THE CONCEPT AND MEASUREMENT OF PERCEIVED RISK:

A MARKETING APPLICATION IN THE CONTEXT OF THE NEW PRODUCT DEVELOPMENT PROCESS

Goodwin, Stephen A.
Illinois State University
sagoodwi@ilstu.edu

ABSTRACT

After a brief review of the history of the perceived risk construct in Marketing (e.g., Bauer 1960; Cox 1967; Cunningham 1967; Stampfl 1978; Grewal et. al. 2007), this paper will offer a conceptualization of consumer risk perception from a Marketing perspective that is based on the work of several notable scholars (e.g., Jacoby and Kaplan 1972; Dowling and Staelin 1994; Mitchell 1999; Dholakia 2001; Conchar 2004). The paper will also describe and discuss an approach to the measurement of perceived risk (Goodwin 2007) which involves the operationalization of a multi-dimensional linear compensatory, two-factor model. The paper will illustrate this measurement approach within the context of the concept development and testing stage of the new product development process (Kotler and Keller 2008). As such, it could be said that this paper will serve as a primer for the consumer researcher interested in learning more about the perceived risk concept and its application in furthering the marketer’s efforts toward successfully developing and introducing new products (Park and Jun 2003; Sääksjärvi and Lampinen 2005; Hirunyawipada and Paswan 2006).

In order to set the stage, the following definition of the core construct is tendered: perceived risk is the uncertainty that a consumer perceives when she/he cannot foresee the consequences of her/his purchase decision. This uncertainty frequently is felt when a consumer is considering the purchase and use of what is for her/him a new product. In general terms, it is a feeling (an expectation) that there may be unpleasant consequences associated with purchase and use of the new product. Such might include several numbers, and various types, of financial, performance, physical, psychological, social, and time-related negative outcomes.

INTRODUCTION

The concept of perceived risk was initially introduced to Marketing scholars in 1960 when a Harvard Business School faculty member proposed that certain types of consumer behavior involved differing types and degrees of risk (Bauer 1960). This proposal subsequently spurred considerable research that continues to this day. Indeed, the several dozen items contained in the References section to this paper reveal merely the tip of the iceberg in terms of the time and attention paid by Marketing scholars to this interesting and relevant construct.

This paper seeks to build upon the work that has preceded it by linking the concept and measurement of perceived risk to that part of the new product development process typically referred to as the “concept
development & testing stage” (Kotler and Keller 2008). It is believed that the perceived risk construct can have special significance in informing the new products marketing manager early in the new product development process as to whether or not there are consumer risk perception-based hurdles associated with the new product idea under study.

The New Product Development Process

Kotler and his associates over the years have made a convincing argument that continues to be well-received today: that firms rushing to market with their latest new product cannot expect to be as successful as would have been the case had the organization taken a careful, systematic ‘development process’ approach prior to introducing the new product. Indeed, in what has become the gold standard recommendation, Kotler has for years urged practitioners to follow the following eight-step approach: Generate Ideas; for a given idea, carefully Screen it (is the potential new product compatible with company objectives, strategies, and employee expertise?); Concept Development and Testing (is the concept of the new product idea relevant to a desirable target market of consumers? Do these consumers like the idea? Do they perceive any risks associated with the new product idea?); Marketing Strategy Development (is a cost-effective, affordable marketing strategy in the cards?); Business Analysis (do the forecasts of costs and revenues suggest that profit goals are attainable?); Product Development (can we produce a functioning prototype? Is it a technically and commercially sound product?); Test Marketing (does a ‘real-world’ test produce the results we are looking for?); Introduce the New Product (and expect it to be successful). Notably, this is to be viewed as a red light – green light process in the sense that if at the conclusion of a given step there are significant red flags, after due deliberation and continuing red flags, the new product idea must be shelved. In short, in order for the process to culminate in an actual introduction of a new product, each step must receive a green light. (Kotler and Keller 2008)

Perceived Risk

Consider the following: an idea for a new product is assigned to a new product venture team in an organization. After this idea has been thoroughly screened, it receives a green light, meaning that the idea can move to the next stage of the new product development process, the concept development and testing stage. It is here that the concept and measurement of perceived risk can enlighten management as to whether or not a new product idea should move to the next stage of its development. The following overview summarizes some mechanics of such an endeavor.

Definition

Once again, we are defining consumer perceived risk in the context of risk perceptions toward the purchase of a product that is judged to be new. In general terms, perceived risk can be defined as the uncertainty that a consumer perceives when she/he cannot foresee the consequences of her/his purchase-decision. This uncertainty frequently is felt when a consumer is considering the purchase and use of what is for her/him a new product. In general, consumer perceived risk is a feeling (an expectation) that there may be unpleasant consequences associated with purchase and use of the new product under consideration.

Measurement Assumptions

Underlying the suggested measurement approach to be detailed below are the following four assumptions: 1) the more risk perceived, the less likely a purchase will be made; 2) the less risk perceived, the more likely a purchase will be made; 3) when risk is perceived, it leads the consumer to feel tense (an uncomfortable psychological state); and 4) when risk is perceived, consumers are naturally motivated to
reduce/minimize or eliminate the tension they feel—especially in the face of considering the possibility of buying something new that interests them.

Measurement Model

Consider the following measurement model:

\[
OPR = \sum_{b}^{6} \sum_{i=1}^{n} \sum_{j}^{(PNC)} \cdot (INC) \]

Where

\( OPR = \) Overall Perceived Risk

\( b = \) an index representing the (new) brand being evaluated by the consumer

\( i = \) an index representing the six general categories of negative consequence

\( j = \) an index representing specific negative consequences within each general negative consequence category

\( \sum = \) Summation

\( \cdot = \) Multiplication

\( PNC = \) (Subjective) Probability of a Negative Consequence Occurring

\( INC = \) Judged Importance of a Negative Consequence Given that it Does, in Fact, Occur

**NOTE:**

When \( i = 1 \), \( i = \) Financial Negative Consequence

\( i = 2 \), \( i = \) Unsatisfactory Product Performance

\( i = 3 \), \( i = \) Physical Negative Consequence

\( i = 4 \), \( i = \) Psychological Negative Consequence

\( i = 5 \), \( i = \) Social Negative Consequence

\( i = 6 \), \( i = \) Time Loss

In bringing this to life, there are various approaches. Many researchers utilize 10-point, bi-polar rating scales to secure subjective probability assessments as well as importance judgments. Here are two examples:
1) To measure PNC …

“What do you think the chances are that, by purchasing and using (new) “brand 1,” you will incur an injury requiring medical attention?” Please answer by circling that number on the following subjective probability scale which best reflects your opinion.

<table>
<thead>
<tr>
<th>I Feel That There Is</th>
<th>I Feel Absolutely Certain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolutely No Chance</td>
<td>That a Serious Injury</td>
</tr>
<tr>
<td>At All</td>
<td>Will Occur</td>
</tr>
</tbody>
</table>

1  2  3  4  5  6  7  8  9  10

2) To measure INC …

“Imagine that you purchased such a new product as “brand 1” (or one similar to it). Also imagine that, soon after bringing it home, your next-door neighbor saw it and proceeded to make fun of you for having purchased it. How bothered would you be by this outcome?”

Please answer by circling that number on the following scale which best reflects your opinion.

<table>
<thead>
<tr>
<th>I Would Not be Bothered</th>
<th>I Would be Extremely Bothered and Upset</th>
</tr>
</thead>
<tbody>
<tr>
<td>or Upset at All</td>
<td></td>
</tr>
</tbody>
</table>

1  2  3  4  5  6  7  8  9  10

Methodology

Armed with the above-detailed, the consumer researcher is ready to address the research problem and decide upon the most appropriate research design, the most suitable opinion sampling procedures (including carefully defining the target market of interest; determining the sampling frame, the sampling technique, and the sample size), the survey method (snail mail?; personal interviews?; etc.), and collect the data. Please note again that this research is part of the concept development and testing stage of the new product development process. As such, there is not yet a tangible new product. Rather, the new product idea is revealed to consumers participating in the research project by way of word-based and sometimes diagram-based descriptions. The company is not to invest much money at this juncture of the new product development process.

Once the data is collected, analysis requires determining the mean and variance for OPR. If available, compare this result to any norms from previous studies. Of much more value is the calculation of means and variances for each specific negative consequence dimension separately for each of the two major variables: the PNC evaluations and the INC evaluations. Here, it is critical that the researcher uncover any and all specific negative consequence dimensions that are perceived to be both highly probably and
to be extremely upsetting (if, in fact, the negative consequence did occur). Such joint occurrences can be called “Danger Signals” in that without efforts to successfully modify the target market’s perceptions, the perceptual hurdle that a danger signal represents is likely to be so significant that successful introduction of the new product under consideration would be highly unlikely.

Following is a hypothetical example to illustrate how to array the means in a 6 x 2 summary matrix and to also illustrate what is meant by a “danger signal.”

**An Example to Illustrate a “Danger Signal”**

<table>
<thead>
<tr>
<th>Components of Perceived Risk</th>
<th>MEAN PNC</th>
<th>MEAN INC</th>
</tr>
</thead>
<tbody>
<tr>
<td>The GENERAL NEGATIVE CONSEQUENCE DIMENSIONS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINANCIAL</td>
<td>1.75</td>
<td>7.25</td>
</tr>
<tr>
<td>PERFORMANCE</td>
<td>8.85</td>
<td>9.20</td>
</tr>
<tr>
<td>PHYSICAL HARM</td>
<td>1.50</td>
<td>9.39</td>
</tr>
<tr>
<td>PSYCHOLOGICAL</td>
<td>1.50</td>
<td>9.01</td>
</tr>
<tr>
<td>SOCIAL</td>
<td>6.20</td>
<td>2.45</td>
</tr>
<tr>
<td>TIME</td>
<td>3.95</td>
<td>3.25</td>
</tr>
</tbody>
</table>

In this example, the only general negative consequence dimension that achieves “hurdle status” is Performance. Here, the target market members collective opinion reveals that there is a very, very high subjective probability of a performance-related negative consequence occurring if purchase and use of the new product were to take place, and (when asked to look ahead and to assume that a performance-related negative consequence would, indeed, occur following new product purchase and use) the sampled members of the target market also are of the collective opinion that such an outcome would bother them very, very much. Ouch. This certainly represents a major hurdle to successful introduction of a new product.
This is not the result that the organization hoping to bring the new product idea successfully to market wants to see. On the other hand, discovering this “hurdle” so early in the process is actually a blessing. The company can now choose to either place this new product idea on the shelf for future examination, or it can pause, reflect, and endeavor to ascertain if there might be something constructive that the company could do in modifying the new product offering that would result in removing it from “hurdle” status. When the latter course of action is called for, the following strategy is suggested: strive to lower the target market’s PNC for each negative consequence dimension deemed a “danger signal.”

To do this, the new product development venture team is encouraged to identify one or more good-fitting risk relievers. Here we are referring to a device or an action, initiated by the seller, which significantly relieves the risk-related hesitancy to buy and serves as a catalyst to facilitate a positive purchase decision. Here are some examples of seller-initiated risk relievers:

- Provide a Free Sample to Target Market
- Develop a New or Improved Money-Back Guarantee
- Develop a New or Improved Service Warranty
- Use Rational Advertising and Show Results of Independent Tests
- Use Rational Advertising and Hire Credible Endorsers to Give Testimony
- Use a Comparison Advertising message framework.

The basic idea here is, for each and every “danger signal” uncovered in the original research, find out if there is a risk reliever that might be both cost effective and perceptually effective in lowering the target market’s PNC perception. In effect, the venture team is seeking the best matching risk reliever to combat the otherwise high PNC perception for the problem negative consequence. If such a match can be ascertained, add it to the description/diagram of the new product idea and re-do the entire study. If the outcome is a dramatic lowering of the PNC for the negative consequence dimension that was found to be the problem, then all is well, a green light has been secured, and the new product development process can proceed to the next step.

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