continuously distributed product attribute, whereas, the number of cylinders within that same engine would be considered as being a metrically scaled, discretely distributed product attribute (Garner, 1978).



Hirschman (1980) felt that two other tangible product attributes categories could be added to Garner's list. First, she suggested that there should be a category for those attributes that are either present or absent, and when present, take on a variety of nominal values. She gave the example of perfumed and unperfumed deodorants. The second category whose addition she had suggested was of those attributes that may or may not be present, and when present, may take a variety of interval or metric forms. Her example was that of automated teller machines that could be located in a bank (Hirschman, 1980).

The magnitude of an intangible attribute is not quantifiably measurable. The intangible attribute associated with a product or service exists within the individual consumer's mind, making it an ordinal measure. To further complicate the measurement of an intangible attribute, the consumer's perceptions of the attribute's magnitude fluctuate with each experience. Hirschman asserts that this is a "function of the fact that tangible attributes are properties of the stimulus, itself; whereas intangible attributes are mental constructions of the individual." (Hirschman, 1980 p.10).

## **2. THE CONSEQUENCES OF INTANGIBILITY**

### ***2.1 Intangibility as a Precursor to Difficulty of Evaluation***

The study of intangibility has led researchers to certain conclusions about its consequences on the purchaser. Product and service intangibility has been closely linked to an increased difficulty of evaluation (Zeithaml 1981; McDougall 1987; McDougall and Snetsinger 1990). High levels of intangibility have also been associated with a greater perceived processing effort (McDougall 1987). Finally, intangibility in a product or service has brought about a lower certainty of evaluation for the consumer (Murray 1991; Mitchell and Greatedorex 1993). It will be shown later that these outcomes have traditionally been associated with higher levels of perceived risk, a construct that shall be explored in greater detail in a subsequent section.

#### ***2.1.1 Perceived Evaluation Difficulty***

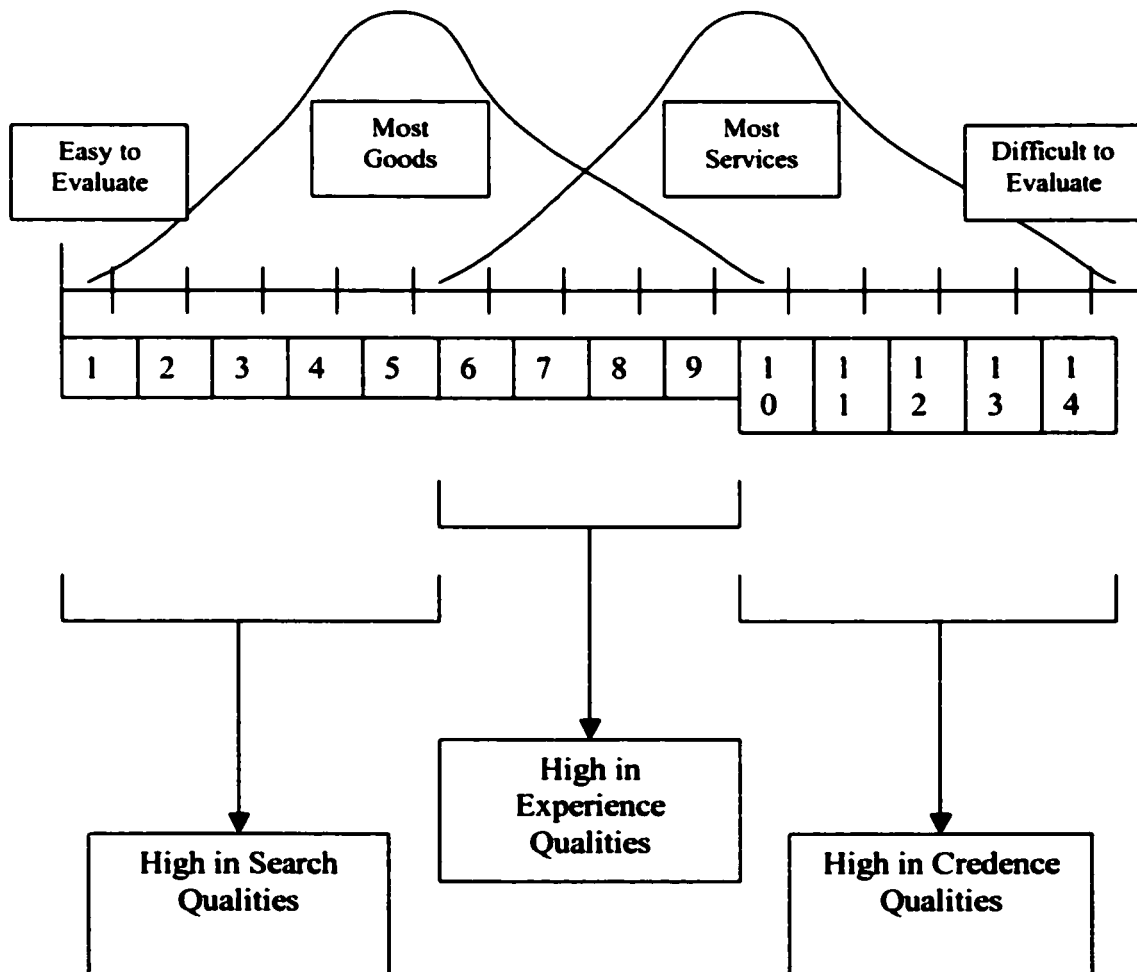
Goods and services have been distinguished on the basis of their characteristics, but how do those differences translate into unique evaluation processes? “Perceived evaluation difficulty reflects the degree to which the consumer finds it problematic to discriminate and choose between alternatives” (Breivik, Troye and Olsson 1998, p.7). Nelson (1974) proposed two categories of consumer goods and service qualities. The first, labeled *search qualities*, were those qualities that are identifiable prior to purchase and consumption. Examples would include colour, style, price, fit, feel, hardness, smell, taste, and wearability. Goods, which are high in these qualities, tend to have attributes that are easily discerned prior to purchase. The second category *experience qualities* are those qualities that are only identifiable once the user has consumed or is in the process

of consuming the good. Restaurants and vacations are good examples of this category of qualities. It was found that some goods, and many services fall into this category (Zeithaml 1981).

In 1973, Darby and Karni added a third category. Labeled *credence qualities*, this category encompassed those qualities that a consumer may find impossible to evaluate, even after she has purchased and consumed the service or good. This inability to evaluate the service or good may come about as the result of an inadequate level of necessary skills or knowledge. Examples of such goods or services may be surgical operations or brake relinings on automobiles. It was found that this category of qualities was found predominantly in service sectors that are provided by specialists or professionals (Zeithaml 1981).

**Figure 4 – Attribute Qualities**

- 1: Clothing
- 2: Jewelry
- 3: Furniture
- 4: Houses
- 5: Automobiles
- 6: Restaurant Meals
- 7: Vacation
- 8: Haircuts
- 9: Child Care
- 10: Television Repair
- 11: Legal Services
- 12: Root Canal
- 13: Auto Repair
- 14: Medical Diagnosis



Source: Zeithaml, V. A. (1981), "How Consumer Evaluation Processes Differ Between Goods and Services" in Donnelly J. H. and George W. R. (Eds.), *Marketing of Services*, American Marketing Association, Chicago, IL, pp. 39-47.

The distribution of services and goods along this continuum was the result of the three distinguishing service characteristics: intangibility, nonstandardization and the inseparability of production and consumption. It is believed that the distinguishing characteristics of services make them more difficult for consumers to evaluate than goods (Zeithaml 1981; McDougall 1987).

In 1998, Breivik, Troye and Olsson found that sense inaccessibility (physical intangibility) was negatively related to perceived evaluation difficulty. The authors found that products with attributes that were inaccessible to the senses were perceived to be less difficult to evaluate than products whose attributes rated highly in sense accessibility. The authors believed that this came about as the result of the consumers' ability to refer to mental representations of the product that are resultant of prior experience, a process that requires less effort than processing the information derived from tangible attributes (Breivik, Troye and Olsson 1998; Hirschman 1980). These findings were directly opposite to the traditional belief that services are "more difficult to evaluate than products because they lack the physical evidence available for most products" (McDougall 1987, p.427). A recent study, whose purpose was to further explore that relationship, found there to be no relation between physical intangibility and perceived difficulty of evaluation (Goutaland, 1999).

Generality, the second intangibility dimension was found to have a positive influence on perceived difficulty of evaluation. That is to say, that the more general the product attributes are, the greater the perceived difficulty of evaluation. This was attributed to the fact that the consumer cannot have a specific mental representation of the product under such conditions (Breivik, Troye and Olsson 1998; Goutaland 1999).

**Mental intangibility was found to have a positive relationship with perceived difficulty of evaluation. Goutaland (1999) found that with increased levels of attribute mental intangibility came increased difficulty of evaluation for the consumers.**

**The perceived difficulty of evaluation for service information is further complicated by its heavy reliance on personal sources (i.e. friends and experts). This reliance on personal information is due to several reasons. First, the mass and selective media are effective at delivering search qualities, but rather inefficient at delivering experience qualities. Friends and experts are much more efficient at transferring that type of information than the non-personal sources. Second, many service sectors do not provide non-personal sources of information. This lack of non-personal information comes about as a result of three factors: a) Advertising funded jointly by the manufacturer and retailer is often not available since many local service providers play the role of both parties, limiting the available funding; b) Most service providers are small, locally owned operations that do not have the necessary funds or expertise to run an extensive advertising campaign; c) The unpredictable nature of the provision of a service (see *Nonstandardization*) urges consumers to be more reliant upon credible sources of information (personal) as opposed to the biased information that can be conveyed through mass or selective media (Cunningham 1967; Zeithaml 1981).**

**This reliance upon experiential information is predominantly found in purchase situations in which the perceived risk is highest (Cunningham 1967; Zeithaml 1981).**

### ***2.1.2 Perceived Processing Effort***

Perceived processing effort can be defined as being the “time and energy the buyer perceives to spend in order to make a decision” (Breivik, Troye and Olsson 1998, p.8). It is a concept that is closely related to perceived evaluation difficulty. Studies in the past have measured this construct either by measuring the time used to reach a purchase decision or by assessing the amount of information that is necessary for a consumer to make a purchase decision (McDougall, 1987). The directional nature of the relationship between the dimensions of intangibility and this construct were the same as those found with perceived difficulty of evaluation, however, the strength of those relationships were found to be weaker (Breivik, Troye and Olsson 1998).

It has been pointed out in the past that the value of the product being sought influences the amount of effort that a consumer is willing to expend in making a purchase decision. The high-value products tend to elicit a greater willingness to exert effort on obtaining the necessary information than do low-value products (Mitchell and Prince 1993). Similarly, the type of information gathered is different when seeking to purchase a good as opposed to a service, as was discussed in the perceived evaluation difficulty section (Zeithaml 1981; Finn 1985; Murray 1991).

### ***2.1.3 Certainty of Evaluation***

Certainty of evaluation is related to the consumers’ confidence in their ability to make a correct purchase decision (Wendler 1983). It would therefore stand to reason that the greater the degree of perceived difficulty of evaluation, the greater the consumers’ uncertainty in their decision.

Mitchell and Greatedorex (1993) explored that very line of reasoning. Their study was based on the belief that uncertainty is a result of factors inherent to the product, brand, place and mode of purchase (Cox and Rich 1964). They believed, and later confirmed, that as a result of their intrinsic characteristics (simultaneity of production and consumption, nonstandardization, intangibility and perishability), services can be associated with higher degrees of uncertainty. This uncertainty led to greater levels of risk involved in the purchase decision of services rather than the purchase decision of goods (Bateson 1979; Mitchell and Greatedorex 1993). Increased uncertainty has also been associated with high levels of anxiety or discomfort (Taylor 1974).

It has thus been suggested that certainty of evaluation is directly related to perceived risk. It is believed to be a concept so closely related to perceived risk, that it has been recognized in the literature as one of its two dimensions (i.e. uncertainty and adverse consequences) (Bauer 1960; Cunningham 1967; Taylor 1974; Cox and Rich 1964).

## ***2.2 Perceived Risk***

Decision theorists first characterized risk “as the situation where a decision maker has a priori knowledge of both the consequences of alternatives and their probabilities of occurring” (Dowling 1986, p.194). It is believed that perceived risk bears closer resemblance to “partial ignorance” (Dowling 1986, p.194), in which the consumer is aware of neither the consequences nor the probabilities of their occurrence (Dowling 1986). The adverse consequences were defined as being the costs involved in attempting to achieve a set of buying goals in a purchase situation. (Cox and Rich 1964). This



definition was later amended to the importance of loss in a buying situation (Taylor 1974).

Bauer first equated the consumption of goods and services to being a risk-taking activity in 1960. He based this assumption on the fact that “any action of a consumer will produce consequences which he cannot anticipate with anything approximating certainty” (Bauer 1960, p.24). This lack of certainty was the causal factor behind the risk of any consumption of good or service (Bauer 1960; Cunningham 1967).

### *2.2.1 Risk: The Sum of Uncertainty and Consequences of an Outcome*

The two-dimensional perceived risk model has gained acceptance throughout much of the literature (Bauer 1960; Cunningham 1967; Taylor 1974; Ross 1975; Havlena and Desarbo 1990). Although it was immediately clear that both perceived risk dimensions, uncertainty (of evaluation) and consequence, contributed to variance in perceived risk levels, it was unclear whether the two dimensions contributed to perceived risk in an additive or multiplicative fashion (Bettman 1973; Ross 1975).

Dowling offered support for the multiplicative two-dimensional model in 1986. First, the absence of either one of the two variables would eliminate perceived risk. With absolute certainty of evaluation, potential consequences would no longer be of concern, since consumers would be able to make perfectly informed decisions. With the absence of purchasing consequences, an error in choice would have no ill-effects on the consumer. In either one of these two cases, perceived risk would be absent. The second argument that supports the multiplicative model is that “the influence of a nonsalient adverse consequence on overall perceived risk is reduced” (Dowling 1986, p.199). It is

this second reason that is most important in cases in which researchers prespecify the adverse consequences or loss that is believed to be salient to respondents (Dowling 1986).

The implementation of the multiplicative model requires the use of one of the following five equations to properly deduce the overall perceived risk that is felt by a consumer.

- (1) Perceived Risk = Uncertainty
- (2) Perceived Risk = Uncertainty  $\times$  Adverse Consequences
- (3) Overall Perceived Risk =  $\sum_{i=1}^n \text{Uncertainty}_i \times \text{Adverse Consequences}_i$
- (4) Overall Perceived Risk =  $\sum_{i=1}^n \text{Probability of Loss}_i$
- (5) Overall Perceived Risk =  $\sum_{i=1}^n \text{Probability of Loss}_i \times \text{Importance of Loss}_i$

Where

n = the number of types of loss /

Source: Dowling, G. R. (1986), "Perceived Risk: The Concept and Its Measurement" *Psychology and Marketing*, Vol. 3, No. 3, pp.198-199.

In order to make this statistical model more complete, an individual's risk tolerance and her wealth must be taken into consideration. According to Dowling, this can be done by including other measures of risk (ie. unidimensional measures that rate the degree of risk associated with a product in a single case – How risky is \_\_\_\_?: "No Risk" to "Extremely Risky", rank order measurements of products on the basis of riskiness and estimates of piecewise disutility functions) (Dowling 1986). Dulude (1998) further suggested that in order to get a firm grasp on the level of risk, it must be measured

in four ways: a global measure, a measure of uncertainty, a measure of importance and a combined measure of uncertainty and importance.

### **2.2.2 Six Types of Risk**

Originally believed to have five components (performance, financial, social, psychological, and physical) (Jacoby and Kaplan 1972; Kaplan, Syzbillo and Jacoby; Roselieus 1971) perceived risk has since been broken down into six: financial risk, performance risk, physical risk, psychological risk, social risk and convenience loss (time-related risk) (Murray and Schlacter 1990; Stone and Grønhaug 1993).

It was found that some of the components of overall perceived risk were more potent in the consumption of services than the consumption of goods. The consumption of services usually involves a greater degree of social contact than do the consumption of goods. This contact can come directly with the provider or indirectly through contact with others in the service environment and is resultant of the simultaneity of production and consumption of services. This can lead to a higher degree of *social risk* when consuming services as opposed to goods (Bateson 1979; Eiglier and Langeard 1977; Murray and Schlacter 1990). The potential loss of time and/or effort resultant to a purchase of a good or service is perceived to be greater in services than in goods. As a result, *convenience risk* is rated higher in the consumption of services. *Physical risk* is also perceived to be greater when consuming services rather than goods. Finally, there is a perception by the consumer that the consumption of services involves a greater potential loss or damage to self-image (*psychological risk*) than do the consumption of goods (Murray and Schlacter 1990).

Of the six types of risk, two were (financial and performance risks) found to have less fluctuations in perceptions when it came to the consumption of services than the consumption of goods. *Financial risks* are perceived to be higher in service consumption than with the consumption of goods. This is the result of the consumer's inability to determine the exact cost prior to purchasing a service (as a result of variable completion schedules or unforeseeable costs) as opposed to goods, whose exact financial cost can be established prior to purchase. Although directionally supported, this finding did not achieve statistical significance. Likewise *performance risks* are perceived to be higher with services, presumably as a result of the variability within the completion of the service by the provider (again only directional support was found, not statistically significant). These two parts of overall perceived risk must be revisited in order to ascertain their true relationship to the consumption of goods and services (Murray and Schlacter 1990).

### ***2.2.3 The Reduction of Risk***

Ross (1975), found that word of mouth was the most effective external information source in trying to assuage overall perceived risk. However, it was found that when performance risk was perceived to be the highest (the greatest single contributing factor to the level of overall perceived risk), consumers found direct exposure and experience to the product or service to be the most convincing risk reliever (Kaplan, Szybillo and Jacoby 1974; Ross 1975).

#### ***2.2.4 Inherent and Handled Risk***

Inherent risk refers to the risk that is innately bound to the product or service class. It is present regardless of circumstance. Handled risk addresses the risk that is brought about as a result of the necessity for a choice between brands within a given product or service category. “Thus, handled risk includes the effects of information and risk reduction processes as they have acted on inherent risk” (Bettman 1973).

For our purposes, inherent risk will be used as a gauge of overall perceived risk. This is done so as to enable us to view overall perceived risk as it relates to the varying degrees of intangibility that are brought about as a result the purchase of a product or service in an online or offline environment. Using inherent risk for such purposes can be found throughout the literature (Cunningham 1967; Jacoby and Kaplan 1972; Murray and Schlacter 1990; Goutaland 1999).

#### ***2.2.5 The Person or Trait Perspective***

Risk perception has been acknowledged as being of a subjective nature. Its perception and interpretation introduces high levels of variability across individuals (Bauer 1960; Taylor 1974; Cunningham 1967; Ross 1975; Havlena and DeSarbo 1990). Further introducing variability in its perception is an individual’s sensitivity to the risks involved in the purchase and consumption of a product or service. Consumers’ sensitivity led researchers to label them as being either risk seekers or risk avoiders (Dowling 1986). Those labeled risk avoiders tended to view all product categories as being riskier than the average consumer, while those labeled as risk seekers tended to rate the product categories as being safer than the average consumer (Cunningham 1967; Ross 1975).

Further influencing the individual's perception of risk is their ability to absorb financial, performance, physical, psychological, social and time risks. When the consumption of the product does not pose a sufficiently high degree of penalty in one or more of those areas, then the individual may not perceive the risk that it may pose to another whose minimum threshold in that component of risk is met (Dowling 1986).

Supporting the existence of a minimum threshold for perceived risk to factor into purchase decision making, it was found that buyer experience had very little effect on low-value items, whereas, in the purchasing of high value items, experience is an intervening variable on perceived risk. The value of experience was not found to be quite as strong when buying services as when buying goods. The authors speculated that this was the result of the variance of service quality in the different service experiences that they may have with a provider (Mitchell and Prince 1993).

From these studies, we can infer that experience, mitigated by involvement, will affect the degree of risk perception that a consumer will feel during the purchasing process. The type of product or service that is being consumed will manipulate the effect of reducing perceived risk that experience will have.

#### ***2.2.6 The Object Point of View: The Type of Product or Product Risk***

The inherent risk that is to be found in product and service classes varies between them. It varies in both its makeup (i.e. proportions of each of the six types of risk that are present), as well as the weight that is given to it by the consumer (i.e. meeting the minimum threshold to make its presence significant to the consumer) (Cunningham 1967; Jacoby and Kaplan 1972). Generally, services tend to elicit greater difficulty of

evaluation, which leads to higher uncertainty, which ultimately leads to higher perceived risk for the consumer (Davis, Gultinan and Jones 1979; Bateson 1979; Zeithaml 1981; Murray and Schlacter 1990; Murray 1991; Mitchell and Greatedorex 1993).

Product innovations are often perceived to be of greater risk than are existing product offerings (Cox and Rich 1964; Havlena and DeSarbo 1990). This increased perception of risk is associated with the consumers' inexperience with the innovation. This relationship is however somewhat tempered by the consumers' involvement with that product class (Ross 1975).

#### ***2.2.7 Information Search***

Although increased access to information has decreased consumers' perceptions of uncertainty about their choice, this did not actually mean that they made better choices. In fact, it was found that too much information reduced certainty after a certain threshold had been surpassed. Information initially increases certainty, only to decrease it once the information load has become too great to process (Jacoby, Speller and Kohn 1974; Alba and Hutchinson 1987). As such, instead of reducing perceived risk, an abundance of information can in fact increase it (Jacoby, Speller and Kohn 1974).

Much literature that followed did not find this upper limit to the utility of information. It was found that in high involvement and risk products, information comprehension increased the certainty with which a purchase decision was made, thereby reducing the perceived risk as a consequence (Wendler 1983). Later on, a study that examined unfamiliar products found that additional information eased the consumers' uncertainty, which in turn reduced risk (Finn 1985). Furthermore, it would seem that

high risk products seemed to elicit a greater information search from consumers than did low-risk products (Mitchell 1991).

This relationship between perceived risk and the consumers' information search was not supported in a meta-analysis of the topic (Gemünden 1985). His review of the various studies did not find support for the assertion that products with high degrees of risk would necessarily entail higher degrees of information search by the consumer. Gemünden offered six potential explanations. First, the elevated levels of perceived risk did not meet the minimum threshold that the consumers had in order to stimulate the additional search efforts. Second, it is possible that even though the minimum threshold of tolerated risk was exceeded, it was reduced by the consumer through means other than extended information searches (i.e. an increased reliance upon brand image). Third, although the consumer would be inclined to perform an extensive information search, she perceives the information sources to be tainted, and as such, unreliable. Fourth, although the consumer would be inclined to search for more information prior to the purchase, barriers are present that prohibit the search for further information (i.e., prohibitive financial, time and/or social costs). Fifth, as was previously suggested (Jacoby, Speller and Kohn 1974; Alba and Hutchinson 1987), the consumers' perceived risk actually increases with the acquisition of additional information. Finally, the consumer searches for information that is fitting to their existing schemas, actively avoiding any information that may introduce cognitive dissonance. This would limit the information search that the consumer would make (Gemünden 1985; Alba and Hutchinson 1987).



### ***2.2.8 The Mode of Purchase (Distribution Channel)***

Thought of as a potential reducer of risk, different channels of information distribution have been found to be effective, to various degrees, in reducing various types of risk. It was found that the information was sought through different channels, as a result of the level, and type of perceived risk that the consumer experiences (Taylor 1974). Cox and Rich (1964, pp.487-488) give the example, “when shopping in person in a department store the customer has the opportunity to reduce uncertainty by personally inspecting or testing the merchandise”. This lead to the conclusion that certain forms of shopping may be riskier to the consumer than others, especially those that do not offer visual or tangible cues, such as the telephone (Cox and Rich 1964; Ross 1975), and later the Internet. In those purchase situations, the consumer has available to her only two options to reduce risk, to look back on previous experiences or to rely upon information given in an advertisement. The intangibility of the purchasing medium can therefore influence the perceived risk before the purchase process even begins (Cox and Rich 1964).

The intangibility of the purchasing medium seemingly plays a more important role when there is a greater amount of information to process in coming to a decision (i.e. brand, size, colour), or when the importance of that decision is greatest, then the greater the uncertainty the consumer feels about making a purchase decision without visual or tangible cues (Cox and Rich 1964). As such, we can presuppose that tangible products purchased over the phone, or via the Internet, will be perceived to be risky by the consumers. The resulting increase in risk perception lead Cox and Rich (1964) to suggest that consumers would avoid those intangible purchasing mediums in acquiring items that are already deemed to be risky.

In order for consumers to use these intangible purchase mediums, it is important for perceived risk to be reduced to an acceptable level (Cox and Rich 1964). In that respect, there are two strategies available. The first involves reducing the stake that is involved (i.e. making the purchase less valuable with regards to the hopes of gain, penalties for failure and means of gain). The second strategy involves increasing the certainty that failure will not occur. This is achieved by becoming more certain that favourable outcomes will be achieved through the purchase decision. Of the two, it has been found that the second, increasing certainty that a favourable outcome will occur, is a more feasible strategy (Cox and Rich 1964; Ross 1975). Of the two risk reduction strategies previously discussed (i.e. seeking information and direct exposure to the purchase situation), it was found that the second is most useful since additional information does not always lead to diminished risk (Kaplan, Szybillo and Jacoby 1974; Ross 1975 – as well please refer to the *information search* section above). As such the consumer can reduce risk by familiarizing herself with both the product and the purchasing medium that she will use. We will try to further explore the moderating influence that the intangible purchase medium has on product/service evaluation.

### **3. OTHER VARIABLES INFLUENCING PRODUCT EVALUATION**

Both knowledge and involvement are recognized as influencing a consumer's product evaluation. Although not exhaustive, our list of influencers should shed light on the interactions of those explaining variables with greatest predictive power.

#### ***3.1 Knowledge***

Knowledge has been reduced to two separate dimensions; one a practical element, experience, which is a representation of the successful manipulations of the product or service that the consumer has had, and a second internal dimension, expertise, which is a dimension that reflects the consumers' acquired ability to effectively use the service or product (Gharbi 1998).

A dependence relationship was found between the concrete experience dimension and the internal expertise dimension. The greater the experience accrued by the consumer, the greater expertise is demonstrated by that consumer in her manipulation of the product or service in which the experience is actualized (Zaichkowsky 1985b; Alba and Hutchinson 1987).

##### ***3.1.1 Experience***

Gharbi (1998) suggested that expertise should be further subdivided into two dimensions. The first entails any activity that the individual takes which relates to the product use. The second dimension includes actions that are behavioural and/or mental or cognitive operations.

The first dimension denotes choice, purchase, possession and usage of a product or service. Both the frequency and variety of these encounters help determine the level of consumer experience (Mitchell and Prince 1993). This frequency, and continuity of encounters, can be used as an indicator of consumer experience (Gharbi 1998). Purchase experiences have been found to be a better indicator of consumer experience than product usage or advertising exposure (Alba and Hutchinson 1987).

The second dimension refers to any indirect exposure that the consumer has to the product/service. This may include research and usage of information that relates to the product or service. According to Gharbi (1998) the range and depth of the information search, the frequency of exposure and use of the information and the variety of situations in which the information is used are all mental/cognitive indicators of a consumer's experience with a product. We must again note however, that purchase repetition was found to be the strongest of all experience indicators (Alba and Hutchinson 1987).

### ***3.1.2 Familiarity***

An examination of this closely related concept showed significant differences in its conceptualization in marketing and psychology literature. It has been treated as being one and the same as knowledge or expertise as in the case with the Johnson and Russo (1984) study, or synonymous with experience as with the Alba and Hutchinson (1987) study. Nantel and Robillard's (1991) review of the existing literature showed two competing conceptualizations of familiarity. The first denotes familiarity as a function of experience, usage, expertise or knowledge. The second regards familiarity as dependent upon various cognitive structures internalized by the consumer. The authors argue that

despite the importance of experience, the measurement of familiarity solely through product experience would be misleading. They argue that familiarity can be increased through an extensive information search, without drawing upon their own experience. Secondly, they maintain that product experience can increase without any learning effect at the level of knowledge (Nantel and Robillard 1991). As such, it is imperative to operationalize experience at the most inclusive level. In order to be comprehensive, it should include “advertising exposures, information search, interactions with salespersons, choice and decision making, purchasing, and product usage in various situations” (Alba and Hutchinson 1987, p. 411).

The second conceptualization of familiarity treats the construct as an internal representation of knowledge. This conceptualization expresses familiarity as a cognitive representation that incorporates both experience and knowledge. This lead to the conclusion that there are two distinct types of experience: the first is direct and is reliant upon product usage and encounters, the second is indirect and is shaped by external sources of information such as product advertising (Nantel and Robillard 1991).

In measuring experience, several different approaches have been suggested. Zaichovsky (1985b) suggested that product use (one component needed to measure familiarity along with subjective knowledge structure) should be measured through both the depth and the breadth of consumption. She further suggested that these measures need to be different for durable and non-durable goods. For durable goods, she posited that depth be measured by the number of times a product is used in a given period of time, while the breadth be measured by the different uses in the allotted time. For non-durable goods, she suggested that depth be measured by the number of times the product

is purchased or consumed in the same given time period, while the breadth be measured by the number of brands that are purchased in the given time period (Zaichovsky 1985b).

Murray and Schlacter (1990) attempted to measure experience through a Likert scale of five items that covered purchasing experience, extent of use and contact with product, familiarity with the available brands in the general product category, purchase frequency and confidence in purchase decision. This scale conceptualized experience as a function of purchasing experience, usage, familiarity, confidence and frequency of purchase.

### *3.1.3 Experience and Its Effects*

The influence of experience on information search has been explored, only to find some conflicting results. The findings have led to four distinct models (Mitchell and Prince 1993). The first suggests that increased consumer experience elicits a smaller information search. The second posits that increased experience allows for a greater information search to be carried out. A third proposes that an inverted U relationship exists. That is to say that as experience increases initially, so does the information search. At a certain point in time, this positive relationship becomes a negative one. Once a threshold is reached, the very experienced consumer requires less and less information than was sought before (Johnson and Russo 1984). Although logically appealing, there is no empirical evidence that supports this model as of yet (Brucks 1985). The fourth model reports no relationship at all between experience and information search (Mitchell and Prince 1993). There does however seem to be a fair

degree of consensus about experience facilitating the absorption of new product information (Johnson and Russo 1984; Brucks 1985).

Familiarity has also been linked to an increased ability to infer information about a product given a generic term. The categorization of information becomes more likely given experience as well (Alba and Hutchinson 1987). For instance, faced with a product description such as a BMW car, to less familiar consumers, it would be regarded and classified as a car, while to more experienced car consumers, it would be classified as a BMW. This ability to classify products with greater degree of accuracy makes the information related to the classification more meaningful as well as less effortful (Park and Lessig 1981).

#### *3.1.4 Expertise*

The other component of consumer knowledge, expertise can be defined as being “the ability to perform product-related tasks successfully” (Alba and Hutchinson 1987, p.411). The authors held this dimension to be a separate entity from experience. However, through a review of the existing psychological and marketing literature, the authors suggested that the two dimensions were closely related. The authors posited that experience should have a positive effect on the five components that make up expertise: cognitive effort and automaticity, cognitive structures, ability for analysis, ability for elaboration and finally, memory. These components, when taken at an aggregate level, determine the level of expertise that a consumer has in a given product category (Alba and Hutchinson 1987).

### ***3.1.5 Cognitive Effort and Automaticity***

**Repetition has a positive effect on all cognitive tasks through an increase in proficiency or through a reduction in demand on cognitive resources. This observation in psychological literature led Alba and Hutchinson (1987) to suggest that an increased level of product familiarity (experience) should lead to a reduction in the effort exerted in the product choice and usage. This reduction of effort is coupled with a “speed up” of the task performance, without a compromise in the quality of performance (Alba and Hutchinson 1987).**

**As the demands on the cognitive processes are diminished, resources become available for other tasks to be carried out, leading to better product choice and performance. The greatest improvements in effort reduction and process-time reduction occur initially, leveling out after more product experiences are had. The reduction in cognitive effort may reach a point where the usage and choice of that product may become an automatic process, taking little conscious control or effort, thereby not impeding any other concurrent tasks that are being performed. A general level of automaticity exists once the process “can be performed with minimal effort and without conscious control” (Alba and Hutchinson 1987, p. 413). Once a consumer has achieved a certain level of automaticity, it becomes very difficult to induce change, since that change will result in an increase in processing effort (Alba and Hutchinson 1987).**

### ***3.1.6 Cognitive Structures***

**Cognitive structure is generally recognized in the literature as the “factual knowledge” that a consumer has of a product, and the way in which that knowledge is organized. Its**



function is thought to be the differentiation of products and services in ways that are helpful for decision-making. As experience with a product or service increases, so does the “factual knowledge” that the consumer must classify. Research in related areas would suggest that as product familiarity increases, finer discriminations are available to the consumer. This is made possible by the familiarity with subcategories within a product class that experience brings about (Alba and Hutchinson 1987). Secondly, Alba and Hutchinson (1987) posited that more complete categorizations of specific products would be made possible by the greater number of subcategories that are available to the consumer’s structure. This increased ability to categorize the products should lead to consumer product representations which are based “deep, rather than surface, structure” (Alba and Hutchinson 1987, p.417). The result of increased experience on cognitive structures is thus an increase in capacity to categorize information at a more micro level, thereby allowing for a more advanced information processing, leading to fewer decision errors (Alba and Hutchinson 1987).

### *3.1.7 Ability for Analysis*

The extent to which a consumer can conduct an information analysis refers to the degree to which she can access all the information that is pertinent to the task at hand. Analytic processing is considered to be an effortful exercise since it requires the consumer to access information that is beyond her immediate means as well as ignore that information that is not relevant to the task at hand (purchasing decision). Since experience is suspected to free up cognitive resources, it is thought to be beneficial for analytical processing as well (Alba and Hutchinson 1987).

Experience is believed to influence all three components of analytical abilities, namely selective encoding, classification processes and inference. Experts are believed to be more likely to search for new information across a variety of sources, restrict the information intake to relevant material only and process that information more extensively. Experts are also more likely to engage in analytic classifications based on attribute similarities as well as being more likely to have the cognitive resources to use these classifications as a means of distinguishing between products. Finally, experts are less likely to rely upon non-analytic inferences (“characterized by heuristic connections between known and inferred facts” (Alba and Hutchinson 1987, p.421)), less likely to over-generalize new product information, less likely to make errors in their inferences as a result of stereotyping and more likely to believe that a product does not have a certain attribute as a result of their not being aware of it (Alba and Hutchinson 1987).

The literature provides mixed results when looking at experience and information search. For a review of the relationship, please refer to the section entitled *Experience and its Effects*. It is interesting to note that Brucks (1985) found that experience with a product class had a positive effect on the variability of the search and a negative effect on the superfluous information gathered by the consumer.

### ***3.1.8 Elaboration***

Elaboration can be defined as “the number of intervening facts that must be computed in order for an inference to be made” (Alba and Hutchinson 1987, p.423). The fewer the intervening variables (resultant from increased experience), the easier it is for the consumer to elaborate on the available information (make inferences) accurately. The

intervening variables are reduced through an experienced consumer's greater factual knowledge, greater knowledge variability and superior analytic processing capabilities (Alba and Hutchinson 1987).

### ***3.1.9 Memory***

For the purpose of their paper, Alba and Hutchinson (1987) conceptualized memory as being long-term retention and recognition of verbal cues, namely brand names and product information. They posited that this form of memory would be facilitated through a decreased reliance upon stimulus-based information. This would come about as a result of increased experience through their repeated exposure to the stimulus, the variety of their experiences with the product, their higher-level classification systems and finally their increased ability for analytic processing (Alba and Hutchinson 1987).

### ***3.1.10 Measurement of Knowledge***

Although Alba and Hutchinson (1987) suggested the existence of the five components of expertise, they did not establish any method of measuring them. Three alternative measurements of knowledge are available to researchers: subjective measures, objective measures and measures that tabulate frequency of product purchase or usage (Brucks 1985). To date, expertise has been established through subjective multiple-choice scales or objective evaluative measures. When measured subjectively, the relationship between expertise and experience (operationalized as product usage in this study) was found to be stronger than when experience was measured objectively (Zaichkowsky 1985b). This

finding prompted researchers to ask the question: which form of measurement (subjective versus objective) is more appropriate (Gharbi 1998)?

### *3.1.11 Objective or Subjective Evaluations of Knowledge*

A demonstrable difference has been found to exist between objective and subjective consumer evaluations, both conceptually and operationally. This difference comes about when measures of subjective knowledge (what individuals perceive to know about a product or task) and objective knowledge (what accurate information is actually stored in the consumers' memory) do not coincide. However, in order for this difference to have any meaning, both types of measure must be equally sensitive (Brucks 1985). The subjective, self-evaluation method is tied to the consumer's direct experiences with the product or task, while the objective method measures all information about a product or service that a consumer remembers. The reliance on direct experience is thus less present in the objective versus the subjective measures (Park, Mothersbaugh and Feick 1994).

It has been suggested that subjective measures are a better indicator as to purchasing strategies and tactics since it gives certain insight into the consumers' confidence in their knowledge of the product or task. The confidence in there is a suspected influence on the consumers' information search and purchasing techniques (Park and Lessig 1981; Brucks 1985; Nantel and Robillard 1991). This confidence in one's own knowledge of a product category or task has been suggested to be a greater indicator of ease of evaluation than has an objective measure of one's knowledge (McDougall 1987). Furthermore, the objective approach has fallen under criticism for

the measure's innate reliance upon a definitive designation of expertise in a product or task (Zaichkowsky 1985b).

The inherent strengths of the two measuring techniques has led to a guideline as to which to use in different research scenarios. When the target of the research is the assessment of a consumer's ability to absorb, code and use new information in order to make a distinction between products, the objective measures are believed to be more appropriate. However, when the goal of the research is to examine motivation, self-confidence and purchasing decision processes, then the subjective measure is believed to be better suited (Mitchell 1981).

Given that our goal is to examine the impact of knowledge on consumer behaviour in the online and offline environments, the subjective measures are more appropriate for our purpose. The reflected consumer confidence should interact with their perceptions of risk, ease of evaluation and perceived intangibility. Measures designed to evaluate product purchasing and usage frequency will also be used in order to have a concrete gauge of product, purchasing medium and task familiarity. These measures will also be explored in relation to perceived risk, ease of evaluation and perceived intangibility as well.

### ***3.2 Involvement***

A concept that has had a presence in marketing literature for the past 35 years, there has been numerous definitions of the concept as well as the dimensions that constitute its overall value. One of the earlier conceptualizations of involvement had it as being an internal state variable which is indicative of a person's arousal, interest or drive levels by

a given stimulus or situation (Mitchell 1979; Mitchell 1981). Lastovicka (1979) defined involvement as being a two-component construct that included normative importance and commitment. Normative importance referred to the degree to which a product class was engaging to a consumer. Commitment referred to one's position on an issue. The commitment component of the construct was later assumed to be more related to brand preference and loyalty, which has not been found to be related to involvement (Nantel and Robillard 1990). It has also been said to be indicative of the personal relevance of the decision or action as a function of her basic values, goals and self-concept (Engel and Blackwell 1982). Similarly, Greenwald and Levitt (1984) conclude that a consensus in the research community exists that high involvement approximately reflects personal relevance or importance. Cohen (1983) defined involvement as the person's level of activation, as induced by a stimulus, at a given moment. Park and Mittal (1985) defined the construct as a goal-directed arousal capacity. They suggested that the goal may be a purchase decision that is brought about as a result of different product or brand availability or the introduction of benefits through an advertisement.

The common link between all of these definitions is that involvement seems to be a motivational state of arousal that is activated by a stimulus, situation or purchase decision. This motivational state is by nature a unidimensional construct (Mittal 1989). This unidimensional nature of involvement can only be seen once it is separated from its antecedents and consequences. It is there that multi-dimensional models of involvement, such as Laurent and Kapferer's (1985) were found to be lacking (Mittal 1989). They included antecedents as a dimension in their model of involvement. The unidimensional model recognizes antecedents as being separate from involvement. The antecedents can

be categorized as being either utilitarian or psycho-social. This suggests that a stimulus only becomes involving if it serves a utilitarian (meets a functional purpose) or psycho-social (meets an internal drive) need (Mittal 1989).

### *3.2.1 Involvement: Cognitive, Motivation and Response-Based Approach*

The influence of involvement has been broken down into three different approaches. Finn (1983) suggested that involvement could be brought about by the stimulus, the subject or the response. Nantel and Robillard (1991) acknowledged the three-pronged approach, however, labeling the three approaches as being related to the product, situation or reaction. Finally, Gharbi (1998) presented the three approaches to involvement as the cognitive (continuous involvement), the motivation (situational approach) and response-based approach.

The first approach examines the people, situations and products (PSP's) as the independent variables. This approach suggests that low involvement PSP's should result in only passive processing of information, while high involvement PSP's should result in a higher-level involvement processing (Finn 1983). The second approach places the active/passive processing as the independent variables. It is suspected that passive processing (low-involvement learning – a process in which new information is learned without active participation and without the individual's awareness of any learning taking place, much like the learning of nonsense syllables) yields a behaviour-before affect hierarchy, while active processing leads to an affect-before behaviour sequence (gathers information by trying a product). The third approach treats the PSP's as the independent

variables, and suggests that low-involvement PSP's will lead to behaviour-before affect (gathering information prior to product trial) (Finn 1983).

The third approach is rejected since inherent performance risk of a product category was found to be a better predictor of the behaviour/affect sequence than was involvement (Smith and Swinyard 1982; Finn 1982). The second approach was also rejected since there was a lack of consistency due to the ability to use both economic risk and product use as valid predictors of the behaviour-affect sequence. This left only the first approach as a viable path for further exploration (Finn 1983).

### *3.2.2 Stimulus Centered View*

Proponents of this approach believe that involvement is a characteristic of the product itself. Some products, by their very nature, are trivial or unimportant while others are considered to be more serious and/or important (Hupfer and Gardner 1971; Houston and Rothschild 1978). Finn (1983) stated that the product characteristics that lead to different involvement evaluations are cost, risk and elapsed time of consumption. The question then was whether the product type affected the nature of the learning process (whether it is active or passive) that a consumer goes through when she was exposed to new information. Krugman (1966) found that message processing was only marginally different for information pertaining to airlines (assumed to be highly involving) and messages pertaining to margarine (assumed to be low involvement). Later research suggested that high involvement products do not necessarily lead to a high level of processing, but rather that the type of processing was affected by the reasons for that purchase (i.e. degree of necessity for the purchase) (Mitchell 1979). Mitchell (1979)



suggested that involvement is in fact a consumer-specific variable that may fluctuate, regardless of the product's cost, risk or elapsed time attributes.

### ***3.2.3 Subject Centered View***

The subject-centered view suggests that people differ in terms of the degree to which they find information to be involving. High-involved receivers will actively process the information that is available while the low involved receivers will employ a highly passive processing strategy (Finn 1983). It is believed that people that reflect more about the information available to them are by definition, processing that information more carefully than those with a low need for information. The literature has subdivided the consumer involvement definition into three components: interest/importance, goals and consequences and commitment (Finn 1983).

### ***3.2.4 Interest/Importance***

This approach views involvement as a consequence of the degree to which a consumer shows interest in or relegates importance to a product category (Finn 1983). Holbrook and Maier (1978) found that the greater the importance that a consumer placed upon certain product attributes, the greater the information search process tended to be. Finn (1983) found there to be sufficient evidence of the existence of this type of subject centered involvement as to merit further exploration.

### ***3.2.5 Goals and Consequences***

**This view of involvement states that consumers are involved with a product class only insofar as it is beneficial towards a desired end or that it has information that is directly relevant to the consumer herself (Finn 1983). Petty and Cacioppo (1981) found that levels of high involvement (as stimulated by introducing direct consequences to the information that was being relayed to the consumers) prompted a much more involved and diligent processing of the information that was conveyed in their message. Finn (1983) found that this approach to viewing subject-centered involvement merited further study since “differences among people most assuredly exist; and these differences will probably lead to differences in cognitive processing” (Finn 1983, p. 421).**

### ***3.2.6 Commitment***

**This approach defines involvement in terms of the level of commitment that a consumer has to preconceptions about an issue or product. Most research in this area has examined this subject-centered view of involvement by examining the consumer’s receptivity of information that is counter attitudinal (Finn 1983). Finn (1983) believed that this approach was better suited to examining brand loyalty rather than subject-centered view of involvement. Although he believed that there would be differences in commitment levels across individuals, and that these differences would prompt modifications in their cognitive processing, he did not believe that it was the result of a trait of a high-commitment consumer, but rather the trait of a brand-loyal one (Finn 1983).**

### ***3.2.7 Response Centered View***

**This model of involvement asserts that active participation in the processing of the information signifies the level of the construct. This perspective regards involvement as “an intervening process within the cognitive stage” (Finn 1983, p. 422). These cognitive activities (including but not limited to attention and active/passive processing) are regarded as being the independent variables that act as influencers of other cognitive variables, namely memory, recognition and recall (Finn 1983).**

**Many studies have demonstrated that differences in involvement, as assessed by the extent and kind of information processing that is undertaken, will have an identifiable impact upon the recall of information (Gardner, Mitchell and Russo 1978; Mitchell 1979; Mitchell 1981). Subjects that were instructed to actively process the brand related information were then better able to recall quickly and with a higher degree of accuracy that information than were subjects who were instructed to execute a non-brand processing strategy (Krugman 1965; Krugman 1966; Leavit, et al. 1981). This signified that passive processing requires more frequent exposure to the information than does active processing to have an impact on the cognitive variables.**

**Finn (1983) believed that this model of involvement deserved further study since it met the two requirements that he had set out, namely, 1) that differences could be monitored across individuals and 2) those differences would result in different cognitive processing strategies.**

### ***3.2.8 Dimensions of Involvement***

Recent literature in the area has seen very little in the way of consensus on the dimensions of this construct. Researchers are divided upon whether the construct is unidimensional (Zaichkowsky 1985a; Zaichkowsky 1985b) or multidimensional (Laurent and Kapferer 1985). Support is starting to shift towards the multidimensional approach, despite the claims by proponents of the unidimensional conceptualization that the multidimensional approach confuses the construct with its antecedents and consequences (Mittal 1989).

The dimensions included in the measurement of involvement vary from study to study. Those dimensions are listed in Table 1.

For the purpose of our study we shall use the Laurent and Kapferer (1985) scale to measure the importance of the tested products and services to the respondents. This scale will be used since it was deemed to be one of the most complete measures of the involvement construct (Jain and Srinivasan 1990) as well as having been implemented effectively in McDougall's (1987) study on product induced differences in ease of evaluation, which mirrors the goal of this study closely.

**Table 1:**  
**Components used in the multidimensional measurement of involvement**

<b>Authors</b>	<b>Components of Involvement Used</b>
<b>Lastovicka and Gardner 1979</b>	<ul style="list-style-type: none"> <li>• Familiarity</li> <li>• Commitment</li> <li>• Normative Importance</li> </ul>
<b>Bloch 1981</b>	<ul style="list-style-type: none"> <li>• Enjoyment</li> <li>• Readiness to talk to others about it</li> <li>• Interest</li> <li>• Self-expression</li> <li>• Attachment</li> </ul>
<b>Laurent and Kapferer 1985</b>	<ul style="list-style-type: none"> <li>• Importance/risk of the product class</li> <li>• Probability of a mispurchase</li> <li>• Symbolic/sign facet</li> <li>• Hedonic value</li> <li>• Interest</li> </ul>
<b>McQuarrie and Munson 1986</b>	<ul style="list-style-type: none"> <li>• Importance</li> <li>• Pleasure/hedonic value</li> <li>• Risk</li> </ul>
<b>McQuarrie and Munson 1991</b>	<ul style="list-style-type: none"> <li>• Importance</li> <li>• Interest</li> </ul>
<b>Higie and Feick 1988</b>	<ul style="list-style-type: none"> <li>• Hedonic value</li> <li>• Self-expression</li> </ul>
<b>Jain and Srinivasan 1990</b>	<ul style="list-style-type: none"> <li>• Importance/risk</li> <li>• Probability of a mispurchase</li> <li>• Symbolic/sign facet</li> <li>• Hedonic value</li> <li>• Interest/relevance</li> </ul>

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.

#### **4. THE INTERNET**

Over the past few years, the Internet has seen its popularity and use increase to such high levels that it has become recognized as an important communications medium in its own right. As such, it has caught the attention of many companies that have sought to take full advantage of the unique attributes of this exciting new medium (Hoffman et al, 1995). Businesses have been aggressive in their attempts to increase their Internet presence through virtual presentations of the company and their product/service offerings online. These virtual markets have many aspects that are easily manipulated, allowing for a great degree of customizability, and at the extreme, allowing for a unique design for each user (Bellman, Lohse and Mandel, 1999).

Despite being a relatively fresh phenomenon, the Internet already accounts for 5 to 8 percent of America's gross domestic product (Ledbetter, 1999). Almost 17 million people have made an online purchase in 1998, up from 10 million in 1997 and 5 million in 1996 (Stewart, 1998). Online sales in the U.S. accounted for \$7.8 billion in 1998 and are expected to rise to \$108 billion by 2003. In Canada, online shopping accounted for \$417 million dollars in 1999. In that year, 1.8 million households shopped online (15% of all Canadian households), while 800,000 placed an order through the Internet. Highly educated, high-income households with teenagers are the most dominant demographic of purchasing households (Ellison and Clark 2001).

Companies have scrambled to quickly establish Internet Presence Sites (IPS - corporate Web sites) to respond to the astounding growth of the medium. Some sites started as cyber brochures that presented the company in a flat advertisement. Quickly,

the potential of the medium was realized and more image and content-rich IPS's quickly replaced the stagnant predecessors (Hoffman et al, 1995). It is these sites that have messages embedded in interactive presentations that are best suited to motivate consumer preference and purchase intent (Hoffman and Novak, 1996). The electronic communications medium quickly approaches immediate response potential, similar to a face-to-face meeting (Alba et al. 1997).

#### ***4.1 The Internet and Tangibility***

It is awkward to imagine that the Internet, a fairly intangible medium, is currently used as a means of tangibilizing the intangible. For example, Hertz car rental tries to give tangible evidence of all online transactions by giving users of their online service a confirmation number and note that is accepted at any Hertz rental office (Berthon, Pitt, Katsikeas and Berthon 1999).

Web sites have begun to explore ways in which to manage and convey those elements of a good or service that are tangible. For example, if a consumer is investigating a trip to Paris, she will be unable to gather information from experiential accounts (friends, relatives or associates) that will help her in deciding upon the quality of that experience. The Internet allows for the consumer to experience the trip prior to actually booking anything through sites like [www.strolling.com](http://www.strolling.com) . This particular site allows visitors to immerse themselves in a 360° picture or video of many international cities. This site is an excellent example of the Web's ability to tangibilize a previously intangible experience. Sites like these allow for experience qualities (please refer to the *Perceived Evaluation Difficulty* section for a definition) to be lived through prior to the

actual consumption of the good or service. Other sites ([www.ecoafrica.com](http://www.ecoafrica.com) allows for visitors to share the experiences that they had while using the tailor-made tours and safaris in southern Africa) create “visitors books” that allow for testimonial anecdotes of previous users’ experiences (Berthon, Pitt, Katsikeas and Berthon 1999). This is extremely important for goods and services that rely on experience qualities rather than search qualities.

Sampling is a way in which many services and products are tested prior to purchase. Before buying a bottle or case of wine, a consumer can try a glass to see whether she likes it. Although this remains difficult for products online, companies are finding ways in which to allow for the trial of their offerings. For example, MP3 sites (i.e. [www.MP3.com](http://www.MP3.com)) allow consumers to download the compressed, near-CD quality songs of various artists. The songs are accompanied with pictures and detailed information about the recording artist. After having tried the songs, the consumers may either buy or download the full albums from the site, or directly from the artist’s site (Berthon, Pitt, Katsikeas and Berthon 1999).

This method of music distribution has several implications for the international music industry. First, no retailer has the international presence that is currently afforded by the advent of the MP3. Retailers may maintain a global presence simply by making their products available on the Internet. Second, the variety of music that the retailer can offer the consumer is not limited by shelf space. This is especially the case when the music is maintained in the digital MP3 format. Third, the digital format allows for the music to be transferred to the consumer without the necessity of a tangible product. The music does not need to be recorded onto a CD or tape in order to be sold. The consumer



takes the ownership of downloading the information (music), and then either maintaining it on the hard drive, burning it onto a CD or transferring the data to a portable MP3 player. The advent of this technology has changed the music industry from a product-based industry (CD's and tapes) to a service-based industry in which the data can be downloaded from the Internet (Jones 1999).

#### ***4.2 The Internet : Services Vs. Products***

The creation and maintenance of an Internet Presence Site enables companies to maintain an international presence regardless of size (Berthon, Pitt and Watson 1996; Quelch and Klein 1996; Berthon, Pitt, Katsikeas and Berthon 1999). The differentiating factors between goods and services (tangibility, simultaneity of production and consumption, perishability, nonstandardization and the absence of ownership – for further discussion please refer to the appropriate sections above) are believed to be exacerbated by the international marketplace (Clark, Rajaratnam and Smith 1996; Dahringer 1991; Patterson and Cicic 1995).

The physical distance between the parties in an international service purchasing setting further increases the difficulties associated with simultaneity of production and consumption (difficulties in coordinating the efforts of the buyer and overseas consumer) as well as perishability (increased difficulties in predicting and making available the necessary supply for international consumption). The socio-cultural distance complicates heterogeneity since there are differences in consumer expectations and standards. Political-legal distance is believed to negatively effect all of the distinguishing service attributes. Technological and economic distance is also believed to negatively affect

each of the service attributes. Although one might think that the communication technology currently available would enhance the simultaneity of production and consumption of a service, the current incompatibility in the technologies and protocols used currently prohibit this efficiency to occur (Berthon, Pitt, Katsikeas and Berthon 1999). Although the use of the Internet as a means of distribution for services necessarily expands the served markets, it also brings along difficulties by enhancing the differences between services and goods.

Since services tend to lie on the intangible side of the spectrum, meaning that the consumption and purchase of it will not stimulate any of the five senses to a great extent, experience and credence qualities become extremely important when purchasing services (Zeithaml 1981). The Internet is an efficient medium towards providing these experiential or credence testimonies. The Internet is an effective tool to distribute “symbolic, informational or knowledge services”, while being extremely ineffective as a means of distributing “matter-dependent or physically embodied services” (Berthon, Pitt, Katsikeas and Berthon 1999, p.89).

However, it should be noted that although certain problems present themselves as a result of the distribution of services on the Internet, with companies’ greater proficiencies in online service provision, many solutions to those problems are becoming apparent. The online service offerings allow the producer of the service to customize their service offerings to the international market on a scale that a bricks and mortar operation simply would not allow. This is the result of online service reliance upon information technology, data storage and data processing rather than on employees and physical location. For example, the Standard Bank of South Africa

**([www.standardbank.co.za](http://www.standardbank.co.za)) allow customers to tailor the bank's service to meet their needs the first time that they log in. It allows for the consumer to use the bank's services from anywhere around the world, as long as they have a connection to the Internet (Berthon, Pitt, Katsikeas and Berthon 1999).**

**At the same time as it increases customizability of a service offering, it also allows for a greater level of homogeneity of quality along the different service encounters. An example that best illustrates this is ATLAS translation services (<http://trns.cab.infoweb.or.jp>). Translation services were traditionally performed by specialists to whom the message was dictated by phone or face-to-face or mailed as a document. A typed translation would then be returned, edited and finally retyped as the final product. The process was usually labour intensive, time consuming and its quality would vary greatly between occasions. ATLAS decided to offer the Japanese/English service online. It had users specify the specialist field to which the document applies (i.e. business, medical, scientific, computing, etc.), any unique terms used and the desired translation style. Once this was done, the user would submit the document as a word-processor file and each page was translated (by computer) and returned to the user via email within fifteen minutes. The service offered homogeneity while being offered 24 hours a day all year long (Berthon, Pitt, Katsikeas and Berthon 1999).**

**An interesting way in which the Internet facilitates the consumption of services is in its ability to manage the customer as an active participant in the service consumption process. In the process of consuming a service, the buyer often becomes an active participant, leading to a scenario in which the quality of the service output is contingent upon the consumer's inputs. It is thus that the consumer is often referred to as a**

**coproducer of the service. The consumer's active participation introduces uncertainty to an already heterogeneous process, but can also offer cost savings and innovation in certain service settings. Management Recruiters International (MRI) ([www.mrinet.com](http://www.mrinet.com)) saw a potential synergy between their service offering and the Internet. Their service was of finding potential employees (customers) for to fill vacant positions for companies around the world (also customers). MRI decided to assemble an employee and a job opening bank. The potential candidates were then given access to the job postings while the companies were given access to candidates' resumés. The Internet allowed MRI to delegate the tasks that were traditionally done at recruitment agencies to the service consumers themselves, while collecting a fee (Berthon, Pitt, Katsikeas and Berthon 1999).**

**This inclusion of the customer in the production process, although a normal and sometimes necessary practice in the provision of a service, can incur customer induced errors that diminish the quality of the service provided. It was found that one-third of all customer complaints (related to the consumption of a service) are related to problems that were caused by the customers themselves (Anderson and Zemke 1991). The Internet can help diminish the problems related to the customers themselves by walking them (sometimes repeatedly) through their involvement. For example, the Globalstar Web site ([www.globalstar.com](http://www.globalstar.com)) requires that service applicants fill out all of the necessary information (the system also checks the information for feasibility) prior to having their applications processed. Furthermore, most of the information can be selected from pull-down menus or option boxes. This ensures that the consumers' involvement is done in accordance with a standard of quality (Berthon, Pitt, Katsikeas and Berthon 1999).**

**This increased level of involvement may also place an additional burden upon the consumer in terms of knowledge, time and effort. This increased burden may be unattractive to the consumer and would thus prompt a change in the consumer's purchase decision. As such, it is imperative that the company make the process as intuitive and pain-free as possible. Furthermore, the savings and benefits of the consumer's participation must be made apparent to the consumer as well (Berthon, Pitt, Katsikeas and Berthon 1999).**

**The use of the Internet as a means of selling a service has also started to diminish the effects of perishability. Supply of the service is no longer limited by employee availability, store hours of operation or locations around the world. The degree of service automation is enabling suppliers to remain in operation 24 hours a day, without maintaining a bricks and mortar store front open. This also allows for service providers to cater to consumers in areas in which they don't have any physical presence. British Airways ([www.british-airways.com](http://www.british-airways.com)) allowed customers to purchase tickets at any time that was convenient to them. They were by no means limited by line-ups, hours of operation or distance from an airport or travel agent. Demand is also a way in which the perishability of the service can be moderated. Since most service businesses deal with a high fixed cost component, it is imperative that they achieve a level of demand that fulfills their capacity. The Internet has helped many airline companies fill their empty seats by offering last minute ticket auctions that can offer prices with a 20-30% reduction in price. This has stimulated demand enough to fill the planes to capacity, avoiding the higher percentage of total cost that fixed costs would account for if the seats went unfilled. This ability to manipulate demand gives the suppliers a means of combating**

perishability of their service through the Internet (Berthon, Pitt, Katsikeas and Berthon 1999).

#### ***4.3 The Internet and Perceived Difficulty of Evaluation***

The Internet has the potential to facilitate product evaluation in several ways. First, it can offer a faithful reproduction of both descriptive and experiential product information. It also can offer a greatly expanded alignment of products relative to a bricks and mortar store, or a catalogue. Third, as will be discussed later, it can be an extremely efficient tool at screening the various offerings to find the ones most appropriate for consideration. Fourth, it can offer an unimpeded search across brands and stores. And finally, it has the ability to remember past selections, simplifying the purchase search and information processing portions of the buying process. On the other side, a bricks and mortar operation makes available to the consumer the opportunity to touch, smell, taste and try the various offerings prior to purchase (Alba et al. 1997).

Alba et al. (1997) suggested that the current online retailers had not yet realized the full potential of the medium. They suggested that there are significant differences between the Internet of the day (1997), and the Internet as it would be when it reached its full potential. He compared these two purchasing mediums with the other mediums with regard to benefits and shortcomings.

**Table 2:**  
**Dimensions Affecting Relative Attractiveness to Consumers of Alternative Retail Formats**

<b>Dimension</b>	<b>Supermarket</b>	<b>Department Store</b>	<b>Category Specialist</b>	<b>Catalogue</b>	<b>Current Internet Retailer</b>	<b>IHS Format</b>
<b>Providing Alternatives for Consideration</b>						
Number of Categories	<i>Medium</i>	<i>Medium</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low or High</i>
Alternatives per Category	<i>Medium</i>	<i>Low</i>	<i>Medium</i>	<i>Medium</i>	<i>Low</i>	<i>High</i>
<b>Screening Alternatives to Form Consideration Set</b>						
Selecting Consideration Set	<i>Medium</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>Low</i>	<i>High</i>
<b>Providing Information for Selecting from Consideration Set</b>						
Quantity	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>High</i>
Quality	<i>High</i>	<i>High</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>Low or High</i>
Comparing Alternatives	<i>Medium</i>	<i>Medium</i>	<i>High</i>	<i>Low</i>	<i>Low</i>	<i>Depends on Supplier</i>
<b>Ordering and Fulfillment: Transaction Costs</b>						
Delivery Time	<i>Immediate</i>	<i>Immediate</i>	<i>Immediate</i>	<i>Days</i>	<i>Days</i>	<i>Days</i>
Supplier Delivery Cost	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>High</i>	<i>High</i>	<i>High</i>
Customer Transaction Cost	<i>High</i>	<i>High</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>
Supplier Facility Costs	<i>High</i>	<i>High</i>	<i>High</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
Locations for Placing Orders	<i>Few</i>	<i>Few</i>	<i>Few</i>	<i>Everywhere</i>	<i>Many</i>	<i>Many</i>
<b>Other Benefits</b>						
Entertainment	<i>Low</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>Low</i>	<i>Medium</i>
Social Interaction	<i>Medium</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
Personal Security	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>High</i>	<i>High</i>	<i>High</i>

Source: Alba Joseph, John Lynch, Barton Weitz, Chris Janiszewski, Richard Lutz, Alan Sawyer and Stacey Wood. (1997), "Interactive Home Shopping: Consumer, Retailer, and Manufacturer Incentives to Participate in Electronic Marketplaces" *Journal of Marketing*, Vol. 61 (July 1997), p.40.

It quickly becomes apparent that IHS (Interactive Home Shopping) "enables consumers to access merchandise unavailable in their local markets, gather veridical information about merchandise at a low cost, efficiently screen the offerings of a broad cross-section of suppliers by avoiding unwanted alternatives and unimportant features, and easily locate the lowest price at which a specific item is offered" (Alba et al. 1997, p.40). The Internet makes for an appealing alternative to the brick and mortar storefronts

in less developed retail areas (Quelch and Klein 1996). The IHS format is an appealing one, that offers benefits to the consumer (i.e. providing more alternatives for consideration, ability to screen these alternatives, thereby forming consideration sets and providing the information necessary to decide between the available alternatives), the question however remains whether the current form of the Internet has reached that level of sophistication (Alba et al. 1997)

#### ***4.4 The Internet and Risk***

Upon the introduction of the Internet as a means of conducting commercial transactions, the issue of trust and risk quickly arose to the forefront of debate on the usefulness of the Internet in that capacity. Originally designed for research, not electronic commerce, the medium was transmuted into a tool whose utility far exceeded that which was originally expected. With the advent of electronic commerce came the average consumer's misgivings about the safety of purchasing online. "EC (electronic commerce) lacks security and reliability arising from the issues of a "complete trustworthy relationship" among the trading partners" (Ratnasingham 1998, P.313).

##### ***4.4.1 Trust***

The basis of the Internet during its inception was trust. Researchers using the Internet relied on mutual respect and an unwritten code of conduct for using the potent tool that was available to them. Once the Internet evolved into a commercial medium, the honour system was no longer enough to safeguard the information that was to be transmitted across the Internet. The consumer trust in the medium lagged. Trust can be defined as



**“the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control the other party” (Mayer et al., 1995). As trust declines, individuals are less likely to be willing to undertake any risks by demanding greater protections against possible betrayal (Ratnasingham 1998).**

**The buying process involves a great deal of trust on the buyer’s behalf. Not only does the buyer have to trust the quality of the goods or services which they are purchasing, but they must also trust the seller to deliver their purchase (extremely relevant in online and catalogue purchases). Furthermore, in an online environment, the buyer must trust the seller’s server administration security in order to confidently give their credit card information online. Even once this is assured, they must trust the seller not to misuse or handle carelessly that information that is necessary for any commercial exchange to take place. This includes not only credit card information, but addresses, telephone numbers and the consumer’s purchasing habits as well (Clarke 1997). This is an extremely high amount of trust that the consumer must place into the seller as well as into a relatively new commercial medium.**

**The promotion of trust can be a costly endeavour. It requires significant time and effort to establish a rapport with the other party while trying to develop an attitude and policies that are helpful in establishing a safe trading partnership. The lack of trust in a relationship reduces the cooperative efforts of both sides, further diminishing the stability of that relationship (Cummings and Bromiley 1996). The problems of creating a trusting partnership is exacerbated in an online environment since the parties involved in the transaction are not in the same physical location. As such, cues like physical proximity,**

handshakes, body signals and the use of the five human senses (sight, hearing, smell, taste and touch) are not available to the parties to facilitate the creation of a trust-based partnership (Clarke 1997; Nohria and Eccles 1992). This uncertainty may be further amplified due to a general feeling of insecurity in the technology used to facilitate the transaction (Ratnasingham 1998).

#### **4.4.1.1 CALCULUS, KNOWLEDGE AND IDENTIFICATION-BASED TRUST**

There are three types of trust that can influence the stability of any given trading partnership. The first, calculus-based trust, relates to the threat of punishment and the opportunity for reward when the positive behaviour is sustained. Although the threat of punishment is believed to be a more effective motivator, the existence of a positive reinforcement for constructive behaviour complements that of the negative reinforcement (Ratnasingham 1998). In the unregulated environment of the Internet, it is unclear as to the existence of measures that ensure the existence of this form of trust. Knowledge-based trust is linked to the familiarity with the trading partner. Knowledge of the trading partner allows for a fairly accurate prediction of the behaviour of the trustee. This form of trust develops over time and repetition (Ratnasingham 1998). Strong brand names may facilitate this form of trust to be translated into the brands' online presence. Finally, identification-based trust is related to the trustor's ability to empathize with the trustee as a result of common values, desires or intentions. This type of trust tends to revolve around a common task rather than on individual cues emitted by the trading partners (Ratnasingham 1998). Joint gains in an online environment can occur in the services

market, in which both the buyer and seller can be integral components of the production process.

Ratnasingham (1998, p.319) amply described the current state of electronic security: “Electronic commerce security is still an administrative nightmare with threats that could manifest from such illegal activities as eavesdropping, password sniffing, data modification, spoofing and repudiation. In addition, there are hosts of other electronic commerce risks that must be addressed such as the accidental and/or erroneous processing of business transactions, establishing procedures for redress, and even developing a virtual marketplace return policy with an associated clearinghouse through which such activities can actually take place.”

#### ***4.5 The Internet and Information Search***

‘The Web facilitates hyperefficient information markets, matching supply and demand at a level previously unattainable’ (Berthon, Pitt, Katsikeas and Berthon 1999, p.100).

The Internet can be conceived as being a “developing marketing channel that transcends national boundaries and encompasses elements of informing, investigating, interacting, distribution, transacting, eliciting feedback, and supporting”(Berthon, Pitt, Katsikeas and Berthon 1999, p.88).

Before actually making a purchase, the Internet can be used as a means of deriving information (i.e. assess promotions, relative positions of varying products/services or brands and assess the options and attributes that are available). During the actual purchasing of the good or service, interaction between the purchaser and the vendor is facilitated, allowing unique, customized offerings to be demanded by

the consumer, and subsequently provided by the producer. Finally, once the purchase has been made, interaction is once again facilitated, making feedback available to the vendor as well as the buyer (provides feedback on ways of getting maximum utility out of their purchase). The Internet is an interactive medium, and this ability for consumers to communicate with the suppliers must be taken advantage of. Static company brochures will often not be sufficient to meet the consumer's information search needs. As a result, the companies must be prepared to take advantage of the communications mediums that the Web makes available to them, namely e-mail, chat rooms, discussion lists or forums, Web telephone and video. They must be able and willing to transmit the information to the consumer not only through their Internet Presence Site, but also through the interactive communications mediums that are facilitated by the Internet (Berthon, Pitt, Katsikeas and Berthon 1999).

With the wealth of information that is available through the Internet, it is imperative to develop an understanding of the factors that may influence the search that is conducted by the consumer. In order to do that, we must examine the effects that the Internet has on the functioning of consumer's external memory.

#### ***4.5.1 External Memory***

External memory "is information available without needing to be stored in the consumer's own memory" (Bettman 1979, p.141). It is important in the purchase decision process since it enables a reduction in the burden that is placed upon the consumer's internal memory. Package information, buying guides and shopping lists are all examples of items that can comprise a memory list (Bettman 1979). It has been found

to play an important role in the computer mediated environment that is created by the Internet (Coupey 1996; Hoffman and Novak 1996). In the online environment, one of the more important external cues is believed to be the hotlist. It was found that hotlists “may influence not only consumer decision-making across sites, but also the content and structure of site information in memory” (Coupey 1996, p.206).

The existence of two roles of external memory aids has been established. The first role is that of an external storage facility for information. The second function is as a cue to action (Harris 1978). Hotlists encompass both of these functions. They fulfill the first by directing users to sites that offer reviews of products and prices (Coupey 1996; Hoffman and Novak 1996). They are also believed to fulfill the second role by directing users to online stores and auction sites (Thakor , Borsuk-Shtevi and Kalamas 2002).

#### ***4.5.2 Consideration Sets***

The consideration sets have been acknowledged in the literature as being a method through which the consumer limits the choices from which to make a purchase decision (Brown and Wildt 1992; Hauser and Wernerfelt 1990). The search time and the information processing effort is decreased by having a reduced number of alternatives making up the consideration set (Roberts and Nedungadi 1995; Sambandam and Lord 1995).

It has been suggested that hotlists may perform the function of an “online” consideration set in an online environment. They help in finding information and products through a less effortful search than using search engines, enabling the users to

act as cognitive misers (Bettman 1979). The sites that are included in the hotlists are more likely to be visited first when looking for an online product or service offering. Only if the search through the hotlists is unsuccessful will the user resort to a broader search engine to fulfill her purchasing or information needs (Thakor , Borsuk-Shtevi and Kalamas 2002).

Much like their offline counterparts, “online” consideration sets are believed to be effortful to build and maintain (Roberts and Nedungadi 1995). As such, it is believed that alternatives will stop being added once the effort needed to build or sustain the list outweighs the potential benefits (Alba et al. 1997). The Web is however believed to limit the resources needed to maintain the “online” consideration set, thus enabling a greater number of alternatives to be considered when shopping for products, services or information (Brynjolfsson and Smith 2000).

#### ***4.6 Knowledge of The Internet***

Once these “online” consideration sets are developed, the consumer should develop ritualized usage patterns that rely on search engines to a lesser extent than consumers that use the Internet for instrumental or goal-directed behaviour (Hoffman and Novak 1996). Despite a believed increase in functionality in search engine usage through extensive use of and experience with the Web, experienced Web users resort to a higher level of dependence upon the external memory aids, namely hotlists (Thakor , Borsuk-Shtevi and Kalamas 2002). This is believed to be resultant of the greater cognitive effort that is required through a new search for information, and the needed processing of that information. Experiential users will be less likely than novice users to exert that level of

effort in an attempt to acquire information or make a purchase (Hoffman and Novak 1996).

Bezjian-Avery, Calder and Iacobucci (1998) tried to understand how it was possible that highly interactive and complex advertisements prompted subjects to spend less time viewing the ads than did ads that were stagnant pictures with a simple design. Although they did not measure for experience with the interactive medium, they believed that this was the most reasonable explanation. The authors believed that experience with the Internet would play a significant role in determining the level of success that the implementation of an interactive format would have with online advertising (Bezjian-Avery, Calder and Iacobucci, 1998).

The proper use of the Internet is believed to be facilitated by prior experience. Bruner II and Kumar (2000) found that prior experience with the medium had a positive effect on the consumer's attitude toward the website. They asserted that as people became familiar with the complexities involved with the use of the Internet, they developed a liking for the features that to naïve users are deemed to be overwhelming. "Familiarity with the medium may help a person to block out competing stimuli and concentrate on a focal stimulus" (Bruner II and Kumar 2000, p.37).

#### ***4.7 Brand Effects on The Internet***

In the offline environment, pioneer brands have been found to have significant advantages over the competition that follows behind. These advantages include stable and large market shares while maintaining market leadership (Golder and Tellis 1993). These pioneer brands have been defined as "the first to sell in a new product category"

**(Golder and Tellis 1993, p.159). This early entry draws great attention due to the uniqueness of the offering. This ensures that this brand becomes familiar to the consumer as a result of all of the time that is spent learning about the new product or service features. This familiarity leads to greater confidence in the judgement of these pioneering brands, consequently leading to a preference over latecomers (Kardes and Kalyanaram 1992). This advantageous position seems to be magnified in an online environment. The over-valuated pioneer e-commerce firms that demonstrated little or no profitability despite substantial revenues reflect this.**

**Thus an early appearance by a brand is crucial in the company's success in e-commerce. In a study conducted by Ernst and Young, it was found that 82% of the consumers surveyed felt that the brand name is "important or very important in their decision to buy online" (1999, p.11). It is thus imperative that brands make an early entry in the online environment so as to allow themselves to be included in the consumers' limited "online" consideration sets.**



## **5. HYPOTHESES**

### ***5.1 Intangibility***

- H1: The degree of product tangibility will be a function of its perceived physical manifestation.**
- H2: The degree of product tangibility will be a function of its perceived mental manifestation.**
- H3: The degree of product tangibility will be a function of its perceived generality.**

These three hypotheses assert the existence of a three-dimensional intangibility construct. Although the literature has had substantial support of the two-dimensional model (please refer to the discussion of Intangibility for further details), support for the possible existence of a third dimension (mental intangibility) was uncovered in the Laroche et al. (2001) study. This mental component of intangibility was suggested to exist in other studies, however, was not believed to be a separate dimension from physical intangibility (McDougall and Snetsinger 1990; Dube-Rioux et al. 1990; Hirschman 1980) This study, whose circumstances, goals and manipulations are very similar to those of the Laroche et al. (2001) study, will revisit intangibility with the expectation that it is a three-dimensional construct.

### ***5.2 Consequences of Intangibility***

- H4: There is no relationship between physical intangibility and perceived difficulty of evaluation.**
- H5: The more general a product or service is, the more difficult its evaluation will be.**
- H6: The more mentally intangible a product or service is, the more difficult its evaluation will be.**
- H7: The more mentally intangible a product or service is, the riskier the transaction will be.**

Breivik, Troye and Olsson (1998) suggested that physically intangible products/services would yield an easier evaluation process since it would involve a greater reliance upon prior experience rather than an assessment of the cues from the physical attributes. This was contrary to McDougall's (1987) study that found intangibility, as operationalized by physical intangibility, to have no impact on ease of evaluation. Goutaland (1999) found that physical intangibility had no impact on difficulty of evaluation. Similar to our study, she had examined the effects of intangibility on difficulty of evaluation in a three dimensional intangibility model. She found that mental intangibility played a more important role in determining the level of difficulty of evaluation, making the physical component less important in its determination. She suggested that people that are unable to develop a mental representation of the product/service will have a difficult time evaluating regardless of whether the product/service has a physical presence. "...if someone does not know what a car engine is made of, that is if the mental representation s/he has is very fuzzy or absent, the fact that it is a physical object will not be enough to ease the evaluation process" (Goutaland 1999, p.118). Since this study is a modified replication of that study, we expect to find a similar lack of influence of physical intangibility on difficulty of evaluation.

Generality and mental intangibility are expected to increase the difficulty of evaluation. The variability that is introduced by products/services that exhibit high levels of generality (Zeithaml 1981) and mental intangibility is expected to induce high levels of consumer uncertainty about the outcomes (Goutaland 1999). With regards to generality, this comes about as a result of the lack of specific and clear attributes that are available to the consumer to evaluate. This makes the evaluation process more time

consuming and effortful (Breivik, Troye and Olsson 1999). Mental intangibility gives the consumer a fuzzier and less accurate cognitive representation with which to come to a decision. This introduces uncertainty, leading to an increasingly difficult evaluation process (Finn 1985, Goutaland 1999).

Generality was thought to increase perceived risk (Zeithaml 1981), however, this relationship was not supported in Goutaland's (1999) work. It was believed that the lack of specific attributes would increase the variability of the possible outcomes of a purchase situation, thereby increasing perceived risk. Though this relationship was not supported, Goutaland (1999) found that high levels of mental intangibility increased the perceived risk levels.

### ***5.3 The Role of Experience***

- H8:** The more experienced in and knowledgeable about a product/service a consumer perceives herself, the easier the product evaluation.
- H9:** The more experienced in and knowledgeable about a product/service a consumer perceives herself, the less risky the transaction.
- H10:** The more knowledge about and experience in a product/service category a consumer has, and the more physically intangible that category is perceived to be, the riskier that transaction will be.
- H11:** The more knowledge about and experience in a product/service category a consumer has, and the more mentally intangible that category is perceived to be, the less risky that transaction it will be.

We anticipate a direct effect of experience on difficulty of evaluation. The greater the perceived level of experience and knowledge with a product/service class, the easier the evaluation process is expected to be. This is consistent with the literature (Finn 1985; McDougall 1987; Goutaland 1999). This decrease in difficulty of evaluation should be

accompanied with a decreased level of perceived risk. As experience with and knowledge of a product/service category increases, we anticipate that the consumer's perceived risk will diminish (Goutaland 1999). Risk associated with the purchase of new or unfamiliar products have been associated with higher levels of risk, arguably as the result of consumer information and prior experience (Cox and Rich 1964; Havlena and DeSarbo 1990). Additional experience and information lead to a reduction in the uncertainty of the outcome, which has been found to lead to a reduction in the perceived risk (Nantel and Robillard 1990; Cox and Rich 1964).

Surprisingly, experience was also found to interact with physical and mental intangibility when impacting perceived risk. Experience was found to have a moderating effect on the relationships of those two variables with perceived risk. It was found that when greater experience levels were coupled with greater levels of physical intangibility, the perceived risk of the transaction was accordingly increased. Goutaland (1999) suggested that this relational direction may exist since the physical cues that are gotten from the product/service may not be consistent with their previous experiences or knowledge. However, when high levels of experience were coupled with high levels of mental intangibility, the transaction was perceived as being less risky (Goutaland 1999). Zeithaml, Berry and Parasuraman (1993) found that prior experience with a product allowed for a clearer mental representation of it. This clearer representation can then perhaps reduce the risk associated with the purchase of that product. The directions of these relationships will be verified.

#### ***5.4 The Role of Involvement***

- H12: The more involving a product/service is to a consumer, and the more general it is perceived to be, the riskier the transaction will be.**
- H13: The more involving a product/service is to a consumer, the more difficult it will be to evaluate.**
- H14: The more involving a product/service is to a consumer, the riskier the transaction will be.**
- H15: The more involving a product/service is to a consumer, and the more physically intangible it is perceived to be, the less risky the transaction will be.**
- H16: The more involving a product/service is to a consumer, and the more general it is perceived to be, the less difficult it will be to evaluate.**
- H17: The more involving a product/service is to a consumer, and the more mentally intangible it is perceived to be, the less difficult it will be to evaluate.**

Involvement has been regarded as an influencer of evaluation difficulty (McDougall 1987) and risk. It is believed that a high level of importance (Lastoviacka 1979; Nantel and Robillard 1990) or personal relevance (Zaickowsky 1985a) (both believed to be underlying concepts of involvement) associated with a product can lead to an increased vested interest in the outcome of the choice, leading to an increased examination of all relevant information, which in turn leads to a more complex and difficult evaluation process and a higher level of risk associated with a poor choice. The literature has considered involvement as either an antecedent or consequence of risk, which leads us to believe that high levels of involvement should be associated with higher levels of risk perception (Nantel and Robillard 1990; Laurent and Kapferer 1985, Jain and Srinivasan 1990).

An interaction between generality and involvement is also expected to increase the consumer's perceived risk. Intuitively, a high level of product generality along with a

high level of involvement can increase the uncertainty of the outcome, creating a high level of perceived risk. This would lead us to believe that this very interaction of generality and involvement would increase difficulty of evaluation. However, Goutaland (1999) found that this relationship was exactly opposite to intuition. High levels of product/service generality and high levels of involvement were associated with lower levels of difficulty of evaluation. Since our research is closely related to Goutaland's (1999), it is reasonable to expect that this relationship remains directionally intact.

With respect to perceived risk, the interaction of physical intangibility and involvement is expected to be a negative one. High levels of physical intangibility and involvement are expected to decrease the risk perception associated with a transaction. Goutaland (1999) suggested that this may come about as a result of the physical cues reassuring consumers in a highly involving purchase situation.

Finally, Goutaland (1999) found that the third dimension of intangibility, mental intangibility, interacted with involvement to reduce difficulty of evaluation. High levels of mental intangibility, coupled with high levels of involvement resulted in a lower level of difficulty of evaluation.

### ***5.5 Services Versus Goods***

- H18: Generality will be equal between services and goods, whereas physical and mental intangibility will be greater in services than in goods.**
- H19: Products and services will be rated equally in difficulty of evaluation.**
- H20: Products and services will be rated equally in perceived risk.**
- H21: Products will be rated as being more involving than services.**

**H22: The impact of knowledge and experience on difficulty of evaluation and perceived risk will be greater for products than for services.**

**There is no anticipated difference between generality evaluations of services and goods.**

**The literature anticipated differences in this dimension's ratings, however, with the separation of generality and mental intangibility, we believe that difference between services and goods will lie in that dimension. Past studies have suggested that a difference should exist in this dimension. However, the differences in the dimension were believed to be resultant of absence of ownership (Rathmell 1974; Berry 1985; Schneider 1988) and nonstandardization (Rathmell 1974; Besson 1973; Parasuraman, Zeithaml and Berry 1985). These differentiating factors are suspected of influencing mental intangibility rather than generality (Goutaland 1999). As such, the evaluations of mental intangibility are expected to be different, while the consumer evaluations of generality will be equivalent between goods and services. Physical tangibility differences are expected, and consistent with the literature (Rathmell 1974; Shostack 1977; Berry 1980; Zeithaml 1981).**

**The literature has been consistent in suggesting that services will be more difficult to evaluate and rated as riskier than goods (Zeithaml 1981; McDougall 1987; Murray and Schlacter 1990; Mitchell and Greatedorex 1993). However, Goutaland (1999) found there to be no significant difference in consumer evaluations of services and goods in either difficulty of evaluation or perceived risk. She had suggested that this finding came about as a result of low levels of experience with the services coupled with high levels of involvement for the products considered. These factors could have negated each other's effects. The low level of experience with the services could have heightened both difficulty of evaluation and perceived risk, while the high level of product involvement**

did the same for product evaluations. Similar goods and services were chosen for this research, and thus, similar effects can be anticipated. For that reason, no differences are anticipated between goods and services with respect to difficulty of evaluation and perceived risk.

The 21<sup>st</sup> and 22<sup>nd</sup> hypotheses are in place since they were found to be valid in Goutaland's (1999) work. Considering the similarities in product and service profiles used, it is expected that these findings will remain consistent across studies.

### ***5.6 The Effect of The Internet on Intangibility***

H23: The change in physical intangibility ratings will be higher in physically tangible goods/services purchased in an online environment.

H24: Purchasing in an online environment will be associated with lower perceived mental intangibility.

H25: Purchasing in an online environment will be associated with lower perceived generality.

Given that physical tangibility is highly dependent upon attribute accessibility through the senses (Hirschman 1980; Breivik Troye and Olsson 1998; Dube-Rioux, Regan and Schmitt 1990), it is a logical assumption that these attributes will not be conveyed efficiently through the Internet, whose ability is only in the transfer of visual and audio cues. The rest of the sensory cues are left inaccessible through the medium. The inefficient transfer of those attribute cues will likely lead to an increase in perceived physical intangibility in those products and services that are most reliant upon tactile, olfactory, and oral cues. It has been proposed that those products/services that are perceived to be highly physically intangible are actually "tangibilized" through their



**purchase and distribution on the Internet (Berthon, Pitt, Katsikeas and Berthon 1999) however this remains to be verified.**

**The increased efficiency at distributing, categorizing and screening information that the Internet offers to its users (Alba et al. 1997; Berthon, Pitt, Katsikeas and Berthon 1999; Hoffman and Novak 1996; Thakor, Borsuk-Shtevi and Kalamas 2002) should help diminish mental intangibility associated with products and services. This increased access to specific, organized information should allow consumers to familiarize themselves with more specific attributes and functions of the service or product that they are purchasing. This should diminish the perceived level of generality that they associate with the product/service.**

### ***5.7 The Internet's Effects on The Consequences of Intangibility***

**H26: The more general a product or service is perceived to be in an offline environment, the greater the reduction in difficulty of evaluation will be as a result of purchasing online.**

**H27: The more mentally intangible a product or service is perceived to be in an offline environment, the greater the reduction in difficulty of evaluation will be as a result of purchasing online.**

**H28: The more mentally intangible a product or service is perceived to be in an offline environment, the greater the reduction of the perceived risk will be as a result of purchasing online.**

**These three hypotheses are resultant of the fact that high levels of perceived generality are associated with high levels of perceived difficulty of evaluation (see consequences of intangibility hypotheses for a discussion) and high levels of mental intangibility are associated with high levels of difficulty of evaluation and perceived risk. Since we believe that purchasing online will decrease generality, it follows that those**

products/services associated with high levels of generality in an offline purchase setting will see a decrease in that generality. This will result in a greater diminishment of difficulty of evaluation when comparing the purchase of that product/service in an offline environment to its purchase in an online setting. As well, since we anticipate a decrease in mental intangibility when purchasing online, we expect to see a large diminishment in perceived risk and difficulty of evaluation when purchasing online products/services rated as highly mentally intangible.

### ***5.8 Online Purchasing Experience Effects***

H29: The more experienced in online purchasing, the easier the product evaluation will be.

H30: The more experienced in online purchasing, the less risky the transaction will be.

Knowledge of and experience with the Internet make the information search much less time and effort consuming, freeing up cognitive resources needed to make an informed and appropriate decision (Roberts and Nedungadi 1995; Sambandam and Lord 1995).

The Internet makes a wealth of information available to the user, however, only a proficiency with the medium allows for proper access to and screening of that information to form appropriate consideration sets, which minimize the effort needed to make a purchase decision (Thakor, Borsuk-Shtevi and Kalamas 2002). As such, we believe that the more knowledgeable of the Internet the user is, the less difficult the evaluation process will be.

Likewise, experience with the Internet will allow for stable relationships to be developed with online vendors, allowing for a trust to develop between the experienced

consumer and the online vendor. This trust should decrease the level of risk perception that the user experiences while making an online purchase, relative to novice users.

### ***5.9 The Internet's Effects***

H31: Purchasing in an online environment will diminish difficulty of evaluation.

H32: Purchasing in an online environment will increase perceived risk.

H33: Brand recognition will have a stronger influence in diminishing perceived risk in an online environment than in an offline environment.

The ease with which knowledgeable users can access, sort and screen information about products and services facilitates the process through which consideration sets can be formed. With the diminished effort required to maintain these online consideration sets, more alternatives can be assessed across more attributes, diminishing the difficulty of evaluation. Although more information does not ensure an easier evaluation process, the Internet enables users to screen out the useless information and access only that information that will be helpful in reaching a purchase decision. As such, we believe that purchasing online will diminish the difficulty of evaluation associated with the purchase of a product/service.

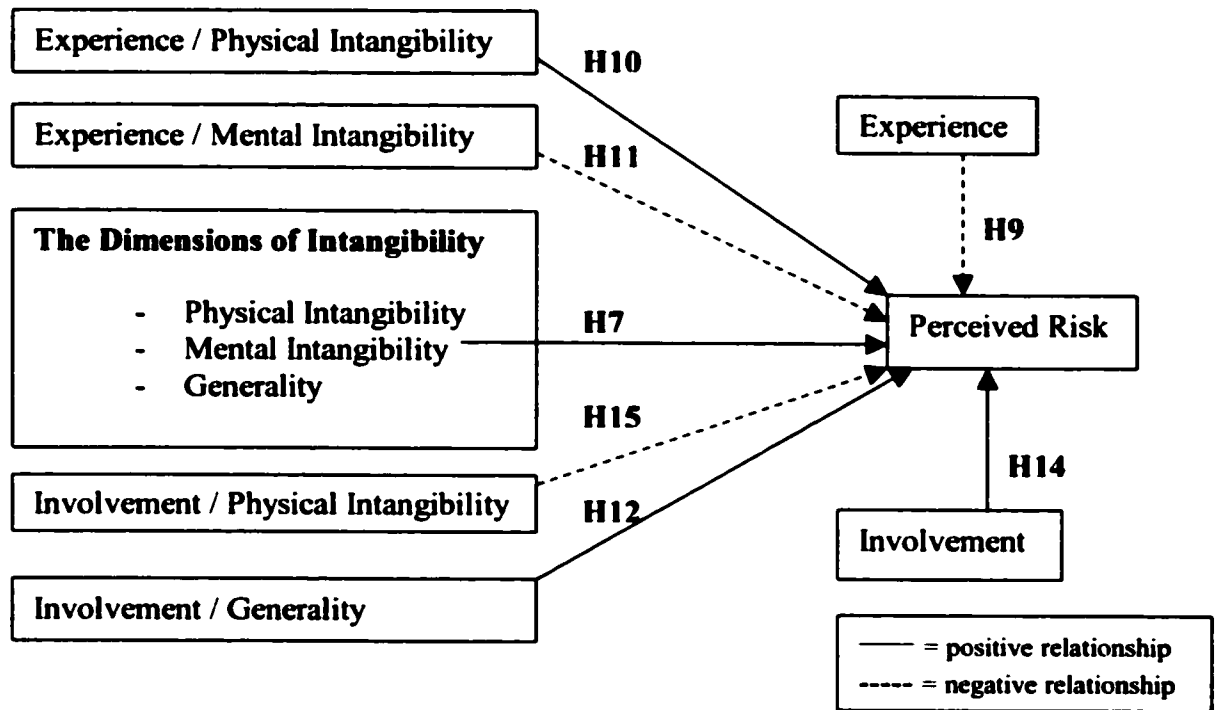
The risk associated with an online purchase is expected to be higher than an identical purchase offline. We believe that trust has not been established in this medium as of yet. As a result, purchases made on the Internet will be perceived as being riskier than purchases in a bricks and mortar shop.

Our last hypothesis asserts that brand recognition will have a larger impact on diminishing perceived risk in an online setting than in an offline setting. We believe that

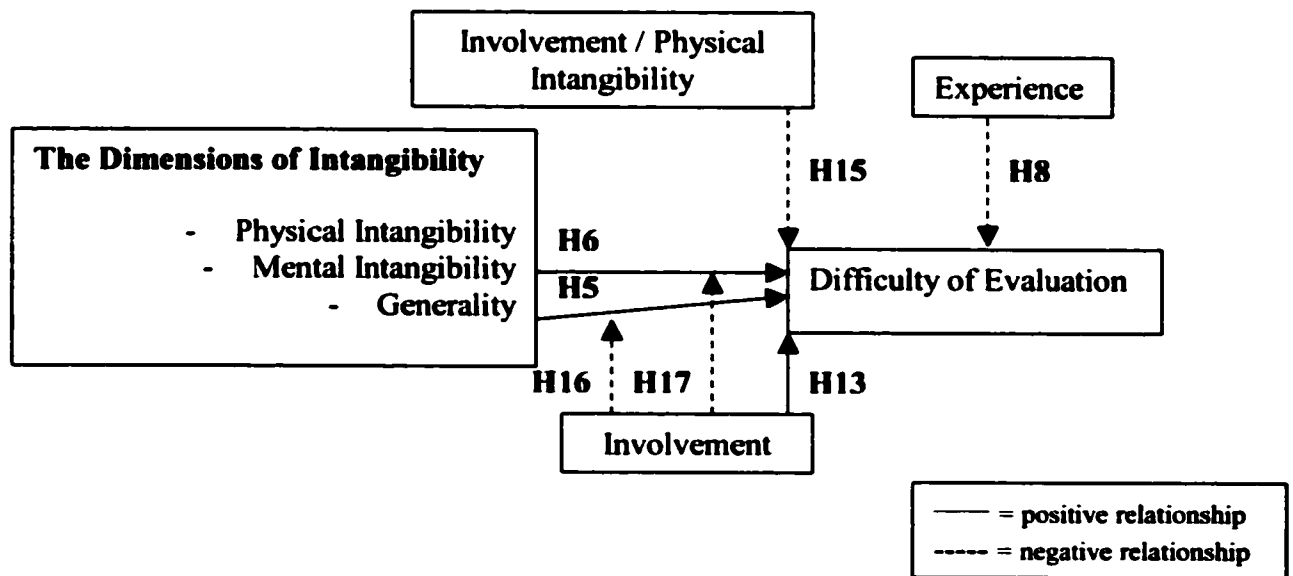
**brand familiarity will help establish a trusting relationship in the online environment.**

**Previous experience will dictate whether or not a seller is deemed to be trustworthy.**

**Figure 5 – Offline Effects on Perceived Risk**

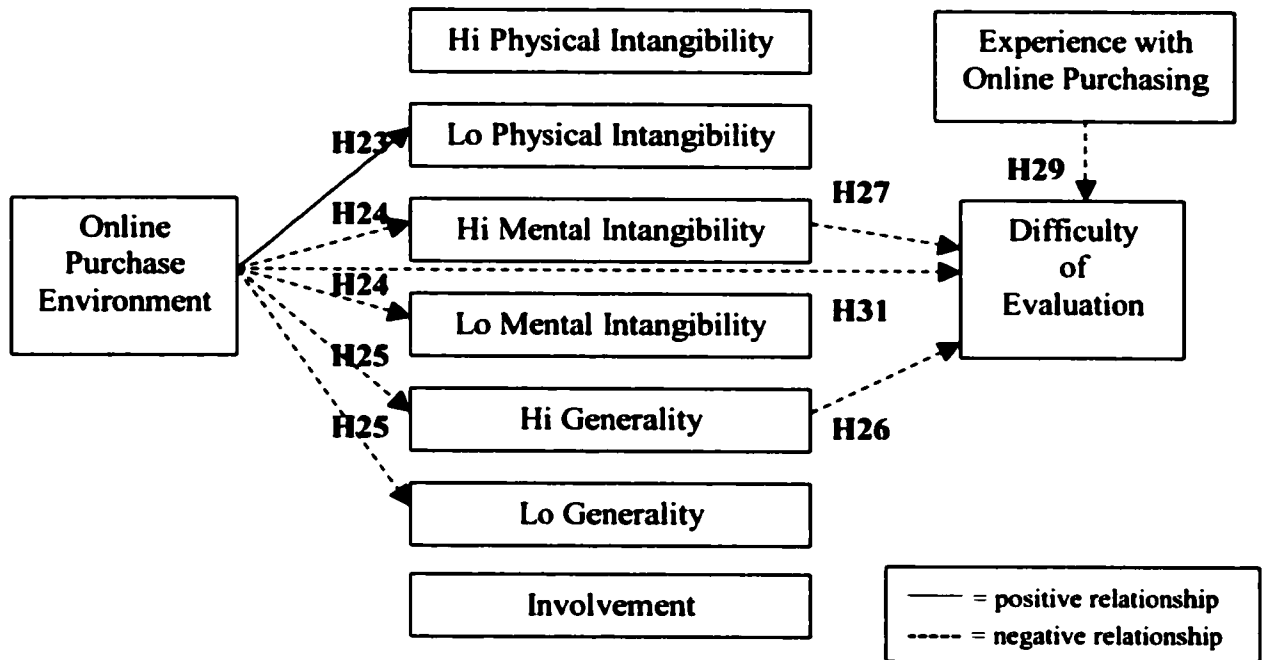


**Figure 6 – Offline Effects on Difficulty of Evaluation**

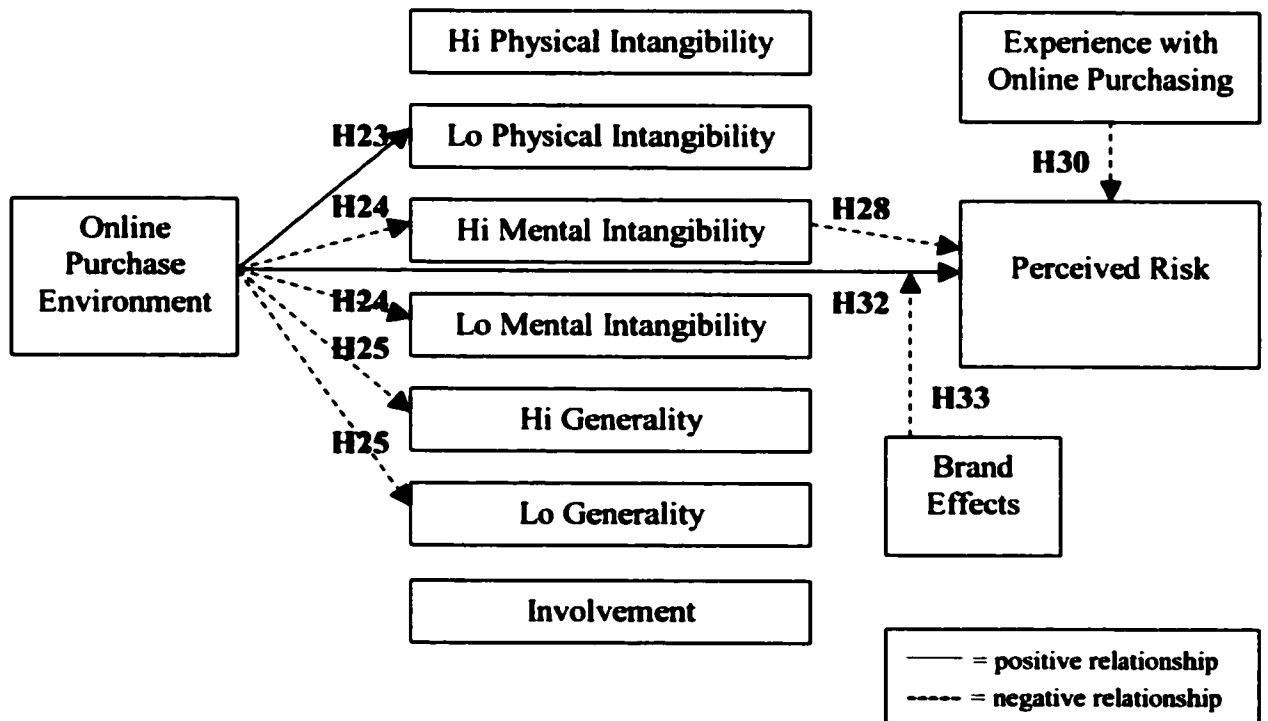


Source: Goutaland, Christine (1999), *Product and Service Intangibility: A Study of its Dimensions and Consequences on Product/Service Evaluation*, Master's Thesis, John Molson School of Business, Concordia University.

**Figure 7 – Online Effects on Difficulty of Evaluation**



**Figure 8 – Online Effects on Perceived Risk**



## **CHAPTER 2 - METHODOLOGY**

### **1. RESEARCH DESIGN**

This research was designed to be an exploratory extension of past studies that examined the relationships between the degree of intangibility of a given product or service, the involvement that the product or service type entailed, the difficulty of evaluation associated with the product or service, the perceived risk in making a choice, and the experience/knowledge that the consumer had with the given product/service. An online purchase scenario was also simulated with the hope of identifying any mediating or direct effects that it may have on the aforementioned constructs.

The study manipulated the degree of intangibility through the inclusion of three product and three service types of varying levels of expected intangibility as objects in the constructed questionnaire. This facilitated the examination of the extent to which difficulty of evaluation and perceived risk, are influenced by the intangibility of the product/service. The involvement and experience/knowledge constructs were also monitored for any direct or indirect effects. However, using a cross-sectional design, we were given a look at the purchasing environment at a given point in time, not affording us the ability to consider any evolution in the individual consumer's perceptions.

#### ***1.1 Chosen Product Descriptions***

When trying to create distinctions in the level of intangibility, several product and service types were used. Broad categories were compared to branded items in order to isolate the effects of specific brands of products. The outcome derived from a study examining the

effects of intangibility in online/offline purchase environments could be expected to be significantly different with the use of brands and general product category.

We specifically wanted to isolate distinctions of intangibility made by respondents based on their experience with the brand as opposed to distinctions made on the category as a whole. The influence of using a brand is not expected, however, to be limited to the intangibility construct. Involvement, perceived risk and experience would all be conceivably influenced by the use of real branded products/services. We therefore segregated the branded objects in our questionnaire from general product/service types. This allowed for the careful comparison of construct relationships in a brand-oriented environment, versus one void of any brand distinctions.

The products/services chosen for inclusion in the study were selected upon their variability along the intangibility dimension. The researcher assessed variability along this dimension. A subsequent standard by which the products were judged was its familiarity to the sample (university students). The product types chosen needed to be familiar to the sample population in order to ensure that the involvement and experience constructs were measurable and significant.

Those guidelines yielded the following products and services: jeans, a computer, a music compact disc, an Internet browser, a pizzeria dinner and a chequing account. The first three were classified as being products, while the last three were classified as being services.

<b>Products</b>	<b>Services</b>
• Jeans	• Pizzeria dinner
• Computer	• Chequing account
• Music compact disc	• Internet browser



The jeans and the computer were employed as highly tangible products, while the music compact disc were kept as a less tangible product. The pizzeria dinner was used as a more tangible service while the chequing account and Internet browser were used as the less tangible services.

Brands for those product categories were then chosen. Brands that were likely to be both popular and familiar to the sample population were assigned to the product/service groups. Familiarity of the brands was assessed through the pre-testing of the questionnaire. Respondents were asked about their awareness of the brand. The brands were deemed to be familiar to all of the pretest participants.

<b>Products</b>	<b>Services</b>
• Levi's Jeans	• Pizza Hut Pizzeria dinner
• IBM Computer	• Royal Bank Chequing account
• Beatles' Compact Disc	• Netscape Internet Browser Software

### ***1.2 Sample Description***

In choosing a sample, it became evident that budgetary and time restrictions would not allow for the collection of data from a representative sample. As such, a convenience sample was used instead.

The data was collected from students at Concordia University in Montreal. Going into classes and asking for voluntary inclusion in the study resulted in data from 783 respondents. Students were not forced to participate by either the researcher or the professors that allowed us into their classrooms. Subjects were allowed to discontinue

their participation at any time. All questionnaires were filled out immediately under the supervision of the researcher.

Although the student population was chosen as a convenience sample, they were assumed to be familiar with the consumer processes that were the focal point of the study. However, the sample population was more educated on the whole and had a more limited age range than the consuming population as a whole.

### ***1.3 Survey Instrument***

A structured, non-disguised questionnaire was created in order to facilitate the collection of the necessary data. Some of the items were originally conceived as nine-point scales, and we felt that converting them to seven-point scales would diminish their efficiency. As a result, a nine-point scale was used for any item that involved a scalar measurement in order to better capture any nuance in the respondents' perceptions. The questionnaire was written in English (since it was being distributed on the grounds of an English university) to make it accessible to the vast majority of the students that volunteered to participate. Students who had difficulties understanding the language were allowed to withdraw.

Eight different questionnaires were developed: four for the branded products/services and four for the generic product/service categories. The four branded versions were identical to the four generic versions. Two of these examined the online purchase environment and two focused on the traditional offline purchase environment. The two online and two offline questionnaires each had one version focusing on the purchase of a computer (IBM), chequing account (Royal Bank) and music compact disc

(Beatles), and another version focusing on the purchase of jeans (Levi's), a pizzeria dinner (Pizza Hut) and an Internet browser (Netscape). The six products and services were split into two different versions in order to shorten the questionnaires. With this division the questionnaires ranged between twelve and sixteen pages. Any longer, and we believed that boredom would set in for the respondents, and the answers would become less reliable. To further minimize any negative effects of the length of the questionnaire, as well as to deal with any order effects that may have been present, we created eight more questionnaires that had the order in which the products and services were listed inversed. For example, the online questionnaire that examined the purchase of a computer (IBM), chequing account (Royal Bank) and music compact disc (Beatles) had a reciprocal counterpart that examined the purchase of a music compact disc (Beatles), a chequing account (Royal Bank) and a computer (IBM).

Each questionnaire was pretested by two students. Written comments were encouraged during their completion of the questionnaire. Subsequent to the completion of the questionnaire, the researcher and the pretest subject discussed any relevant comments. This enabled several minor modifications to be made to the wording of the questions themselves, in order to make them more understandable and intuitive to the respondents. Please refer to the appendices 1 and 2 for a sample of the questionnaires.

The questionnaires were divided into four subsections. The first three examined the consumer perceptions for the three different product or service classes. Each section dealt with the consumer perceptions of one product or service. The fourth section was included to gather general demographic information about each respondent. This final section was the same across all sixteen versions of the questionnaire.

## ***1.4 Measurement of The Concepts***

### ***1.4.1 Physical Intangibility***

The measurement of this construct was achieved using a combination of items that was initially used by Laroche et al. (2001). It melded a scale developed by McDougall and Snetsinger (1990) with a new item, “I can physically grasp this item”. This item was developed in accordance with the existing literature on intangibility. This item, along with two items from the McDougall and Snetsinger (1990) scale were measured along a nine-point Likert-type scale. The two items included from the McDougall and Snetsinger (1990) scale were “This item is very easy to see and touch” and “This item is very tangible”. Both of these items rated higher than 0.76 in reliability.

### ***1.4.2 Generality***

Laroche et al. (2001) assessed the generality dimension using a scale initially developed by Dubé, Regan and Schmitt (1990). Two semantic differential scales were used from the original scale, ranging from “very abstract” to “very concrete” and “very generic” to “very specific”, and a third was added. Laroche et al. (2001) added an item that read “I feel that this product is”. The semantic differential scale then ranged from “very accessible to my senses” to “not accessible to my senses at all”. However, the researchers found that the Cronbach alpha values were a little low. Furthermore, we felt that the items in the scale did not sufficiently match the definition that we had established for the construct. For those two reasons, we felt it imperative to change the scale. Two researchers at Concordia University thus created a new scale with which to measure the generality dimension of intangibility. It consists of three items measured on a nine-point

Likert-type scale. The items include: “I could easily explain many features associated with *given product*”, “It is not difficult to give a precise description of a *given product*” and “It is easy to describe many features related to a *given product*” (Laroche et al. 2001).

#### *1.4.3 Mental Intangibility*

The mental intangibility construct was measured using a set of four items that were used by Laroche et al. (2001). It in turn was adapted from McDougall and Snetsinger’s (1990) work with the addition of one item: “I need more information about this item in order to make myself a clear idea of what it is”. Four items were used from McDougall and Snetsinger’s (1990) work. They included: “I have a very clear picture of this item”, “The image of this item comes to mind right away”, “This is not the sort of item that is easy to picture” and “This is a difficult item to think about”. Although not originally envisioned as a measure of mental intangibility by McDougall and Snetsinger (1990), Laroche et al.’s (2001) adaptation and use of the scales were successful. All of the reliability scores were reported to be in excess of 0.71. Again, the items were assessed on a nine-point Likert-type scale.

#### *1.4.4 Difficulty of Evaluation*

This construct was measured with a scale developed by a fellow researcher at the University. It consists of four items in a semantic differential scale ranging from “very difficult” to “very easy”, “very problematic” to “not problematic at all”, “very complex” to “very simple” and “very complicated” to “not complicated at all”. The items are in

response to the statement “Given that I have to acquire a *given product*, choosing among the available brands will be:”

#### ***1.4.5 Risk***

Perceived risk was measured through its components, namely, financial, social, time, performance and psychological risk. A measure of overall risk was also used. The perceived risk measures were adapted from Stone and Gronhaug’s 1993 work. They had found the Cronbach alpha values to be the following – overall risk 0.686, financial risk 0.762, social risk 0.715, time risk 0.657, performance risk 0.750 and psychological risk 0.810. All of the alphas are greater than 0.6, as prescribed by Nunnally (1967).

Notwithstanding, we felt the alphas to be too low to use the items as they were. As such, the phrasing was manipulated to meet our needs, and several items were added as well.

In overall risk the items “I will incur some risk if I buy a *given product* in the next twelve months” and “A *given product* is a very risky purchase” were added. The following item was removed from the original scale, “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”.

In social risk, the item “If I bought a *given product*, I would be held in higher esteem by my family” was added while the item “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” was removed.

In time risk, the items were rephrased somewhat to meet the needs of our study, however, no items were added or removed from the original. In financial risk, one item

was changed from “My purchasing a personal computer within the next twelve months for use at home would be a bad way to spend money” to “Purchasing a *given product* could involve important financial losses”.

Performance risk was maintained as originally developed by Stone and Gronhaug (1990). Several minor phrasing changes were implemented to customize the items to meet our needs. Finally, the psychological risk items were maintained with only minor phrasing modifications. Physical risk items were omitted since none of the goods or services that we had used in our study are expected to load highly on that dimension.

#### *1.4.6 Experience and Knowledge*

As explained in the literature review, we feel that the measure of both experience and knowledge are appropriate as a focal point in our study. The measurement of familiarity is only used as an indication as to the extent of subjective knowledge that the consumer has about a product/service category. Evaluating the frequency of actions relating to a particular product/service category on the other hand assesses experience.

To that end, we used a scale developed by Park, Mothersbaugh and Feick (1994) which allowed for the differentiation between the two constructs by having items specifically tailored for each one. Experience was further measured using two items from a scale developed by Oliver and Bearden (1983). A third item from this scale was dropped since it overlapped with an item from the Park, Mothersbaugh and Feick (1994) scale. One other item was added to measure experience. It was taken from Biehal’s (1983) scale. The item reads, “I don’t have much experience making this kind of

decision”. It was phrased slightly differently in our study to read, “I don’t have much experience buying a *given product*”.

Despite the apparent fit of the Park, Mothersbaugh and Feick items with our purposes, changes and omissions were needed to make the scale applicable to our research. One item, “Do you currently own a *given item*?” was removed since it could not be applied to services. Some other items needed to be phrased differently in order to meet the requirements specific to a particular good or service (please refer to the questionnaires in the appendix).

#### ***1.4.7 Involvement***

Zaichkowsky’s (1985 a) widely used involvement scale was used as a basis for our five-item scale. Zaichkowsky (1985a) originally conceived the scale to consist of twenty items. Using Mittal’s (1989) article as a basis from which reduction of hedonic-factor and attitude-like items could be done, Goutaland (1999) used an abbreviated 11-item scale. From those eleven (listed below), we were able to remove 6 more, creating a 5-item scale for involvement. The five items used as two separate semantic differential scales are listed immediately below:

“I perceive a <i>given product</i> as:	very important....	very unimportant
	very significant....	very insignificant
	very valuable....	not valuable at all
A <i>given product</i> :	matters a lot to me....	doesn’t matter to me
	means a lot to me....	means nothing to me”



**Table 3: Goutaland's 11-Item Scale of Involvement**

**You perceive this product as:**

- 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**

## **2. ANALYSES AND RESULTS**

### ***2.1 General Comments***

Before beginning the analysis, we felt it important to familiarize ourselves with the make-up of our subject pool. We conducted several basic demographic analyses to get an idea as to the type of respondent that participated in our survey. The following section identifies several key demographic variables that were collected as part of our questionnaire.

#### ***2.1.1 Demographic Data***

We were able to get 783 usable questionnaires, with the number of respondents for each questionnaire version outlined in Table 4. There was almost an equal distribution of respondents across the 16 versions of the questionnaire, ranging from 48 to 50 for each version.

**Table 4: Questionnaire Version Frequency**

	Frequency	Percent	Valid Percent	Cumulative Percent
Ver. # 1	50	6.4	6.4	6.4
2	48	6.1	6.1	12.5
3	50	6.4	6.4	18.9
4	50	6.4	6.4	25.3
5	49	6.3	6.3	31.5
6	50	6.4	6.4	37.9
7	49	6.3	6.3	44.2
8	48	6.1	6.1	50.3
9	49	6.3	6.3	56.6
10	48	6.1	6.1	62.7
11	48	6.1	6.1	68.8
12	48	6.1	6.1	75.0
13	48	6.1	6.1	81.1
14	50	6.4	6.4	87.5
15	48	6.1	6.1	93.6
16	50	6.4	6.4	100.0
Total	783	100.0	100.0	

We can see from the age distribution that a university student sample was used, with the greatest portion of respondents being in the 15-25 year old range.

**Table 5: 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		

Gender was fairly evenly divided between men and women. A high number of missing responses may be problematic with regards to gender comparisons.

**Table 6: 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		

The level of education of the sample was predominantly undergraduate. This is to be expected since the vast majority of classes that were used as a sample were undergraduate. Very few graduate classes were approached in the sample.

**Table 7: Scholastic Level**

		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		

A majority of students that are full time is representative of the student population as a whole. Moreover, most of the classes that were used in the sample were during regular business hours, suggesting that part time students would be less represented.

**Table 8: Scholastic Status**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	full	582	74.3	84.3	84.3
	part	108	13.8	15.7	100.0
	Total	690	88.1	100.0	
Missing	System	93	11.9		
Total		783	100.0		

Respondents communicated with their relatives about half of the time in English, and watched most of their television in English, listened to most of their radio in English and read the English newspaper the most. This would suggest that the questionnaires were completed by a majority of respondents that were Anglophone. Speaking a language other than English or French with their relatives was the second most prevalent response. This is not unusual, given the varied ethnic background of the Montreal community as a whole, and more specifically, the university community. However, when it comes to watching television, listening to the radio, and reading the newspaper, French becomes the second most dominant response. This is to be expected given the higher degree of availability of written and oral mediums in this language. To recap, a slight majority of the communications that the respondents have with their relatives is in English, while a vast majority of their television watching, radio listening and newspaper reading occurs in English.

**Table 9: Language Use with Relatives, Watching T.V., Listening to The Radio and Reading the Newspaper**

(%)

Lang. / Activity	N	Minimum	Maximum	Mean	Std. Deviation
English with rel.	768	0	100	53.33	36.49
French with rel.	766	0	100	21.07	30.41
Other with rel.	768	0	100	25.65	34.04
English TV	766	0	100	83.14	21.34
French TV	765	0	95	12.92	19.13
Other TV	764	0	92	3.97	11.93
English Radio	759	0	100	83.24	22.57
French Radio	759	0	100	13.50	20.55
Other Radio	757	0	100	3.27	12.08
English News	763	0	100	76.96	27.67
French News	763	0	100	18.73	25.82
Other News	763	0	100	4.31	14.25
Valid N (listwise)	751				

On average, respondents consider themselves to be primarily Anglophones (mean rating of 6.26 compared to 3.75 – Francophone and 4.13 – Allophone). It is thus not surprising that the average rating of Anglophone friends was the highest as well (mean of 6.13 compared with 3.90 – Francophone and 4.31 – Allophone). However, respondents on average felt that their parents were best described as being Allophones. This would suggest that many of the Anglophones still came from a variety of ethnic and cultural backgrounds. Francophone parents were on average the least predominant, which is not surprising given that the questionnaires were distributed in an English university.

**Table 10: Cultural Makeup**

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
Anglophone	751	1	9	6.26	3.01
Francophone	743	1	9	3.75	3.06
Allophone	722	1	9	4.13	3.30
Parents Angl.	743	1	9	4.19	3.45
Parents Fran.	742	1	9	3.28	3.21
Parents Allo.	731	1	9	4.90	3.62
Friends Anglo.	747	1	9	6.13	2.81
Friends Fran.	740	1	9	3.90	2.80
Friends Allo.	731	1	9	4.31	3.02
Valid N (listwise)	701				

There are several missing values, especially in the gender and scholastic status items.

The missing values will not be of great importance in the scholastic status item, however, the missing gender values may make comparisons across gender a little more difficult. A recap of the items and the corresponding number of missing values are listed in Table 11.

**Table 11: Missing Values in Demographic Variables**

		<b>Age</b>	<b>Gender</b>	<b>Level</b>	<b>Status</b>
N	Valid	772	699	765	690
	Missing	11	84	18	93

### **2.1.2 Overall Sample**

The 783 usable questionnaires seem to be fairly representative of the student population with regards to gender (54% female), age (59% were between the ages of 21 and 25) and education level (92% were undergraduate students). The highly educated and young sample is fairly representative of the online purchasing community. This should allow for significant insight into the purchasing behaviours of that portion of the buying population.

## **2.2 Data Reduction**

### **2.2.1 Factor Analysis**

**Table 12: Factor Analysis Loadings**

<b>Name of Factor (items listed below factor)</b>	<b>Loading</b>	<b>Eigen Value</b>	<b>Cronbach Alpha Value</b>
<b>Time Risk</b>		<b>10.182</b>	<b>.9382</b>
Purchasing a computer could involve important financial losses	.933		
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	.970		
Purchasing a computer will lead to an inefficient use of my time	.775		
<b>Knowledge / Experience</b>		<b>6.56</b>	<b>.8907</b>
In general, my knowledge of computers is:	.807		
Would you consider yourself uninformed or informed about computers?	.835		
Compared to my friends and acquaintances, my knowledge of computers is:	.800		
Compared to experts in this area, my knowledge of computers is:	.842		

I use a computer:	.536		
The global information search I have performed on computers is:	.719		
I don't have much experience purchasing computers	.583		
<b>Involvement</b>		<b>3.642</b>	<b>.9447</b>
I perceive computers as: very important ... very unimportant	-.941		
I perceive computers as: very significant ... very insignificant	-.951		
I perceive computers as: very valuable ... not valuable at all	-.923		
Computers: matter a lot to me ... don't matter to me	-.838		
Computers: mean a lot to me ... mean nothing to me	-.828		
<b>Social Risk</b>		<b>2.716</b>	<b>.8705</b>
If I bought a computer, I would be held in higher esteem by my friends	-.960		
If I bought a computer, I would be held in higher esteem by my family	-.968		
Purchasing a computer within the next twelve months would cause me to be considered as foolish by some people whose opinion I value	-.548		
<b>Physical Intangibility</b>		<b>2.254</b>	<b>.8668</b>
A computer is very easy to see and touch	-.797		
I can physically grasp a computer	-.941		
A computer is very physically tangible	-.898		
<b>Difficulty of Evaluation</b>		<b>2.041</b>	<b>.9524</b>
Given that I have to buy a computer in a computer store, choosing among the available brands will be: very difficult ... very easy	.861		
Given that I have to buy a computer in a computer store, choosing among the available brands will be: very problematic ... not problematic at all	.902		
Given that I have to buy a computer in a computer store, choosing among the available brands will be: very complex ... very simple	.936		
Given that I have to buy a computer in a computer store, choosing among the available brands will be: very complicated ... not complicated at all	.942		
<b>Mental Intangibility</b>		<b>1.651</b>	<b>.7747</b>
I need more information about computers to get a clear idea (image) of what it is	.663		
This is a difficult product to think about	.873		
This is not the sort of product that is	.879		



easy to picture			
<b>Generality</b>		<b>1.041</b>	<b>.9109</b>
I could easily explain many features associated with a <i>computer</i>	-.850		
It is not difficult to give a precise description of a <i>computer</i>	-.925		
It is easy to describe many features related to a <i>computer</i>	-.907		
<b>Performance Risk</b>		<b>.968</b>	<b>.9094</b>
If I were to purchase a <i>computer</i> within the next twelve months, I would be concerned that this product will not provide the level of benefits that I would be expecting	.596		
As I consider the purchase of a <i>computer</i> in the near future, I worry about whether it will really "perform" as well as it is supposed to	.939		
The thought of purchasing a <i>computer</i> causes me to be concerned for how really reliable that product will be	.814		
<b>Psychological Risk</b>		<b>.923</b>	<b>.9673</b>
The thought of purchasing a <i>computer</i> gives me a feeling of unwanted anxiety	-.913		
The thought of purchasing a <i>computer</i> makes me feel psychologically uncomfortable	-.914		
The thought of purchasing a <i>computer</i> causes me to experience unnecessary tension	-.919		
<b>Financial Risk</b>		<b>.763</b>	<b>.9144</b>
If I bought a <i>computer</i> for myself within the next twelve months, I would be concerned that this financial investment would not be wise	-.863		
Purchasing a <i>computer</i> could involve important financial losses	-.900		
If I bought a <i>computer</i> for myself within the next twelve months, I would be concerned that I would not get my money's worth	-.758		

We began our analysis by conducting a factor analysis on the questionnaire items.

We reversed the scales on questions 9 and 18 through 29. These questions needed to be reversed since their scales were directionally opposite to the other questions.

Once this was done, we began by opting for a solution that included dimensions that had an eigenvalue of 1 or more. We conducted a principal component method factor analysis, while using a direct oblimin rotation to facilitate interpretation of the factors.

This yielded a nine-dimensional solution. This solution coupled time risk with financial risk, knowledge with experience and social risk with psychological risk. Wanting to explore the individual dimensions of perceived risk, we decided upon trying a twelve dimensional solution. This would allow for each of our twelve a priori dimensions to be measured by the items that were assigned to them. This approach yielded some troubling results. By using a twelve-dimensional solution, one item from experience was isolated as a dimension unto itself. The expected five dimensions of perceived risk were now distinct. In order to maintain the separation of the five dimensions of perceived risk while eliminating the single-item experience construct, we explored a solution with eleven dimensions. We found this to be an optimal solution.

Our chosen solution combined knowledge and experience together. This was somewhat conflicting with our expectations. We had expected to find knowledge and experience to be distinct constructs, that were very closely related (Zaichkowsky 1985 a; Alba and Hutchinson 1987). The fact that our data necessitated the combination of the two constructs supports the notion that they are very closely related. So although we did not find the two dimensions to be unique, their close relationship was not entirely unexpected either.

Throughout all of the potential solutions, two items in the mental intangibility construct were consistently loading with other constructs. In the original nine-dimensional solution, the items “The image of a *given product* comes to my mind right away” and “I have a clear picture of a *given product*” loaded with generality, performance risk, time risk and financial risk. Once we had decided upon an eleven-dimensional solution, we removed those two items and reran the factor analysis. We also

checked the reliability of the dimension with and without the two items. Including the two items, the Cronbach alpha value was .8097. After having removed the two items, the Cronbach alpha value was only decreased to .7747. Considering that these two items were loading with multiple other dimensions, while not even loading on mental intangibility, we felt that the removal of these two items would be an optimal solution.

The factor analysis did reaffirm the existence of three separate dimensions of intangibility, namely physical intangibility, mental intangibility and generality. Their reliability measures ranged from .7747 to .9109, all well above the prescribed 0.7 minimum threshold.

Despite having one item in social risk and one item in experience cross-loading with other dimensions (social risk with psychological risk and experience with involvement – please refer to Table 12), their removal is believed to potentially weaken the constructs as a whole. Their loadings on their respective dimensions were fairly strong at -.548 and .536. The cross-loadings found were also fairly weak at -.391 and -.324. As a result, we decided to keep them in. Social risk and knowledge/experience were found to have .8705 and .8907 Cronbach alpha scores with those items kept.

Having decided on the item-groupings for the dimensions, we proceeded to test the reliabilities of the measures that had been established. Please refer to Table 12 for the listings of all dimension reliabilities, eigenvalues and item loadings. All of the Cronbach alpha values were well above the prescribed 0.7 cut-off point, suggesting that our measures were appropriate in assessing their designated constructs.

### ***2.3 Regressions***

Before beginning the regression analyses, we had to reverse several scales in order to make them directionally consistent within and across all constructs. We chose to reverse all scales that had high values that corresponded to low construct levels. This allowed us to assert that all high scale values corresponded to high levels within the construct. For example, a high value associated with the physical intangibility items reflected high levels of physical intangibility. In order to accomplish this, the scales in items 9 through 15 and 21 through 29 were reversed.

Having ensured that all item values were directionally consistent, we averaged the construct item values to create one mean value for each construct. In total, we had one value for each of the following factors: physical intangibility, generality, mental intangibility, financial risk, time risk, performance risk, social risk, psychological risk, involvement, knowledge/experience, and difficulty of evaluation. In order to be able to test for the interactions between certain factors, we created new interaction variables that consisted of two factors whose values were multiplied together. The interaction variables that were tested consisted of involvement/physical intangibility, involvement/generality, involvement/mental intangibility, knowledge/physical intangibility, knowledge/generality, and knowledge/mental intangibility.

Once all of our variables (including interaction variables) were calculated, we ran stepwise linear regression analyses using the probability of F falling within the .200 and .201 range to allow the inclusion of independent variables with significance levels of  $p = .10$  (one way) for consideration in our regression models. We used the stepwise methodology in order to minimize any multicollinearity effects that would have otherwise

affected our solutions. We tested several dependent variables, namely, financial risk, time risk, performance risk, social risk, psychological risk and difficulty of evaluation. The potential independent variables that were examined in each regression analysis were physical intangibility, generality, mental intangibility, involvement/physical intangibility, involvement/generality, involvement/mental intangibility, knowledge/physical intangibility, knowledge/generality, knowledge/mental intangibility, involvement, and knowledge.

We separated our sample along the online and offline conditions. This allowed us to explore the between-factor relationships as they appear in a bricks and mortar environment (as a confirmation and extension of Goutaland (1999)) as well as the between-factor relationships as they appear in the virtual environment that is the Internet. Although not specifically included in this paper's hypotheses, the comparison of these relationships will serve as a foundation for further research in the area.

In order to test hypothesis 22, we ran four additional regressions. One used only offline services as its sample, the second used offline products as its sample, the third used online services as its sample and the final one used online products as its sample. Running these four regressions in the offline and online environments allowed us to isolate any effect that the online purchase environment may have had on the results. Once the four regressions were run, the solutions for the products were compared to the solutions for the services in order to identify any differences in the impact of experience on difficulty of evaluation and perceived risk in the two conditions.

It is important to note that in order to facilitate the analysis across the product/service condition, it was necessary to change the sample units from respondents

(783 units) to individual questionnaire sections (each questionnaire was comprised of three separate sections that examined a different product or service category. This increased the unit sample size from 783 (using the respondent as a means of division) to 2349 (using the questionnaire section as a means of division). This subdivision of units allowed for the comparison of product/service means as well as relationships across conditions that would have otherwise been impossible.

#### ***2.4 T-Tests***

Independent sample t-tests were also performed in order to identify any differences in the mean dimension values across several conditions. The t-tests were conducted to compare the means of the online and offline conditions as well as the product and service purchasing conditions (in both an offline and online purchasing condition). Once again, the averaged overall dimension values (i.e., physical intangibility, generality, mental intangibility, etc.) were used for this purpose. The comparisons were run on all pertinent variables (physical intangibility, generality, mental intangibility, financial risk, time risk, performance risk, social risk, psychological risk, involvement and difficulty of evaluation).

To test hypotheses 29 and 30, supplemental t-tests were performed in order to compare levels of difficulty of evaluation and perceived risk between subjects that had experience purchasing goods or services online and those that had no experience making online purchases. The distribution of subjects that had made an online purchase over the Internet in the last five years versus those that had never made an online purchase was about 50/50, making this an appropriate tool with which to test the hypotheses. Although

the question relating to Internet purchasing experience derived a quantitative answer from respondents, we felt that the variation and distribution of answers did not make a correlational testing approach the optimal solution. Instead, we decided to recode the answers so that any value that was greater than 0 was considered to be an experienced online purchaser. Subjects that responded to this item with 0, were categorized as inexperienced online purchasers. These two groups' mean difficulty of evaluation and perceived risk values were then tested for any significant differences.

## ***2.5 Regression Results***

### ***2.5.1 Financial Risk***

In exploring the influencing factors on perceived financial risk in an offline setting, we found five influencers to exist. Mental intangibility, involvement and physical intangibility all had a positive relationship with perceived financial risk. Knowledge and the interaction variable of involvement coupled with physical intangibility had a negative relationship with financial risk. Identical relationships existed in the online purchasing environment.

**Table 13: Financial Risk Regression**

<i>Variable</i>	<i>Offline Coefficient (Beta)</i>	<i>Offline T-Value</i>	<i>Online T-Value</i>	<i>Online Coefficient (Beta)</i>	<i>Variable</i>
Physical Intangibility	.216	3.098 <sup>a</sup>	2.077 <sup>b</sup>	.142	Physical Intangibility
Mental Intangibility	.147	* 4.653 <sup>a</sup>	* 4.255 <sup>a</sup>	.136	Mental Intangibility
Involvement	.186	* 4.086 <sup>a</sup>	* 4.613 <sup>a</sup>	.214	Involvement
Knowledge	-.163	* -5.008 <sup>a</sup>	* -4.804 <sup>a</sup>	-.161	Knowledge
Involvement / Physical Intangibility	-.282	* -3.648 <sup>a</sup>	* -3.160 <sup>a</sup>	-.237	Involvement / Physical Intangibility
F-value = 17.097 <sup>a</sup> Adjusted R <sup>2</sup> = .064 Constant: 2.64			F-value = 13.347 <sup>a</sup> Adjusted R <sup>2</sup> = .050 Constant: 3.336		
* = 1 Way Significance			a=p<.01, b=p<.05, c=p<.10		

### 2.5.2 Time Risk

Upon running the regression with time risk as the dependant variable, five influencers were found to be in effect. Generality, involvement and the interaction variable composed of knowledge and mental intangibility were found to have a positive relationship with this dimension of perceived risk. Knowledge and the interaction variable consisting of involvement and generality had a negative relationship with time risk. When purchasing over the Internet, physical and mental intangibility were found to have a positive relationship with time risk. Knowledge, and the two interaction variables consisting of involvement/mental intangibility and involvement/physical intangibility were all found to have a negative relationship with time risk.



**Table 14: Time Risk Regression**

<i>Variable</i>	<i>Offline Coefficient (Beta)</i>	<i>Offline T-Value</i>	<i>Online T-Value</i>	<i>Online Coefficient (Beta)</i>	<i>Variable</i>
Generality	.348	5.614 <sup>a</sup>	2.357 <sup>a</sup>	.153	Physical Intangibility
Knowledge	-.240	* -6.185 <sup>a</sup>	* 2.824 <sup>a</sup>	.162	Mental Intangibility
Involvement	.135	* 2.545 <sup>a</sup>	* -3.148 <sup>a</sup>	-.102	Knowledge
Involvement / Generality	-.353	* -5.030 <sup>a</sup>	-1.438 <sup>c</sup>	-.087	Involvement / Mental Intangibility
Knowledge / Mental Intangibility	.125	* 4.110 <sup>a</sup>	* -2.861 <sup>a</sup>	-.202	Involvement / Physical Intangibility
F-value = 30.245 <sup>a</sup> Adjusted R <sup>2</sup> = .111 Constant: 2.832			F-value = 17.859 <sup>a</sup> Adjusted R <sup>2</sup> = .067 Constant: 4.082		
* = 1 Way Significance      a=p<.01, b=p<.05, c=p<.10					

**2.5.3 Performance Risk**

Four influencers were found when running the regression with performance risk as the dependent variable in an offline purchase condition. Physical intangibility and the interaction variable of involvement and mental intangibility were found to positively influence performance risk while knowledge/experience and the interaction variable of involvement and physical intangibility were found to negatively influence performance risk. When purchasing online, a positive relationship was found to exist between performance risk and physical intangibility, mental intangibility and involvement. The interaction variables of involvement/mental intangibility, involvement/physical intangibility and knowledge/physical intangibility were all found to be negative influencers of performance risk in an online purchasing environment.

**Table 15: Performance Risk Regression**

<i>Variable</i>	<i>Offline Coefficient (Beta)</i>	<i>Offline T-Value</i>	<i>Online T-Value</i>	<i>Online Coefficient (Beta)</i>	<i>Variable</i>
Physical Intangibility	.272	5.000 <sup>a</sup>	2.396 <sup>a</sup>	.177	Physical Intangibility
Knowledge	-.142	* -4.613 <sup>a</sup>	* 2.957 <sup>a</sup>	.199	Mental Intangibility
Involvement / Mental Intangibility	.182	5.491 <sup>a</sup>	* 2.284 <sup>a</sup>	.127	Involvement
Involvement / Physical Intangibility	-.281	* -4.857 <sup>a</sup>	-1.826 <sup>b</sup>	-.136	Involvement / Mental Intangibility
			* -1.786 <sup>b</sup>	-.151	Involvement / Physical Intangibility
			* -1.804 <sup>b</sup>	-.097	Knowledge / Physical Intangibility
F-value = 26.590 <sup>a</sup> Adjusted R <sup>2</sup> = .080 Constant: 3.765			F-value = 5.290 <sup>a</sup> Adjusted R <sup>2</sup> = .021 Constant: 3.601		

\* = 1 Way Significance      a=p<.01, b=p<.05, c=p<.10

#### **2.5.4 Social Risk**

There are six variables that have an influence upon social risk. The two interaction variables of knowledge/mental intangibility and involvement/generalizability as well as the involvement variable were found to have a positive influence upon social risk. The negative influencers of social risk consisted of knowledge and the two interaction variables that combined involvement/mental intangibility and involvement/physical intangibility. In an online purchasing setting, knowledge/generalizability and knowledge/mental intangibility have a positive relationship with social risk. Knowledge/physical intangibility was found to negatively influence social risk when buying online.

**Table 16: Social Risk Regression**

<i>Variable</i>	<i>Offline Coefficient (Beta)</i>	<i>Offline T-Value</i>	<i>Online T-Value</i>	<i>Online Coefficient (Beta)</i>	<i>Variable</i>
Involvement	.224	* 4.212 <sup>a</sup>	1.740 <sup>c</sup>	.063	Knowledge / Generality
Knowledge	-.218	*-4.377 <sup>a</sup>	* 5.356 <sup>a</sup>	.175	Knowledge / Mental Intangibility
Involvement / Generality	.137	* 3.061 <sup>a</sup>	*-3.326 <sup>a</sup>	-.119	Knowledge / Physical Intangibility
Involvement / Mental Intangibility	-.215	-3.010 <sup>a</sup>			
Involvement / Physical Intangibility	-.109	*-2.861 <sup>a</sup>			
Knowledge / Mental Intangibility	.353	* 5.591 <sup>a</sup>			
F-value = 13.360 <sup>a</sup> Adjusted R <sup>2</sup> = .059 Constant: 1.884			F-value = 13.348 <sup>a</sup> Adjusted R <sup>2</sup> = .031 Constant: 2.314		
* = 1 Way Significance			a=p<.01, b=p<.05, c=p<.10		

#### 2.5.5 Psychological Risk

Psychological risk was found to have three influencing variable, namely mental intangibility, generality and knowledge. The first two variables were found to positively influence this dimension of risk while the last variable was found to have a negative influence. When buying items over the Internet, generality, mental intangibility and involvement increased psychological risk, while involvement/mental intangibility and involvement/physical intangibility decreased it.

**Table 17: Psychological Risk Regression**

<i>Variable</i>	<i>Offline Coefficient (Beta)</i>	<i>Offline T-Value</i>	<i>Online T-Value</i>	<i>Online Coefficient (Beta)</i>	<i>Variable</i>
Generality	.061	1.690 <sup>c</sup>	3.341 <sup>a</sup>	.121	Generality
Mental Intangibility	.167	* 5.229 <sup>a</sup>	* 3.585 <sup>a</sup>	.238	Mental Intangibility
Knowledge	-.082	*-2.441 <sup>a</sup>	* 3.271 <sup>a</sup>	.167	Involvement
			-1.987 <sup>b</sup>	-.143	Involvement / Mental Intangibility
			*-2.682 <sup>a</sup>	-.102	Involvement / Physical Intangibility
F-value = 25.610 <sup>a</sup> Adjusted R <sup>2</sup> = .059 Constant: 1.787			F: Value = 9.365 <sup>a</sup> Adjusted R <sup>2</sup> = .034 Constant: 1.627		

\* = 1 Way Significance      a=p<.01, b=p<.05, c=p<.10

#### *2.5.6 Difficulty of Evaluation*

In an offline environment, difficulty of evaluation was found to have five variables with a significant influence. Generality, involvement and mental intangibility were all found to have a positive impact upon difficulty of evaluation. The two interaction variables of knowledge/generality and knowledge/mental intangibility were found to negatively influence difficulty of evaluation. When purchasing online, physical intangibility, generality and the interaction variable consisting of involvement and mental intangibility was found to have a positive influence on difficulty of evaluation. Knowledge was found to have a negative influence on the dependent variable.

**Table 18: Difficulty of Evaluation Regression**

<i>Variable</i>	<i>Offline Coefficient (Beta)</i>	<i>Offline T-Value</i>	<i>Online T-Value</i>	<i>Online Coefficient (Beta)</i>	<i>Variable</i>
Generality	.376	* 6.301 <sup>a</sup>	1.956 <sup>c</sup>	.068	Physical Intangibility
Mental Intangibility	.269	* 4.156 <sup>a</sup>	* 3.427 <sup>a</sup>	.135	Generality
Involvement	.123	* 4.493 <sup>a</sup>	* -5.602 <sup>a</sup>	-.186	Knowledge
Knowledge / Generality	-.115	-2.194 <sup>b</sup>	* 2.245 <sup>a</sup>	.066	Involvement / Mental Intangibility
Knowledge / Mental Intangibility	-.188	-2.998 <sup>a</sup>			
F-value = 62.811 <sup>a</sup> Adjusted R <sup>2</sup> = .208 Constant: 1.907			F-value = 36.440 <sup>a</sup> Adjusted R <sup>2</sup> = .108 Constant: 4.426		
* = 1 Way Significance			a=p<.01, b=p<.05, c=p<.10		

### **2.6 T-Test Results**

When comparing the mean values associated with purchasing services and purchasing goods offline, products were found to be more tangible in all three dimensions, less risky in both affected dimensions of perceived risk, more involving and equally difficult to evaluate. As well, consumers felt more knowledgeable of and experienced with products than with services. In an online purchasing environment, products remained more tangible than services in all three dimensions, became more risky in three dimensions of risk, were more involving and less difficult to evaluate. Once again, respondents felt more knowledgeable of and experienced with the products than with the services. For specific mean comparisons, please refer to Tables 19 and 20.

**Table 19: Offline Services Vs. Products T-Tests**

<b>Offline Services Versus Products</b>						
<i><b>Variable</b></i>	<i><b>Direction of Difference</b></i>	<i><b>t-value</b></i>	<i><b>Significance</b></i>	<i><b>Mean Service (St. Dev.)</b></i>	<i><b>Mean Product (St. Dev.)</b></i>	<i><b>d.f. Total</b></i>
Physical Intangibility	Prod. < Serv.	23.198	.000 *	5.3932 (2.9520)	2.1562 (1.6495)	1169
Generality	Prod. < Serv.	6.346	.000	4.3691 (2.3825)	3.5359 (2.1074)	1171
Mental Intangibility	Prod. < Serv.	9.366	.000 *	3.8365 (2.2554)	2.6963 (1.9009)	1171
Financial Risk	None.	-1.561	.119	2.9822 (2.1537)	3.1823 (2.2245)	1166
Time Risk	None	.606	.545	2.7930 (2.0242)	2.7222 (1.9669)	1165
Performance Risk	Prod. < Serv.	2.023	.043	3.7263 (2.2306)	3.4671 (2.1431)	1164
Social Risk	None	-1.521	.129	2.1779 (1.6083)	2.3237 (1.6621)	1163
Psychological Risk	Prod. < Serv.	2.073	.038	2.1451 (1.8358)	1.9341 (1.6360)	1165
Involvement	Prod. > Serv.	-2.099	.018 *	4.7626 (2.1816)	5.0348 (2.2558)	1169
Knowledge / Experience	Prod. > Serv.	-2.424	.015	4.7530 (1.9931)	5.0220 (1.8044)	1173
Difficulty of Evaluation	None	1.565	.118	3.8621 (2.2078)	3.6664 (2.0698)	1169
* = 1 way significance						

**Table 20: Online Services Vs. Products T-Tests**

<b>Online Services Versus Products</b>						
<i>Variable</i>	<i>Direction of Difference</i>	<i>t-value</i>	<i>Significance</i>	<i>Mean Service (St. Dev.)</i>	<i>Mean Product (St. Dev.)</i>	<i>d.f. Total</i>
Physical Intangibility	Prod. < Serv.	23.263	.000 *	5.4020 (2.9506)	2.1583 (1.5843)	1154
Generality	Prod. < Serv.	8.569	.000	4.3986 (2.4193)	3.2664 (2.0547)	1153
Mental Intangibility	Prod. < Serv.	9.439	.000 *	3.9510 (2.3052)	2.7646 (1.9466)	1151
Financial Risk	Prod. > Serv.	-3.533	.000	3.6061 (2.2641)	4.0851 (2.3215)	1142
Time Risk	None	.211	.833	3.8156 (2.3526)	3.7866 (2.2884)	1141
Performance Risk	None	-1.235	.217	4.3958 (2.3061)	4.5657 (2.3420)	1140
Social Risk	Prod. > Serv.	-2.891	.004	2.5346 (1.8228)	2.8459 (1.8146)	1139
Psychological Risk	Prod. > Serv.	-2.159	.031	2.9774 (2.2836)	3.2750 (2.3685)	1138
Involvement	Prod. > Serv.	-3.301	.001 *	4.8722 (2.3507)	5.3233 (2.2727)	1143
Knowledge / Experience	Prod. > Serv.	-3.342	.001	4.7347 (2.0434)	5.1235 (1.9124)	1157
Difficulty of Evaluation	Prod. < Serv.	1.801	.072	4.4035 (2.3524)	4.1577 (2.2652)	1142
* = 1 way significance						

The comparison of the online and offline purchasing conditions showed there to be no significant difference in the intangibility of the two purchasing conditions. All dimensions of risk were perceived to be less troublesome in the offline purchasing condition. Involvement was also found to be significantly less in the offline purchasing condition. Finally, difficulty of evaluation was also found to be at a lower average level in the offline purchasing condition. For all specific results, please refer to Tables 19 and 20.

**Table 21: Online Vs. Offline T-Tests**

<b>Online Versus Offline</b>						
<i><b>Variable</b></i>	<i><b>Direction of Difference</b></i>	<i><b>t-value</b></i>	<i><b>Significance</b></i>	<i><b>Mean Online (St. Dev.)</b></i>	<i><b>Mean Offline (St. Dev.)</b></i>	<i><b>d.f. Total</b></i>
Physical Intangibility	None	0.174	.862	3.785 (2.871)	3.765 (2.883)	2325
Generality	None	-1.207	.114 *	3.834 (2.314)	3.950 (2.285)	2326
Mental Intangibility	None	1.062	.144 *	3.359 (2.214)	3.263 (2.160)	2324
Financial Risk	Off < On	8.158	.000 *	3.845 (2.304)	3.082 (2.190)	2310
Time Risk	Off < On	11.602	.000 *	3.801 (2.319)	2.757 (1.995)	2308
Performance Risk	Off < On	9.416	.000 *	4.480 (2.324)	3.595 (2.189)	2306
Social Risk	Off < On	6.089	.000 *	2.690 (1.824)	2.251 (1.636)	2304
Psychological Risk	Off < On	12.719	.000 *	3.126 (2.330)	2.039 (1.740)	2305
Involvement	Off < On	2.112	.035	5.098 (2.321)	4.899 (2.222)	2314
Difficulty of Evaluation	Off < On	5.580	.000 *	4.280 (2.311)	3.763 (2.140)	2313
* = 1 way significance						



## **CHAPTER 3 - HYPOTHESIS DISCUSSION**

### **1. HYPOTHESES**

#### ***1.1 Intangibility***

**H1, H2 and H3 – please refer to Table 12**

*H1*      *v*

*H2*      *v*

*H3*      *v*

The existence of three separate intangibility dimensions was fully supported. Their treatment as unique entities was confirmed in the initial factor analysis that was run. The items grouped as physical intangibility had an eigenvalue of 2.254 and a Cronbach alpha value of .8668. Both of these values are high, and suggest with a high level of confidence the existence of this unique dimension as a component of overall intangibility. The three items comprising mental intangibility had an eigenvalue of 1.651 and a Cronbach alpha value of .7747. Again, the grouping of items that were a priori believed to make up the mental intangibility construct was supported. It is important to mention again that two items that were believed to be measures of mental intangibility were dropped since they did not meet the statistical requirements necessary to be included in the measure of this dimension of intangibility. Finally, the grouping of items believed to make up the generality measure had an eigenvalue of 1.041 and a Cronbach alpha value of .9109. This eigenvalue, although somewhat lower than the values for the other two dimensions is still satisfactory.

Significant support of these three hypotheses is a substantial step towards the confirmation of the three-dimensional model of intangibility. The recent extension of the model merited further exploration. Dubé-Rioux, Regan and Schmitt's (1990) separation of the construct into two dimensions was a break from the widely accepted

unidimensional approach. The authors suggested the existence of two intercorrelated, yet unique components whose sum determined the total product intangibility level. They separated the construct into concreteness (the attribute's accessibility to the senses) and specificity (the level of attribute clarity) (Dubé-Rioux, Regan and Schmitt 1990). Breivik, Troye and Olsson (1998) expanded and refined this two-dimensional model, relabeling the dimensions as inaccessibility to the senses and generality.

Laroche, Bergeron and Goutaland (2001) suggested the existence of a third dimension that is distinct from the other two. This dimension, labeled mental intangibility, was a component of intangibility that revolved around a mental representation that a consumer had about a product or service. This component evolved out of the subject-specific component of intangibility. Although this component of intangibility was recognized to exist (Hirschman 1980; Finn 1985; McDougall and Snetsinger 1990; Breivik, Troye and Olsson 1998), it was not treated as a distinct dimension until Laroche, Bergeron and Goutaland (2001). It revolves around the mental imagery that consumers develop about products or services through their experiences (or lack of experiences).

The existence of this third dimension had not yet been corroborated, and it was one of the main objectives of this study to confirm and further explore this dimension. Our confirmation of this distinct, subject specific component of intangibility reaffirms the need to separate it from physical intangibility and generality.

## **1.2 Consequences of Intangibility**

**H4 – please refer to Table 18**

<b>Difficulty of Evaluation</b>	<b>offline</b>	<b>v</b>
	<b>online</b>	<b>x</b>

No significant relationship was found to exist between physical intangibility and perceived difficulty of evaluation in an offline environment. Upon running the regression with difficulty of evaluation as the dependent variable, physical intangibility did not come out as being one of the influencing dependent variables.

A weaker ( $p = .054$ ) relationship was found to exist between physical intangibility and difficulty of evaluation in an online environment. It is important to note that the influence is rather small ( $\text{Beta} = .068$ ), however, the positive relationship is contrary to what we had expected to find.

### **Offline**

The lack of a relationship between physical intangibility and difficulty of evaluation in an offline environment is supported by past literature. McDougall (1987) had found there to be no relationship between intangibility (operationalized as physical intangibility) and difficulty of evaluation. Goutaland (1999) also found there to be no significant relationship between the two constructs.

It bears mentioning that the literature was not always consistent in its assessment of the relationship between this dimension of intangibility and difficulty of evaluation. Service literature, which had traditionally considered intangibility as a hallmark of all services, had suggested that the consumption of a service is associated with a greater difficulty of evaluation (Bateson 1979; Zeithaml 1981). Breivik, Troye and Olsson (1998), who had decomposed intangibility into two separate dimensions, had found high

levels of product/service physical intangibility to be associated with decreased levels of difficulty of evaluation.

With the inclusion of mental intangibility in our model (which had a fairly high Beta coefficient of .269), it can be asserted that the physical dimension of a product/service may not be enough to compensate for a lack of a clear mental representation. For example, the fact that a computer has a physical entity that is accessible to the senses does not make evaluation any less difficult if one does not know how the computer works. It is thus not surprising to see physical intangibility taking a less prominent place in determining the level of difficulty of evaluation than does mental intangibility.

### **Online**

The existence of a weak positive relationship between physical intangibility and difficulty of evaluation is difficult to explain. Had lower levels of physical intangibility (highly *tangible* goods) been associated with higher levels of difficulty of evaluation, it would have been reasonable to assume that the “intangible” nature of the Internet made the evaluation of corporeal goods and services more difficult. However, the relationship found, although fairly weak, is directionally opposite to this expectation.

Berthon, Pitt, Katsikeas and Berthon (1998) asserted that the Internet was an effective medium at distributing experiential or credence qualities, while being very inefficient at distributing certain sensory attribute cues (namely taste and touch). With the Internet being an appropriate medium for physically intangible goods and services, how can we explain our findings? It is possible that the greater reliance upon experiential

and credence cues in service consumption (Zeithaml 1981) is hindered by the lack of experience that many consumers have with the online environment (48% of our sample had not purchased anything online in the past five years, 75% had purchased three or fewer goods or services in that same period). This inability to draw upon those cues may make the evaluation process of physically intangible goods and services more difficulty than physically tangible goods/services. This may not however be a static relationship. As experience with Internet increases, the relationship between physical intangibility and difficulty of evaluation may dissipate.

**H5 – please refer to Table 18**

<i>Difficulty of Evaluation</i>	<i>offline</i>	$\nu$
	<i>online</i>	$\nu$

Difficulty of evaluation was found to be influenced by generality in an offline environment. As anticipated, the direction of this relationship was positive. The greater the level of generality within a product or service, the greater the difficulty of evaluation of that product or service will be. This relationship was found at a significance level of .000. It is seemingly a rather strong relationship as indicated by the Beta coefficient of .376. A significant ( $p = .001$ ) and fairly strong (Beta coefficient of .135) relationship between generality and difficulty of evaluation was found in the online purchasing environment as well.

### **Offline**

It is thought that the less specific the available attributes for evaluation are, the more effortful and difficult the product/service evaluation process will be (Breivik, Troye and Olsson 1998).

## **Online**

The relationship between generality and difficulty of evaluation is seemingly unphased by the purchase environment. Although existing literature in the area is scarce, there are no attributes of the online purchasing environment that would seemingly affect this relationship. The strength of the relationship is somewhat diminished from the offline condition, however, it should be noted that it remains the strongest positive relationship in both purchasing conditions.

**H6 – please refer to Table 18**

<i>Difficulty of Evaluation</i>	<i>offline</i>	<i>v</i>
	<i>online</i>	<i>x</i>

A significant positive relationship was found to exist between mental intangibility and difficulty of evaluation. Once again, this relationship was found to be a strong one, with a coefficient of .269. The significance was at a .000 level. When purchasing on the Internet, there is no apparent relationship between mental intangibility and difficulty of evaluation. This is an extremely surprising finding.

## **Offline**

Although not specifically isolated as a dimension before, it has been suggested that difficulty of evaluation would be increasingly difficult as the mental representation of the product/service and the evaluation attributes were increasingly vague (Finn 1985, Goutaland 1999).

## **Online**

The sample's aforementioned lack of experience with online purchases would presumably increase the strength of the relationship between mental intangibility and difficulty of evaluation. This, however, was not the case. One viable explanation revolves around the interaction between mental intangibility and involvement, and the presence of physical intangibility as an influencer of difficulty of evaluation in the online purchasing environment. A positive relationship exists between the aforementioned interaction variable and difficulty of evaluation. It is possible that only the interaction variable, not mental intangibility alone, is an influencer since the online purchasing medium makes the consumer more wary of physical intangibility (as a result of the Internet's inability to efficiently transmit physical cues). This increased awareness of physical intangibility perhaps overshadows the effects of mental intangibility, unless the purchase situation is sufficiently involving to merit the additional concern resultant of a high level of mental intangibility. There is no literature from which to base any conjecture on this matter, so this is purely speculative. Further research in this area is merited.

<b>H7</b>	<b>Offline</b>	<b>Online</b>	<i>(please refer to Tables 13-17)</i>
<i>Financial Risk</i>	v	v	
<i>Time Risk</i>	x	v	
<i>Performance Risk</i>	x	v	
<i>Social Risk</i>	x	x	
<i>Psychological Risk</i>	v	v	

Since we examined risk as a multidimensional construct, we entered each of the five relevant dimensions of risk in separate regression models as dependent variables. For each hypothesis that dealt with risk, we explored each of these dimensions individually. Our hypothesis that the greater the level of mental intangibility that is associated with a

product/service, the greater the associated level of perceived risk was partially supported. In the offline condition, only financial and psychological risks were influenced by the independent variable as was expected. Both of the relationships were found to have a significance level of .000. The coefficients suggest a fairly strong relationship between mental intangibility and these two dimensions of risk (.147 for financial risk and .167 for psychological risk). The three other dimensions of risk were found to have no significant relationship with mental intangibility.

When we explored the relationships in an online setting, the positive influence of mental intangibility expanded to four of the five dimensions. Financial risk (Beta coeff. = .136;  $p = .000$ ), time risk (Beta coeff. = .162;  $p = .002$ ), performance risk (Beta coeff. = .199;  $p = .001$ ) and psychological risk (Beta coeff. = .238;  $p = .000$ ) were all significantly influenced by the degree of mental intangibility.

### **Offline**

It has been asserted in past literature that vagueness and uncertainty in the mental representation of a good would be inducers of greater risk (Bauer 1960; Cunningham 1967; Mitchell and Greatedorex 1993). The dimension has only been studied once as a separate entity within intangibility. Goutaland (1999) had found the mental intangibility dimension to be positively related to risk. Her study explored the effects of intangibility on the overall perceived risk. She had not measured the individual dimensions of risk, making any assertions on the effect of the dimensions of intangibility on any one of the components of risk impossible.



To have found this dimension of intangibility to influence financial and psychological risk is not unusual. One would have expected to see these dimensions to be influenced. What is somewhat surprising is to see that mental intangibility has no significant influence on performance risk. It is a reasonable assumption that vagueness in the mental representation of a good would have induced uncertainty and variability of performance of a given product or service. Since direct experience with a product or service was considered to be the best way of diminishing performance risk (Kaplan, Szybillo and Jacoby 1974; Ross 1975) as well as diminishing the effects of mental intangibility, it is possible that the choice of familiar products and services diminished the effects that exist between mental intangibility and performance risk. The alternative is that no relationship exists.

### **Online**

Strong and significant relationships exist between mental intangibility and all dimensions of risk other than social risk. The lack of a relationship between mental intangibility and this particular dimension has been indirectly explored in past research. Social risk has been found to occur mostly when there is a great deal of interaction between the seller and the buyer. This is an occurrence that is mainly associated with the consumption of services (Bateson 1979; Eiglier and Langeard 1977; Murray and Schlacter 1990). Since social interaction is limited by the Internet (even in the consumption of services), it is reasonable to assume that social risk will not be affected by mental intangibility, even if this dimension of intangibility varies significantly between goods and services.

### ***1.3 The Role of Experience***

#### **H8**

<i>Difficulty of Evaluation</i>	<i>offline</i>	×
<i>(please refer to Table 18)</i>	<i>online</i>	√

When running the regression with difficulty of evaluation as the dependent variable, the independent variable of knowledge/experience did not appear as having a significant relationship with the dependent variable directly. No directional relationship appeared with our offline analysis. In the online purchasing environment, difficulty of evaluation was found to be significantly ( $p = .000$ ), negatively influenced (Beta coeff. =  $-.186$ ) by the knowledge/experience factor.

#### **Offline**

The notion that the more experience that one has with a product or service, the easier its evaluation will be is appealing on an intuitive level. Moreover, this relationship has been supported by many independent research efforts (Finn 1985; McDougall 1987; Goutaland 1999). The lack of statistical support for this relationship is disconcerting. It has been suggested that reliance upon experiential information as a primary cue occurs when perceived risk is the highest (Cunningham 1967; Zeithaml 1981). Interaction effects were found to exist between knowledge/experience and mental intangibility as well as knowledge/experience and generality. In high generality and mental intangibility situations, one can assume that risk is at its highest. Perhaps knowledge/experience does not play a significant role in decreasing the difficulty of evaluation until a particularly risky purchasing situation presents itself.

## **Online**

High levels of experience and knowledge significantly reduced the difficulty of evaluation. This is consistent with the findings of previous literature that measured the effects of experience and knowledge on difficulty of evaluation. An interesting alternative is to suggest that since purchasing in an online environment increases all dimensions of perceived risk (please refer to the discussion regarding hypothesis 32 for further details), the minimum threshold of risk is attained, thereby creating a purchase situation in which product knowledge and experience will decrease the difficulty of evaluation. Future research should determine whether a minimum risk threshold must be attained before the knowledge and experience variables factor in the decrease of difficulty of evaluation.

<b>H9</b>	<b>Offline</b>	<b>Online</b> <i>(please refer to Tables 13-17)</i>
<i>Financial Risk</i>	v	v
<i>Time Risk</i>	v	v
<i>Performance Risk</i>	v	x
<i>Social Risk</i>	v	x
<i>Psychological Risk</i>	v	x

Our analysis suggests that the greater the level of knowledge of and experience with a product/service, the lower the level of risk perception will be. This directional relationship was found to be significant offline for all five of the dimensions of risk. The significance levels were all at .000 except for psychological risk, which was found to have a significance level of .008. The strength of the influence was uniformly strong with the exception of psychological risk whose Beta coefficient was -.082. The remaining coefficients were: financial risk -.163, time risk -.240, performance risk -.142 and social risk -.218. Although all of the coefficients suggest the existence of a strong relationship between the dimensions of risk and knowledge/experience, the time risk

relationship seems to be particularly strong. Making an online purchase, significant relationships existed only with financial (Beta coeff. = -.161) and time risks (Beta coeff. = -.102)

### **Offline**

It has been a commonly cited principle that risks associated with purchases of new products are significantly higher due to a lack of relevant information and experience (Cox and Rich 1964; Havlena and DeSarbo 1990). Nantel and Robillard (1990) found that as the number of product encounters increased, be it through usage, purchase, choice or simple evaluation, the familiarity is increased, which in turn decreases the risk associated with that product (Gharbi 1998; Cox and Rich 1964). It is interesting to note that this relationship has held true in all five dimensions of perceived risk. Experience and familiarity seemingly increase the comfort and certainty of the purchasing situation for the consumer.

### **Online**

The fact that experience did not diminish the level of perceived performance, social and psychological risk is puzzling. One can assert that the Internet adds a significant amount of risk that cannot be compensated for through product or service experience. The fact that the purchase is online makes the situation overwhelming for the inexperienced (with regards to the Internet use) consumer. Experience with a product or service will not diminish the risk that is attributable to the online purchase environment. Why then is financial and time risk significantly influenced by product knowledge/experience? These

two dimensions of risk were higher in an online environment, much like the other three dimensions (please refer to the discussion about hypothesis 32). Perhaps these two elements of overall risk are more in the control of the individual consumer (the purchaser can determine the amount of money they are willing to risk on a purchase as well as the amount of time that they are willing to devote to making the purchase – they cannot influence the performance of their purchase, they cannot determine the level of social risk that they are willing to undertake with absolute certainty, and they cannot establish a level of psychological risk that is acceptable to them). This control over these two dimensions may make them more susceptible to negative influencers. Further research is necessary to isolate the effects that the online purchase environment has on the relationship between the product knowledge/ experience and the various dimensions of risk.

<b>H10</b>	<b>Offline</b>	<b>Online</b> <i>(please refer to Tables 13-17)</i>
<i>Financial Risk</i>	×	×
<i>Time Risk</i>	×	×
<i>Performance Risk</i>	×	× <i>directionally</i>
<i>Social Risk</i>	×	× <i>directionally</i>
<i>Psychological Risk</i>	×	×

The positive relationship between the interaction variable comprised of knowledge/experience and physical intangibility and the perceived risk dependent variable was not supported. None of the five dimensions of risk appeared to be influenced by this interaction variable. In an online condition, both performance and social risk were found to be significant ( $p = .036$  and  $.001$  respectively). Although not very strong (Beta coeff. =  $-.097$  and  $-.119$ ), the relationships were directionally opposite to those that were hypothesized.

### **Offline**

Goutaland (1999) had found a surprising interaction effect between her experience construct and physical intangibility. Upon running the regression with risk (she had measured total risk) as the dependent variable, she had found a positive relationship between risk and the interaction variable that was made up of experience and physical intangibility. She had suggested that perhaps individuals that had high experience in a product category might collect physical evidence that is not in line with their expectations. This incongruence between expectations and physical evidence may lead to higher levels of perceived risk. Our findings did not support the existence of this relationship. In an offline environment, we did not encounter any significant relationship between the interaction variable (knowledge/experience and physical intangibility) and the levels of perceived risk.

### **Online**

The two relationships that we had found were directionally opposite to what we had hypothesized. However, the direction of the relationship is in line with intuitive reasoning. One would think that with a high level of physical intangibility (lack of physical cues), product/service knowledge and experience would effectively reduce the uncertainty and variation of possible outcomes, which would in turn reduce the levels of perceived risk. The fact that this relationship is exhibited in the performance risk is in line with common sense. Why this relationship is prominent (and stronger) in the social risk is less evident. We believe that this outcome is a result of the greater social interaction that takes place when consuming physically intangible items (primarily

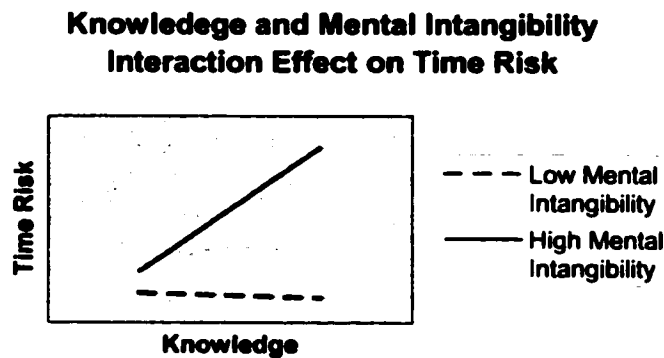
services). As a result of this greater social interaction, experience with the purchase of the physically intangible item is likely to give the consumer a framework from which to avoid embarrassing or degrading experiences. Thus, the experience with the intangible good/service decreases the perceived social risk that the consumer feels. It is still unclear as to why this relationship exists in an online environment (which presents limited social interaction) and not in the offline environment.

<b>H11</b>	<b>Offline</b>	<b>Online</b>	<i>(please refer to Tables 13-17)</i>
<i>Financial Risk</i>	×	×	
<i>Time Risk</i>	× <i>directionally</i>	×	
<i>Performance Risk</i>	×	×	
<i>Social Risk</i>	× <i>directionally</i>	× <i>directionally</i>	
<i>Psychological Risk</i>	×	×	

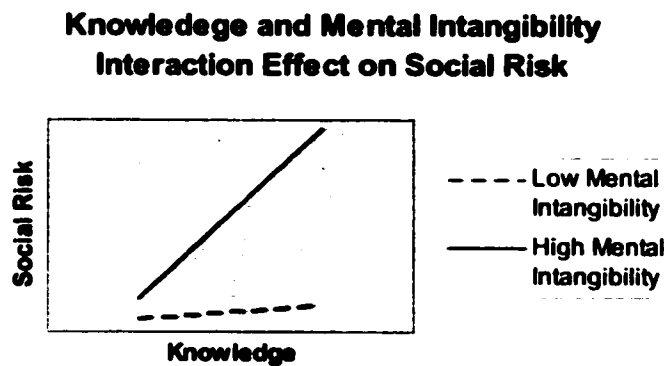
In an offline purchasing environment, the hypothesized negative relationship between the interaction variable (knowledge/experience and mental intangibility) and perceived risk was directionally unsupported in two of the dimensions. The other three dimensions of risk had no significant relationship with the interaction variable. With time risk as the dependent variable, the relationship was found at a significance level of .000, and the coefficient was .125. Having social risk as the dependent variable, the relationship was once again found to be significant, but considerably stronger ( $p = .000$ , coeff. = .353). Purchasing through the Internet, a significant ( $p = .000$ ) and fairly robust relationship was found to exist between the interaction variable and social risk (Beta coeff. = .175). Once again, the relationship was directionally opposite to our hypothesized relationships. From Figures 9 and 10, we can see that in the low mental intangibility condition, regardless of the level of knowledge/experience there is very little associated time or social risk. However, when we examine the high mental intangibility condition, we can see that the risk increases with increases in knowledge/experience. Figures 9 and 10

graphically depict the main effect from the knowledge construct concurrently with the interaction effect that exists between the knowledge/experience and mental intangibility constructs

**Figure 9 – Knowledge and Mental Intangibility Interaction Effect on Time Risk**



**Figure 10 – Knowledge and Mental Intangibility Interaction Effect on Social Risk**



### **Offline**

It was believed that high levels of mental intangibility coupled with a great deal of product knowledge and experience would reduce the perceived risk levels. Being able to refer back to past experiences with a product/service or to an extensive library of



knowledge, the consumer would achieve a clearer representation of that product/service (Zeithaml, Berry and Parasuraman 1993). This clearer mental representation would in turn reduce the perceived risk. We found a directionally opposite relationship to exist. The greater the level the mental intangibility and the greater the level of product/service experience, the higher the level of perceived time and social risk.

Although unexpected, this finding is not altogether unusual. One might say that with a greater level of understanding of a mentally intangible product/service comes a greater appreciation of the potential risks involved in the purchase and consumption of that good/service. For example, a dental procedure may be considered a highly mentally intangible service that offers mainly credence quality cues that are beyond the comprehension of most consumers. However, at the far end of the knowledge/experience spectrum, a dentist that is undergoing the same procedure may associate a high level of risk with the procedure as a result of their high knowledge of the field.

What is interesting are the two dimensions that affected this relationship highly, namely, time and social risk. Why these dimensions were found to have a significant relationship with the interaction variable is not evident. One might guess that since high levels of mental intangibility are generally associated with services (please refer to the discussion of hypothesis 18), the time and social dimensions of risk have a more prominent role in defining overall risk. As such, these two dimensions would be clearly affected by a product/service that is highly mentally intangible.

## **Online**

It is interesting to note that the only significant relationship between knowledge/experience with mental intangibility, social risk was directionally consistent to the two relationships that were found in the offline purchasing environment. The same explanation can be suggested for the direction of the relationship found in the online environment as in the offline environment. However, it is particularly strange that the relationship would be significant in the social risk dimension. It is most likely that the social risk that the consumer feels extends beyond the trading partners, and includes all those people with whom the consumer surrounds herself. As such, the social risk that the consumer feels is external to the purchasing situation. Their awareness of the risks involved in purchasing this mentally intangible item (as a result of their high level of product/service knowledge and experience) make them conscious of the opinions of others when preparing to make the purchase over the Internet.

### ***1.4 The Role of Involvement***

<b>H12</b>	<b>Offline</b>	<b>Online</b>	<i>(please refer to Tables 13-17)</i>
<i>Financial Risk</i>	×	×	
<i>Time Risk</i>	× <i>directionally</i>	×	
<i>Performance Risk</i>	×	×	
<i>Social Risk</i>	✓	×	
<i>Psychological Risk</i>	×	×	

Another interaction effect was tested, and found to have significant influence on several dimensions of perceived risk. The interaction between the involvement and generality variables was found to have significant influence on time ( $p = .000$ , coeff. =  $-.353$ ) and social risk ( $p = .001$ , coeff. =  $.137$ ). Contrary to our hypothesized direction, time risk decreased as the levels of involvement and generality were higher. The positive hypothesized direction was supported with social risk as the dependent variable. When

purchasing online, no significant relationships were found to exist between the interaction variable and any of the dimensions of perceived risk.

### **Offline**

We had anticipated a small yet significant relationship to exist between intangibility/generality and the dimensions of perceived risk. Our findings on social risk are consistent with the notion that product involvement should moderate the relationship between the dimensions of intangibility and its consequences, namely perceived risk (McDougall 1987). Goutaland (1999) found moderate support for this hypothesized relationship in her study as well. The premise behind the existence of this relationship was that highly involving products/services would exacerbate any increase in perceived risk that would come about as a result of a high level of product/service generality. With the weak relationship that had been previously suggested to exist between generality and risk as a whole, it is not surprising to find somewhat conflicting results when the dimensions of risk are studied separately. The relationship is significantly and directionally supported when examining social risk, yet directionally contradictory when examining time risk. Once again, dimensions that are more prominent when assessing risk with high generality goods/services (namely services – please refer to the discussion of hypothesis 18) are found to have significant relationships. The reason for the directionally opposite relationships remains unclear. Neither our analyses nor the existing literature helped in trying to understand these relationships. Clearly, further research is needed.

### **Online**

The relationship between involvement/generality and perceived risk was not supported in any of the dimensions. Similarly to the online findings, the lack of support is not too surprising. The relationship was found to be fairly weak and only significant at the  $p < .10$  level. With the online purchase environment not being significantly different to the offline purchasing environment with regards to generality (please refer to the discussion on hypothesis 25) nor any expected difference with regards to the level of involvement, the results in the two purchasing conditions were not expected to be significantly different.

<b>H13</b>	<b>Offline</b>	<b>Online</b>	<i>(please refer to Table 18)</i>
<i>Difficulty of Evaluation</i>	v	x	
Difficulty of evaluation was found to be positively influenced by the level of			

product/service involvement. In other words, the higher the level of product/service involvement, the more difficult it will be for the consumer to evaluate. This relationship was found to be both significant ( $p = .000$ ) and fairly robust (coeff. = .123). In an online purchasing environment, this relationship was not found to exist.

### **Offline**

Our findings are consistent with the literature in the area. Involvement has been commonly cited as an influencer of difficulty of evaluation (McDougall 1987; Goutaland 1999). Whether involvement is considered to be the importance of the product/service to the consumer (Lastovicka 1979; Nantel and Robillard 1990) or whether it is considered to be the degree of personal relevance of the given product/service (Zaichkowsky 1985a), its positive influence on difficulty of evaluation is consistent with logical reasoning.

Certainly when a product/service is important to the individual or the outcome of the purchasing situation is significant, it is quite reasonable to assume that the individual will take the time to consider as many relevant criteria in order to increase their certainty of evaluation. However, with this increased attention to detail comes increased complexity, and ultimately difficulty of evaluation.

### **Online**

The lack of support for any relationship between involvement and difficulty of evaluation is troubling. The Internet actually yielded higher mean involvement values than did purchasing through a bricks and mortar medium. As such, the relationship between involvement and difficulty of evaluation should stay intact, if not become more prevalent, across online and offline purchasing situations. One possible explanation is that the consumers have a preconception that effectively evaluating products/services online will be an arduous task, regardless of the product category. As a result of this perception of overall increased difficulty of evaluation (across all products and services), the fact that one product or service is more involving than another does not elicit the same effect that it does in an offline purchasing environment. In our sample this effect may be magnified by the fact that so little of the sample has any experience purchasing through the Internet.

<b>H14</b>	<b>Offline</b>	<b>Online</b>	<i>(please refer to Tables 13-17)</i>
<i>Financial Risk</i>	v	v	
<i>Time Risk</i>	v	x	
<i>Performance Risk</i>	x	v	
<i>Social Risk</i>	v	x	
<i>Psychological Risk</i>	x	v	

In the offline situation, involvement was found to have a significant positive influence on three dimensions of perceived risk: financial ( $p = .000$ ,  $\text{coeff.} = .186$ ), time ( $p = .006$ ,

coeff. = .135) and social risk ( $p = .000$ , coeff. = .224). The remaining two dimensions were not found to have any relationship with involvement. All three of the significant relationships were fairly strong. Purchasing over the Internet, financial ( $p = .000$ , coeff. = .214), performance ( $p = .01$ , coeff. = .127) and psychological risks ( $p = .001$ , coeff. = .167) were all found to be positively influenced by involvement.

### **Offline**

Involvement and perceived risk have been closely associated throughout the past literature. Risk has been portrayed as an antecedent, a consequence (Nantel and Robillard 1990) or even as a dimension of involvement (Laurent and Kapferer 1985; Jain and Srinivasan 1990). Whatever the presumed relationship, directionally it has been consistently found as being positive. In our study, listing risk as a consequence, we separated the dimensions of risk and explored the effects of involvement on each dimension. For the most part, the directional relationship was supported. Only performance and psychological risk were found to be without a relationship with involvement. There is no apparent logical or literature-based reason for this distinction of dimensions of risk. Further exploration is needed in order to suggest a reason for the existence of the positive relationship in certain dimensions and its absence in others.

### **Online**

There is an apparent relationship between involvement and financial, performance and psychological risks. The absence of a relationship between involvement and time and social risk could be indicative of the lack of interactivity that the Internet as a medium

allows. Social (Bateson 1979; Eiglier and Langeard 1977; Murray and Schlacter 1990) and time risks have been found to be significantly higher in services than goods (Murray and Schlacter 1990). It is resultant of the direct contact and interaction that comes about when consuming or purchasing a service. This contact is historically not present when making online purchases. As a result, these dimensions would not be as strongly influenced by involvement in an online setting. Service consumption has also been associated with higher levels of psychological risk (Murray and Schlacter 1990). This dimension of risk can be expected to play an integral role when purchasing in an unfamiliar and abstract medium. As such, the influence of involvement on psychological risk in an online purchasing environment comes as no surprise.

<b>H15</b>	<b>Offline</b>	<b>Online</b> <i>(please refer to Tables 13-17)</i>
<i>Financial Risk</i>	v	v
<i>Time Risk</i>	x	v
<i>Performance Risk</i>	v	v
<i>Social Risk</i>	v	x
<i>Psychological Risk</i>	x	v

The interaction variable consisting of involvement and physical intangibility has a significant negative relationship with financial, performance and social risk. In the offline condition, this interaction variable was found to have no significant influence upon time and psychological risk. All of the relationships were significant ( $p = .000$  for all three) and fairly robust (coeff. =  $-.282$ ,  $-.281$  and  $-.109$  respectively). In an online purchasing environment, a significant relationship was found to exist between the interaction variable (involvement/physical intangibility) and four of the five measured dimensions of perceived risk (financial:  $p = .02$ , time: sig. =  $.002$ , performance:  $p = .04$  and psychological:  $p = .004$ ). The Beta coefficient for the interaction variable in each of

the four relationships was: financial risk = -.237, time risk = -.202, performance risk = -.151 and psychological risk = -.102).

### **Offline**

Goutaland (1999) had found an unexpected interaction effect (involvement/physical intangibility) that had a significant negative effect on her overall measure of perceived risk. Although counter-intuitive, she had suggested that this relationship existed since the physical cues associated with a highly physically tangible product might be contrary to the expectations, increasing the uncertainty the consumer faces when dealing with highly involving products or services. Prior to Goutaland's (1999) findings there were no similar results to explain or support her own conclusions. Our empirical support for the existence of this relationship confirms Goutaland's (1999) own findings. We explored the relationship on each of the five dimensions, and found a significant relationship to exist in three (financial, performance and social risk). This relationship was not found to exist in time and psychological risks. On an intuitive level, one might conclude that the lack of contradictory physical cues should not diminish the psychological tension or the efficiency of their use of their time. One surprising element that is influenced by this interaction variable is social risk. Perhaps the ability to reaffirm their purchase decision to important people around the consumer through experiential anecdotes is reassuring.

### **Online**

A significant relationship exists between the interaction variable of involvement/physical intangibility in all but one of the dimensions of risk, namely social risk. It is possible that



social risk does not have a significant relationship with the interaction variable since the absence of online experiential anecdotes diminishes the consumer's ability to justify the purchase to others. Thus, physical intangibility does not help in influencing social risk when product involvement is high.

It is unclear why any significant negative relationships between this interaction variable and perceived risk would occur in light of the consumer's inexperience with the Internet. This lack of online purchasing experience would presumably make the consumer more reliant on any available physical cues. However, with the absence of any significant difference in perceived physical intangibility in an online and offline purchase setting, and a higher mean level of involvement in an online setting, it is not an unusual assumption that the effects of this interaction variable would be similar in an online and offline environment. The relationship between involvement/physical intangibility and time and psychological risks are somewhat unusual given the lack of such relationships in an offline purchase setting. It is, however, quite possible that the consumer becomes reliant upon past offline experiential cues, thereby offering familiarity and reassurance in an unfamiliar purchase setting.

<b>H16</b>	<b>Offline</b>	<b>Online</b>	<i>(please refer to Table 18)</i>
<i>Difficulty of Evaluation</i>	×	×	

No relationship was found to exist between the interaction variable comprised of involvement and generality, and difficulty of evaluation in either the offline or online purchasing conditions. Thus, our sixteenth hypothesis was not supported.

### **Offline**

Intuition would dictate that high levels involvement coupled with a high level of product/service generality would result in a higher difficulty of evaluation. Goutaland (1999) had found that though a relationship existed between the interaction variable and difficulty of evaluation, directionally, it was counter-intuitive. That is to say that with a high level of involvement coupled with a level of product/service generality, difficulty of evaluation will actually be lower. She proposed that this directionally strange relationship could be the result of a higher level of attention and effort paid to the decision, which would in turn decrease the difficulty of evaluation. Our hypothesis mirrored this negative relationship between the two variables since our study was a modified and extended replication of that research. This hypothesis was not supported. There was no support for the existence of any relationship between these two variables. The changing results would suggest that this is a volatile relationship that our measures might not effectively gauge. Further research is needed to shed light on the relationship between involvement/generality and difficulty of evaluation.

### **Online**

There is no reason to believe that this assumed relationship would be affected by the online purchasing environment. Intuitively, one would think that a high level of involvement coupled with a high level of product/service intangibility would yield a higher level of difficulty of evaluation. As in our examination of the offline buying condition, this relationship, or any other directional relationship, was not empirically supported.

<b>H17</b>	<b>Offline</b>	<b>Online</b>
<i>Difficulty of Evaluation</i>	×	<i>(please refer to Table 18)</i> × <i>directionally</i>

Our hypothesis that the involvement and mental intangibility interaction variable would have a negative relationship with difficulty of evaluation was not supported in an offline environment. Upon running the regression with difficulty of evaluation as the dependent variable, this interaction variable did not enter the model. As such, we must reject this hypothesis. Purchasing online, the interaction variable appeared as having a significant relationship with difficulty of evaluation, however, it was directionally counter to our hypothesis ( $p = .012$ , Beta coeff. = .066). Although significant, the relationship was weak.

### **Offline**

Since mental intangibility had not been identified as a distinct dimension of intangibility until Goutaland's (1999) work, this hypothesis had been based solely upon the findings in her work. She had found an unexpected interaction variable (involvement and mental intangibility) to have a negative influence upon difficulty of evaluation. The strength of the relationship was very weak (coeff. = .01) and significant only at the  $p < .10$  level. The direction of the relationship was unexpected (much like her findings with the interaction of involvement and generality), but the small coefficient and marginal significance made her uncertain of its existence. Our data suggest that perhaps the relationship that she had found was a statistical anomaly.

### **Online**

A small positive coefficient suggests that the relationship between involvement/mental intangibility and difficulty of evaluation is a weak one. It is significant at a  $p < .05$  level,

but one must be careful before making any conclusions. Although the direction of the relationship is more in line with intuitive reasoning (the higher the involvement coupled with a high level of mental intangibility results in a higher level of difficulty of evaluation), its existence must be verified.

**1.5 Services Versus Goods**

<b>H18</b>	<b>Offline</b>	<b>Online</b>	<i>(please refer to Tables 19-20)</i>
<i>Generality</i>	x	x	
<i>Physical Intangibility</i>	v	v	
<i>Mental Intangibility</i>	v	v	

We had hypothesized that there would be no significant difference between the generality ratings of products versus services. We did, however, find that products on the whole were rated as being significantly less “general” than were services in both the offline and online buying situations. As such, we must reject that portion of the hypothesis. We had also hypothesized that products would be rated much lower in terms of their physical and mental intangibility. This portion of our hypothesis was supported by our t-test analysis (all at a significance level of .000).

**Offline**

Breivik , Troye and Olsson (1998) explored generality between physical sets of products and goods. That is to say that the goods and services that they used all had a physical dimension to them (goods – leisure time jacket, running shoes, pocket camera, car and jeans; services – hair cut, hotel stay, restaurant dinner, dental examination and charter tour). Using these physical products and services, they found significant differences to exist in both the sense inaccessibility (physical intangibility) and generality dimensions when compared across products and services. Goutaland (1999) had hypothesized to find

similar differences across products and services when she conducted her study using jeans, web browser, home computer and pop music as her products and a haircut, charter flight for vacation, chequing account and a pizzeria dinner as her services. Using three dimensions of intangibility, she found significant differences to exist between goods and services in the physical and mental dimensions of intangibility. There was no significant difference in the generality dimension. Considering that we had assumed the existence of the three dimensional intangibility model, we had hypothesized that the relationships would be stable across our research and hers. However, we found there to exist significant differences between products and services in all three dimensions. This is in line with the literature on the two-dimensional model of intangibility.

### **Online**

We had expected an increase in physical intangibility in goods to come about as a result of the Internet's poor efficiency at transmitting physical cues (Berthon, Pitt, Katsikeas and Berthon 1999). This coupled with the Internet's attempts to "tangibilize" the physically intangible services led us to believe that the level of physical intangibility of goods and services might become more similar in an online environment. However, since this effect was not observed in our analysis, it is not unexpected for the difference between goods and services in physical intangibility to be maintained. With regards to mental intangibility and generality, the anticipated decrease (which was not supported) was expected to be uniform across goods and services, thereby not influencing the hypothesized differences. The continuity of the levels of all three dimensions of intangibility across the offline and online purchasing conditions ensured that the

differences found between products and services offline, would remain when examined on the Internet.

**H19**                      **Offline**                      **Online**                      *(please refer to Tables 19-20)*  
*Difficulty of Evaluation*                       $\nu$                        $\times$

We had suggested that products and services would be rated equally in terms of difficulty of evaluation. We found support for our hypothesis in the offline purchase setting, as there was no significant difference found. In the online purchase environment, products were rated as being significantly less difficult to evaluate than services, albeit at only a  $p < .10$  significance level.

## Offline

The literature has research that supports the existence of a difference (Zeithaml 1981) and research that has suggested no meaningful difference in the levels of products and services (Breivik, Troye and Olsson 1998, Goutaland 1999). Our results confirm that in an offline purchase situation there is indeed no significant difference between good and service difficulty of evaluation levels.

### Online

Although we had anticipated a global decrease in difficulty of evaluation when purchasing online (please refer to the discussion on hypothesis 31), we had anticipated this result to come about regardless of the type of purchase being made (good or service). We found marginal support for the existence of a difference in the difficulty of evaluation levels between goods and services in an online purchasing environment with products rated easier to evaluate than services. This is a surprising result.

With the apparent inability of the Internet to convey physical cues properly (Berthon, Pitt, Katsikeas and Berthon 1999), one would have anticipated that any difference would have been directionally different (goods more difficult to evaluate than services). One possible explanation was suggested by Breivik, Troye and Olsson (1999). It was offered as clarification as to why services would be easier to evaluate than goods. The authors believed that services would be less difficult to evaluate than products (despite the lack of physical cues) since their evaluation was more reliant upon past experiences. As such, less information had to be processed in order to make an informed choice, facilitating the entire decision making process. If this were the case, then our sample's inexperience with purchasing in an online medium should have in fact made the evaluation process of experiential goods and services more difficult than physically tangible items.

<b>H20</b>	<b>Offline</b>	<b>Online</b>	<i>(please refer to Tables 19-20)</i>
<i>Financial Risk</i>	v	x	
<i>Time Risk</i>	v	v	
<i>Performance Risk</i>	x	v	
<i>Social Risk</i>	v	x	
<i>Psychological Risk</i>	x	x	

Upon examining the differences in mean ratings of perceived risk between products and services, significant differences were found to exist in two of the five dimensions in the offline setting. We had expected no difference to exist between products and services, so we must partially reject our hypothesis. Both performance and psychological risks were found to be rated significantly (sig. = .043 and .038 respectively) higher in the evaluation of services as opposed to products. Purchasing on the Internet, the procurement of goods was rated as being significantly more financially, socially and psychologically risky than the acquisition of services (sig. = .000, .004 and .031 respectively).

## **Offline**

The literature has traditionally supported the view that perceived risk would be higher in the consumption of services than it would be in the consumption of goods (Zeithaml 1981; Mitchell and Greatedorex 1993). These studies explored the differences of overall perceived risk. Goutaland (1999) surprisingly found there to be no significant difference in the mean perceptions of overall risk between the consumption of goods and services. She had attributed her findings to the role of experience and involvement. Her chosen product categories were on the whole more involving than the services, while the people tended to have less experience with the service categories than with the product categories. Given the similar makeup of the products and services chosen for our studies, we had anticipated a similar finding of no differences in perceived risk between goods and services.

Unlike Goutaland (1999) we have examined the differences of risk at five dimensional levels. Murray and Schlacter (1990) explored the differences of perceived risk between goods and services in the same way. They found services to be significantly more risky in all dimensions (although financial and performance risks were not found to be statistically significant, the directional differences were evident). We found statistical support in only two of the five dimensions that we tested, namely, performance and psychological risks. Directional support was found with the time dimension of risk, but the other two dimensions had products rated as being riskier than services. Like Goutaland's (1999), it is quite possible that the higher involvement ratings for products (see results for hypothesis 21), coupled with the higher levels of knowledge/experience negated any effects that would have otherwise been seen. The two moderators are



believed to have contradictory effects that cancel one another out in terms of difficulty of evaluation and perceived risk.

### **Online**

Purchasing over the Internet was expected to increase perceived risk uniformly across products and services, thereby, maintaining a similar dynamic to that which was found in the offline environment. We instead found that the online purchasing environment altered the relationships. Products were rated as being riskier than services in the financial, social and psychological dimensions. Although intuitively sound (physically tangible goods were expected to be riskier as a result of the Internet's inability to convey physical cues effectively), it is a troubling finding since services were found to be significantly more difficult to evaluate in an online purchasing environment (see the discussion of hypothesis 19). Thus we see that services are more difficult to evaluate, but less risky a purchase. Due to the weak significance of our findings with the difficulty of evaluation, we suggest that further work be done before any conclusions are drawn.

<b>H21</b>	<b>Offline</b>	<b>Online</b>	<i>(please refer to Tables 19-20)</i>
Involvement	v	v	

Our hypothesis that products would be more involving than services was supported.

Significant difference existed between the mean involvement ratings of products and services in the offline (sig. = .018) and online (sig. = .001) settings.

### **Offline**

It was believed that due to the higher level of consumer interaction with the vendor, the simultaneity of production and consumption, the high level of heterogeneity and the lack

of physical cues, services would be a more involving purchase than products (Goutaland 1999). Goutaland (1999) had assumed that this was what she would find in her research. However, her results, much like mine, suggest that products are more involving than are services. She had suggested that it was possible that her service categories elicited less interest or were less meaningful than were her product choices. Although possible, the consistency of findings across studies suggests that perhaps involvement is greater in products than it is in services. Perhaps the reliance upon experiential cues when coming to a service purchase decision makes the process more automatic and less involving. The reliance upon physical cues in most goods may be involving due to the resultant need to process and categorize the amassed information.

### **Online**

The consistency of findings across purchasing mediums would suggest that the interest aroused as a result of the need to process the product's physical cues affects involvement in the same way online as it does offline.

<b>H22 (please refer to Tables 22-33)</b>	<b>Offline</b>	<b>Online</b>
<i>Difficulty of Evaluation</i>	<i>no evidence</i>	v
<i>Financial Risk</i>	x	v
<i>Time Risk</i>	v	v
<i>Performance Risk</i>	v	<i>no evidence</i>
<i>Social Risk</i>	x	<i>no evidence</i>
<i>Psychological Risk</i>	<i>no evidence</i>	v

We found knowledge/experience to have no direct impact in the determination of the difficulty of evaluation when purchasing either goods or services. Our hypothesis concerning difficulty of evaluation is thus not supported. Only two dimensions of risk that are influenced to a greater extent by the knowledge/experience construct when

**purchasing goods as opposed to services were found. Knowledge/experience did not enter the regressions at all when we examined the influencers of psychological risk in both goods and services. When we examined financial risk, the knowledge/experience variable loaded with a higher level of significance and a stronger Beta coefficient (suggesting a stronger influence) in the consumption of services rather than goods. As such our hypothesis was not supported in this dimension of risk. When examining services as the dependent variable, knowledge/experience loaded when examining the service purchasing condition, but failed to load when we examined the product purchasing condition. Once again, our hypothesis was not supported in this dimension of risk.**

**When purchasing online, knowledge/experience was found to be a significant influencer of difficulty of evaluation when purchasing products, but not when purchasing services. Our hypothesis concerning difficulty of evaluation was supported. The knowledge/experience construct failed to load as a significant influencer of difficulty of evaluation in both the purchase of goods and services when performance and social risks were the dependent variables. There was thus no evidence to support our belief that difficulty of evaluation would be influenced more by product knowledge/experience when purchasing a good as opposed to purchasing a service. In the other three dimensions, financial, time and psychological risk, our hypothesis was supported. In time and psychological risk, the knowledge/experience variable loads as a significant influencer for the purchase of goods, but not for the purchase of services. These findings support our hypotheses concerning these dimensions of risk. With financial risk, the knowledge/experience construct significantly diminishes this dimension of risk when**

purchasing goods, but increases it when purchasing services (this influence on the purchase of services is marginally significant). The greater relationship strength, as assessed by the Beta coefficient, and the higher level of significance suggest that product knowledge/experience is a more important influencer on psychological risk when purchasing goods, than when purchasing services.

### **Offline**

The degree of heterogeneity that is commonly associated with most services (Parasuraman, Zeithaml and Berry 1985; Berry 1980; Lovelock 1991) led us to believe that experience would have a greater influence in diminishing perceived difficulty of evaluation and risk in goods than in services. The logic behind this hypothesis is simple, the greater the variability within the experiences with a given category of purchase, the less reliable that experience becomes in accurately predicting future experiences with that same category of purchase. Thus, since services tend to display a great deal of time-to-time and person-to-person variation (Hale 1998), the influence of experience in diminishing difficulty of evaluation and perceived risk were expected to be less significant.

The absence of this relationship in difficulty of evaluation of both products and services is contrary to the findings of most research in the area (McDougall 1987; Finn 1985; Breivik, Troye and Olsson 1998; Gharbi 1998; Goutaland 1990). The absence of a relationship between the evaluation of services and knowledge/experience can be explained by service variability. The absence of this relationship when purchasing a product is a little more baffling. As was earlier suggested (please refer to the discussion

on hypothesis 8), this lack of a relationship between experience/knowledge is not found to exist since a minimum risk threshold has not been reached with our choice of product categories. As such, the consumers do not find it energy-efficient to draw upon past experience and knowledge when considering the purchase of jeans, computers or compact disks.

The larger negative effect of knowledge/experience on financial and social risks when purchasing services is difficult to explain. Perhaps financial risk is more stable than the other dimensions when purchasing services (Murray and Schlacter 1990). Thus increased knowledge/experience helps prepare the consumer as to what they can expect to pay or how much money they risk when they are purchasing that service, thereby diminishing the risk that they experience. Furthermore, increased experience with a service can make a consumer aware of the social interactions or repercussions that are incumbent to the successful completion of the transaction. This awareness will allow them to feel comfortable as to the extent to which they will be at risk socially. Seeing as these two dimensions do not change dramatically between purchases of a product, knowledge/experience was a more significant influencer when purchasing services as opposed to goods.

The lack of influence of knowledge/experience on psychological risk in either of the two conditions is also surprising. One possible explanation is that this dimension of risk is a “first impression” of the product/service that is being purchased. Thus, if either through social conditioning or the item’s high investment value, a product/service is perceived to be a stressful acquisition, then regardless of the knowledge/experience

accrued, the purchase of that product/service category will remain a psychologically uncomfortable purchase.

### **Online**

Our hypotheses had greater support in the online purchasing dimension, with knowledge/experience being more significant an influencer when purchasing goods in all but two dimensions. Performance and social risk were found to be unrelated to knowledge/experience in both the service and product purchasing conditions.

Difficulty of evaluation was affected by knowledge/experience almost as expected. The construct did not diminish difficulty of evaluation when purchasing services. Our hypothesis is thus supported, but the absence of a relationship between difficulty of evaluation and knowledge/experience when purchasing services is disconcerting. It is possible, although unlikely, that the minimum risk threshold that we had alluded to earlier had been met in the online purchase of goods, but not in the online purchase of services. Marginal support exists for this theory since the purchase of goods was rated as being significantly more risky (financially, socially and psychologically) than services in an online environment.

**Table 22: Offline Difficulty of Evaluation**

<i>Variable</i>	<i>Product Coefficient (Beta)</i>	<i>Product T-Value</i>	<i>Service T-Value</i>	<i>Service Coefficient (Beta)</i>	<i>Variable</i>
Physical Intangibility	.315	3.295 <sup>a</sup>	7.277 <sup>a</sup>	.338	Generality
Generality	.118	2.396 <sup>b</sup>	5.692 <sup>a</sup>	.324	Mental Intangibility
Mental Intangibility	.274	3.166 <sup>a</sup>	1.823 <sup>c</sup>	.068	Involvement / Physical Intangibility
Involvement	.184	4.406 <sup>a</sup>	-4.488 <sup>a</sup>	-.229	Knowledge / Mental Intangibility
Knowledge / Mental Intangibility	-.209	-2.409 <sup>b</sup>			
Knowledge / Physical Intangibility	-.233	-2.455 <sup>b</sup>			
F-value = 16.073 <sup>a</sup> Adjusted R <sup>2</sup> = .133 Constant: 1.925			F-value = 63.224 <sup>a</sup> Adjusted R <sup>2</sup> = .298 Constant: 1.825		
* = 1 Way Significance			a=p<.01, b=p<.05, c=p<.10		

**Table 23: Offline Financial Risk**

<i>Variable</i>	<i>Product Coefficient (Beta)</i>	<i>Product T-Value</i>	<i>Service T-Value</i>	<i>Service Coefficient (Beta)</i>	<i>Variable</i>
Mental Intangibility	.135	3.104 <sup>a</sup>	2.117 <sup>b</sup>	.108	Generality
Involvement	.078	1.500 <sup>d</sup>	3.326 <sup>a</sup>	.147	Mental Intangibility
Knowledge	-.092	*-1.972 <sup>b</sup>	* -3.533 <sup>a</sup>	-.171	Knowledge
Involvement / Physical Intangibility	.065	1.377 <sup>c</sup>			
F-value = 6.178 <sup>a</sup> Adjusted R <sup>2</sup> = .034 Constant: 2.774			F-value = 25.660 <sup>a</sup> Adjusted R <sup>2</sup> = .112 Constant: 2.890		
* = 1 Way Significance      a=p<.01, b=p<.05, c=p<.10, d=p<.15, e=p<.20					

**Table 24: Offline Time Risk**

<i>Variable</i>	<i>Product Coefficient (Beta)</i>	<i>Product T-Value</i>	<i>Service T-Value</i>	<i>Service Coefficient (Beta)</i>	<i>Variable</i>
Physical Intangibility	.096	2.083 <sup>b</sup>	4.817 <sup>a</sup>	.430	Generality
Generality	.177	2.053 <sup>b</sup>	2.461 <sup>b</sup>	.107	Mental Intangibility
Involvement	.102	1.384 <sup>c</sup>	1.512 <sup>d</sup>	.118	Involvement
Knowledge	-.219	*-4.203 <sup>a</sup>	* -3.135 <sup>a</sup>	-.163	Knowledge
Involvement / Generality	-.272	-2.956 <sup>a</sup>	-3.693 <sup>a</sup>	-.388	Involvement / Generality
Knowledge / Mental Intangibility	.152	3.532 <sup>a</sup>			
F-value = 9.642 <sup>a</sup> Adjusted R <sup>2</sup> = .081 Constant: 3.019			F-value = 22.209 <sup>a</sup> Adjusted R <sup>2</sup> = .153 Constant: 2.193		
* = 1 Way Significance      a=p<.01, b=p<.05, c=p<.10, d=p<.15, e=p<.20					

**Table 25: Offline Performance Risk**

<i>Variable</i>	<i>Product Coefficient (Beta)</i>	<i>Product T-Value</i>	<i>Service T-Value</i>	<i>Service Coefficient (Beta)</i>	<i>Variable</i>
Generality	-.068	-1.335 <sup>c</sup>	3.805 <sup>a</sup>	.324	Generality
Knowledge	-.159	*-3.126 <sup>a</sup>	-2.610 <sup>a</sup>	-.199	Involvement
Involvement / Mental Intangibility	.107	2.517 <sup>b</sup>	-2.108 <sup>b</sup>	-.228	Involvement / Generality
Knowledge / Physical Intangibility	.102	2.181 <sup>b</sup>	5.406 <sup>a</sup>	.390	Involvement / Mental Intangibility
			-2.999 <sup>a</sup>	-.164	Knowledge / Mental Intangibility
F-value = 4.855 <sup>a</sup> Adjusted R <sup>2</sup> = .026 Constant: 4.102			F-value = 21.726 <sup>a</sup> Adjusted R <sup>2</sup> = .150 Constant: 3.457		
* = 1 Way Significance      a=p<.01, b=p<.05, c=p<.10, d=p<.15, e=p<.20					



**Table 26: Offline Social Risk**

<i>Variable</i>	<i>Product Coefficient (Beta)</i>	<i>Product T-Value</i>	<i>Service T-Value</i>	<i>Service Coefficient (Beta)</i>	<i>Variable</i>
Mental Intangibility	.158	3.948 <sup>a</sup>	3.016 <sup>a</sup>	.170	Generality
Involvement / Generality	.065	1.327 <sup>c</sup>	4.666 <sup>a</sup>	.392	Involvement
Involvement / Physical Intangibility	.193	3.924 <sup>a</sup>	* -2.162 <sup>b</sup>	-.171	Knowledge
			-2.454 <sup>b</sup>	-.236	Involvement / Mental Intangibility
			-3.850 <sup>a</sup>	-.239	Involvement / Physical Intangibility
			4.214 <sup>a</sup>	.348	Knowledge / Mental Intangibility
F-value = 20.423 <sup>a</sup> Adjusted R <sup>2</sup> = .090 Constant: 1.432			F-value = 8.210 <sup>a</sup> Adjusted R <sup>2</sup> = .069 Constant: 1.146		
* = 1 Way Significance      a=p<.01, b=p<.05, c=p<.10, d=p<.15, e=p<.20					

**Table 27: Offline Psychological Risk**

<i>Variable</i>	<i>Product Coefficient (Beta)</i>	<i>Product T-Value</i>	<i>Service T-Value</i>	<i>Service Coefficient (Beta)</i>	<i>Variable</i>
Physical Intangibility	.201	4.399 <sup>a</sup>	5.127 <sup>a</sup>	.274	Generality
Generality	-.083	-1.761 <sup>c</sup>	2.250 <sup>b</sup>	.102	Mental Intangibility
Mental Intangibility	.202	4.717 <sup>a</sup>	-2.451 <sup>b</sup>	-.106	Involvement / Physical Intangibility
			-1.948 <sup>c</sup>	-.096	Knowledge / Generality
F-value = 17.747 <sup>a</sup> Adjusted R <sup>2</sup> = .079 Constant: 1.263			F-value = 13.885 <sup>a</sup> Adjusted R <sup>2</sup> = .081 Constant: 1.488		
* = 1 Way Significance      a=p<.01, b=p<.05, c=p<.10					

**Table 28: Online Difficulty of Evaluation**

<i>Variable</i>	<i>Product Coefficient (Beta)</i>	<i>Product T-Value</i>	<i>Service T-Value</i>	<i>Service Coefficient (Beta)</i>	<i>Variable</i>
Knowledge	-.296	*-7.143 <sup>a</sup>	3.355 <sup>a</sup>	.248	Physical Intangibility
Involvement / Mental Intangibility	.078	1.942 <sup>b</sup>	3.621 <sup>a</sup>	.206	Generality
Knowledge / Physical Intangibility	.099	2.339 <sup>b</sup>	1.394 <sup>c</sup>	.061	Mental Intangibility
			-2.902 <sup>a</sup>	-.180	Knowledge / Physical Intangibility
F-value = 18.304 <sup>a</sup> Adjusted R <sup>2</sup> = .082 Constant: 5.438			F-value = 25.683 <sup>a</sup> Adjusted R <sup>2</sup> = .144 Constant: 2.805		
* = 1 Way Significance      a=p<.01, b=p<.05, c=p<.10, d=p<.15, e=p<.20					

**Table 29: Online Financial Risk**

<i>Variable</i>	<i>Product Coefficient (Beta)</i>	<i>Product T-Value</i>	<i>Service T-Value</i>	<i>Service Coefficient (Beta)</i>	<i>Variable</i>
Mental Intangibility	.093	2.162 <sup>b</sup>	3.067 <sup>a</sup>	.312	Physical Intangibility
Involvement	.317	4.586 <sup>a</sup>	5.018 <sup>a</sup>	.218	Mental Intangibility
Knowledge	-.367	*-5.732 <sup>a</sup>	* 1.420 <sup>c</sup>	.124	Knowledge
Involvement / Physical Intangibility	-.340	-3.305 <sup>a</sup>	-2.604 <sup>a</sup>	-.304	Knowledge / Physical Intangibility
Knowledge / Generality	-.086	-1.748 <sup>b</sup>			
Knowledge / Physical Intangibility	.414	3.993 <sup>a</sup>			
F-value = 7.768 <sup>a</sup> Adjusted R <sup>2</sup> = .065 Constant: 4.359			F-value = 14.007 <sup>a</sup> Adjusted R <sup>2</sup> = .081 Constant: 1.774		
* = 1 Way Significance      a=p<.01, b=p<.05, c=p<.10, d=p<.15, e=p<.20					

**Table 30: Online Time Risk**

<i>Variable</i>	<i>Product Coefficient (Beta)</i>	<i>Product T-Value</i>	<i>Service T-Value</i>	<i>Service Coefficient (Beta)</i>	<i>Variable</i>
Generality	.230	2.473 <sup>a</sup>	4.068 <sup>a</sup>	.162	Mental Intangibility
Involvement	.213	2.597 <sup>a</sup>	-5.281 <sup>a</sup>	-.210	Involvement
Knowledge	-.286	*-4.102 <sup>a</sup>			
Involvement / Generality	-.293	-3.042 <sup>a</sup>			
Involvement / Physical Intangibility	-.250	-2.324 <sup>b</sup>			
Knowledge / Physical Intangibility	.285	2.794 <sup>a</sup>			
F-value = 9.128 <sup>a</sup> Adjusted R <sup>2</sup> = .077 Constant: 4.364			F-value = 23.350 <sup>a</sup> Adjusted R <sup>2</sup> = .071 Constant: 4.193		
* = 1 Way Significance			a=p<.01, b=p<.05, c=p<.10		

**Table 31: Online Performance Risk**

<i>Variable</i>	<i>Product Coefficient (Beta)</i>	<i>Product T-Value</i>	<i>Service T-Value</i>	<i>Service Coefficient (Beta)</i>	<i>Variable</i>
Mental Intangibility	.161	2.488 <sup>a</sup>	3.838 <sup>a</sup>	.397	Physical Intangibility
Knowledge / Generality	-.075	-1.747 <sup>c</sup>	-3.124 <sup>a</sup>	-.299	Generality
Knowledge / Mental Intangibility	-.117	-1.759 <sup>c</sup>	2.704 <sup>a</sup>	.124	Mental Intangibility
			-2.303 <sup>b</sup>	-.105	Involvement
			4.005 <sup>a</sup>	.331	Knowledge / Generality
			-4.137 <sup>a</sup>	-.468	Knowledge / Physical Intangibility
F-value = 3.290 <sup>b</sup> Adjusted R <sup>2</sup> = .012 Constant: 4.667			F-value = 7.504 <sup>a</sup> Adjusted R <sup>2</sup> = .062 Constant: 4.124		
* = 1 Way Significance			a=p<.01, b=p<.05, c=p<.10		

**Table 32: Online Social Risk**

<i>Variable</i>	<i>Product Coefficient (Beta)</i>	<i>Product T-Value</i>	<i>Service T-Value</i>	<i>Service Coefficient (Beta)</i>	<i>Variable</i>
Mental Intangibility	.233	5.568 <sup>a</sup>	3.179 <sup>a</sup>	.191	Involvement / Generality
Involvement	.075	1.831 <sup>c</sup>	-3.337 <sup>a</sup>	-.256	Involvement / Mental Intangibility
Knowledge / Generality	-.078	-1.588 <sup>d</sup>	5.504 <sup>a</sup>	.363	Knowledge / Mental Intangibility
Knowledge / Physical Intangibility	.166	3.417 <sup>a</sup>	-3.545 <sup>a</sup>	-.170	Knowledge / Physical Intangibility
F-value = 12.330 <sup>a</sup> Adjusted R <sup>2</sup> = .072 Constant: 1.763			F-value = 8.594 <sup>a</sup> Adjusted R <sup>2</sup> = .049 Constant: 2.132		
* = 1 Way Significance      a=p<.01, b=p<.05, c=p<.10					

**Table 33: Online Psychological Risk**

<i>Variable</i>	<i>Product Coefficient (Beta)</i>	<i>Product T-Value</i>	<i>Service T-Value</i>	<i>Service Coefficient (Beta)</i>	<i>Variable</i>
Mental Intangibility	.249	2.635 <sup>a</sup>	1.865 <sup>c</sup>	.112	Physical Intangibility
Involvement	.283	3.296 <sup>a</sup>	2.875 <sup>a</sup>	.129	Mental Intangibility
Knowledge	-.225	*-3.455 <sup>a</sup>	3.459 <sup>a</sup>	.178	Knowledge / Generality
Involvement Mental Intangibility	-.168	-1.682 <sup>c</sup>	-3.059 <sup>a</sup>	-.202	Knowledge / Physical Intangibility
Involvement / Physical Intangibility	-.186	-1.778 <sup>c</sup>			
Knowledge / Physical Intangibility	.279	2.760 <sup>a</sup>			
F-value = 5.264 <sup>a</sup> Adjusted R <sup>2</sup> = .042 Constant: 2.430			F-value = 9.827 <sup>a</sup> Adjusted R <sup>2</sup> = .057 Constant: 1.926		
* = 1 Way Significance			a=p<.01, b=p<.05, c=p<.10		

## 1.6 The Effect of The Internet on Intangibility

H23 – please refer to Table 34

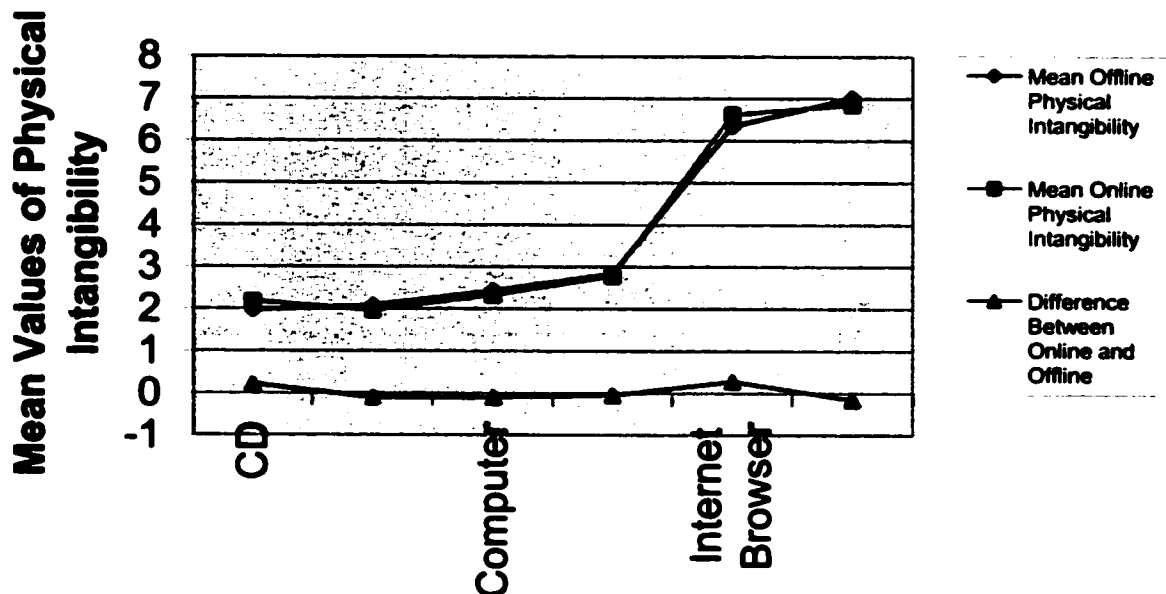
Online Physical Intangibility ×

**Table 34: Online Vs. Offline Differences in Physical Intangibility**

<i>Online vs. Offline: Differences in Physical Intangibility</i>			
<i>Category of Product or Service</i>	<i>Mean Offline Physical Intangibility (Ranking)</i>	<i>Mean Online Physical Intangibility</i>	<i>Difference Between Online and Offline</i>
CD	1.9714 – (1)	2.1780	.2066 (Not significant)
Jeans	2.0662 – (2)	1.9627	-.1035 (Not significant)
Computer	2.4306 – (3)	2.3333	-.0973 (Not significant)
Pizza	2.8325 – (4)	2.7829	-.0496 (Not significant)
Internet Browser	6.3368 – (5)	6.6108	.2740 (Not significant)
Chequing Account	7.0034 – (6)	6.8482	-.1552 (Not significant)

**Figure 11 - Online Vs. Offline Differences in Physical Intangibility**

### Online vs. Offline: Differences in Physical Intangibility



We ranked the products and services from lowest to highest (least intangible to most intangible) with respect to their mean offline physical intangibility ratings. We chose to do the rankings with the offline physical intangibility so as to avoid any changes in rankings that may have come about as a result of the abstract purchasing medium. Once the rankings were established, we examined the difference in the online and offline mean ratings of physical intangibility. We had expected the Internet's inability to properly convey many physical cues (Berthon, Pitt, Katsikeas and Berthon 1998) to increase the perceived physical intangibility for those products/services that were heavily reliant upon those corporeal cues. With the Internet's ability to convey experiential and information-based data with relative efficiency, we had anticipated the degree of perceived physical tangibility to remain constant for physically intangible goods/services.

This hypothesis was not supported. There is no pattern to suggest that our most physically tangible products/services had a more substantial decrease in their tangibility rating than their intangible counterparts

Our results suggest that the Internet may actually possess the ability to maintain or increase the level of perceived physical tangibility of all items through its ability to have the consumer focus on past experience with the physical good (maintaining or increasing physical tangibility for concrete goods and services) while giving physical cues about physically intangible goods and services (maintaining or increasing physical tangibility for intangible goods and services). This is a preliminary and exploratory finding, and any conclusions must be drawn carefully, however, the Internet as a potential "tangibilizing" purchasing medium is definitely one possible explanation for our findings.

**H24 – please refer to Table 21**

***Mental Intangibility* ×**

Purchasing in an online environment did not exhibit lower mean levels of perceived mental intangibility than did purchasing in an offline environment. As such, this hypothesis had to be rejected.

Our belief that the availability of a wide range of highly organized information on the Internet (Alba et al. 1997; Berthon, Pitt, Katsikeas and Berthon 1999; Hoffman and Novak 1996; Thakor, Borsuk-Shtevi and Kalamas 2002) would lead to a clearer mental representation of a good or service was not supported. It has been suggested that a vast amount of available information does not always increase the certainty with which a conclusion is reached (Jacoby, Speller and Kohn 1974; Alba and Hutchinson 1987). Similarly, we can assume that the available product/service information found on the Internet did not make their mental representations of a mentally intangible product/service any clearer either.

**H25 - please refer to Table 21**

***Generality* ×**

No significant difference was found between mean levels of perceived generality when purchasing online and offline although there was directional support. This hypothesis was not supported.

The anticipated, significantly lower levels of generality as a result of access to a wide range of specific product/service information was not supported. One possible explanation for this lack of effect (as well as an alternative explanation for the findings in hypothesis 24) is that the consuming public is not yet proficient enough with the Internet to take full advantage of the information that is available to them. Thus, despite the

availability of this information, it is not making its way to the consumers that could use it to diminish uncertainty. If this is the case, then as the Internet becomes more commonplace and accepted, the expected differences in hypotheses 24 and 25 will become more apparent.

### ***1.7 The Internet's Effects on The Consequences of Intangibility***

**H26 - please refer to Table 35**

**? Generality / Online / ? Difficulty of Evaluation      ×**

We had anticipated that products and services that were rated as being high in generality (again assessed in an offline purchasing condition – please refer to the discussion on hypothesis 23 for the reasoning) would experience a larger reduction in their mean difficulty of evaluation ratings when being purchased online as opposed to offline. With generality having a positive relationship with difficulty of evaluation (Breivik, Troye and Olsson 1998; Goutaland 1999), the anticipated, but not supported (refer to hypothesis 25 for a discussion), decrease in mean generality ratings when purchasing over the Internet was expected to be more significant in those products/services that had high offline generality ratings.

This hypothesis was not supported. The expected decrease in online difficulty of evaluation for products/services that are highly rated in the generality dimension of intangibility does not hold true when we examine jeans and chequing accounts. With the jeans, one could argue that its high increase in difficulty of evaluation when purchasing online is resultant of its low level of generality. The fact that it is ranked second lowest in terms of generality ratings, but highest in terms of increase in difficulty of evaluation can be explained by the very close ratings that jeans and pizza received in terms of



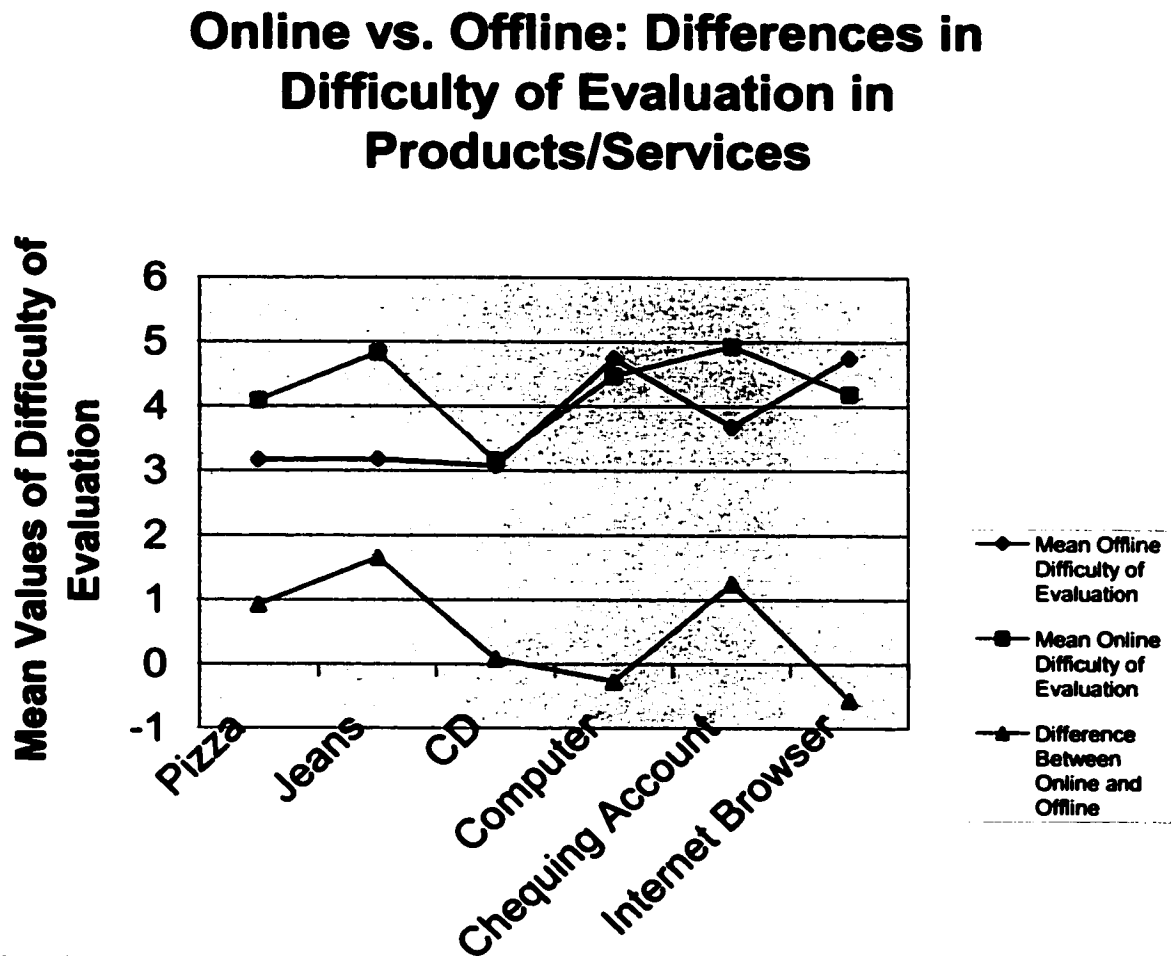
generality. The increase in difficulty of evaluation for the chequing accounts (1.2495 – second highest increase of all products/services) is a little more difficult to account for. It is important to note that the difference in online and offline difficulty of evaluation ratings were significantly different when considering the purchase of pizzas, jeans, computers (at  $\text{sig}=\text{p}<.10$ ) and Internet browsers.

Although not supported at this time, the coming increased proficiency with the Internet may make this relationship worthy of more research at a later point in time. It is encouraging to see difficulty of evaluation following the general pattern (for the most part) that this hypothesis had predicted. The three items with the lowest generality ratings saw their difficulty of evaluation increased when purchasing online, whereas, two of the three items rated as being the highest in terms of generality had their difficulty of evaluation decreased.

**Table 35: Online Vs. Offline Differences in Difficulty of Evaluation (Generality)**

<i>Online vs. Offline: Differences in Difficulty of Evaluation in Products/Services</i>				
<b><i>Category of Product or Service</i></b>	<b><i>Mean Offline Generality</i></b>	<b><i>Mean Offline Difficulty of Evaluation</i></b>	<b><i>Mean Online Difficulty of Evaluation</i></b>	<b><i>Difference Between Online and Offline</i></b>
Pizza	3.0017 – (1)	3.1688	4.0955	.9267 (Significant)
Jeans	3.0902 – (2)	3.1765	4.8338	1.6573 (Significant)
CD	3.7441 – (3)	3.0758	3.1592	.0834 (Not Significant)
Computer	3.7643 – (4)	4.7424	4.4715	-.2709 (Significant at .10)
Chequing Account	4.8680 – (5)	3.6827	4.9322	1.2495 (Significant)
Internet Browser	5.2387 – (6)	4.7513	4.1911	-.5602 (Significant)

**Figure 12 - Online Vs. Offline Differences in Difficulty of Evaluation  
(Generality)**



**H27 - please refer to Table 36**

**? Mental Intangibility / Online / ? Difficulty of Evaluation**

This hypothesis anticipated that with a higher offline mental intangibility rating (for an explanation as to why offline ratings were used, please refer to the discussion on hypothesis 23) would come a more significant decrease in the difficulty of evaluation rating of that product when purchasing online. Goutaland (1999) had found a significant positive relationship to exist between mental intangibility and difficulty of evaluation. Since we had anticipated a decrease in mental intangibility when purchasing online (see the discussion on hypothesis 24 for actual results), we had believed that those items that

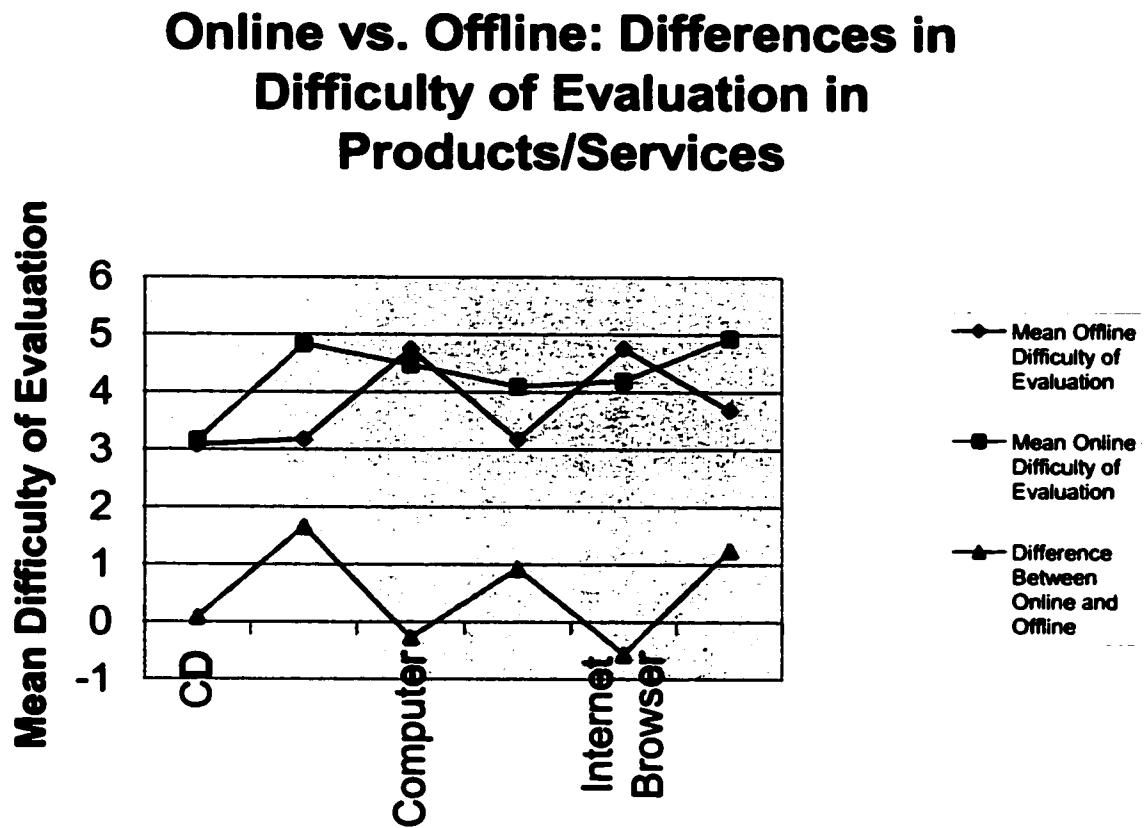
had the highest mean mental intangibility ratings would see the most significant decrease in difficulty of evaluation.

There was no support for this hypothesis. Computers and Internet browsers (ranked 3<sup>rd</sup> and 5<sup>th</sup> in offline mental intangibility respectively) experienced a decrease in difficulty of evaluation, while CD's, jeans, pizzas and chequing accounts (ranked 1<sup>st</sup>, 2<sup>nd</sup>, 4<sup>th</sup> and 6<sup>th</sup> in offline mental intangibility respectively) experienced an increase. There is no apparent pattern that can be related to mental intangibility. It is interesting to note that technological goods and services were the only ones that had a decrease in difficulty of evaluation when purchasing online.

**Table 36: Online Vs. Offline Differences in Difficulty of Evaluation  
(Mental Intangibility)**

<i>Online vs. Offline: Differences in Difficulty of Evaluation in Products/Services</i>				
<b><i>Category of Product or Service</i></b>	<b><i>Mean Offline Mental Intangibility</i></b>	<b><i>Mean Offline Difficulty of Evaluation</i></b>	<b><i>Mean Online Difficulty of Evaluation</i></b>	<b><i>Difference Between Online and Offline</i></b>
CD	1.9714 – (1)	3.0758	3.1592	.0834 (Not significant)
Jeans	2.0662 – (2)	3.1765	4.8338	1.6573 (Significant)
Computer	2.4306 – (3)	4.7424	4.4715	-.2709 (Significant at .10)
Pizza	2.8325 – (4)	3.1688	4.0955	.9267 (Significant)
Internet Browser	6.3368 – (5)	4.7513	4.1911	-.5602 (Significant)
Chequing Account	7.0034 – (6)	3.6827	4.9322	1.2495 (Significant)

**Figure 13 - Online Vs. Offline Differences in Difficulty of Evaluation  
(Mental Intangibility)**



**H28 - please refer to Table 37**

**?Mental Intangibility / Online / ? Perceived Risk**

**×**

**We had anticipated a decrease in mental intangibility when purchasing goods or services**

**over the Internet (please refer to hypothesis 24 for a discussion). This anticipated decrease in mental intangibility was expected to yield lower levels of perceived risk (Goutaland 1999). As a result of purchasing online, we had anticipated the largest decrease in mental intangibility to occur in those items that had the highest offline ratings, and consequently the greatest reduction in perceived risk.**

**There was no support whatsoever for this hypothesis. All dimensions of perceived risk increased significantly for all goods and services except for the Internet**

browser. With the Internet browser, financial risk is significantly higher online ( $\text{sig}=p<.10$ ), time risk is higher online (but not significantly), performance risk is significantly higher offline ( $\text{sig}=p<.01$ ) and both social and psychological risks are higher (but not significantly) offline. Even though mental intangibility was only found to have a significant positive relationship with financial and psychological risks offline (financial, time, performance and psychological risks online), these isolated dimensions of risk did not differ in their lack of support for the hypothesis.

One can only assume that the degree of unfamiliarity and uncertainty that is associated with online purchasing, increases the uncertainty of the purchasing decision, thereby increasing perceived risk (Cox and Rich 1964; Bateson 1979; Mitchell and Greatedrex 1993; Dowling 1986), regardless of product/service class.

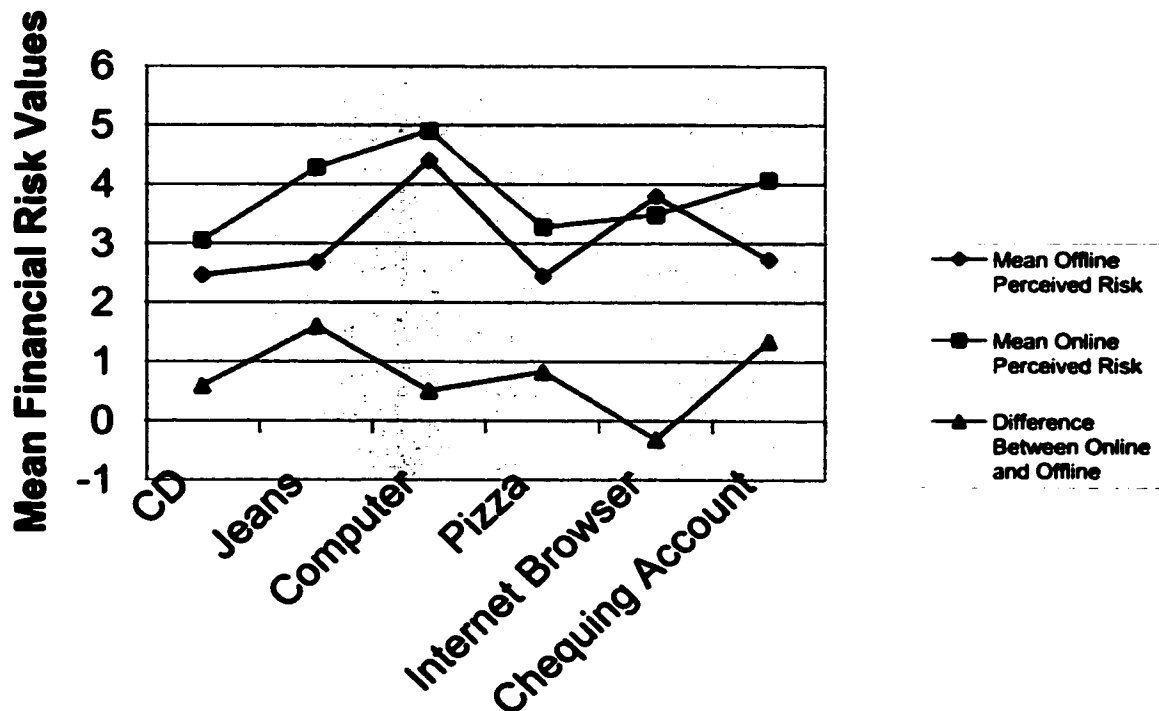
**Table 37: Online Vs. Offline Differences in Perceived Risk**

<i>Online vs. Offline: Differences in Perceived Risk in Products/Services</i>				
<i>Category of Product or Service</i>	<i>Mean Offline Mental Intangibility</i>	<i>Mean Offline Perceived Risk</i>	<i>Mean Online Perceived Risk</i>	<i>Difference Between Online and Offline</i>
CD	1.9714	Frisk: 2.4592	Frisk: 3.0529	Frisk: .5937
		Trisk: 2.6344	Trisk: 3.6037	Trisk: .9693
		Prisk: 2.5527	Prisk: 3.2855	Prisk: .7328
		Srisk: 2.1446	Srisk: 2.8069	Srisk: .6623
		Yrisk: 1.5451	Yrisk: 2.8794	Yrisk: 1.3343
Jeans	2.0662	Frisk: 2.6804	Frisk: 4.2789	Frisk: 1.5985
		Trisk: 2.5155	Trisk: 3.9368	Trisk: 1.4213
		Prisk: 3.6460	Prisk: 5.5930	Prisk: 1.9470
		Srisk: 2.1443	Srisk: 2.4377	Srisk: .2934
		Yrisk: 1.9038	Yrisk: 3.0509	Yrisk: 1.1471
Computer	2.4306	Frisk: 4.3959	Frisk: 4.9050	Frisk: .5091
		Trisk: 3.0118	Trisk: 3.8169	Trisk: .8051
		Prisk: 4.2005	Prisk: 4.8014	Prisk: .6009
		Srisk: 2.6785	Srisk: 3.2858	Srisk: .6073
		Yrisk: 2.3511	Yrisk: 3.8808	Yrisk: 1.5297

Pizza	2.8325	Frisk: 2.4467	Frisk: 3.2719	Frisk: .8252
		Trisk: 2.3308	Trisk: 4.1158	Trisk: 1.7850
		Prisk: 3.2698	Prisk: 4.5450	Prisk: 1.2752
		Srisk: 1.9759	Srisk: 2.4813	Srisk: .5054
		Yrisk: 1.9253	Yrisk: 2.8788	Yrisk: .9535
Internet Browser	6.3368	Frisk: 3.7923	Frisk: 3.4809	Frisk: -.3114
		Trisk: 3.4092	Trisk: 3.5556	Trisk: .1464
		Prisk: 4.4824	Prisk: 3.9757	Prisk: -.5067
		Srisk: 2.4902	Srisk: 2.3307	Srisk: -.1595
		Yrisk: 2.4947	Yrisk: 2.4505	Yrisk: -.0442
Chequing Account	7.0034	Frisk: 2.7228	Frisk: 4.0667	Frisk: 1.3439
		Trisk: 2.6565	Trisk: 3.7781	Trisk: 1.1216
		Prisk: 3.4490	Prisk: 4.6719	Prisk: 1.2229
		Srisk: 2.0782	Srisk: 2.7930	Srisk: .7148
		Yrisk: 2.0238	Yrisk: 3.6070	Yrisk: 1.5832

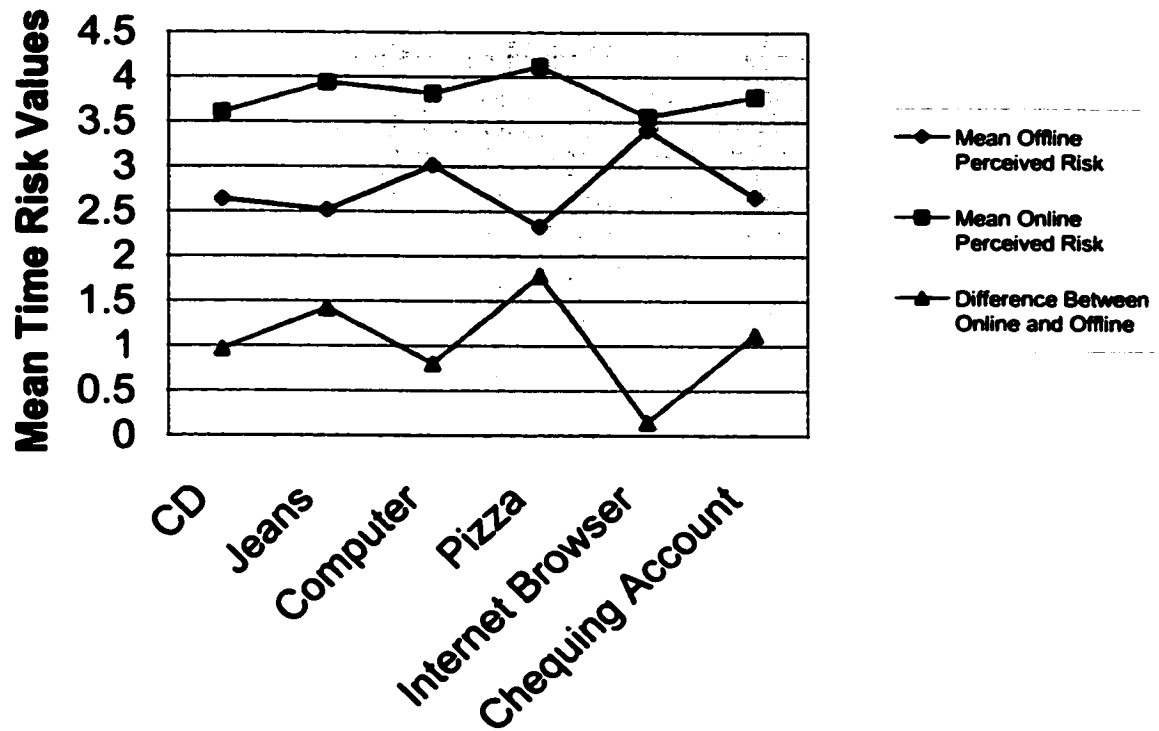
**Figure 14 - Online Vs. Offline Differences in Financial Risk**

## Online vs. Offline: Differences in Financial Risk

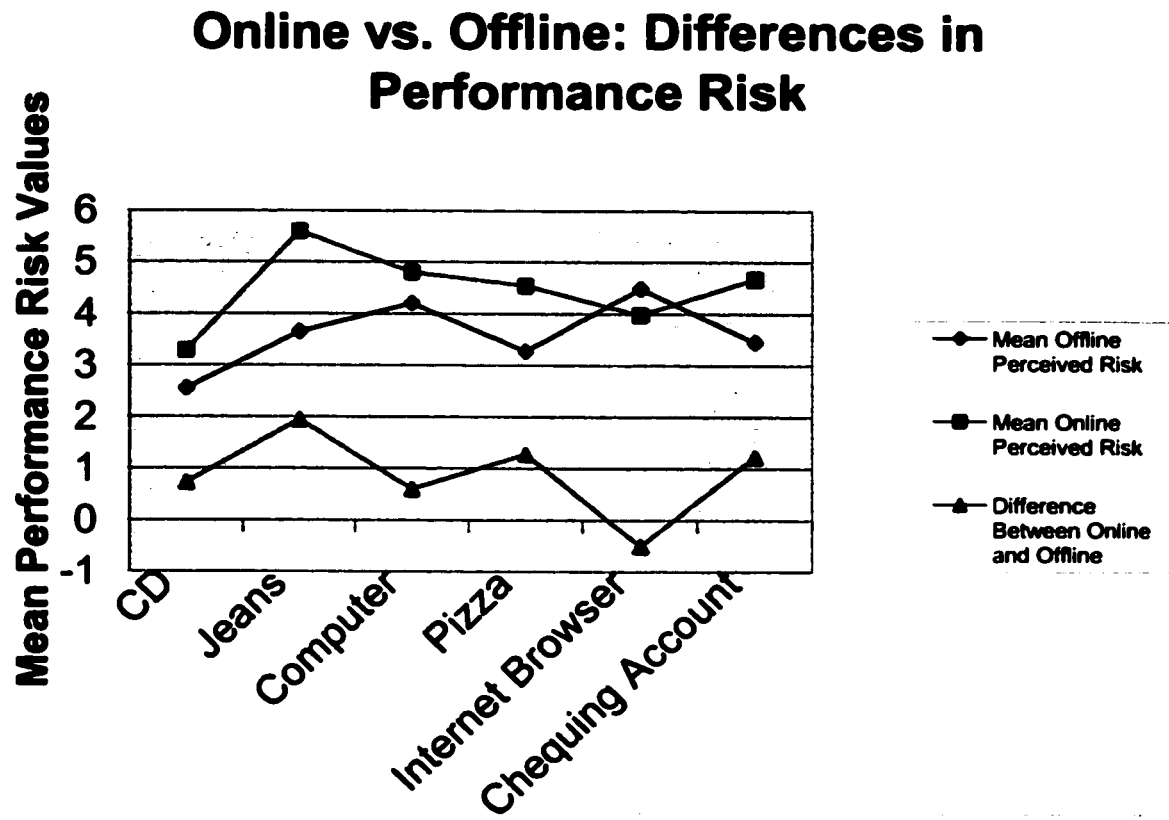


**Figure 15 - Online Vs. Offline Differences in Time Risk**

## Online vs. Offline: Differences in Time Risk

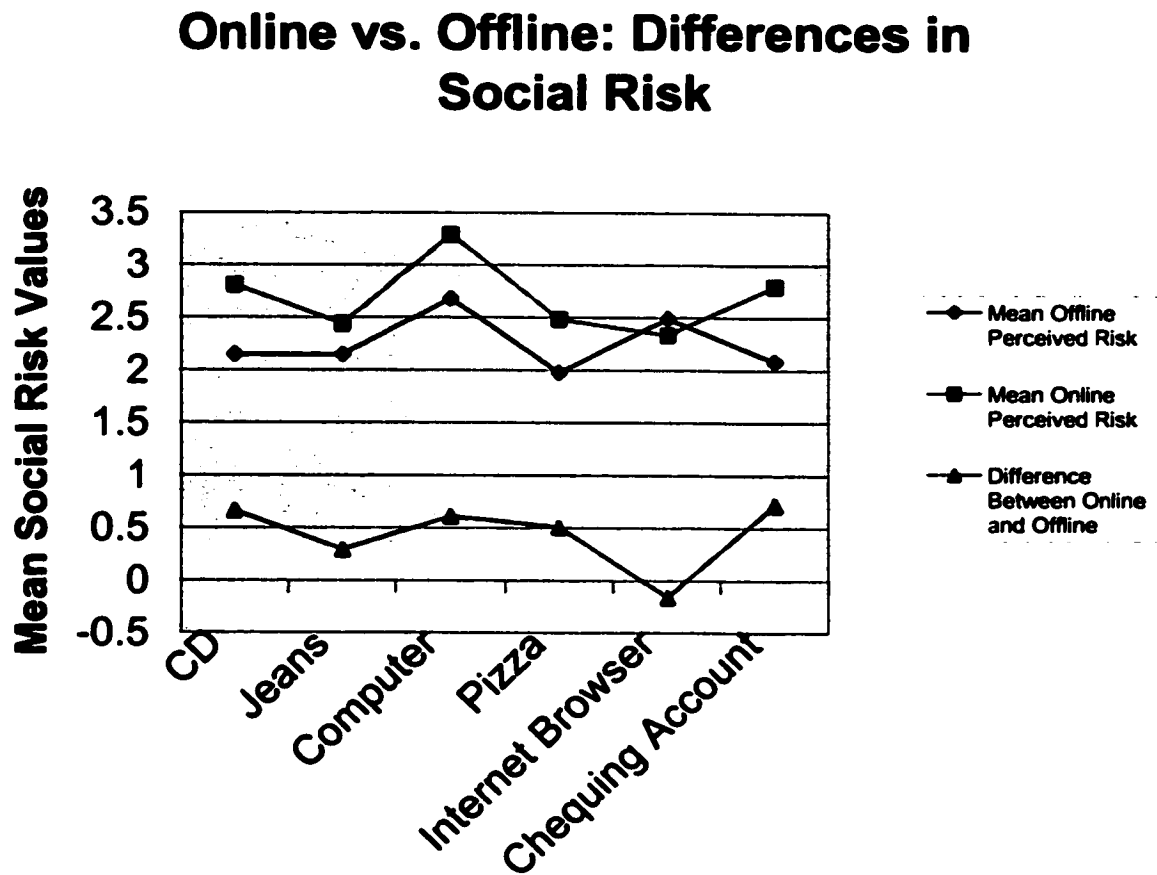


**Figure 16 - Online Vs. Offline Differences in Performance Risk**

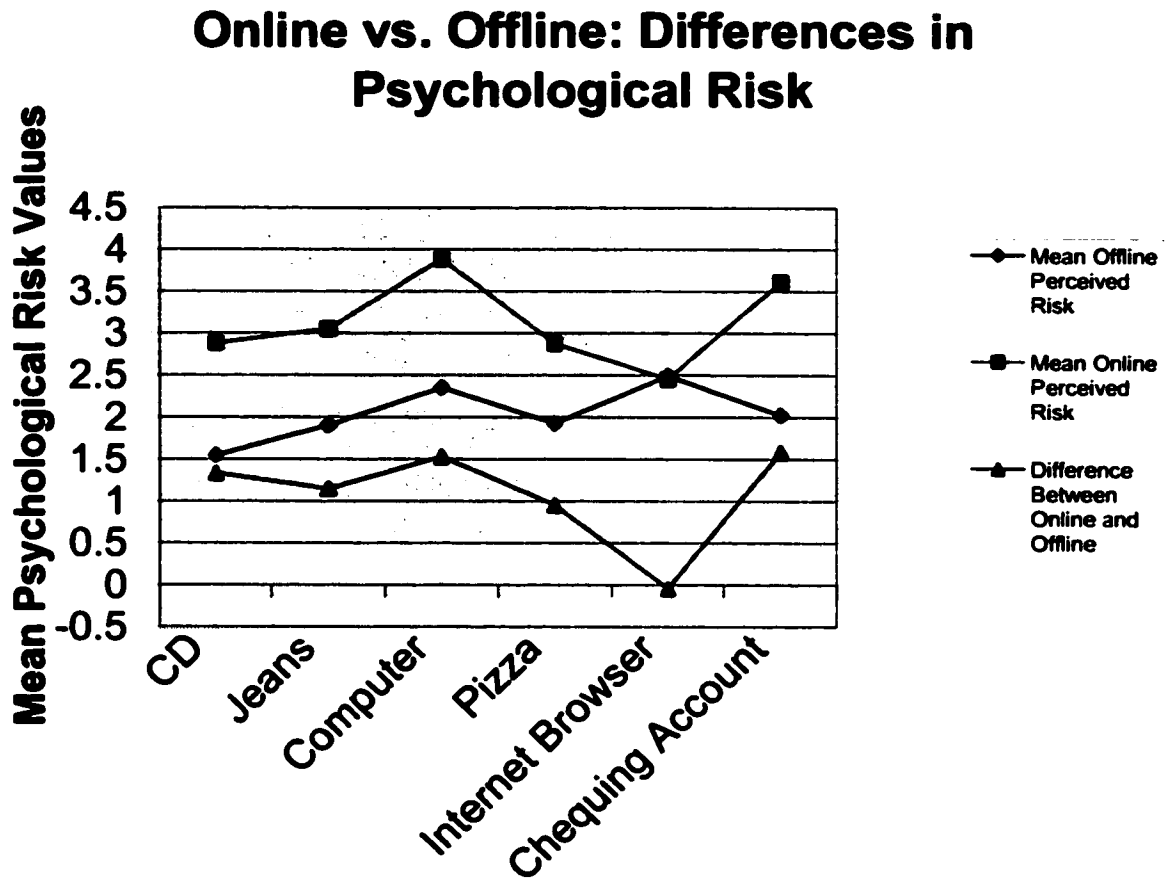




**Figure 17 - Online Vs. Offline Differences in Social Risk**



**Figure 18 - Online Vs. Offline Differences in Psychological Risk**



### **1.8 Online Purchasing Experience Effects**

**H29 - please refer to Table 38**

**Difficulty of Evaluation**

Although not ideal, approximately half of our sample had not made an online purchase in the past five years, while the other half had made at least one purchase online in the last five years. Considering the skewed data set that we had collected (half of the answers lying at zero, the other half ranging between 1 and 150), we had decided to change it to a dichotomous classification – those that have experience purchasing over the Internet, and those that don't. With this classification, we conducted a t-test in order to see whether any difference existed between the mean difficulty of evaluation ratings for purchases online. Our hypothesis was supported; those consumers that had some experience

purchasing online had a lower mean value for difficulty of evaluation than those that had no experience with online purchases.

Apparently, experience with the Internet makes the information search much less time and energy consuming, thereby freeing up cognitive resources needed to make a decision (Roberts and Nedungadi 1995; Sambandam and Lord 1995). Furthermore, more experience with online purchasing can facilitate the understanding of the Internet's ability to maintain external consideration sets, once again, facilitating the decision process (Thakor, Borsuk-Shtevi and Kalamas 2002).

**Table 38: Experience Level T-Test on Difficulty of Evaluation**

<b>Experienced Versus Inexperienced</b>						
<i>Variable</i>	<i>Direction of Difference</i>	<i>t-value</i>	<i>Sig.</i>	<i>Mean Experienced</i>	<i>Mean Inexperienced</i>	<i>d.f. Total</i>
Difficulty of Evaluation	Exp. < Inexp.	4.630	.000 *	3.9768 (2.2974)	4.6142 (2.2981)	1115
* = 1 way significance						

**H30 - please refer to Table 39**

*Financial Risk* v

*Time Risk* v

*Performance Risk* v

*Social Risk* x

*Psychological Risk* v

There is considerable support for the notion that experience with online purchasing

diminishes the risk that the individual perceives. All dimensions except for social risk,

demonstrated a significantly lower mean risk value in the online environment when

experience with the online purchasing medium was present. Confidence in the decision

(please refer to hypothesis 29 for results and discussion) as well as an increased trust in

online vendors (Ratnasingham 1998) resultant from increased online buying experience

could significantly reduce the risk that the consumer feels.

Social risk was not significantly affected by online purchasing experience. With low mean social risk values being reported by all respondents of the online purchasing condition questionnaire, it is likely that the increased level of online purchasing experience was unable to bring levels any lower. This low overall social risk level is particularly curious considering the social stigma that was generally believed to be associated with purchases online. This low level of reported social risk is perhaps indicative of an increased acceptance of online buying, and those who choose to use the Internet as a purchasing medium.

**Table 39: Experience Level T-Test on Perceived Risk**

<b>Experienced Versus Inexperienced</b>								
<i>Variable</i>	<i>Direction of Difference</i>	<i>t-value</i>	<i>Sig.</i>	<i>Mean Experienced</i>	<i>Mean Inexperienced</i>	<i>F-value</i>	<i>d.f. between groups</i>	<i>d.f. Total</i>
Financial Risk	Exp. < Inexp.	4.741	.000 *	3.5180 (2.2325)	4.1692 (2.3527)	22.479	1	1114
Time Risk	Exp. < Inexp.	4.542	.000 *	3.5031 (2.2494)	4.1306 (2.3603)	20.627	1	1113
Performance Risk	Exp. < Inexp.	5.245	.000 *	4.1369 (2.2679)	4.8644 (2.3582)	27.508	1	1112
Social Risk	None	.102	.460 *	2.6710 (1.7886)	2.6820 (1.8458)	.010	1	1112
Psychological Risk	Exp. < Inexp.	5.397	.000 *	2.7537 (2.0935)	3.5016 (2.5225)	29.126	1	1111
* = 1 way significance								

### **1.9 The Internet's Effects**

**H31 - please refer to Table 21**

*Difficulty of Evaluation* × *directionally*

We had asserted that purchasing online would yield a significantly smaller mean level of difficulty of evaluation than would purchasing offline. Although a significant difference was found to exist in the mean levels of difficulty of evaluation in the two purchasing conditions, it was not directionally consistent with our expectations. We found the mean

ratings of difficulty of evaluation to be significantly ( $p = .000$ ) less in the offline condition than in the online condition. As such we must reject our hypothesis.

Although it is possible that the Internet's capabilities of efficiently distributing information are not yet fully accessible to the majority of the population, the fact that the experienced Internet users still rated difficulty of evaluation higher (3.976) than did those respondents who were asked to consider offline purchases (3.763) brings that assumption into question. Although it is encouraging to see that Internet purchasing experience decreases difficulty of evaluation, one must still question whether difficulty of evaluation will ever be lower in an online purchasing condition. It is an area that should be revisited on a periodic basis to monitor any changes.

**H32 - please refer to Table 21**

*Financial Risk*             $v$

*Time Risk*                 $v$

*Performance Risk*        $v$

*Social Risk*               $v$

*Psychological Risk*       $v$

The mean levels of perceived risk (all dimensions) were found to be significantly ( $p = .000$  in all dimensions) higher in the online purchasing condition. This is consistent with our hypothesis.

These findings have two probable explanations. First, trust in the Internet as a reliable purchasing medium has not yet been established. This would yield an environment in which uncertainty and fear are more common, thereby leading to a higher level of perceived risk. The fact that all dimensions of risk are affected suggests that the Internet is a long way off from being a viable alternative for most consumers. An alternative explanation is that the increased difficulty of evaluation that is found in an online environment (please refer to the discussion on hypothesis 31) results in a higher

level of perceived risk. This higher risk is the result of greater uncertainty in the purchase decision that the consumer makes. It is possible, if not probable, that these two factors are working concurrently in increasing the perceived risk that consumers experience when purchasing online.

**H33 - please refer to Tables 40-41**

**? Brand Effect / Online / ? Perceived Risk**

*Financial Risk*             $\nu$

*Time Risk*                 $\nu$

*Performance Risk*       $\nu$

*Social Risk*               $\times$

*Psychological Risk*     $\nu$

**Table 40: Online Vs. Offline Brand Effects on Perceived Risk**

<b>Brand Effects Online vs. Offline</b>					
<i>Variable</i>	<i>Source of Influence</i>	<i>Significance</i>	<i>F- value</i>	<i>d.f. between groups</i>	<i>d.f. Total</i>
<i>Financial Risk</i>	Online / Offline	.000	66.491	1	2312
	Generic / Branded	.022	5.272	1	2312
	Interaction	.001	10.992	1	2312
<i>Time Risk</i>	Online / Offline	.000	135.552	1	2310
	Generic / Branded	.029	4.760	1	2310
	Interaction	.000	16.659	1	2310
<i>Performance Risk</i>	Online / Offline	.000	89.578	1	2308
	Generic / Branded	.000	29.659	1	2308
	Interaction	.000	30.402	1	2308
<i>Social Risk</i>	Online / Offline	.000	37.110	1	2306
	Generic / Branded	.136 (Not significant)	2.229	1	2306
	Interaction	.266 (Not significant)	1.235	1	2306
<i>Psychological Risk</i>	Online / Offline	.000	161.872	1	2307
	Generic / Branded	.342 (Not significant)	.904	1	2307
	Interaction	.000	14.754	1	2307

**Table 41: Mean Values of Perceived Risk Across the  
Online and Offline Conditions and the Branded and Generic Conditions**

<i>Purchasing Conditions</i>	<b>Mean Value Financial Risk</b>	<b>Mean Value Time Risk</b>	<b>Mean Value Performance Risk</b>	<b>Mean Value Social Risk</b>	<b>Mean Value Psychological Risk</b>
<b>Online</b>	<b>3.8456</b>	<b>3.8011</b>	<b>4.4807</b>	<b>2.6906</b>	<b>3.1265</b>
<b>Generic</b>	4.1044	3.8852	4.9833	2.6770	3.3279
<b>Branded</b>	3.5813	3.7150	3.9657	2.7046	2.9193
<b>Offline</b>	<b>3.0828</b>	<b>2.7574</b>	<b>3.5958</b>	<b>2.2514</b>	<b>2.0390</b>
<b>Generic</b>	3.0352	2.4766	3.5926	2.1575	1.9157
<b>Branded</b>	3.1302	3.0377	3.5989	2.3454	2.1621
<b>Total</b>	<b>3.4602</b>	<b>3.2738</b>	<b>4.0337</b>	<b>2.4687</b>	<b>2.5764</b>
<b>Generic</b>	3.5675	3.1779	4.2850	2.4162	2.6187
<b>Branded</b>	3.3520	3.3708	3.7793	2.5220	2.5334

We had anticipated to find the effects that brand names had in reducing risk levels would be more significant in the online purchasing environment than it is in the offline purchasing environment. This difference was anticipated since knowledge-based trust in an online environment can be forged only through familiarity and repetition, which is fostered through product branding (Ratnasingham 1998). This type of trust was anticipated to play a larger role in the development of a trusting, trading relationship in an online environment since it is suspected that of the two other types of trust, calculus-based trust is not feasible due to the unregulated nature of the Internet (Ratnasingham 1998).

Our hypothesis, and presumably our reasoning, was supported in all but one dimension of risk, social risk. We notice that in both the online and offline, purchasing environments, social risk is increased (not significantly) when considering a branded product/service as opposed to a generic one. We feel that perhaps the amount of social risk that is associated with a purchase is more reliant upon the nature of the product or

service, rather than on the brand name. The fact that one is purchasing a product/service that is socially frowned upon will not be changed by the purchase of a brand name.

## **2. OTHER RESULTS**

### ***2.1 Financial Risk***

#### **Offline**

A strong (coeff. = .216), positive relationship was found to exist between physical intangibility and financial risk. That is to say that the higher the level of product/service physical intangibility, the greater the degree of perceived financial risk. This is in line with the traditional service literature that has associated lower levels of physical tangibility with higher levels of risk (Bateson 1979; Zeithaml 1981; Murray and Schlacter 1990; Murray 1991; Mitchell and Greatedorex 1993). This literature adopted a unidimensional model of intangibility. The two bodies of research that examined intangibility as a multidimensional construct found there to be no significant relationship between physical intangibility and risk. It is important to note, however, that these two works operationalized perceived risk as a unit rather than subdivide its measurement along the dimensions (Breivik, Troye and Olsson 1998; Goutaland 1999). Our examination of a multidimensional model of intangibility and its effects on the individual dimensions of risk showed there to be a relationship between physical intangibility and two dimensions of risk.

The influence of physical intangibility on financial risk is difficult to explain. Perhaps physical intangibility prohibits an effective evaluation of value. The greater difficulty in assessing physically intangible cues may make it more financially risky to



purchase a physically intangible item. For example, if one assesses the value derived from the purchase of a pair of jeans, they can assess the type of material, the colour, the style and the fit. From these physical cues, that consumer can make a reasonably confident assessment of the value that was derived from the purchase. If one is to assess the value derived from a compact disc, it becomes somewhat less clear. It is not effective to count the musical notes, or the number of pages in the pamphlet or the number of songs on the CD. The means of evaluation become more experiential, and therefore, arguably more risky since variability and subjectivity is introduced.

### **Online**

The existence of a strong positive relationship between physical intangibility and financial risk was somewhat unexpected. However, it can be said that the increased reliance upon experiential information increases subjectivity and variability into the evaluation of value and financial risk (please refer to the preceding section for a further discussion).

## ***2.2 Time Risk***

### **Offline**

We found a significant ( $\text{sig.} = p < .01$ ) and strong relationship (Beta coefficient = .348) to exist between generality and time risk. The higher the level of generality associated with a product or service, the higher the time risk. Generality was not expected to have had any influence on perceived risk. Goutaland (1999) was the only body of work to examine the effects of three separate dimensions of intangibility on risk. She found there to be no

relationship between generality and perceived risk. Her findings suggested that perceived risk was more closely related to the mental dimension of intangibility. Our findings are somewhat contradictory, however, we have separated the dimensions of risk, and explored the effects of generality on each one individually.

Initial research on the relationship between these two variables suggested that high levels of generality would ultimately yield high levels of perceived risk. It was believed that the variability and the uncertainty associated with a product/service that is high in the generality dimension of intangibility (although this work did not specify the generality dimension as a unique entity) would induce uncertainty about the outcome, thereby making them more risky (Zeithaml 1981). Breivik, Troye and Olsson (1998) examined the relationship between generality and perceived evaluation difficulty, and subsequently risk importance and perceived evaluation difficulty. They found generality to positively influence perceived evaluation difficulty, and a positive association between risk importance and perceived evaluation difficulty. They did not test for any direct effect between generality and risk importance, however, their link between perceived evaluation difficulty and risk importance suggests the existence of at least an indirect effect.

The influence between generality and time risk is curious. One would not immediately associate product/service variability and uncertainty with an increased time risk. One possible explanation is that the uncertainty associated with high generality makes the evaluation process more time-consuming, thereby increasing the risk in this dimension.

### **Online**

Physical intangibility was found to be a significant positive influencer of time risk. It is possible that the reliance upon experiential information to make an informed decision introduces a significant amount of variability with respect to the time that is required to make an informed decision. This variability then leads to a higher degree of time risk that is associated with physically intangible goods/services.

A weak (coeff. = -.087) and marginally significant (sig= $p < .10$ ) negative relationship was found to exist between the interaction variable of involvement and mental intangibility and the time dimension of risk. That is to say that high levels of involvement coupled with high levels of mental intangibility were associated with lower levels of time risk. It is possible that this purchasing scenario forces the consumer to base their purchase decision solely on past experience, thereby diminishing the time involved in coming to a resolution. The weak relationship and marginal significance suggests that this relationship should be explored further before any conclusions are drawn. It does not seem logical that high involvement and a vague and unclear mental representation of the product/service would yield less significant time risks.

### ***2.3 Performance Risk***

#### **Offline**

Physical Intangibility was found to be significantly (sig= $p < .10$ ) related to performance risk. The robust positive coefficient (coeff. = .272) suggests that it is strong relationship that exists between the two variables. One must only look back to the service literature to find support for the notion that physically intangible goods would be more risky to

**purchase (Bateson 1979; Zeithaml 1981; Murray and Schlacter 1990; Murray 1991; Mitchell and Grotorex 1993). It is thus possible that the existence of physical cues diminishes the variability of any given product/service's functioning sufficiently to diminish the performance risk associated with its purchase. Although somewhat contradictory to Goutaland's (1999) findings, she operationalized risk as a unidimensional construct. The difference in findings most likely stems from this difference.**

**A fairly strong (coeff. = .182) and very significant (sig=p<.01) positive relationship exists between the interaction variable consisting of involvement/mental intangibility and the performance dimension of risk. Although not specifically found to exist in the literature (consisting of one study that isolated mental intangibility as a unique dimension of intangibility), it is a perfectly logical relationship. A high level of ambiguity and vagueness elicits a high degree of uncertainty in the performance of the product/service that is being purchased. This uncertainty's effects are exacerbated by the fact that the purchase is highly involving. The combination of the two conditions increases perceived performance risk.**

### **Online**

**A strong (coeff. = .177), significant (sig=p<.01) relationship exists between physical intangibility and performance risk. Although unexpected, this positive relationship can be explained by the lack of experiential information available to most consumers when dealing with online purchases. As such, physically tangible cues, although not conveyed efficiently through the Internet, can serve as a basis from which confident decisions can**

be made. This would yield the positive relationship that we have found. The greater the reliance upon past experience as opposed to descriptions or pictures of physical cues, the greater the performance risk associated with that product/service category.

A fairly significant ( $\text{sig}=\text{p}<.05$ ) negative relationship was also found between involvement/mental intangibility and performance risk. The online relationship between these two variables is directionally opposite to the one found in an offline purchasing environment. It is directionally consistent to the relationship found between the same interaction variable and time risk. The more involving and vague the products/services are, the lower performance risk evaluations. Once again, this is a counter-intuitive finding. This purchasing condition would probably force the consumer to rely on past purchasing experience in order to come to a decision. With the limited online purchasing experience that our sample had, this should yield higher performance risk evaluations. It is conceivable that the consumer's inability to use experiential cues from an online purchasing environment, force the use of experiential cues that are similar in an offline purchasing condition to the foreign purchasing situation in which the respondents found themselves. The exclusion of the Internet in their decision-making reduces the variability of the possible performance outcomes, effectively reducing the performance risk.

## ***2.4 Social Risk***

### **Offline**

An unexpected interaction variable was found to negatively influence social risk. High involvement coupled with a high level of mental intangibility was found to reduce the amount of social risk found in a purchasing situation. Perhaps the highly difficult

evaluation conditions allow the consumers to feel more socially secure with the possibility of making a mistake with their decision. The fact that it is such a difficult situation in which to make a good decision makes it less socially embarrassing to make a mistake. The logic may be that since people expect a mistake, it is more acceptable to make an error in judgment as opposed to the situation in which there are high expectations.

### **Online**

A weak (coeff. = .063) and marginally significant ( $\text{sig} = p < .10$ ) relationship exists between the interaction variable (knowledge/generalizability) and social risk. The more knowledgeable and experienced one is in a product/service category, and the more generally intangible that product/service is, the more socially risky it will be perceived to be. A similar explanation to the one used for the unexpected offline relationship can be used. With the greater knowledge and experience one has in highly generally intangible products/services, comes a greater social expectation that an informed decision will be made. With this higher expectation comes a higher degree of social risk with the prospect of making an erroneous decision. The knowledgeable and experienced consumer may be regarded as somewhat of an informal expert in this difficult purchasing category. Although a possible explanation, the existence of this relationship should be verified before closely examining possible explanations.

## **2.5 Psychological Risk**

### **Offline**

A marginally significant ( $\text{sig}=p<.10$ ), weak ( $\text{coeff.} = .061$ ) relationship was found to exist between generality and psychological risk. There is substantial support in the literature for the existence of this relationship (please refer to the above section on unexpected time risk findings). One can speculate that the high level of variation that can exist within a generally intangible good/service induces a higher level of anxiety and discomfort in a consumer when making a purchase decision.

### **Online**

As in the offline scenario, a relationship was found to exist between generality and psychological risk. However, the relationship in the online purchasing condition was found to be both significant ( $\text{sig}=p<.01$ ) and fairly robust ( $\text{coeff.} = .121$ ). This would suggest that the feelings of anxiety and discomfort that are resultant of the higher level of variability associated with “general” products/services is magnified by the online purchasing environment.

Another unexpected relationship was found to exist between the interaction variable (involvement/mental intangibility) and psychological risk. It is fairly significant ( $\text{sig}=p<.05$ ) and robust ( $\text{coeff.} = -.143$ ). A highly involving, mentally intangible condition would most likely result in a purchasing decision based on experiential cues. With the lack of experience in an online purchasing environment that our sample exhibited, it stands to reason that they would use the most comparable offline experiences to “stand in” as their experiential cues in their online purchasing condition. With the

elimination of the Internet in their consideration, one can assume that their anxiety over their purchase would be diminished. In uninvolved, mentally tangible purchasing situations, the decision would be based upon all easily available information, making it unlikely that the Internet's presence would be eliminated from consideration.

## ***2.6 Difficulty of Evaluation***

### **Offline**

Two unexpected relationships were found, one which included the interaction of knowledge and generality, and the second which included the interaction of knowledge and mental intangibility. The first was found to be a significant ( $\text{sig}=p<.05$ ) determinant of difficulty of evaluation ( $\text{coeff.} = -.115$ ). A high level of product/service knowledge and experience coupled with a high level of product generality resulted in a lower level of difficulty of evaluation. This finding is consistent with the notion that highly general products/services would be evaluated with experiential cues. The high levels of product/service knowledge and experience facilitate the evaluation process in this experience dependent purchasing condition.

Similarly, our found significant ( $\text{sig}=p<.01$ ) and negative ( $\text{coeff.} = -.188$ ) relationship between knowledge and experience/mental intangibility and difficulty of evaluation, can be explained through the increased reliance upon past knowledge and experience with highly mentally intangible goods/services. The increased reliance upon experiential information with mentally intangible goods/services, coupled with the consumer's high level of knowledge and experience facilitates the evaluation process, thereby diminishing the difficulty of evaluation.



### ***2.7 Offline Services vs. Offline Products***

No hypothesis related to the amount of knowledge and experience with products as opposed to services was constructed. Our finding that knowledge and experience levels were higher in products as opposed to services is consistent with existing literature (Berry 1980; Parasuraman, Zeithaml and Berry 1985; Lovelock 1991; Rust, Zakorik and Keiningham 1996). The heterogeneity associated with the consumption of services makes it difficult to learn through experience. Thus, knowledge and experience levels are higher in products than they are in services.

### ***2.8 Online Services vs. Online Products***

The findings discussed in the above section were consistent across the offline and online purchasing conditions. Once again, the amount of knowledge and experience that consumers had about products was on average greater than the knowledge and experience that they had about services.

### ***2.9 Online vs. Offline***

Although not expected, our finding that purchasing in an online environment was on average more involving than purchasing in an offline environment is not surprising. If we define involvement as a motivational state of arousal that is activated by a stimulus, situation or purchase decision (Mittal 1989) (please refer to the discussion on involvement in the literature review for all relevant definitions of involvement), then we can assert that the purchase of a good or service in an unfamiliar purchasing environment would effectively increase the state of arousal that the consumer feels. Therefore, we can

**conclude that regardless of the type of good or service that is being purchased, the fact that it is being purchased over the Internet is sufficient to increase interest and attention.**

## **CHAPTER 5 - CONCLUSION**

### **1. THEORETICAL IMPLICATIONS**

The confirmation of the proposed three-dimensional model of intangibility (Laroche, Bergeron and Goutaland, 2001) is quite significant. Particularly important in services marketing research, this should allow for a more accurate categorization and exploration of product and service differentiation.

The exploration of the effects of these three dimensions of intangibility on difficulty of evaluation and perceived risk was also particularly fruitful. Examining the three dimensions of intangibility individually as they influence difficulty of evaluation and the five dimensions of risk yielded some exciting preliminary results. We found support that generality and mental intangibility influenced difficulty of evaluation, while the traditionally believed effect of physical intangibility on difficulty of evaluation (Zeithaml 1981; McDougall 1987; McDougall and Snetsinger 1990) was not supported. Guided by the works that either explored intangibility as a unidimensional construct (Burton 1990; Zeithaml 1981, Hirschman 1980) or risk as a singular, overall measure (Zeithaml 1981, Breivik, Troye and Olsson 1998; Goutaland 1999), we were able to examine the effects of the three separate dimensions of intangibility on each of the five relevant dimensions of risk. From this, we were able to offer some insight as to the existing relationships and their origins. Physical intangibility influenced financial and performance risks directly, as well as combining with involvement to influence financial, performance and social risks. Generality was found to directly influence time and psychological risks, while combining with involvement to influence time and social risks. Finally, mental intangibility had a direct effect upon financial and psychological risks

while combining with involvement to influence performance and social risks. It also had an interaction effect upon time and social risks when combined with the knowledge and experience construct.

The role of two moderating variables, namely knowledge/experience and involvement was also explored. Initially believed to be three separate moderators, we found knowledge and experience to be measures of one collective item (Zaichkowsky 1985 a; Alba and Hutchinson 1987), thus reducing the total to two moderators. Once again, it was an initial foray into the exploration of these two moderators, along with the interactions with the three dimensions of risk, and their effects on difficulty of evaluation and the five dimensions of risk. Knowledge and experience were not found to be significant moderators of difficulty of evaluation, which was a significant and unexpected finding. The other direct and moderating influences on the relationships between the dimensions of intangibility and their consequences as well as on the risk and difficulty of evaluation constructs were explored and monitored. Involvement had a direct influence upon financial, time and social risks, while knowledge had a direct impact on all five dimensions of risk. Several interaction effects that were found to exist in Goutaland's (1999) work were not found in this extended replication, while new interactions were documented.

The impact of the three dimensions of intangibility and the two moderating variables was briefly explored in the context of product and service purchases. Offline, services were found to be higher in all three dimensions of intangibility, equally difficult to evaluate as products, equally risky in three dimensions of risk (services were rated as being more performance-oriented and psychologically risky), less involving than

products and consumers were less knowledgeable and experienced in the purchasing of services than they were in the purchasing of goods. An online purchasing environment seemingly influenced the products and services differently with regards to risk perception (services were rated as being less financially, socially and psychologically risky compared to products and equally risky in the other two dimensions) and difficulty of evaluation (services were found to be less difficult to evaluate than goods). These differences are an important beginning to the documentation and understanding of the role of the Internet when purchasing goods or services.

Our work extended into an area of study that is for the most part new and uncharted. This exploratory component of our research examined the aforementioned relationships, as well as others, in an online purchasing environment. As can be expected, there were significant differences between purchases made through traditional bricks and mortar stores, and purchases made over the Internet. Among the most important findings was that both difficulty of evaluation and all five dimensions of perceived risk were higher in an online environment than in an offline environment. These higher levels can however be moderated with experience. Experience in online purchases reduced both difficulty of evaluation and all dimensions of perceived risk.

The scope of the Internet's influence on our findings spanned well beyond our hypothesized effects on the three dimensions of intangibility, difficulty of evaluation and perceived risk. We found the interactions of these variables, as well as the two moderators to be significantly influenced by the online purchasing medium. Some of our findings, such as the ability of product/service knowledge and experience to yield lower levels of difficulty of evaluation were easily explained by existing literature in the offline

environment, while other findings such as the lack of a relationship between mental intangibility and difficulty of evaluation were more reliant upon logical reasoning and deductions.

Our findings in the online purchasing environment should act as a starting point for future research in the area. Our initial foray into the field has shed some light on possible differences in the purchasing strategies and difficulties involved in the procurement of goods that differ in terms of tangibility, involvement and consumer knowledge and experience. It is clear from our work that differences exist, and that these differences merit the attention of future research.

## **2. LIMITATIONS AND FUTURE RESEARCH**

One obvious limitation to our study was the use of a convenience sample. Our sample of students does not amply reflect the consuming population as a whole. The use of this sample is particularly troublesome since on the whole, it may be expected that university students would be more adapted to the Internet than the population as a whole.

A second area of concern is our generality and difficulty of evaluation scales. Having been used only once, it is imperative that these scales' external validity be verified through repetition under different conditions. Furthermore, our initial factor analysis which grouped financial and time risks together and social and psychological risks together suggest that these four scales must be verified for both reliability and independence.

Another area of concern is the low level of online purchase experience. The uneven distribution of Internet purchasing experience (approximately half did not have any online purchasing experience in the past five years) did not allow us to effectively monitor the effects of online purchasing experience through a regression analysis. We were forced to divide the sample into two categories, those that were experienced and those that weren't. With this division, we were forced to conduct a mean comparison that simply told us whether a difference existed between the two categorizations. It would have been preferable to examine the effects of various levels of Internet purchasing experience. Future research should monitor Internet purchasing experience prior to the respondent's inclusion in the sample. This would allow for an examination of incremental experience on online difficulty of evaluation and perceived risk.

In order to verify the relationships found in Goutaland's (1999) work, we chose a product/service category mix that was similar to hers, however, future work should expand this mix to include products of varying intangibility profiles. With the increased acceptance of the Internet, it may be beneficial to include more products and services that are completely physically intangible (information products – please refer to Freiden, Goldsmith, Takacs and Hofacker 1998) in the mix.

Our examination of the online interactions of the three dimensions of intangibility, knowledge/experience/ involvement, perceived risk and difficulty of evaluation have to be revisited, however, there is a necessity for extension as well. Online effects on the three dimensions of intangibility must be reaffirmed. This should be done by predetermining the positioning of certain products on an intangibility map, and then examining the positioning of those same products in an online purchasing environment. This can offer a significant amount of insight on the interaction of the Internet with the three dimensions of intangibility.

Furthermore, the Internet's effects on physical intangibility, generality and mental intangibility must be monitored. These effects are not expected to be stagnant, and merit exploration as experience with and knowledge of the Internet as a purchasing medium become more predominant.

As well, a preliminary look at the brand effects showed a significant difference between the online and offline purchasing conditions. Further research must examine the workings of the brand name influence. The practical significance of research in this area is of particular importance. If the augmented risk and difficulty of evaluation that we believe to be associated with online purchases can be significantly diminished through



**brand recognition then online retailers can focus on the selling of highly recognized brands.**

**Finally, these relationships should be explored in the online purchasing mediums that have no real offline equivalents, such as online auction sites (i.e. ebay.com) and “name your price” sites (i.e. travelocity.com). Do these retail concepts significantly influence difficulty of evaluation or risk perceptions for consumers, or are they simply marketing gimmicks that use the same Internet sales model as all other online retailers?**

### **3. MANAGERIAL IMPLICATIONS**

First and foremost, our research reiterated that there are significant differences in the offline and online retail mediums. We found that despite the wider acceptance of the Internet, purchases online are still more difficult to evaluate and riskier than offline purchases. These factors can be minimized by focusing on brand name merchandise and by high levels of product knowledge and experience. Furthermore, online purchasing experience can further diminish the risk and difficulty of evaluation that consumers will experience when making an Internet purchase. Thus, the focus of online retailers must be to facilitate the first few purchases. Make the Website as accessible to new Internet users as possible. Utilize the interactive nature of the Web to facilitate communication with prospective consumers. Our research would suggest that the unknown properties of the Internet, not the actual medium itself, make online commerce more intimidating. If retailers are able to facilitate the first interaction, they may be able to foster a trusting relationship, even in an online purchase setting (Ratnasingham 1998).

Furthermore, although the Internet is recognized as an ineffective means of communicating physical cues (Berthon, Pitt, Katsikeas and Berthon 1998), it does not necessarily make the purchase of services any less difficult to evaluate. Although services are perceived as being less risky in an online environment, they are perceived as being more difficult to evaluate. Having their evaluation more reliant on experiential cues, service providers should offer past customer testimonials, or reduced initial trials to help consumers develop a sense of knowledge, experience and consequently trust with an online service provider. Tangible good providers should focus their attention on

minimizing risk. This risk reduction can be achieved by offering lenient return or exchange policies.

One of the implications for both online and offline marketers is that they should perhaps be less focused on minimizing the effects of physical intangibility than on minimizing the effects of mental intangibility. Mental intangibility plays a larger role in determining difficulty of evaluation and perceived risk levels than does physical intangibility. Consumers are faced to a larger extent with physically intangible products and services (Freiden et al. 1998) that are very new and difficult to conceptualize. As such, adapting to this informational product trend, and mentally tangibilizing their physically intangible goods and services may better serve marketers in the near future.

It is important to note that consumer perceptions of product/service tangibility are unchanged between the online and offline purchase environments. This would suggest that for most services and products, sales and marketing approaches will one day converge between the online and offline sales mediums. Once the Internet's potential is harnessed, and the consumer's trust in it is developed, the medium will allow for retailers to provide large number of product/service alternatives which are appropriately screened for each individual consumer. Furthermore, there will be cost-benefits that will be transmitted to the users as well as personal security and convenience benefits that the offline buying experience will not be able to provide.

These features, combined with the unaltered product/service intangibility perceptions will make the Internet an attractive alternative to most consumers once the medium evolves into a less risky proposition. Difficulty of evaluation will also decrease once retailers become proficient at offering relevant and timely information to the

consumers, and once consumers have enough experiential cues to facilitate the buying process of items that are heavily reliant upon such cues.

Finally, it is probable that many of the risks and difficulties associated with online purchases will change or disappear as the medium becomes more accepted, and as it evolves into a medium that more closely resembles an Interactive Home Shopping model as opposed to an Internet retail model (Alba et al. 1997). Thus, it may prove beneficial to promote an Internet presence early on, but not expect significant returns until the medium is more widely used and accepted.

## **BIBLIOGRAPHY**

- Alba, Joseph W. and J. Wesley Hutchinson (1987), "Dimensions of Consumer Expertise", *Journal of Consumer Research*, Vol. 13 (March), pp. 411-454.
- Alba, Joseph W., John Lynch, Barton Weitz, Chris Janiszewski, Richard J. Lutz, Alan Sawyer and Stacey Wood (1997), "Interactive Home Shopping: Consumer, Retailer, and Manufacturer Incentives to Participate in Electronic Marketplaces", *Journal of Marketing*, Vol. 61 (July), pp. 38-53.
- Anderson, K. and R. Zemke (1991), *Delivering Knock Your Socks Off Services*, New York: AMACOM.
- Avery-Bezjian, Alexa, Bobby Calder, and Dawn Iacobucci (1998), "New media interactive advertising vs. traditional advertising", *Research*, (Jul/Aug).
- Bateson, John E. G. (1977), "Do We Need Service Marketing?", in Pierre Eiglier, Eric Langeard, Christopher H. Lovelock, John E. G. Bateson, and Robert F. Young (Eds.), *Marketing Consumer Services: New Insights*, Cambridge, MA: Marketing Science Institute.
- Bateson, John E. G. (1979), "Why We Need Service Marketing", *Conceptual and Theoretical Developments in Marketing*, Proceedings Series of the American Marketing Association, pp. 131-146.
- Bauer, Raymond A. (1960), "Consumer Behavior at Risk Taking", in Donald F. Cox (1967) (Ed.), *Risk Taking and Information Handling in Consumer Behavior*, Harvard University, pp. 23-33.
- Bellman, S., Lohse, G. L. & Johnson, E. J. (1999), "Predictors of Online Buying: Findings from the Wharton Virtual Test Market". Working Paper, The Wharton School.
- Berry, L. L. (1980) "Services Marketing is Different", *Business*, (May-June), pp. 16-23.
- Berry, L. L. and Clark (1986) "Four Ways to Make Services More Tangible", *Business*, Vol. 36 (October), pp. 53-54.
- Berthon, P. R., L. F. Pitt and R. T. Watson (1996), "The World Wide Web as an Advertising Medium: Toward an Understanding of Conversion Efficiency", *Journal of Advertising Research*, Vol. 36 (No. 1), pp. 43-54.
- Berthon, Pierre, Leyland Pitt, Constantine S. Katsikeas and Jean Paul Berthon (1999), "Virtual Services Go International: International Services in the Marketplace", *Journal of International Marketing*, Vol. 7 (No. 3), pp. 84-105.

- Bettman, James R. (1973), Perceived Risk and its Components: A Model and Empirical Test", *Journal of Marketing Research*, Vol. 10, pp. 184-189.
- Bettman, James R. (1979), *An Information Processing Theory of Consumer Choice*, Addison-Wesley, New York.
- Bitner, Mary J. and Valarie A. Zeithaml (1988), "Fundamentals in Services Marketing", in C. Surprenant (ed.), *Proceedings: Add Value to Your Service*, 6<sup>th</sup> Annual Services Marketing Conference, New York University, p. 7-11.
- Bloch, Peter H. (1981), "An Exploration into Scaling of Consumers' Involvement with a Product Class", in Kent B. Monroe (Ed.), *Advances in Consumer Research*, Vol.8, Ann Arbor: Association for Consumer Research, pp. 61-65.
- Breivik, Einar, Sigurd Villads Troye and Ulf H. Olsson (1998), "Dimensions of Intangibility and Their Impact on Product Evaluation", *Working Paper* presented to the Annual Conference (October), Association for Consumer Research.
- Brown, Juanita J. and Albert R. Wildt (1992), "Consideration Set Measurement", *Journal of the Academy of Marketing Science*, Vol. 20 (Summer), pp. 235-243.
- Brucks, Merrie (1985), "The Effects of Product Knowledge on Information Search Behavior", *Journal of Consumer Research*, Vol. 12 (June), pp. 1-16.
- Bruner II, Gordon C, and Anand Kumar (2000), "Web commercials and advertising hierarchy-of-effects", *Journal of Advertising Research*, (Jan/Apr).
- Brynjolfsson, Erik and Michael D. Smith (2000), "Frictionless Commerce", *Management Science*, Vol. 46 (No. 4), pp. 563-585.
- Burton, Scot (1990), "The Framing of Purchase for Services", *Journal of Services Marketing*, Vol. 4 (Fall), pp. 55-67)
- Clark, T., D. Rajaratnam and T. Smith (1996), "Toward a Theory of International Services: Marketing Intangibles in a World of Nations", *Journal of International Marketing*, Vol. 4 (No. 2), pp. 9-28.
- Clarke, R. (1997), "Promises and Threats in Electronic Commerce", <http://www.anu.edu.au/people/Roger.Clarke/EC/Quantum.html>
- Cohen, J. B. (1983), "Involvement and You: 1000 Great Ideas", in R. P. Bagozzi and A. M. Tybout (Eds.), *Advances in Consumer Research*, Ann Arbor, MI: Association for Consumer Research, X, pp. 325-328.

- Coupey, Eloise (1996), "Advertising in an Interactive Environment: A Research Agenda", *Working Paper*, Virginia Polytechnic Institute and State University, Blacksburg, VA.
- Cox, Donald F. and S. V. Rich (1964), "Perceived Risk and Consumer Decision Making – The Case of Telephone Shopping", in Cox, Donald F. (1967) (Ed.), *Risk Taking and Information Handling in Consumer Behavior*, Boston, MA, Harvard University Press, pp. 487-506.
- Cummings, L. L. and P. Bromiley (1996), "The Organizational Trust Inventory (OTI): Development and Validation", in R. M. Kramer and T. R. Tyler (Eds.), *Trust in Organizations: Frontiers of Theory and Research*, Sage, Thousand Oaks, CA, pp. 302-320.
- Cunningham, Scott M. (1967), "The Major Dimensions of Perceived Risk", in Cox, Donald F. (1967) (Ed.), *Risk Taking and Information Handling in Consumer Behavior*, Boston, MA, Harvard University Press, pp. 82-108.
- Dahringer, L. D. (1991), "Marketing Services Internationally: Barriers and Management Strategies", *Journal of Services Marketing*, Vol. 5 (No. 3), pp. 5-17.
- Darby, M. R. and E. Karni (1973), "Free Competition and the Optimal Amount of Fraud", *Journal of Law and Economics*, Vol. 16 (April), pp. 67-86.
- Davis, D. L., J. P. Gultinan and W. H. Jones (1979) "Service characteristics, Consumer Search and the Classification of Retail Services", *Journal of Retailing*, Vol. 55 (Fall), pp. 3-21.
- Dowling, G. R. (1986), "Perceived Risk: The Concept and its Measurement", *Psychology and Marketing*, Vol. 3 (3), pp. 183-209.
- Dubé-Rioux, Laurette, Dennis T. Regan and Bernd H. Schmitt (1990), "The Cognitive Representation of Services Varying in Concreteness and Specificity", *Advances in Consumer Research*, Vol. 17, pp. 861-865.
- Dulude, Catherine (1998), *Une Étude Exploratoire des Variables Affectant l'Expérience et la Connaissance Subjective de l'Internet*, Travail Dirigé, M.Sc., École des Hautes Études Commerciales, affiliée à l'Université de Montréal.
- Eiglier, Pierre and Eric Langeard (1977), "A New Approach to Service Marketing", in Pierre Eiglier, Eric Langeard, Christopher H. Lovelock, John E. G. Bateson, and Robert F. Young (Eds.), *Marketing Consumer Services: New Insights*, Cambridge, MA: Marketing Science Institute, pp. 33-58.
- Ellison, Jonathan and Warren Clark (2001), "Net Shopping", Canadian Social Trends, Statistics Canada Catalogue No. 11-008, Spring, pp. 6-9.

- Engel, J. F. and R. D. Blackwell (1982), *Consumer Behavior*, New York, Dryden Press.
- Enis, Ben M. and Kenneth J. Roering (1981), "Services Marketing: Different Products, Similar Strategy", in James H. Donnelly and William R. George (Eds.), *Marketing of Services*, Chicago, American Marketing Association, pp. 1-4.
- Ernst & Young (1999), "Internet Shopping: An Ernst & Young Special Report", <http://www.ey.com/shopping.html>
- Finn, David W. (1983), "Low Involvement isn't Low Involving", in Richard P. Bagozzi and Alice M. Tybout (Eds.), *Advances in Consumer Research*, Vol. 10, Ann Arbor, MI: Association for Consumer Research, pp. 419-424.
- Finn, Adam (1985), "A Theory of the Consumer Evaluation Process for New Product Concepts", *Research in Consumer Behavior*, Vol. 1, pp. 35-65.
- Flipo, Jean-Paul (1988) "On the Intangibility of Services", *The Service Industries Journal*, Vol. 8, pp. 286-298.
- Freiden, Jon, Ronald Goldsmith, Scott Takacs and Charles F. Hofacker (1998), "Information as a Product: not Goods, not Services", *Marketing Intelligence and Planning*, Vol. 16 (3), pp. 210-220.
- Gardner, Meryl P., Andrew A Mitchell and J. Edward Russo (1978), "Chronometric Analysis: An Introduction and an Application to Low Involvement Perception and Advertisements" in H. K. Hunt (Ed.), *Advances in Consumer Research*, Vol. 5, pp. 581-589.
- Gemünden, Hans G. (1985), "Perceived Risk and Information Search: A Systematic Meta-Analysis of the Empirical Evidence", *International Journal of Research in Marketing*, Vol. 2 (2), pp. 79-100.
- Gharbi, Jamel-Eddine (1998), *Étude des facteurs qui influencent les processus décisionnels des consommateurs lors d'un achat par Internet*, Thèse de Doctorat, École des Hautes Études Commerciales, affiliée à l'Université de Montréal.
- Golder, Peter N. and Gerald J. Tellis (1993), "Pioneer Advantage: Marketing Logic or Marketing Legend?", *Journal of Marketing Research*, Vol. 30 (May), pp. 158-170.
- Goutaland, Christine (1999), *Product and Service Intangibility: A Study of Its Dimensions and Consequences on Product/Service Evaluation*, Master's Thesis, John Molson School of Business, Concordia University.



- Greenwald, A. G. and C. Leavitt (1984), "Audience Involvement in Advertising: Four Levels", *Journal of Consumer Research*, Vol. 11 (June), pp. 581-592.
- Hale, Anne T. (1998), "Theory Development in Services Marketing: Transcending Service Specificity", in John B. Ford and Earl D. Honeycutt, Jr. (eds.), *Developments in Marketing Science*, Vol. 21, p. 42-47.
- Harris, John E. (1978), "External Memory Aids", in Michael M. Gruneberg, Peter Edwin Morris and Robert N. Sykes (Eds.), *Practical Aspects of Memory*, Academic Press, Inc., London, UK, pp. 172-179.
- Hauser, John R. and Birger Wernerfelt (1990), "An Evaluation Cost Model of Consideration Sets", *Journal of Consumer Research*, Vol. 16 (March), pp. 393-408.
- Havlena, William J. and Wayne S. DeSarbo (1990), "On the Measurement of Perceived Consumer Risk", *Decision Sciences*, Vol. 22, pp. 927-939.
- Hirschman, Elizabeth C. (1980), "Attributes of Attributes and Layers of Meaning", *Advances in Consumer Research*, Vol. 7, pp. 7-12.
- Hoffman, D. L., T. P. Novak, and P. Chatterjee (1995), "Commercial Scenarios for the Web: Opportunities and Challenge." *Journal of Computer-Mediated Communication, Special Issue on Electronic Commerce*, Vol. 1 (No. 3).
- Hoffman, D. L. and T. P. Novak (1996), "Marketing in Hypermedia Computer-Mediated Environments: Conceptual Foundations", *Journal of Marketing*, Vol. 60 (July), pp. 50-68.
- Holbrook, Morris B. and Karl A. Maier (1978), "A Study of the Interface Between Attitude Structure and Information Acquisition Using a Questionnaire-Based Information-Display Sheet", in H. K. Hunt (Ed.), *Advances in Consumer Research*, Vol. 5, pp. 93-98.
- Hollander, Stanley C. (1979), "Is There a Generic Demand for Services?", *MSU Business Topics*, Vol. 3, pp.41-46.
- Houston, Michael J. and Michael L. Rothschild (1978), "Conceptual and Methodological Perspectives on Involvement", in S. C. Jain (Ed.), *Research Frontiers in Marketing: Dialogues and Directions*, American Marketing Association, pp. 184-187.
- Hupfer, N. T. and D. M. Gardner (1971), "Differential Involvement with Products and Issues: An Exploratory Study", in D. M. Gardner (Ed.), *Proceedings: 2<sup>nd</sup> Annual Conference of The Association for Consumer Research*, pp. 262-269.

- Jacoby, Jacob and L. Kaplan (1972), "The Components of Perceived Risk, in M. Venkatesan (Ed.), *Proceedings*, 3rd Annual Conference, Chicago, IL: Association for Consumer Research, pp. 382-393.
- Jacoby, Jacob, Donald E. Speller and Carol A. Kohn (1974), "Brand Choice Behavior as a Function of Information Load", *Journal of Marketing Research*, Vol. 11 (February), pp. 63-69.
- Jain, Kapil and Narasimhan Srinivasan (1990), "An Empirical Assessment of Multiple Operationalizations of Involvement", *Advances for Consumer Research*, Vol. 17, Marvin Goldberg, Gerald Gorn, and Richard Pollay (eds.), Provo, UT: The Association for Consumer Research, pp.594-602.
- Johnson, Eric J. and Edward J. Russo (1984), "Product Familiarity and Learning New Information", *Journal of Consumer Research*, Vol. 11 (June), pp. 542-550.
- Jones, C. (1999), "Digital Music at the Crossroads", *Wired*, Vol. 7 (No. 4), p. 63.
- Kaplan, L., G. Szybillo and J. Jacoby (1974), "Components of Perceived Risk in Product Purchase: A Cross-Validation", *Journal of Applied Psychology*, Vol. 59, pp. 287-291.
- Kardes, Frank R. and Gurumurthy Kalyanaram (1992), "Order-of-Entry Effects on Consumer Memory and Judgement: An Information Integration Perspective", *Journal of Marketing Research*, Vol. 29 (August), pp. 343-357.
- Krugman, Herbert E. (1965), "The Impact of Television Advertising: Learning Without Involvement", *Public Opinion Quarterly*, Vol. 29, pp. 349-356.
- Krugman, Herbert E. (1966), "The Measurement of Advertising Involvement", *Public Opinion Quarterly*, Vol. 30, pp. 583-596.
- Laroche, Michel, Jasmin Bergeron and Christine Goutaland (2001), "A Three-Dimensional Scale of Intangibility", *Working Paper*.
- Lastovivka, John L. (1979), "Questioning the Concept of Involvement Defined Product Classes", in W. L. Wilkie (Ed.), *Advances in Consumer Research*, Vol. 6, pp. 174-179.
- Laurent, Gilles and Jean-Noël Kapferer (1985), "Measuring Consumer Involvement Profiles", *Journal of Marketing Research*, Vol. 22 (February), pp. 41-53.
- Leavitt, Clark, Anthony G. Greenwald and Carl Obermiller (1981), "What is Low Involvement Low In?", in K. B. Monroe (Ed.), *Advances in Consumer Research*, Vol. 8, pp. 15-19.

- Ledbetter, J.(1999), "Marketing Spotlight: Internet Ad Spending Keeps Climbing." *The Industry Standard*, Vol. 2 (No. 25).
- Lefkoff-Hagius, Roxanne and Charlotte H. Mason (1993), "Characteristics, Beneficial, and Image Attributes in Consumer Judgments of Similarity and Preference", *Journal of Consumer Research*, Vol. 20 (June), pp. 100-110.
- Levitt, Theodore (1969), "Improving Sales Through Product Augmentation", *European Business*, Vol. 21, pp. 5-12.
- Levitt, Theodore (1980), "Marketing Success Through Differentiation - Anything", *Harvard Business Review*, Vol. 58, pp. 83-92.
- Levitt, Theodore (1981), "Making Intangible Products and Products Tangibles », *Harvard Business Review*, Vol. 59 (3, May-June), pp. 94-102.
- Lovelock, Christopher L. (1979), "Classifying Services to Gain Strategic Marketing Insights", *Journal of Marketing*, Vol. 47, pp. 9-20.
- Lovelock, Christopher H. (1991), *Services Marketing*, Englewood Cliffs, NJ: Prentice-Hall.
- Mayer, R. C. , J. H. Davis and F. D. Schoorman (1995), "An Integrative Model of Organizational Trust", *Academy of Management Review*, Vol. 20 (No. 3), pp. 709-734.
- McDougall, Gordon H. G. (1987), "Determinants of Ease of Evaluation: Products and Services Compared", *Canadian Journal of Administrative Sciences*, Vol. 4 (4, December), pp. 426-446.
- McDougall, Gordon H. G. and Douglas W. Snetsinger (1990), "The Intangibility of Services: Measurement and Competitive Perspectives", *The Journal of Services Marketing*, Vol. 4 (4, Fall), pp. 27-40.
- McQuarrie E. F. and J. M. Munson (1986), "The Zaichkowsky Personal Inventory: Modification and Extension", in Melanie Wallendorf and Paul Anderson (Eds.), *Advances in Consumer Research*, Vol. 14, Provo, UT: Association for Consumer Research, pp. 36-40.
- Mitchell, Andrew A. (1979), "Involvement: A Potentially Important Mediator of Consumer Behavior", in W. L. Wilkie (Ed.), *Advances in Consumer Research*, Vol. 6, pp. 191-196.
- Mitchell, Andrew A. (1981), "The Dimensions of Advertising Involvement", in K. Monroe (Ed.), *Advances in Consumer Research*, Vol. 8, pp. 25-30.

- Mitchell, V. W. and M. Greatorex (1993), "Risk Perception and Reduction in the Purchase of Consumer Services", *The Service Industries Journal*, Vol. 13 (4, October), pp. 179-200.
- Mitchell, V. W. and G. S. Prince (1993), "Retailing to Experienced and Inexperienced Consumers: A Perceived Risk Approach", *International Journal of Retail and Distribution Management*, Vol. 21 (5), pp. 10-21.
- Mittal, Banwari Lal (1989), "A theoretical Analysis of Two Recent Measures of Involvement, in W. L. Wilkie (Ed.), *Advances in Consumer Research*, Vol. 6, pp. 697-702.
- Murray, K. B. (1991) "A Test of Services Marketing Theory: Consumer Information Acquisition Activities", *Journal of Marketing*, Vol. 55, pp. 10-25.
- Murray, K. B. and J. L. Schlacter (1990), "The Impact of Services Versus Goods on Consumer's Assessment of Perceived Risk and Variability", *Journal of the Academy of Marketing Science*, Vol. 18 (1), pp. 51-65.
- Myers, James H. and Allan D. Shocker (1981), "The Nature of Product-Related Attributes", in Jagdish N. Sheth (Ed.), *Research in Marketing*, Vol. 5, JAI Press Inc., pp. 211-236.
- Nantel, Jacques et Renée Robillard (1990), Le Concept de l'Implication dans l'Étude des Comportements des Consommateurs : Une Revue de la Littérature, *Cahier de Recherche*, 90-01 (mars), ISSN : 0709-986X, École des Hautes Études Commerciales de Montréal.
- Nantel, Jacques et Renée Robillard (1991), Le Concept de la Familiarité dans l'Étude des Comportements des Consommateurs : Une Revue de la Littérature, *Cahier de Recherche*, 91-16 (juin), ISSN : 0846-647, École des Hautes Études Commerciales de Montréal.
- Nelson, Philip (1974), "Advertising as Information", *Journal of Political Economy*, Vol. 81 (July/August), pp. 729-754.
- Nohria, N. and R. G. Eccles (1992), "Face-to-Face: Making Network Organizations Work", in N. Nohria and R. G. Eccles (Eds.), *Networks and Organizations*, Harvard Business School Press, Boston, MA, pp. 288-308.
- Nunnally, J. C. (1967), *Psychometric Theory*, McGraw-Hill, New York, NY.
- Parasuraman, A., V. A. Zeithaml and L. L. Berry (1985) "A Conceptual Model of Service Quality and its Implications for Future Research", *Journal of Marketing*, Vol. 49 (Fall), pp. 41-50.

- Park, C. Whan and Banwari Mittal (1985), "A Theory of Involvement in Consumer Behavior: Problems and Issues", in Jagdish N. Sheth (Ed.), *Research in Consumer Behavior*, Vol. 1, Greenwich, CT: JAI Press, Inc., pp. 201-231.
- Park, C. Whan and V. Parker Lessig (1981), "Familiarity and its Impacts on Consumer Decision Biases and Heuristics", *Journal of Consumer Research*, Vol. 8 (September), pp. 223-230.
- Park, C. Whan, David L. Mothersbaugh and Lawrence Feick (1994), "Consumer Knowledge Assessment", *Journal of Consumer Research*, Vol. 21 (June), pp. 71-82.
- Patterson, P. and M. Cicic (1995), "A Topology of Service Firms in International Markets: An Empirical Investigation", *Journal of International Marketing*, Vol. 3 (No. 4), pp. 57-83.
- Petty, Richard E. and John T. Cacioppo (1981), "Issue Involvement as a Mediator of the Effects on Attitude of Advertising Content and Context", in K. B. Monroe (Ed.), *Advances in Consumer Research*, Vol. 8, pp. 20-24.
- Quelch, J. A., and L. R. Klein (1996), "The Internet and International Marketing", *Sloan Management Review*, Vol. 37 (Spring), pp. 60-75.
- Rathmell, John M. (1966), "What is Meant by Services?", *Journal of Marketing*, Vol. 30, pp. 32-36.
- Rathmell, John M. (1974), *Marketing in the Service Sector*, Cambridge, MA, Winthrop Publishers.
- Ratnasingham, Pauline (1998), "The Importance of Trust in Electronic Commerce", *Internet Research: Electronic Networking Applications and Policy*, Vol. 8 (No. 4), pp. 313-321.
- Roberts, John H. and Prakash Nedungadi (1995), "Studying Consideration in the Consumer Decision Process: Progress and Challenges", *International Journal of Research in Marketing*, Vol. 12 (No. 1), pp. 3-7.
- Ross, Ivan, (1975), "Perceived Risk and Consumer Behavior: A Critical Review", *American Marketing Association*, Vol. 1, pp. 19-23.
- Rust, R. T., A.J. Zakorik and T. L. Keiningham (1996), *Service Marketing*, Harper Collins College Publishers.
- Sambandam, Rajan and Kenneth R. Lord (1995), "Switching Behavior in Automobile Markets: A Consideration Sets Model", *Journal of the Academy of Marketing Science*, Vol. 23 (No. 1), pp. 57-65.

- Schneider (1988), "Imperatives for the Design of Service Organizations", in C. Surprenant (ed.), *Proceedings: Add Value to Your Service*, 6<sup>th</sup> Annual Services Marketing Conference, New York University, pp. 97-99.
- Shostack, G. L. (1977) "Breaking Free from Product Marketing", *Journal of Marketing*, (April).
- Smith, Robert E. and William R. Swinyard (1982), "Information Response Models: Integrated Approach", *Journal of Marketing*, Vol. 46 (Winter), pp. 81-93.
- Stewart, Martha (1998) "My Big Bet on the Net." *Newsweek*, December 7.
- Stone, Robert N. and K. Gronhaug (1993), "Perceived Risk: Further Considerations for the Marketing Discipline", *European Journal of Marketing*, Vol. 27 (3), pp. 39-50.
- Taylor, James W. (1974), 'The Role of Risk in Consumer Behavior', *Journal of Marketing*, Vol. 38 (April), pp. 54-60.
- Thakor, Mrugank V., Wendy Borsuk-Shtevi and Maria Kalamas (2002), "Hotlists and Web Browsing Behavior – An Empirical Investigation", *Working Paper*, John Molson School of Business, Concordia University, Montreal, QC.
- Wendler, Eric R. (1983), "Consumer Information and Confidence: Moderating Effects of Perceived Comprehension and Risk", *Advances in Consumer Research*, Vol. 10, pp. 364-369.
- Zaichkowsky, Judith L. (1985a), "Measuring the Involvement Construct", *Journal of Consumer Research*, Vol. 12 (December), pp. 341-352.
- Zaichkowsky, Judith L. (1985b), "Familiarity: Product Use, Involvement or Expertise", in Elizabeth C. Hirschman and Morris B. Holbrook (Eds.), *Advances in Consumer Research*, Vol. 12, Provo, UT: Association for Consumer Research, pp. 296-299.
- Zeithaml, V. A. (1981) "How Consumer Evaluation Processes Differ Between Goods and Services" in Donnelly J. H. and George W. R (Eds) *Marketing of Services*, AMA's Special conference on Services Marketing, pp. 186-190.
- Zeithaml, V. A., L. L. Berry and A Parasuraman (1985) "Problems and Strategies in Services Marketing", *Journal of Marketing*, Vol. 49, (Spring), pp. 33-46.
- Zeithaml, V. A., L. L. Berry and A. Parasuraman (1993) "The Nature and Determinants of Customer Expectations of Service", *Journal of the Academy of Marketing Science*, Vol. 21 (1, Winter), pp. 1-12.

## **APPENDICES**

**APPENDIX 1: OFFLINE GENERIC QUESTIONNAIRE**

**APPENDIX 2: ONLINE BRANDED QUESTIONNAIRE**

**APPENDIX 3: FACTOR ANALYSIS PATTERN MATRIX**

## APPENDIX 1

### 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**

How many times have you purchased a *computer* in the past? \_\_\_\_

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

I use a *computer*:

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

The global 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



	Strongly disagree									Strongly agree
<i>A computer</i> is very easy to see and touch.	1	2	3	4	5	6	7	8	9	
I can physically grasp <i>a computer</i> .	1	2	3	4	5	6	7	8	9	
<i>A computer</i> is very physically tangible.	1	2	3	4	5	6	7	8	9	
I could easily explain many features associated with <i>a computer</i> .	1	2	3	4	5	6	7	8	9	
It is not difficult to give a precise description of <i>a computer</i> .	1	2	3	4	5	6	7	8	9	
It is easy to describe many features related to <i>a computer</i> .	1	2	3	4	5	6	7	8	9	
The image of <i>a computer</i> comes to my mind right away.	1	2	3	4	5	6	7	8	9	
I have a clear picture of <i>a computer</i> .	1	2	3	4	5	6	7	8	9	
I need more information about <i>computers</i> to get a clear idea (image) of what it is.	1	2	3	4	5	6	7	8	9	
This is a difficult <i>product</i> to think about.	1	2	3	4	5	6	7	8	9	
This is not the sort of <i>product</i> that is easy to picture.	1	2	3	4	5	6	7	8	9	

Given that I have to buy a computer in a computer store, choosing among the available brands will be:

very difficult	1	2	3	4	5	6	7	8	9	very easy
very problematic	1	2	3	4	5	6	7	8	9	not problematic at all
very complex	1	2	3	4	5	6	7	8	9	very simple
very complicated	1	2	3	4	5	6	7	8	9	not complicated at all

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

*Computers:*

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

mean a lot to me      1   2   3   4   5   6   7   8   9      mean 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 twelve 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

	<b>Strongly disagree</b>					<b>Strongly agree</b>			
If I were to purchase a <i>computer</i> within the next twelve months, I would be concerned that this product 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 <i>computer</i> 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 <i>computer</i> 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 <i>computer</i> , I would be held in higher esteem by my friends.	1	2	3	4	5	6	7	8	9
If I bought a <i>computer</i> , I would be held in higher esteem by my family.	1	2	3	4	5	6	7	8	9
Purchasing a <i>computer</i> 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 <i>computer</i> gives me a feeling of unwanted anxiety.	1	2	3	4	5	6	7	8	9
The thought of purchasing a <i>computer</i> makes me feel psychologically uncomfortable.	1	2	3	4	5	6	7	8	9
The thought of purchasing a <i>computer</i> causes me to experience unnecessary tension.	1	2	3	4	5	6	7	8	9

<p><b><i>Thank you very much for completing the first part of the questionnaire</i></b></p>
---------------------------------------------------------------------------------------------

**2. In the second part of this questionnaire, we are going to consider another specific type of product: A Chequing Account**

How many times have you opened a *chequing account* in the past? \_\_\_\_

In general, my knowledge of *chequing accounts* is:

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

Would you consider yourself uninformed or informed about *chequing accounts*?

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

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

Weaker 1 2 3 4 5 6 7 8 9 Stronger

Compared to experts in this area, my knowledge of *chequing accounts* is:

Weaker 1 2 3 4 5 6 7 8 9 Stronger

I use a *chequing account*:

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

The global information search I have performed on *chequing accounts* is:

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

I don't have much experience with *chequing accounts*.

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

	Strongly disagree									Strongly agree
<i>A chequing account</i> is very easy to see and touch.	1	2	3	4	5	6	7	8	9	
I can physically grasp a <i>chequing account</i> .	1	2	3	4	5	6	7	8	9	
<i>A chequing account</i> is very physically tangible.	1	2	3	4	5	6	7	8	9	
I could easily explain many features associated with a <i>chequing account</i> .	1	2	3	4	5	6	7	8	9	
It is not difficult to give a precise description of a <i>chequing account</i> .	1	2	3	4	5	6	7	8	9	
It is easy to describe many features related to a <i>chequing account</i> .	1	2	3	4	5	6	7	8	9	

	<b>Strongly disagree</b>					<b>Strongly agree</b>				
The image of a <i>chequing account</i> comes to my mind right away.	1	2	3	4	5	6	7	8	9	
I have a clear picture of a <i>chequing account</i> .	1	2	3	4	5	6	7	8	9	
I need more information about <i>chequing accounts</i> to get a clear idea (image) of what it is.	1	2	3	4	5	6	7	8	9	
This is a difficult <i>service</i> to think about.	1	2	3	4	5	6	7	8	9	
This is not the sort of <i>service</i> that is easy to picture.	1	2	3	4	5	6	7	8	9	

Given that I have to open a chequing account, choosing among the available brands will be:

very difficult	1	2	3	4	5	6	7	8	9	very easy
very problematic	1	2	3	4	5	6	7	8	9	not problematic at all
very complex	1	2	3	4	5	6	7	8	9	very simple
very complicated	1	2	3	4	5	6	7	8	9	not complicated at all

I perceive a *chequing 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

*Chequing accounts:*

matter a lot to me	1	2	3	4	5	6	7	8	9	don't matter to me
mean a lot to me	1	2	3	4	5	6	7	8	9	mean nothing to me

	<b>Strongly disagree</b>							<b>Strongly agree</b>	
	1	2	3	4	5	6	7	8	9
There is a good chance I will make a mistake in opening a <i>chequing account</i> .									
I have the feeling that opening a <i>chequing account</i> will really cause me lots of trouble.	1	2	3	4	5	6	7	8	9
I will incur some risk if I open a <i>chequing account</i> in the next twelve months.	1	2	3	4	5	6	7	8	9
A <i>chequing account</i> is a very risky acquisition.	1	2	3	4	5	6	7	8	9
If I opened a <i>chequing account</i> 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
Opening a <i>chequing account</i> could involve important financial losses.	1	2	3	4	5	6	7	8	9
If I opened a <i>chequing account</i> 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
Opening a <i>chequing account</i> will lead to an inefficient use of my time.	1	2	3	4	5	6	7	8	9
Opening a <i>chequing account</i> will involve important time losses.	1	2	3	4	5	6	7	8	9
The demands on my schedule are such that opening a <i>chequing account</i> 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 open a <i>chequing account</i> within the next twelve months, I would be concerned that this service will not provide the level of benefits that I would be expecting.	1	2	3	4	5	6	7	8	9
As I consider opening a <i>chequing account</i> 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 opening a <i>chequing account</i> causes me to be concerned for how really reliable that service will be.	1	2	3	4	5	6	7	8	9

	<b>Strongly disagree</b>								<b>Strongly agree</b>			
If I opened a <i>chequing account</i> , I would be held in higher esteem by my friends.	1	2	3	4	5	6	7	8	9			
If I opened a <i>chequing account</i> , I would be held in higher esteem by my family.	1	2	3	4	5	6	7	8	9			
Opening a <i>chequing account</i> 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 opening a <i>chequing account</i> gives me a feeling of unwanted anxiety.	1	2	3	4	5	6	7	8	9			
The thought of opening a <i>chequing account</i> makes me feel psychologically uncomfortable.	1	2	3	4	5	6	7	8	9			
The thought of opening a <i>chequing account</i> 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**

How many times have you purchased a *CD* in the past? \_\_\_\_\_

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 of *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

I listen to *CD's*:                      Never   1   2   3   4   5   6   7   8   9   Very often

The global information search I have performed on *CD's* 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

	Strongly disagree											Strongly agree
<i>A CD is very easy to see and touch.</i>	1	2	3	4	5	6	7	8	9			
<i>I can physically grasp a CD.</i>	1	2	3	4	5	6	7	8	9			
<i>A CD is very physically tangible.</i>	1	2	3	4	5	6	7	8	9			
<i>I could easily explain many features associated with a CD.</i>	1	2	3	4	5	6	7	8	9			
<i>It is not difficult to give a precise description of a CD.</i>	1	2	3	4	5	6	7	8	9			
<i>It is easy to describe many features related to a CD.</i>	1	2	3	4	5	6	7	8	9			
<i>The image of a CD comes to my mind right away.</i>	1	2	3	4	5	6	7	8	9			
<i>I have a clear picture of a CD.</i>	1	2	3	4	5	6	7	8	9			
<i>I need more information about CD's to get a clear idea (image) of what it is.</i>	1	2	3	4	5	6	7	8	9			
<i>This is a difficult product to think about.</i>	1	2	3	4	5	6	7	8	9			
<i>This is not the sort of product that is easy to picture.</i>	1	2	3	4	5	6	7	8	9			

Given that I have to buy a CD in a music store, choosing among available CD's will be:

very difficult	1	2	3	4	5	6	7	8	9	very easy
very problematic	1	2	3	4	5	6	7	8	9	not problematic at all
very complex	1	2	3	4	5	6	7	8	9	very simple
very complicated	1	2	3	4	5	6	7	8	9	not complicated at all



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

*CD's*:

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

mean a lot to me      1   2   3   4   5   6   7   8   9      mean 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 twelve 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

	Strongly disagree								Strongly agree
If I were to purchase a <i>CD</i> within the next twelve months, I would be concerned that this product 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 <i>CD</i> soon, I worry about whether it will really work as well as it is supposed to.	1	2	3	4	5	6	7	8	9
The thought of purchasing a <i>CD</i> 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 <i>CD</i> , I would be held in higher esteem by my friends.	1	2	3	4	5	6	7	8	9
If I bought a <i>CD</i> , I would be held in higher esteem by my family.	1	2	3	4	5	6	7	8	9
Purchasing a <i>CD</i> 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 <i>CD</i> gives me a feeling of unwanted anxiety.	1	2	3	4	5	6	7	8	9
The thought of purchasing a <i>CD</i> makes me feel psychologically uncomfortable.	1	2	3	4	5	6	7	8	9
The thought of purchasing a <i>CD</i> causes me to experience unnecessary tension.	1	2	3	4	5	6	7	8	9

***Thank you very much for completing the 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
With relatives	____%	____%	____%	100%
Watching television	____%	____%	____%	100%
Listening to radio	____%	____%	____%	100%
Reading newspapers	____%	____%	____%	100%

Please **circle** the number that best reflects your degree of agreement with the following statements:

	Strongly disagree									Strongly agree
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 Anglophones	1	2	3	4	5	6	7	8	9	
My parents are Francophones	1	2	3	4	5	6	7	8	9	
My parents are Allophones*	1	2	3	4	5	6	7	8	9	
All my closest friends are Anglophones	1	2	3	4	5	6	7	8	9	
All my closest friends are Francophones	1	2	3	4	5	6	7	8	9	
All my closest friends are Allophones*	1	2	3	4	5	6	7	8	9	

\* **Other than Anglophone (s) or Francophone (s). Use the one that applies to you (e.g., Hispanophone [s])**

**Thank You very much!**

## APPENDIX 2

### 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 the online acquisition of a specific type of product: **Netscape Software**

Have you ever heard of the brand *Netscape*?

Yes \_\_\_\_\_

No \_\_\_\_\_

How many times have you acquired a *Netscape Software* online in the past? \_\_\_\_\_

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

I use *Netscape Software*:

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

The global 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 acquiring *Netscape Software*.

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

	Strongly disagree									Strongly agree
<i>Netscape Software</i> is very easy to see and touch.	1	2	3	4	5	6	7	8	9	
I can physically grasp <i>Netscape Software</i> .	1	2	3	4	5	6	7	8	9	
<i>Netscape Software</i> is physically very tangible.	1	2	3	4	5	6	7	8	9	
I could easily explain many features associated with the <i>Netscape Software</i> .	1	2	3	4	5	6	7	8	9	
It is not difficult to give a precise description of the <i>Netscape Software</i> .	1	2	3	4	5	6	7	8	9	
It is easy to describe many features related to the <i>Netscape Software</i> .	1	2	3	4	5	6	7	8	9	
The image of the <i>Netscape Software</i> comes to my mind right away.	1	2	3	4	5	6	7	8	9	
I have a clear picture of <i>Netscape Software</i> .	1	2	3	4	5	6	7	8	9	
I need more information about the <i>Netscape Software</i> to get a clear idea (image) of what it is.	1	2	3	4	5	6	7	8	9	
This is a difficult <i>brand</i> to think about.	1	2	3	4	5	6	7	8	9	
This is not the sort of <i>brand</i> that is easy to picture.	1	2	3	4	5	6	7	8	9	

Given that I have to acquire an Internet browser on the Internet, evaluating the *Netscape Software* will be:

very difficult	1	2	3	4	5	6	7	8	9	very easy
very problematic	1	2	3	4	5	6	7	8	9	not problematic at all
very complex	1	2	3	4	5	6	7	8	9	very simple
very complicated	1	2	3	4	5	6	7	8	9	not complicated at all

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

	Strongly disagree	1	2	3	4	5	6	7	8	9	Strongly agree
There is a good chance I will make a mistake if I acquire <i>Netscape Software</i> online.		1	2	3	4	5	6	7	8	9	
I have the feeling that acquiring <i>Netscape Software online</i> will really cause me lots of trouble.		1	2	3	4	5	6	7	8	9	
I will incur some risk if I acquire <i>Netscape Software online</i> in the next twelve months.		1	2	3	4	5	6	7	8	9	
<i>The Netscape Software</i> is a very risky online acquisition.		1	2	3	4	5	6	7	8	9	
If I acquired the <i>Netscape Software online</i> 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	
Acquiring <i>Netscape Software online</i> could involve important financial losses.		1	2	3	4	5	6	7	8	9	
If I acquired <i>Netscape Software online</i> 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	

	Strongly disagree									Strongly agree
Acquiring <i>Netscape Software online</i> will lead to an inefficient use of my time.	1	2	3	4	5	6	7	8	9	
Acquiring <i>Netscape Software online</i> will involve important time losses.	1	2	3	4	5	6	7	8	9	
The demands on my schedule are such that acquiring <i>Netscape Software online</i> concerns me because it would impose even greater time pressures on me.	1	2	3	4	5	6	7	8	9	
If I were to acquire <i>Netscape Software online</i> within the next twelve months, I would be concerned that the brand will not provide the level of benefits that I would be expecting.	1	2	3	4	5	6	7	8	9	
As I consider acquiring the <i>Netscape Software online</i> in the near future, 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 acquiring <i>Netscape Software online</i> causes me to be concerned for how really reliable that product will be.	1	2	3	4	5	6	7	8	9	
If I used <i>Netscape Software</i> , I would be held in higher esteem by my friends.	1	2	3	4	5	6	7	8	9	
If I used <i>Netscape Software</i> , I would be held in higher esteem by my family.	1	2	3	4	5	6	7	8	9	
Acquiring <i>Netscape Software online</i> 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 acquiring <i>Netscape Software online</i> gives me a feeling of unwanted anxiety.	1	2	3	4	5	6	7	8	9	
The thought of acquiring <i>Netscape Software online</i> makes me feel psychologically uncomfortable.	1	2	3	4	5	6	7	8	9	
The thought of acquiring <i>Netscape Software online</i> causes me to experience unnecessary tension.	1	2	3	4	5	6	7	8	9	

	<b>Strongly disagree</b>		<b>Strongly agree</b>
I would acquire the <i>Netscape software</i> on the Internet.	1	2 3 4 5 6 7 8 9	
Even if I could save money, I'd rather acquire <i>Netscape Software</i> in a store than on the Internet.	1	2 3 4 5 6 7 8 9	
There is a good chance I won't get <i>Netscape Software</i> if I acquire it on the Internet.	1	2 3 4 5 6 7 8 9	

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

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

I think that purchasing a product or a service on the Internet is:

Not risky at all    1   2   3   4   5   6   7   8   9   Very risky

Approximately, how many products or services have you bought on the Internet in the last five years? \_\_\_\_\_

<i>Thank you very much for completing this first part of the questionnaire.</i>
---------------------------------------------------------------------------------

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

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

Yes\_\_\_\_\_

No\_\_\_\_\_

How many times have you purchased a *Pizza Hut Pizza* online in the past? \_\_\_\_\_



In general, my knowledge of a *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

I eat a *Pizza Hut Pizza*:

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

The global 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

	Strongly disagree									Strongly agree
<i>Pizza Hut Pizza</i> is very easy to see and touch.	1	2	3	4	5	6	7	8	9	
I can physically grasp <i>Pizza Hut Pizza</i> .	1	2	3	4	5	6	7	8	9	
<i>Pizza Hut Pizza</i> is physically very tangible.	1	2	3	4	5	6	7	8	9	
I could easily explain many features associated with <i>Pizza Hut Pizza</i> .	1	2	3	4	5	6	7	8	9	
It is not difficult to give a precise description of <i>Pizza Hut Pizza</i> .	1	2	3	4	5	6	7	8	9	
It is easy to describe many features related to <i>Pizza Hut Pizza</i> .	1	2	3	4	5	6	7	8	9	

	Strongly disagree									Strongly agree
The image of a <i>Pizza Hut Pizza</i> comes to my mind right away.	1	2	3	4	5	6	7	8	9	
I have a clear picture of <i>Pizza Hut Pizza</i> .	1	2	3	4	5	6	7	8	9	
I need more information about <i>Pizza Hut Pizzas</i> to get a clear idea (image) of what it is.	1	2	3	4	5	6	7	8	9	
This is a difficult <i>brand</i> to think about.	1	2	3	4	5	6	7	8	9	
This is not the sort of <i>brand</i> that is easy to picture.	1	2	3	4	5	6	7	8	9	

Given that I have to buy a pizzeria dinner on the Internet, evaluating a *Pizza Hut Pizza* will be:

very difficult	1	2	3	4	5	6	7	8	9	very easy
very problematic	1	2	3	4	5	6	7	8	9	not problematic at all
very complex	1	2	3	4	5	6	7	8	9	very simple
very complicated	1	2	3	4	5	6	7	8	9	not complicated at all

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

	Strongly disagree									Strongly agree
There is a good chance I will make a mistake if I purchase <i>Pizza Hut Pizza online</i> .	1	2	3	4	5	6	7	8	9	
I have the feeling that purchasing <i>Pizza Hut Pizza online</i> will really cause me lots of trouble.	1	2	3	4	5	6	7	8	9	
I will incur some risk if I buy <i>Pizza Hut Pizza online</i> in the next twelve months.	1	2	3	4	5	6	7	8	9	
A <i>Pizza Hut Pizza</i> is a very risky online purchase.	1	2	3	4	5	6	7	8	9	
If I bought a <i>Pizza Hut Pizza online</i> 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 <i>Pizza Hut Pizza online</i> could involve important financial losses.	1	2	3	4	5	6	7	8	9	
If I bought <i>Pizza Hut Pizza online</i> 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 <i>Pizza Hut Pizza online</i> will lead to an inefficient use of my time.	1	2	3	4	5	6	7	8	9	
Purchasing <i>Pizza Hut Pizza online</i> will involve important time losses.	1	2	3	4	5	6	7	8	9	
The demands on my schedule are such that purchasing <i>Pizza Hut Pizza online</i> concerns me because it would impose even greater time pressures on me.	1	2	3	4	5	6	7	8	9	

	<b>Strongly disagree</b>										<b>Strongly agree</b>			
If I were to purchase <i>Pizza Hut Pizza</i> online within the next twelve months, I would be concerned that the brand 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 <i>online</i> purchase of <i>Pizza Hut Pizza</i> in the near future, I worry about whether it will really "taste" as well as it is supposed to.	1	2	3	4	5	6	7	8	9					
The thought of purchasing <i>Pizza Hut Pizza online</i> causes me to be concerned for how really reliable that product will be.	1	2	3	4	5	6	7	8	9					
If I ate <i>Pizza Hut Pizza</i> , I would be held in higher esteem by my friends.	1	2	3	4	5	6	7	8	9					
If I ate <i>Pizza Hut Pizza</i> , I would be held in higher esteem by my family.	1	2	3	4	5	6	7	8	9					
Purchasing <i>Pizza Hut Pizza online</i> 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 <i>Pizza Hut Pizza online</i> gives me a feeling of unwanted anxiety.	1	2	3	4	5	6	7	8	9					
The thought of purchasing <i>Pizza Hut Pizza online</i> makes me feel psychologically uncomfortable.	1	2	3	4	5	6	7	8	9					
The thought of purchasing <i>Pizza Hut Pizza online</i> causes me to experience unnecessary tension.	1	2	3	4	5	6	7	8	9					
I would buy a <i>Pizza Hut Pizza</i> on the Internet.	1	2	3	4	5	6	7	8	9					
Even if I could save money, I'd rather buy <i>Pizza Hut Pizza</i> in a store than on the Internet.	1	2	3	4	5	6	7	8	9					
There is a good chance I won't get <i>Pizza Hut Pizza</i> if I buy it on the Internet.	1	2	3	4	5	6	7	8	9					

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

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

*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 the online purchase of another specific type of product: Levi's Jeans

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

Yes \_\_\_\_\_

No \_\_\_\_\_

How many times have you purchased a pair of *Levi's Jeans* online in the past? \_\_\_\_\_

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 *Levi's Jeans* is:

Weaker    1   2   3   4   5   6   7   8   9   Stronger

I wear *Levi's Jeans*:

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

The global 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

	Strongly disagree								Strongly agree
<i>Levi's Jeans</i> are very easy to see and touch.	1	2	3	4	5	6	7	8	9
I can physically grasp <i>Levi's Jeans</i> .	1	2	3	4	5	6	7	8	9
<i>Levi's Jeans</i> are physically very tangible.	1	2	3	4	5	6	7	8	9
I could easily explain many features associated with <i>Levi's Jeans</i> .	1	2	3	4	5	6	7	8	9
It is not difficult to give a precise description of <i>Levi's Jeans</i> .	1	2	3	4	5	6	7	8	9
It is easy to describe many features related to <i>Levi's Jeans</i> .	1	2	3	4	5	6	7	8	9
The image of a pair of <i>Levi's Jeans</i> comes to my mind right away.	1	2	3	4	5	6	7	8	9
I have a clear picture of <i>Levi's Jeans</i> .	1	2	3	4	5	6	7	8	9
I need more information about <i>Levi's Jeans</i> to get a clear idea (image) of what it is.	1	2	3	4	5	6	7	8	9
This is a difficult <i>brand</i> to think about.	1	2	3	4	5	6	7	8	9
This is not the sort of <i>brand</i> that is easy to picture.	1	2	3	4	5	6	7	8	9

Given that I have to buy jeans on the Internet, evaluating a pair of *Levi's Jeans* will be:

very difficult	1	2	3	4	5	6	7	8	9	very easy
very problematic	1	2	3	4	5	6	7	8	9	not problematic at all
very complex	1	2	3	4	5	6	7	8	9	very simple
very complicated	1	2	3	4	5	6	7	8	9	not complicated at all

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	don't matter to me
mean a lot to me	1	2	3	4	5	6	7	8	9	mean nothing to me

	<b>Strongly disagree</b>		<b>Strongly agree</b>						
There is a good chance I will make a mistake if I purchase <i>Levi's Jeans online</i> .	1	2	3	4	5	6	7	8	9
I have the feeling that purchasing a pair of <i>Levi's Jeans online</i> 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 pair of <i>Levi's Jeans online</i> in the next twelve months.	1	2	3	4	5	6	7	8	9
A pair of <i>Levi's Jeans</i> is a very risky <i>online</i> purchase.	1	2	3	4	5	6	7	8	9

	Strongly disagree									Strongly agree
If I bought a pair of <i>Levi's Jeans online</i> 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 pair of <i>Levi's Jeans online</i> could involve important financial losses.	1	2	3	4	5	6	7	8	9	
If I bought a pair of <i>Levi's Jeans online</i> 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 pair of <i>Levi's Jeans online</i> will lead to an inefficient use of my time.	1	2	3	4	5	6	7	8	9	
Purchasing a pair of <i>Levi's Jeans online</i> will involve important time losses.	1	2	3	4	5	6	7	8	9	
The demands on my schedule are such that purchasing <i>Levi's Jeans online</i> concerns me because it would impose even greater time pressures on me.	1	2	3	4	5	6	7	8	9	
If I were to purchase <i>Levi's Jeans online</i> within the next twelve months, I would be concerned that the brand 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 <i>online</i> purchase of a pair of <i>Levi's Jeans</i> in the near future, I worry about whether it will really "fit" as well as it is supposed to.	1	2	3	4	5	6	7	8	9	
The thought of purchasing a pair of <i>Levi's Jeans online</i> causes me to be concerned for how really reliable that product will be.	1	2	3	4	5	6	7	8	9	



	Strongly disagree									Strongly agree									
If I wore <i>Levi's Jeans</i> , I would be held in higher esteem by my friends.	1	2	3	4	5	6	7	8	9										
If I wore <i>Levi's Jeans</i> , I would be held in higher esteem by my family.	1	2	3	4	5	6	7	8	9										
Purchasing <i>Levi's Jeans online</i> 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 <i>Levi's Jeans online</i> gives me a feeling of unwanted anxiety.	1	2	3	4	5	6	7	8	9										
The thought of purchasing <i>Levi's Jeans online</i> makes me feel psychologically uncomfortable.	1	2	3	4	5	6	7	8	9										
The thought of purchasing <i>Levi's Jeans online</i> causes me to experience unnecessary tension.	1	2	3	4	5	6	7	8	9										
I would buy <i>Levi's Jeans</i> on the Internet, given that I could provide my measurements.	1	2	3	4	5	6	7	8	9										
Even if I could save money, I'd rather buy <i>Levi's Jeans</i> in a store than on the Internet.	1	2	3	4	5	6	7	8	9										
There is a good chance I won't get <i>Levi's Jeans</i> if I buy them on the Internet.	1	2	3	4	5	6	7	8	9										
Compared to other brands of jeans I know, <i>Levi's Jeans</i> is my:																			
	Least preferred	1	2	3	4	5	6	7	8	9									Most preferred

**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).**

	<b>English</b>	<b>French</b>	<b>Other</b> ( )	<b>Total</b>
<b>With relatives</b>	____%	____%	____%	100%
<b>Watching television</b>	____%	____%	____%	100%
<b>Listening to radio</b>	____%	____%	____%	100%
<b>Reading newspapers</b>	____%	____%	____%	100%

Please **circle** the number that best reflects your degree of agreement with the following statements:

	<b>Strongly disagree</b>									<b>Strongly agree</b>
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 Anglophones	1	2	3	4	5	6	7	8	9	
My parents are Francophones	1	2	3	4	5	6	7	8	9	
My parents are Allophones*	1	2	3	4	5	6	7	8	9	
All my closest friends are Anglophones	1	2	3	4	5	6	7	8	9	
All my closest friends are Francophones	1	2	3	4	5	6	7	8	9	
All my closest friends are Allophones*	1	2	3	4	5	6	7	8	9	

**\* Other than Anglophone (s) or Francophone (s). Use the one that applies to you (e.g., Hispanophone [s])**

<p><b>Thank You very much!</b></p>
------------------------------------

## APPENDIX 3

### Factor Analysis Pattern Matrix

<b>Questionnaire Item</b>	<b>Component 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
TRISK38	.970										
TRISK37	.933										
TRISK39	.775										
KNOW6		.842									
KNOW4		.835									
KNOW3		.807									
KNOW5		.800									
INFO8		.719									
EXP9		.583									
EXP7		.536	-.391								
INV26			-.951								
INV25			-.941								
INV27			-.923								
INV28			-.838								
INV29			-.828								
SRISK44				-.968							
SRISK43				-.960							
SRISK45				-.548						-.324	
PHYS11					-.941						
PHYS12					-.898						
PHYS10					-.797						
DIFF24						.942					
DIFF23						.936					
DIFF22						.902					
DIFF21						.861					
MENTAL20							.879				
MENTAL19							.873				
MENTAL18							.663				
GEN14								-.925			
GEN15								-.907			
GEN13								-.850			
PRISK41									.939		
PRISK42									.814		
PRISK40									.596		
YRISK48										-.919	
YRISK47										-.914	
YRISK46										-.913	
FRISK35											-.900
FRISK34											-.863
FRISK36											-.758

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