



## Extending prospect theory cross-culturally by examining switching behavior in consumer and business-to-business contexts

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### ABSTRACT

Prospect theory states that an individual in a loss situation is more likely to make a risky financial decision than when they are in a gain frame. Some researchers observe that Asians tend to have a more positive attitude toward risk in financial decisions than Westerners. The first of two studies tests these two phenomena. The study finds Singaporeans and Chinese to be less risk averse than Dutch and New Zealand people over both a gain and a loss frame when making a personal financial decision. A second study extends this finding to individuals in a business relationship switching suppliers, and finds that when switching is framed as a risky decision the same pattern of behavior occurs. New Zealand and American consumers are more risk averse than those from Japan and Singapore, who are more likely to change suppliers under both a gain and a loss frame.

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### 1. Introduction

Fundamental to modern marketing is the idea that many companies are no longer interested in simply making a sale, but focus on building lasting relationships with groups of clients in order to ensure an ongoing stream of profitability. A plethora of research identifies antecedents of a good relationship. Among these antecedents are satisfaction, trust, and many of the co-creation variables such as information sharing, personalization, customization and mutual participation.

Ensuring loyalty and reducing churn are two reasons for developing a strong relationship with key clients. Another way of expressing this focus is that companies are eager to reduce the incidence of their clients switching to some other provider. Although much research examines the switching costs facing brand defectors, several gaps in this literature exist. Business relationships are no less important in a global than in a domestic context, yet researchers largely ignore the cross-cultural differences in switching behavior.

This research informs two studies in the present report. The first study is confirmatory in nature, and seeks to establish differences between the attitude to economic risk in Western and Eastern countries. Some evidence supports the view that people in the more hierarchical, collectivistic Eastern countries have a more positive attitude to financial risk than their more individualistic, egalitarian, Western counterparts.

As attitude to risk is so fundamental to switching behavior, this research first confirms this cross-cultural difference in risk aversion. Consumers in the Netherlands, New Zealand, Singapore and China provide data for this study. The data is analyzed using Kahneman and Tversky's prospect theory framework (Kahneman and Tversky, 1979). The study provides evidence that this framework does indeed offer insights to financial risky decision-making behavior, and to highlight differences in attitude to risky decision-making between Easterners and Westerners over various environmental frames.

The second study builds upon the first. Data from a second multicultural sample (New Zealand, Singapore, Japan, and the USA) are utilized to test two ideas. The first idea is that Kahneman and Tversky's prospect theory framework extends to switching behavior, even though such behavior involves more than simply financial risk. Thus, risking a change of supplier is more likely in a loss frame than a gain frame. The second idea is that Easterners are more risk accepting than Westerners when considering such a change of supplier, and are therefore more likely to switch in either a negative or a positive frame.

### 2. Study one: cross-cultural financial risk aversion behavior

#### 2.1. Aversion to risk

Aversion to risk is a topic of interest to sociologists, economists and business psychologists. Expected utility theory (von Neumann and Morgenstern, 1944) may explain how individuals make decisions under risk. According to this theory, the decision-maker chooses between risky prospects by comparing their probable expected utility values; that is, the sum of the utility values of outcomes multiplied by

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their respective probabilities yields a weighted sum (Mongin, 1998). However, economists and psychologists report many examples of decisions involving risk that are inconsistent with expected utility theory (Starmer, 2000). The prospect theory (Kahneman and Tversky, 1979) largely replaces expected utility theory as the model of choice (Plous, 1993).

Decision theorists widely accept prospect theory. The theory was originally developed to explain financial risk aversion under either loss or gain situational frames, but has been applied to many other risky decisions. Unlike expected utility theory, the prospect theory suggests that people interpret outcomes not as final states but as gains and losses relative to a (positive/gain or negative/loss) reference point (Aggarwal and Zhang, 2006; Kahneman and Tversky, 1979; Tversky and Kahneman, 1986). A graphical representation results in the well-known asymmetric value function, which illustrates the point that most people are more risk averse in a gain frame than they are in a loss frame. This makes intuitive good sense to most people. A gambler who wins a substantial amount of money is often reluctant to risk it on another bet; the same punter who has lost a substantial amount of money may well be tempted to risk yet more money in an optimistic bid to recoup his or her losses (Jervis, 2004; Levy, 1997).

## 2.2. The East versus West issue

People from many Eastern cultures are apparently less risk averse than those from Western cultures and, although there is ongoing debate, there do seem to be several potential explanations. The “cushion hypothesis” suggestion of Weber and Hsee (1998), for instance, proposes that social networks in the more collectivistic cultures serve as a mediating factor between culture and risk preference. Thus an individual in a more collectivistic society, or one with a strong extended family structure, might see an opportunity for spreading financial loss and therefore develop a more positive attitude to risk. Other researchers mount similar arguments. For example, Yates et al. (1996) and Hens and Wang (2007) point to a higher degree of uncertainty avoidance in many Asian countries compared to Western, which they believe could lead to an overconfidence bias in their probability judgments. Arkes et al. (2008) call for investigations into the extent to which prospect theory holds in Eastern countries, in the hope that cross-cultural differences in the adaptation of positive and negative reference points may help explain the apparent variations in market behavior across countries.

In fact, at the time of Arkes' call several authors report applications of prospect theory cross-culturally. Xie and Wang (2003), report a study of Chinese risk perception and risk choice patterns using a prospect theory framework, but they are more concerned with the underlying motivational factors explaining Chinese risk behaviors than conducting cross-cultural comparisons. Brumagim and Wu (2005) conduct an investigation to identify differences in the pattern of risk aversion, using Kahneman and Tversky's framework, between China and the United States. Their work is not conclusive; this could partly be attributable to the use of a student sample, partly to using an instrument which only requires a dichotomous answer and therefore places limits on statistical analysis or, possibly, because the economic risk involved was not personal, but framed as business risk.

The study reported here concerns personal attitudes to risk in a financial situation and so more closely replicates Kahneman and Tversky's original prospect theory work, and answers Arke's call more directly, than does Xie and Wang (2003) or Brumagim and Wu (2005). The purpose of the research is to investigate the difference between Eastern and Western cultural groups regarding attitude to risky economic decisions. Specifically, answers are sought to two Research Questions; are respondents more adverse to risk in a positive rather than a negative frame and, second, are Eastern respondents less risk adverse than Western over both positive and negative frames. If these Research Questions are answered positively, then the way lies open for

a second research study, concerning (risky) switching behavior across different cultural environments.

## 2.3. Research strategy

Citizens from the Netherlands, New Zealand, Singapore and China responded to questions indicating their risk behavior in four personal economic scenarios. These scenarios create high loss, loss, gain and high-gain frames; each person is then given the choice of a further gamble using some of their winnings (or losses). The research instrument then goes on to seek preference for these choices on a seven-point Likert scale. This method allows interpretation of risk behavior through a statistical analysis of variance.

## 2.4. Sample and data-collection procedure

Holland and New Zealand score very high on individualism and low on power distance, whilst Singapore and China exhibit opposite behavior (Hofstede, 2009). Even though the literature includes vigorous debate regarding the validity of Hofstede's cultural dimensions in recent years (McSweeney, 2002), both his own rebuttal (Hofstede, 2002) and the comments of other cultural researchers (e.g. Soares et al., 2007) leave the door open to the use of the dimensions to at least differentiate between cultures with more than marginal differences in their dimensional ratings.

The research team recruited respondents conveniently from the general urban population in these countries. One of the authors or, if this was linguistically infeasible, a trained assistant of the same language-group as the respondent, administered the questionnaires in each country. Most interviews were street- or mall-intercepts, but some were collected from friends or neighbors. The questionnaire is very short and nonthreatening, and there were no difficulties in gaining responses.

In spite of the convenient nature of the sample, wide-spread age and rough parity among genders occurs (Table 1). The sample size was determined in order to yield sufficient statistical power to conduct an ANOVA. There is between-nation similarity between the gender and age distribution, so that differences in risk attitude is ascribable reasonably to the cultural environment.

## 2.5. Research instrument

The original questionnaire is designed in English, but includes translations into Dutch and Chinese (Singaporeans use English as their first language); back-translation reveals no language-related problems. The opening scenario asks respondents to select their preference for a sure gain of \$100 (or the local currency equivalent) or for a 50% chance to win \$200 and a 50% chance to win nothing. This simple task repeats for a rating of a sure gain of \$1000 (or the local currency equivalent) or for a 50% chance to win \$2000, and then the same choices framed negatively (a sure loss of \$100/\$1000 or a 50% chance of either a loss of \$200/\$2000 or no loss).

After each choice-set, participants were asked to rate their preferences for both choices on a seven-point Likert-type rating scale anchored by “Agree strongly” and “Disagree strongly.” Simple questions asking the age of the respondent and their gender complete the

**Table 1**  
Sample statistics, study 1.

Country	N	Women	Men	Mean age (years)	Age range (years of age)
Holland	80	43	37	27	17–62
New Zealand	50	27	23	31	17–68
Singapore	80	45	35	28	17–59
China	77	43	34	29	17–59

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