# INTANGIBILITY DIMENSIONS OF INSURANCE

**Gerda Lechner**
Bawag PSK Versicherung, Vienna
**Michael Theil**
University of Economics and Business Administration Vienna

## Abstract

*One of the core characteristics of insurance is intangibility. We study several dimensions of this phenomenon and their impact upon evaluation difficulty and perceived risk. Furthermore we analyse relationships between intangibility, distribution channels and the effect of prior knowledge.*

## บทคัดย่อ

ลักษณะที่สำคัญของประกันภัยประการหนึ่งคือประกันภัยเป็นสินค้าที่ไม่อาจจับต้องได้ ผู้วิจัยจึงศึกษาถึงทิศทางของปรากฏการณ์ดังกล่าว และผลกระทบของการประเมิน และการรับรู้ความเสี่ยง นอกจากนี้ผู้วิจัยได้ทำการวิเคราะห์ ความสัมพันธ์ระหว่างการจับต้องไม่ได้ กับช่องทางการจำหน่าย และผลกระทบของความรู้ที่มีอยู่ก่อน

## Introduction

Intangibility has long been recognised as a differentiating factor between goods and services. Insurance, in turn, is one of the most popular examples of an intangible product, a real teaching aid for intangibility and its consequences (Levitt 1981). In particular, intangibility is viewed as the core reason for insurance as it requires special selling efforts and instruments, as well as having a particular influence on product development (e.g. Theil 2003).

Quite recently, and outside the insurance context, Laroche and colleagues (Laroche et al. 2005) have analysed the concept of intangibility more closely, striving to get a more detailed and sophisticated view. As a result, they find several dimensions of intangibility which possibly offer further explanatory and analytic value.

Since this development may have substantial relevance for the academic treatment of insurance, we bring to bear their concept on this particular context. That is, we first examine whether the methods of Laroche and collaborators are directly applicable or need to be adapted. In a next step, we apply the instrument in a large-scale study, report the results, and finally discuss the implications for theoretical and managerial matters.

## Intangibility dimensions

The initial and probably still most popular view of intangibility is to understand it as the lack of physical evidence (Levitt 1981, Laroche,,Bergeron and Goutaland 2001). The related dimension is therefore termed physical intangibility. Whether it is gradual or complete remains a matter of debate. For instance, in the case of insurance, the insurance policy is not least intended to serve as a surrogate for the intangible core product (Levitt 1981 gives several more examples).

The second dimension, generality, refers to the difficulty of precisely describing or defining a particular product or service (Laroche et al. 2001, Laroche et al. 2005). If the consumer is capable of defining it only vaguely, then generality is high. For instance, car insurance can be described by referring to its characteristics such as coverage, exclusions, sum insured, deductibles, premium (and more), making the description very specific. Or, the consumer may simply state that this type of insurance pays in cases of car accidents, which is quite general. Finally, mental intangibility as the third dimension refers to the fact that a product may be physically tangible but still be difficult to grasp mentally (Laroche et al. 2001, Laroche et al. 2005). For instance, a car engine is highly tangible but hard to understand, except for those who have sufficient knowledge to appreciate its mechanics.

These three dimensions of intangibility are believed to have an impact upon perceived risk, so that a consumer of a highly intangible product or service experiences a higher expectation of loss. This relationship may either be direct or through expectation difficulty as a moderating variable. In this context, prior knowledge may reduce risk as it is perceived by the decision maker.

As discussed in an earlier work (Theil 2003), sales strategy has an important influence on insurance purchase. As a consequence, we will explore differences between purchases over the Internet versus traditional forms of insurance distribution.

To summarise, the current approach offers a novel framework, further developing it to fit the context of insurance, and testing it for two different sales methods and two different levels of prior knowledge.

## Experimental Design

### General

In order to remain compatible with the current line of research, we retained the instrument used in Laroche et al. (2005). That is, we kept the models for the constructs and variables. Changes, of course, were necessary to move the context from products to insurance, as in Laroche at al. (2005) there were tangible products (jeans, computers and CDs) and services (pizza service, haircut, bank account).

**Products**
Credit insurance, accident insurance and travel insurance products appear in our survey. The main reasons for choosing these products were that the subjects group was expected to be familiar with them and that they are available both off- and online.

**Subjects**
In order to keep continuity to Laroche et al. (2005), participants in our survey also were students. Following Calder, Phillips and Tybout (1981), another reason for having students as subjects in experiments is their relative homogeneity and thus lower variation, which is deemed advantageous in studies of variable structures. On the other hand, however, this reduces representativeness, an effect that has to be kept in mind when discussing whether results can be generalized.

**Stimuli**
The questionnaire was taken from Laroche et al. (2005), without adaptations except that insurance products were mentioned instead of the products and services studied previously. It consists of 35 questions, covering immateriality dimensions, perceived risk, evaluation difficulty and prior knowledge. They were measured by bipolar 9-point Likert scales. Based on a within-subject design, our survey produced almost 700 product evaluations overall.

## Results

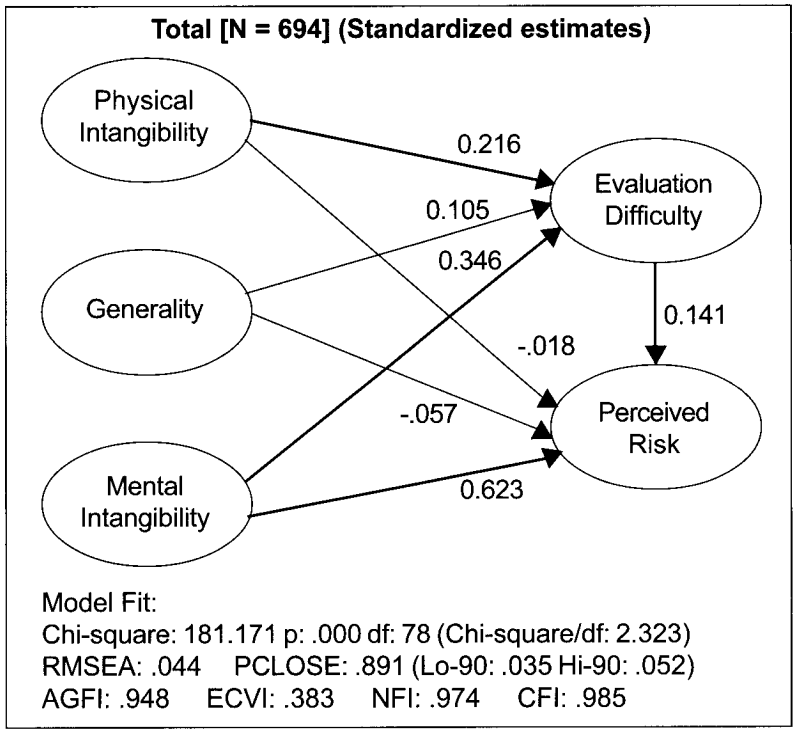
**Instrument verification**
First and foremost, the applicability of the instrument introduced by Laroche et al. (2005) to insurance products is to be tested. To serve this purpose, we initially conducted a factor analysis. It proved possible to extract the same six factors for insurance as for the products analysed by Laroche and colleagues: physical intangibility, generality, mental intangibility, evaluation difficulty, perceived risk, and knowledge. Jointly, these factors explain 63.83% of variance, with RMSEA = 0.058, which is considered a good fit (Hu and Bentler 1999). As for reliability, Cronbach's alpha was higher than 0.8 for each of the factors. Based on these results, we may safely consider the instrument developed by Laroche and collaborators suitable for our purposes.

**Structural Equation Model**
In a first approach, we replicated the original model. As we checked fit measures, it soon turned out that our model required adaptation.

One is the elimination of the social dimension of perceived risk. This factor is constructed around items reflecting whether friends or family appreciate one's buying an insurance product and whether the buying decision imposes an unnecessary amount of tension.

Indicator structure requires the second major change, namely to eliminate the item representing the degree to which the product is easy to see and touch, and to collapse two other physical intangibility items into one (aspects which reflected specific aspects yet are indistinguishable to subjects).

The resulting model is depicted below:




**Intangibility, Evaluation Difficulty and Perceived Risk**

As mentioned above, the three types of intangibility are believed to have an impact on both evaluation difficulty and perceived risk.

To start with physical intangibility, many think that this lack of sensory clues increases evaluation difficulty. Laroche et al. (2005), however, argue that these two are negatively related, since physical intangibility yields an easier evaluation process as it involves greater reliance upon prior experience rather than assessment of physical evidence. The present research rejects this notion with a significant positive regression weight between physical intangibility and evaluation difficulty (0.216, $p<0.001$), supporting the more commonly held opinion of a positive association. Also, we find physical intangibility to have an indirect positive relationship to perceived risk via higher evaluation difficulty (0.030, $p<0.001$). However the direct path between physical intangibility and perceived risk points in the other (negative) direction, but is not significant.

Generality is expected to increase evaluation difficulty and perceived risk. While the influence on evaluation difficulty (0.105, $p = 0.203$) is so in our sample, generality has an opposite direct association with perceived risk (-.057, $p = 0.489$). Additionally, the direct as well as indirect relationships are not statistically significant.

For mental intangibility, in turn, the proposed positive relationship, direct and indirect alike, is established in our research, that is, mental intangibility increases both evaluation difficulty (0.346,

$p<0.001$) and perceived risk (0.623, $p<0.001$), immediately and the latter via evaluation difficulty as a moderating variable.

Not surprisingly, our data also support the direct path between evaluation difficulty and perceived risk as expected (0.141, $p<0.001$).

## Offline Versus Online Sales

Laroche et al. (2001, 2005) argue that the Internet has a high potential to facilitate customers' evaluation of goods and services. Compared to customary stores and offices, it offers access to a much higher number of products across suppliers, thus substantially enlarging alternative space for decision. Furthermore, the customer may find support in comparing competing offers by appropriate tools. On the other hand, as Theil (2003) pointed out, the Internet lacks the possibility to get in touch with customers on a face-to-face basis.

In order to study these aspects, half of the subjects received the questionnaire in an online version, the other half in an offline context. In order to remain compatible with Laroche et al. (2005), we tested the hypothesis that the impact of intangibility on evaluation difficulty and perceived risk would be lower in an online rather than in an offline environment.

Concerning model construction, no significant differences between these two selling modes were found. As for the impact on physical intangibility, there was no support for the proposed reduction in effect, nor was it for generality. However, we found strong support for the assumption that the impact of mental intangibility is lower in an online that in an offline environment.

Laroche et al. (2005) propose that the impact of evaluation difficulty upon perceived risk is higher in an online that in an offline mode, not least because of privacy and security concerns and problems concerning trust. We, on the other hand, were not able to discern such an effect in our research, instead comparing both conditions, online (0.135, $p = 0.035$) and offline (0.153, $p = 0.009$), provide some evidence of an opposite impact.

## Prior Knowledge

If consumers have previous experience with a particular buying decision, future decisions may become easier. Thus, we also investigate the moderating role of prior knowledge. While we do not find an impact related to physical intangibility, we do have strong effects concerning mental intangibility.

| | Impact of mental intangibility on ... | Regression weight | |
|---|---|---|---|
| | | High prior knowledge | Low prior knowledge |
| Online condition | Evaluation difficulty | -.130, $p = 0.452$ | 0.323, $p = 0.022$ |
| | Perceived risk | 0.455, $p = 0.014$ | 0.496, $p = 0.002$ |
| Offline condition | Evaluation difficulty | 0.338, $p = 0.001$ | 0.386, $p = 0.021$ |
| | Perceived risk | 0.484, $p<0.001$ | 0.679, $p<0.001$ |

## Discussion

The instrument developed by Laroche and colleagues has been successfully applied to a broad range of economic activities. The present work added insurance as another area where immateriality, evaluation difficulty and perceived risk are long believed to play important roles.

While we could employ the instrument itself unchanged, relationships between variables required adaptation. Poor reliability values required that we drop the construct social risk from further consideration. A similar effect has also been observed by Laroche and collaborators, while it appears more distinct for insurance than for other products and services. This result may either suggest that social reference groups are not much aware whether someone buys insurance, or that it is not particularly appreciated.

A second modification refers to physical intangibility, where items proved indistinguishable to subjects and had to be collapsed into a single one. Looking somewhat closer at these items which ascertain how a product or service can be grasped, seen and touched, it does not come as a surprise that for the case of insurance, they all appear similar. Compared to other services, insurance seems to be even more physically immaterial in the minds of subjects.

Concerning the relationship between immateriality dimensions, evaluation difficulty and perceived risk, our research leads to results differing from those for other products in a number of aspects.

To start with, the impact of physical intangibility upon both, evaluation difficulty and perceived risk (directly and indirectly alike) is considerably more pronounced for insurance than it is for other products and services. In particular, while Laroche et al. (2005) find support for the notion that physical intangibility reduces risk since people rely on prior experience instead, this hypothesis is rejected by our research for the context of insurance. Indeed, insurance decisions are not very frequently taken, often on a year-to year basis in the case of annual renewal, or even in far longer periods of time when insurance contracts are taken out for multiple years or decades. Very few types of insurance are purchased more frequently and thus more comparable to services like a haircut, for instance, or travel insurance. However, our results for travel insurance do not differ from those concerning credit or accident insurance, suggesting that frequency is still too low to build up sufficiently reliable experience.

Contrary to products other than insurance, generality does not have direct significant effects upon evaluation difficulty and perceived risk. Generality is seen as the customer's difficulty to precisely define and describe a particular product. As we have shown in other work (Theil 2003), insurance is difficult to understand and very prone to a number of perception problems. Perhaps uncertainty concerning insurance is much more pronounced than it is for other products, so that the proposed relationship does not hold.

For mental immateriality, which is constructed around information deficiencies and insecurity to describe a product, insurance shows strong impact, directly and indirectly, upon evaluation

difficulty and perceived risk, just as other products and services do. In a similar spirit, the direct relationship between evaluation difficulty and perceived risk is also significant, for all examined products and services, including insurance.

To summarise, the proposed relationship network between kinds of intangibility, evaluation difficulty and perceived risk, which Laroche and colleagues showed to hold for a number of products and services, appears much less complex for insurance. In our case, subjects seem to be significantly more uncertain about the features of insurance than they are in other contexts, and this effect appears to dominate all others. Considering that insurance companies have undertaken significant efforts to make their offers clearer to customers in the past decade, these results appear disappointing: either, information did not fit or did not reach the target group, or their thirst to know more is unquenchable.

As for the second research question, whether results vary in an online environment from an offline setting, our results for insurance differ in the same manner as before. That is, we do observe a significant impact only for mental immateriality. That is in line with our interpretation above that subjects feel uncertain about the features of insurance products, considering that the Internet puts them into a much more favourable position to gather and compare information. Still, it remains unclear, whether costumers would indeed profit from having more pieces of information to explore in finding more reasonable decisions.

The effect of prior knowledge constitutes the third area of interest. It is constructed around seven items reflecting levels of information and knowledge, partly directly, partly indirectly through comparisons to reference groups. Our results are consistent with the design of mental intangibility in that subjects who describe themselves as better informed also exhibit lower effects of mental intangibility upon evaluation difficulty and perceived risk. A practical implication is that giving people a good feeling of being informed and knowledgeable could benefit insurance companies in reducing mental obstacles to taking out insurance.

In total, our research re-affirms the notion that insurance requires special attention regarding the development of analytical instruments and considering their practical implications. While the Laroche et al. (2001, 2005) framework of kinds of intangibility, evaluation difficulty and perceived risk has proven stable and fruitful for a number of products and services, things look differently for the case of insurance. In particular, kinds of intangibility appear less distinguishable, mainly because uncertainty about the features of insurance is overly dominating.

Above, we have mentioned that using students as subjects may constitute a limiting factor of this research. While this certainly holds true concerning representativeness, we still found some clues whether the results can be extended to other populations. Generally, students are viewed as being above average concerning being used to analyse problems and acquiring new information. Thus, it is very likely that more general populations would exhibit higher difficulty to deal with intangibility of insurance.

## REFERENCES


Calder, B; Phillips, L.; Tybout, A. (1981): Designing Research for Application; *Journal of Consumer Research*, 8(2): 197-207

Hu, L.; Bentler, P.M. (1999): Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives; *Structural Equation Modeling*, 6(1): 1-55.

Johnston, R.; Clark, G. (2001): *Service Operations Management*; Harlow.

Laroche, M.; Yang, Z.; McDougall, G.H.G.; Bergeron, J. (2005): Internet versus bricks-and-mortar retailers: An investigation into intangibility and its consequences; *Journal of Retailing*, 81(4): 251-267.

Laroche, M.; Bergeron, J.; Goutaland, C. (2001): A three-dimensional scale of intangibility; *Journal of Service Research*, 4(1): 26-38.

Levitt, T. (1981): Marketing intangible products and product intangibles; *Harvard Business Review*, 59(3): 94-102.

Theil, M. (2003): The value of personal contact in marketing insurance. Client judgments of representativeness and mental availability. *Risk Management and Insurance Review*, 6(2): 145-157.