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Determinants of International Equity Entry Mode: An Empirical **Analysis**

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Determinants of international equity entry mode: an empirical analysis. Ruth Clarke; Fernando Robles; Syed Akhter; Marcilio Machado.

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ABSTRACT

This empirical paper tests hypotheses exploring the use of equity investment in international market entry by US-based firms. We first establish the respondents' use of equity or non-equity, and their international presence, and then proceed to test for determinants of investment. Using transaction cost theory and resource base theory we examine the influences of asset specificity, tacitness of strategic resources, country similarity, business similarity, environmental uncertainty and behavioral uncertainty on firm decisions to make equity investments. Six hypotheses are presented and tested on a sample of self-identified firms engaged in international business. The results for the exploratory study are significant for one hypothesis, and discussion follows regarding the lack of confirmation of the theory with this data set.

Keywords: International Entry Mode; Transaction Costs; Resource Based Theory.

TESTING INTERNATIONAL ENTRY MODE DETERMINANTS OF EQUITY INVESTMENT

1. INTRODUCTION

This paper reports empirical research which first establishes the international presence of the firms studied and then examines the internal strategic and external environmental influences on the decision to use equity or non-equity in entry mode choice relating to international expansion. The strategic decision to venture into new markets in the international arena considers the impact on the organization and overall firm strategic direction as well as the demands of the new market and the structure of the international environment. In particular, entry mode strategy is generally concerned with organizational control over foreign operations, the investment risk involved and resource commitment required (Zhao, Luo and Suh, 2004). We build on established work in entry mode theory (Akhter and Robles, 2006), referring to the theoretical frameworks of transaction cost theory (Williamson, 1975; Agarwal and Ramaswami, 1992), and resource-based theory (Barney, 1991; Anand and Delios, 2002). Transaction cost theory advocates selecting a governance form to minimize costs associated with governing and monitoring operations and transactions. The resource-based perspective emphasizes the difficulty of codifying and transferring resources and knowledge through market transactions alone in the entry mode choice. The study builds on previous conceptual work presenting a series of propositions for testing for collaboration strategies (Akhter and Robles, 2006) and in this study narrows the focus to equity or nonequity investments only. The determinants of equity investment in international markets investigated are asset specificity, tacitness, country similarity and business similarity, environmental uncertainty and behavioral uncertainty.

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2. LITERATURE REVIEW

When the firm makes an international market entry decision it must consider the trade-off between control, return potential, risk exposure, and resource commitment considerations (Anand and Delios, 1997; Hennart and Reddy, 1997; Brouthers and Brouthers, 2003). Control allows firms to improve their competitive position and maximize the return on their assets and skills (Gatignon and Anderson, 1988; Benito, 1996). Demand for higher control requires firms to commit a higher level of resources, which increases risk exposure (Hill, Hwang, and Kim, 1990). As such, the firm's disposition to invest equity depends on its perception that risk can be reduced without exposing critical resources to partners (Akhter and Robles, 2006; Woodcock, Beamish, and Makino, 1994). Cultural distance may lead to a desire for a higher level of equity ownership, but equally risk exposure may lead to a desire for greater flexibility (Kim and Kwang, 1992; Grosse and Trevino, 1996) and less equity investment.

As firms achieve a competitive advantage by leveraging their competency in the marketplace, the protection of competency through control over decision making becomes critical. On the other hand, uncertainty in the host country can create risk and, thus, its management through equity or a non-equity position becomes salient to firms. Internal competency and environmental uncertainty thus encompasses both firm-related and market-related perspectives. We explore the influence of these constructs on the decision to enter an international market with or without an equity position.

2.1 Asset Specificity

According to transaction cost theory, firms make specific investments to facilitate exchange (Williamson, 1975). When firms deploy these resources in host countries they will be concerned about the risk of maladaptation and opportunism. Transaction costs will increase with higher asset specificity requiring efforts to supervise and monitor assets. Research evidence supports a negative relationship between asset specificity and the level of equity invested. Anderson and Coughlan (1987), for example, find that firms are more likely to use wholly-owned subsidiaries than independent distribution when their products have more proprietary content and are more differentiated. Klein et al., (1990) finds that exporters are more likely to use equity investment than independent export channels as asset specificity increases. We test the following hypothesis:

Hypothesis 1: The greater the asset specificity, the higher the likelihood that firms will use an equity investment in international market entry.

2.2 Tacitness of Strategic Resources

The resource-based view of firms suggests that tangible and intangible resources lead to internal competencies (Barney, 1986; Wernerfelt, 1984) and sustainable competitive advantage which generates above-normal rates of return (Shoemaker and Amit, 1997). Tacit resources are hard to codify and thus are hard to replicate (Polanyi, 1958), while explicit resources can be codified and can be replicated easily, not only within the organization but also by competing firms. The firm can replicate and control strategic assets in their new venture in another country, or it can take advantage of local partners' capabilities (Andersen, 1997; Madhok, 1997). Since the goal is to preserve the value of the strategic resource, firms will prefer full control through the use of equity when the resource is tacit. On the other hand, without the use of equity it may be more efficient to transfer strategic resources to foreign partners if these resources are explicit. Based on these arguments, we test the following hypothesis: Hypothesis 2: The greater the tacitness of strategic resources, the higher the likelihood that firms will use an equity investment in international market entry.

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2.3 Country Similarity

The cultural context of a host country strongly influences the firm's successful establishment. If firm competencies and cultural context are compatible the easier the ability of the firm to generate rent (Tallman, 1991). Kogut and Singh (1988) suggest that firms reduce complexity by entering into equity based arrangements, while in a culturally similar country, the cost of adjustments will be low and the firm will be able to exploit its competencies and offerings without equity. We test the following hypothesis: Hypothesis 3: The greater the cultural context similarity between home and international markets, the lower the likelihood that firms will use an equity investment in international market entry.

2.4 Business Similarity

Considerable variations in organizational culture both within a country and across countries force firms to judge the compatibility of potential partners. Similar cultural values and routines may lead to less prohibitive adaptation costs, but when the partner's cultural values and routines are dissimilar, adaptation costs due to communication ineffectiveness can be prohibitive (Boyacigiller, 1990). Here we test the following hypothesis regarding business similarity: Hypothesis 4: The greater the business difference between home and international markets, the lower the likelihood that firms will use an equity investment in international market entry.

2.5 Uncertainty

Uncertainty is divided into environmental uncertainty and behavioral uncertainty. Exogenous environmental developments in technology, competition, regulations and other external factors, shift conditions in which firm decisions are made (Folta, 1998). The impact of uncertainty on mode of entry has been explored for both service and manufacturing firms with mixed results (Brouthers and Brouthers, 2003; Ekeledo and Sivakumar, 1998). Miller (1993) identifies five categories of environmental uncertainty: macroeconomic, political/governmental, supply, product market, and competition. Given previous mixed results with this concept of uncertainty we use individual measures of the five dimensions and collapse them into a single dimension of uncertainty, and test for behavioral uncertainty.

Macroeconomic uncertainty is the unpredictability of fluctuations in economic activities and prices in a host country (Miller, 1992). In order to manage these risks, firms need strategic flexibility to make operational adjustments (Jacque, 1981). We argue that with conditions of uncertainty, strategic flexibility can be obtained by the firm with less equity participation (Sutcliffe and Zaheer, 1998).

The political environment is affected by changes in regulations which create trade barriers, and may affect the firm's ability to transfer assets or profits, or may result in unilateral cancellation of contracts (Brewer, 1983). Institutional frameworks affect firm strategic choice, and when investments are taking place in an emerging economy with developing institutions and weakened controls, it cannot be assumed that a market-based framework is in place (Scott, 1995). Fundamentally, a comprehensive system of commercial law is imperative for a well-functioning market system. Empirical evidence indicates that when country risk is high, firms are more likely to use lower levels of equity participation or use no equity investment (Aulakh and Kotabe, 1997; Bell, 1996; Luo, 2001; Kim and Hwang, 1992; Gatignon and Anderson, 1988; Benito, 1996).)

Vertical integration is positively associated with environmental uncertainty (Harrigan, 1985; Klein, 1989; Walker and Weber, 1987). However, recent studies in the supply chain literature show an

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increased preference for outsourcing and de-verticalizing the firm (Fawcett and Magnan, 2002). With the global expansion of supply chains, increased trade liberalization, global economic integration, and increased global supplier connectivity, firms have increased their non-equity collaborative efforts with suppliers to manage uncertainties. Greater efficiencies and responsiveness of supply chains to demand and input price volatility make this an attractive option. Therefore we argue that firms will seek flexibility and efficiency in such an environment through non-equity based arrangements.

Product market uncertainty is due to unexpected changes in consumer demand, lack of availability of complementary products, and the presence of substitute products (Miller, 1992). Under conditions of high demand uncertainty, the risk of having too much excess capacity makes firms opt for strategic flexibility in outsourcing supply (Harrigan, 1985). In essence, when demand uncertainty in the foreign country is high firms will seek to minimize resource commitments (Kim and Hwang, 1992) and remain strategically flexible (Kulkarni, 2001; Ghemawat, 1991).

Competition uncertainty refers to the unpredictability of the future state of competition in international markets (Miller, 1992; Shroff, 2002), with high competition volatility firms are less likely to embrace vertical integration, in an effort to avoid costly overhead and to maintain strategic flexibility. Conflicting evidence is presented regarding the likelihood of equity use in the face of competition uncertainty in the host country (Ahmed et al, 2002), so when the intensity of competition is high, multinational firms favor entry modes that involve low resource commitments, such as licensing (Kim and Hwang, 1992; Kulkarni, 2001), and as competitive uncertainty in the host country diminishes firms are more likely to use wholly-owned subsidiaries (Kulkarni, 2001). We test the following hypothesis for environmental uncertainty.

Hypothesis 5: The higher the perceived environmental uncertainty, the lower the likelihood that firms will use an equity investment in international market entry.

2.6 Behavioral Uncertainty

Firm behavioral uncertainty refers to the inability of managers to predict the opportunistic actions, plans and decisions of potential partners or firm members (Williamson, 1975). Such uncertainty arises from perceived opportunistic and self-seeking behavior of venture partners, and can be reduced by contractual, non-contractual agreements and trust building to some extent. Internal uncertainty comes from performance ambiguity; inability to assess the quality and extent of partners contribution to the agreement; inability to screen, select, and choose reliable and effective partners; and a lack of information about potential partners and about the regulatory and legal environment in the target country (Bucklin and Sengupta, 1993; Stump and Heidi, 1996; Woodcock, Beamish, and Makino, 1994). In the event of fluid changes in governmental institutions, managers take into their own hands such matters as seeking information, obtaining finance, interpreting regulations and enforcing contracts (Khanna and Palepu, 1997). Given these conditions, firms are more likely to invest equity when internal uncertainty is high. Therefore, we test the following:

Hypothesis 6: The higher the perceived behavioral uncertainty, the higher the likelihood that firms will use an equity investment in international market entry.

3. METHODOLOGY

We use a sample of 560 self-identified firms engaged in international business. Senior managers received a mailed paper questionnaire and a cover letter asking them to participate in the study, and a follow up email in one week. Respondents were asked to relate their answers to their last international

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market entry decision. We received a total of 42 usable questionnaires with complete data, yielding a response rate of 6.3%. We now proceed to present the statistical analysis and discussion of findings.

3.1 Statistical Analysis

The international presence of the sample is assessed by three commonly used measures of firm presence; percentage of firm's revenues in international markets; percentage of employees engaged in international activity; and percentage of firm's assets in international markets. Table 1 shows an even distribution of the revenue dimension, a more bifurcated result on the employee dimension and a much lower percentage on the location of international assets. Every firm had some international presence on at least one of these dimensions, although source of revenues is a clearer indicator of international presence than employees or assets.

Respondents' perception of their achievements in terms of performance success is measured by five items; on reaching objectives in regards to level of sales obtained; rate of sales growth after entry; level of profits obtained; achievement of market goals set for this country; and overall satisfaction with effort for this country. Analysis shows there is no significant difference between firms with equity investment or non-equity investment. Next we establish the dependent variable of the study as equity or non-equity participation in the last international market entry by a direct measure of use of equity or no use of equity. The sample splits into approximately two equal groups in terms of use of equity. The independent variables of the study are asset specificity, tacitness of strategic resources, environmental uncertainty, behavioral uncertainty, country similarity, and business similarity.

120
155-2
9.62%
7.8%

For the explanatory variables, we use established measures and scales commonly used in mode-of-entry research, 7 point ordinal scales, Likert. The Cronbach alpha test

establishes the internal reliability of each variable and the item-to-total correlation of each component of the construct (Table 2). Items with low item-to-total correlations (below 0.30) are eliminated to achieve total scale reliability greater than alpha equals 0.80, as recommended (Nunnally, 1967), and are not shown in Table 2. Dimensionality of the variables is assessed through exploratory principal components factor analysis. Factors with an eigenvalue >1 are retained and specific items with factor loadings of more that 0.50 are used (Hair et al, 1998; Green, 1978. All measures are found to be unidimensional and deemed reliable for analysis.

Asset specificity (AS) has an alpha coefficient of 0.92 and a factor analysis extracts one factor accounting for 0.69 of the variance from 7 items. The tacitness of firm strategic resources (OT), 3 items measuring the transferability, replicability and imitability of strategic resources, shows an alpha coefficient of 0.81 and a single factor explaining 0.73 of the variance is extracted. Country similarity (CS) is measured through a 7 item semantic differential scale assessing the degree of similarity or difference between the country environment of the firm and that of the last market entered in terms of their economic, business, technological, cultural and political environments, and consumer preferences and distribution channels. 3 items with an item to item correlation below 0.3 are dropped. The alpha coefficient is 0.78 and a single factor extracted 0.56 percent of the variance

Business similarity (BS) is measured by a 14 item semantic differential scale assessing the degree of similarity or difference in business processes and practices of the home and target market. 5 items are retained with above item to item correlation of 0.30; these are finance, strategic planning, marketing operations, team capability and training capability. This scale shows high internal consistency with an alpha coefficient of 0.89 and a single factor extracted 0.70 percent of the variance.

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Environmental uncertainty (EU) is measured by a 10 item semantic differential scale with 1 item scaled on stable to volatile and 9 items scaled from predictable to unpredictable. We measure uncertainties in the environment for macroeconomic, political, regulatory, competitive, supply and product/market demand. The dimensions are measured by single items. Factor analysis results in a 1 factor solution which shows high internal consistency, with a Cronbach alpha of 0.85. The items loading are business environment, financial environment, political environment, legal environment, supply and technical environment.

We measure behavioral uncertainty (BEU) with 9 items. 7 items have a higher than 0.30 item to item correlation, and the scale is highly reliable, with an alpha coefficient of 0.88, a single factor extracted 0.60 of variance.

We now proceed to analyze these refined measures with regression techniques. With the assumption of nominal scale properties for the dependent variable equity investment measured as a dichotomy, we use a binary logistic regression as recommended for this situation (Cox, 1970). Logistic regression has been used extensively in mode-of-entry research (Agarwal & Ramaswami, 1992; Kim & Hwang, 1992). We estimate a full model using logistic regression with all six explanatory variables to test the impact of each variable on propensity to invest equity in the presence of other variables.

4. FINDINGS

The results of the logistic regression analysis using the direct measure of equity or non equity investment with each of the derived factors representing six explanatory variables are presented in Table 3.

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	RELIABILITY ANALYSIS OF OPERAT	DONAL MEASURES	1
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		Correlation	
Asset Specifying	Ecoprerary properses	0.80	r 52
-ASi	Developing proprietary (and	2.83	
	Adapting marketing systems	5-4	
	Adapting products	0.60	
	Contraction processes	୍ ୧୭୦	
	Specialized ogestic systems	59.4	
	Specific humas removable	7.52	
Tackhess .OT:	Difficulty or transferring consending	0.73	C 81
	Difficulty in representing knowledge	9.73	
	Differently in intelliging and wedge	F.3.0	
Country Servicedy	Business environment	3.57	0.78
\$5·	Fectinological episionimetri	. 546	
	Cutural efficientment	0.10	
	Polocal energyment	0.85	-
	Destribution channels	0.38	
Bus ress Semiante	F-rancal propesses	2.61	C 89
-B5-	Strategic planning	୍ର ପଞ୍ଚ	
	Marketing operations	951	
	Team capacity	9.75	
	Transing tagrately	0.44	:
Environmental	Busiese environment	0.96	0.85
stripe treety (5.5)			
	Frace	3/9	
	+test-cal	2 (≠	•
•	Lega	` G#1	
	Supply and Distriction	0.57	
	Ter terrain	0.57	
Benaviora	identification of puterbal compars		C 88
ancertainly Bu		_	
4	Swemich of premise parents	3.0	
	Misuse of proprietary knowledge	3.66	:
•	Partner's injecting obligations	180	:
	Standards resources seed	8.70	<u>:</u>
	Partier's performance	£ 70	-
	Enforcing centractual blagations	2.74	•

The results show significance for the asset specificity factor but with a negative sign. We find that Hypothesis I is not supported, and instead the findings support the idea that the greater the asset specificity, the lower the likelihood that firms will use an equity investment in international market entry. This finding is directly contradictory to research by Anderson and Coughlan, 1987, and Klein et al, 1990. Given the time period between this research and previous research on the topic, we might extrapolate that firm knowledge of international market entry modes has at the least, changed considerably over time.

Hypotheses 2 through 6 are not supported by our statistical analysis which results in non-significant p values for each

factor explanatory variable. This is an unexpected finding, given our detailed theoretical base. In general we believe that non-response bias is the most likely explanation for the lack of significant findings and therefore only present each of the hypotheses briefly here with some suggestions for other explanations for the lack of support at this stage.

5. DISCUSSION

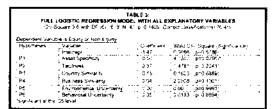
Literature on entry mode choice in new international markets suggests that the firm's decision to make equity investments or not is based on conditions of specificity, uncertainty, and tacitness. This research focuses on the question—under which of these conditions do firms make decisions on equity

investment in entry mode choice? The study tests the determinants of equity investment building on previous work by Akhter and Robles (2006) on collaboration in international entry mode, but with a reduction of focus to equity investment alone. We ask the respondents to focus on their most recent international market entry decision. Overall, the regression results are not significant, except for the significance of a negative finding for Hypothesis 1. The concepts captured by the six factors determined in the study are reliable and show internal validity, but do not show significance as explanatory variables for equity investment. Other factors, such as changing global supply chain links and the development of more sophisticated familiarity with international markets across the globe may lead to a different set of strategic decisions for firms in the 21st century regarding equity or non-equity investments in international market entry.

6. LIMITATIONS

We suggest that sample size and variability of response is inadequate to measure the number of variables involved. Secondly given the low response rate, non-response bias is considered to be high and directly linked to lack of support of the hypotheses. Thirdly these firms are quite different in demographic profile, selected from a mix of service, manufacturing and combination manufacturing and service. Additionally variance in the degree of internationalization may be an issue, with investments in other countries ranging from firms with one country investment to firms with 200 country investments. A larger sample size would allow for adjusting for firm size and by implication, amount of experience and range of investment types. The sample originally entered into 14 different countries, with 30.95 percent of entry into China, which might be considered a particular case for entry, given the legal infrastructure and level of implementation of law currently in place. Respondents indicated that their last country entry was made to 27 different countries, with a wide dispersal of the data. Strategic decisions related to equity investment are tied to the specific country environment, but given this wide dispersal of countries entered, and corresponding environments, our findings are most likely compromised. The non-significant determinants, tacitness of strategic resources, environmental uncertainty, behavioral uncertainty, country similarity, and business similarity, are concepts based on the literature which discusses international market entry, from transaction cost economics and resource based theory. We assert that further refinement of the survey instrument and sample population will clarify the concepts and produce a stronger result which will support our propositions.

7. IMPLICATIONS



The research implications for the study are to encourage us to develop our survey instrument to account for the issues identified in the previous section. Further trials of our conceptual framework are being made in multiple country sites, both in developed and developing countries. In this study the focus is on the international market entry of US-

based firms and the expected impacts on the decision to use equity investments. We suspect that the increasing sophistication of firms in the international arena is reducing the reluctance to commit resources to uncertain environments, but at the same time is encouraging a greater amount of outsourcing, both through equity and non-equity based investments. As firms become increasingly global, the determinants of entry mode choice will be modified by increasing knowledge of and experience with international markets and partners. Strategic decisions will be made by drawing on diverse individual country nationals for input, de facto creating multinational teams and decreasing the ties to home country views and limits to decision-making.

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12.5%

TABLE 1

DEMOGRAPHICS: FIRMS INTERNATIONAL PRESENCE

Scale	0-25%	26-49%	50-74%
Revenues from foreign markets	26.83%	21.95%	17.07%
Employees engaged in international activity	43.90%	14.63%	2.44%
Firm's assets in international markets	50.00%	22.50%	15.00%
Scale	75-100%		
Revenues from foreign markets	34.15%		
Employees engaged in international activity	39.02%		

TABLE 2

RELIABILITY ANALYSIS OF OPERATIONAL MEASURES

Firm's assets in international markets

		Item to T otal
Variable	Items	Correlation
Asset Specificity (AS)	Proprietary processes Developing proprietary data Adapting marketing systems Adapting products Coordination processes	0.80 0.83 0.79 0.80 0.80

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Tacitness (OT)	Specialized logistic systems Specific human resources Difficult in transferring knowledge Difficulty in replicating knowledge	0.64 0.62 0.73 0.73
Country Similarity (CS)	Difficult in imitating knowledge Business environment Technological environment Cultural environment Political environment	0.53 0.65 0.46 0.70
Business Similarity (BS)	Distribution channels Financial processes Strategic planning Marketing operations Team capability Training capability	0.38 0.81 0.81 0.67 0.79
Environmental Uncertainty EU	Business environment	0.66
-	Financial Political Legal Supply and Distribution Technical	0.59 0.64 0.61 0.67
Behavioral Uncertainty BU	Identification of potential partners	0.58
	Selection of potential partners Misuse of proprietary knowledge Partner's meeting obligations Standards being maintained Partner's performance Enforcing contractual obligations	0.71 0.56 0.80 0.70 0.74
Variable	Items	Cronbach Alpha
variable	1 Cellis	
Asset Specificity (AS)	Proprietary processes Developing proprietary data Adapting marketing systems Adapting products Coordination processes Specialized logistic systems	0.92
Asset Specificity	Proprietary processes Developing proprietary data Adapting marketing systems Adapting products Coordination processes Specialized logistic systems Specific human resources Difficult in transferring knowledge Difficulty in replicating knowledge	•
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Scale Revenues from foreign markets Employees engaged in international activity Firm's assets in international markets	75-100% 34.15% 39.02% 12.5%		

TABLE 2

RELIABILITY ANALYSIS OF OPERATIONAL MEASURES

Variable	Items	Item to Total Correlation
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> Standards being maintained Partner's performance Enforcing contractual obligations

* below 30% dropped

TABLE 3:

FULL LOGISTIC REGRESSION MODEL WITH ALL EXPLANATORY VARIABLES

Chi-Square 9.6 with DF (6) =6.9, N=42, p=0.1409, Correct classifications=76.4%

Dependent Variable is Equity or Non-Equity

Hypotheses	Variable Intercept	Coefficient	Wald Chi-Square Significance 0.3086 =0.5786
P1	Asset Specificity	-0.50	4.7307 (p=0.0296) *
P2	Tacitness	0.37	1.4781 (p=0.2241)
P3	Country Similarity	-0.15	0.1603 (p=0.6889)
P4	Business Similarity	0.64	2.2908 (p=0.1301)
P5	Environmental		
	Uncertainty	0.00	0.00 (=0.9993)
P6	Behavioral		
	Uncertainty	0.05	0.0193 (p=0.8894)

* significant at the .05 level

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