DISCONFIRMATION AND SATISFACTION IN THE LIGHT OF CULTURE - AN ANALYSIS FOR CHINESE AND U.S. AMERICAN CONSUMERS

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ABSTRACT

Literature indicates that culture influences consumers' expectations on a product or service, how they perceive performance, handle disconfirmation resulting from the comparison of expectations and perceived product or service performance, as well as their satisfaction. The study compares the confirmation/disconfirmation-paradigm between Chinese and U.S. American consumers. The influence of Hofstede's (2001) cultural dimension on disconfirmation and satisfaction is examined. The results show that the process of customer satisfaction differs across national borders. For U.S. American consumers the perceived performance has a stronger effect on satisfaction than for Chinese consumers. A direct influence of expectations on satisfaction can be observed only for Chinese consumers. Uncertainty avoidance and power distance influence customers' disconfirmation and satisfaction. The findings of the study contribute to current marketing literature and management practice in order to explain differences in cross-cultural consumer behaviour. The implications relate to the management of expectations, product development, and quality management.

INTRODUCTION

Customer satisfaction is one of the key-elements of a company's success. It is widely accepted that customer satisfaction/dissatisfaction influences repurchase intentions, frequency of use, loyalty/disloyalty, word-of-mouth communication, cross selling, and price sensitivity (e.g., Cronin & Taylor 1992). Literature indicates that there is a positive relationship between changes in customer satisfaction and changes in productivity as well as changes in profitability (Anderson, Fornell & Rust 1997). Taking these findings into account, a focal point for a producer of durable high-involvement products such as cars should be the satisfaction of consumers needs resulting from, in the customers' perspective, more than adequate performance of the good. Identifying the customers' needs, wants, and expectations and to satisfy these is already a challenge in the home country but even more complex beyond national borders. So is culture assumed to be an influencing variable on the determinants of customer satisfaction (Donthu & Yoo 1998; Liu et al. 2001; Reimann et al. 2008). So far, cross-cultural research on customer satisfaction has been limited to selected aspects of satisfaction and its determinants. The purpose of our study is to compare the confirmation/disconfirmation-paradigm (C/D-paradigm, Oliver 1980) across national borders to systematize potential international, cross-cultural differences of the model. The experimental study offers a data set to analyze the impact of the cultural background of Chinese and U.S. American consumers on the constructs disconfirmation and satisfaction. In that context, the aim of our study is twofold: the first objective is to examine if the structure of the C/D-paradigm differs between the countries. The second objective is to investigate if culture has an influence on disconfirmation and satisfaction. Further, the study follows the call for research to investigate the determinants of customer satisfaction for complex products (Szymanski & Henard 2001), here for the automobile industry. China and the U.S. were selected as target countries as they are of special interest for car manufactures. First, these markets are diverse with respect to market development. The U.S. American car industry is saturated and currently stagnating, whereas the Chinese marketed is rapidly growing. Second, the underlying national cultures are diverse, influencing the customer's behavior and hence, lead to various challenges for multinational companies. The findings of the study will add to current literature on customer satisfaction as well as management practices in order to explain differences in the consumer behavior of individuals from different national backgrounds. Implications of this study will relate to the management of expectations, disconfirmation and satisfaction, product development, and quality management considering interpersonal differences.

THE INFLUENCE OF CULTURE ON THE DETERMINANTS OF CUSTOMER SATISFACTION

With the introduction of the C/D-paradigm (Oliver 1980), an integrative frame for the emergence of customer satisfaction was established being base for numerous studies in the field of customer satisfaction (for an overview see Szymanski & Henard 2001). Churchill and Surprenant (1982) identified four relevant constructs of the C/D-paradigm which are expectations, performance, disconfirmation, and satisfaction. Satisfaction is the consequence of buying and using a product, comparing the rewards and costs of this process to its final outcomes (Churchill & Surprenant 1982). Customer expectations can be considered as (1) anticipation, meaning that expectations have a direct positive effect on customer satisfaction or (2) comparative references, which refer to a comparison standard against which the perceived performance is assessed (Patterson 1993; Szymanski & Henard 2001), leading to disconfirmation. This leads to the following hypotheses:

Hypothesis 1: The higher the degree of perceived expectations, the higher is the level of satisfaction.

Performance is next to expectations the second variable directly influencing satisfaction in positive direction (Halstead et al. 1994), resulting in the following hypotheses:

Hypothesis 2:   The higher the degree of perceived performance, the higher is the level of satisfaction.

Disconfirmation is defined as the difference between the perceived expectations and perceived performance (Churchill & Surprenant 1982). The comparison standard is the base for evaluation of the actual performance, i.e. the perceived performance. The individual's comparison standard is (1) confirmed when a product performance meets the expectations, (2) positively disconfirmed when the performance is better than expected, or (3) negatively disconfirmed when the performance is below the comparison standard. Disconfirmation is assumed to directly influence satisfaction (Churchill & Surprenant 1982). This results in the following hypotheses:

Hypothesis 3:   The higher the degree of perceived expectations, the higher is the level of negative disconfirmation.

Hypothesis 4:   The higher the degree of perceived performance, the lower is the level of negative disconfirmation.

Hypothesis 5:   The higher the degree of negative disconfirmation, the lower is the level of satisfaction.

With respect to cross-cultural equivalence of consumer satisfaction Reynolds and Simintiras (2000) highlight the three aspects (1) antecedent factors, (2) formation processes, and (3) behavioural outcomes to assess the comparability of satisfaction data. Considering the formation process, which is focal point of this study, the effect of differing cultural backgrounds, partly operationalized by Hofstede's cultural dimensions (power distance, individualism, masculinity vs. femininity, uncertainty avoidance, long-term vs. short-term orientation), are examined in several studies (e.g., Donthu & Yoo 1998, Furrer et al. 2000, Tsikriktsis 2002, Laroche et al. 2005). Reimann et al. (2008) found a significant moderating influence of uncertainty avoidance (to what extend uncertainty is tolerated with respect to future and ambiguous situations; Hofstede 2001) on the relationship of the perception of service quality and customer satisfaction. They state that customers from cultures with a low degree of uncertainty avoidance are more tolerant with respect to service defects. Therefore we assert that:

Hypothesis 6:   The higher the degree of uncertainty avoidance, the higher is the level of negative disconfirmation.

Hypothesis 7:   The higher the degree of uncertainty avoidance, the stronger will be the negative effect of negative disconfirmation on customer satisfaction.

As less literature exists discussing the influence of power distance, individualism, masculinity vs. femininity, and long-term vs. short-term orientation on aspects of the C/D-paradigm (e.g., Mattila 1999, Donthu & Yoo 1998) but culture is

considered as a holistic concept (Furrer et al. 2000) we also examine their influence on disconfirmation and satisfaction.

METHOD DESCRIPTION

To test for the hypotheses we used the experimental design of Churchill and Surprenant (1982) as the basic methodological approach. We manipulated three levels of perceived expectations and three levels of perceived performance resulting in a 3x3 factorial between subjects design. In customer satisfaction related research, an experimental design has the advantage to overcome the time lag between the expectation formation process, information gathering, the buying decision and the experience with the product while using it by manipulating the research subject accordingly. By means of information framing, the researcher has the possibility to develop different scenarios and with that, to place the subjects in a certain situation. This scenario approach is widely accepted (e.g., see Kopalle & Lehmann 2001, Chan et al. 2009). To simulate the process of customer satisfaction according to the C/D-paradigm, it was necessary to manipulate the perceived expectations and the perceived performance of the subjects. For that purpose, we conducted two pre-studies to (1) identify the five most important attributes of cars in the target countries (empirical online study, questionnaire) and (2) to find usable expressions to describe the performance levels of the selected attributes on a high, medium and low level (qualitative online study, freelistings). By means of the first study the attributes reliability, safety, fuel economy, overall manufacturing quality, and driving qualities were identified as most important in both countries and were used for the experimental study. Following Churchill and Surprenant (1982), we measured the four constructs, perceived expectations, perceived performance, disconfirmation, and satisfaction, using a multi-item, attribute specific measure for the five manipulated attributes. Table 1 gives an overview of all variables and items. The expectations and perceived performance related items are measured on a seven-point scale anchored at 1 = very inferior and 7 = very superior (e.g., "In your opinion, how will be the performance/quality of the just described subcompact car with respect to the following characteristics?"). The items for disconfirmation are measured on a seven-point scale with the anchor points 1 = much too low: it was better than I thought, and 7 = much too high: it was worse than I thought (e.g., "After the experience of the actual performance of the car, how do you rate your level of expectations of the following characteristics which you had in the beginning?"). The items for satisfaction (e.g., "How satisfied are you with respect to the reliability of the car?") were measured using a seven-point scale anchored at 1 = completely unsatisfied and 7 = completely satisfied.

We used the CVSCALE to operationalize culture. This tool is applicable to measure culture on an individual level (Yoo & Donthu 2002) which is an answer to the criticism to Hofstede's metric being claimed to be used to stereotype individuals according to their national background (e.g., Spector, Cooper & Sparks 2001). This instrument measures the five dimensions power distance (5 items, e.g., "People in higher positions should avoid social interaction with people in lower positions."), uncertainty avoidance (5 items, e.g., "It is important to closely follow instructions and procedures."), collectivism (6 items, e.g., "Individuals should sacrifice self-interest for the group."), long-term orientation (6 items, e.g., "Careful management of money (Thrift)"), and masculinity (4 items, e.g., "It is more important for men to have a professional career than it is for women.") on an individual level and is applicable for non-work related situations. A seven-point scale is used anchored at 1 = strongly disagree and 7 = strongly agree. For the dimension long-term orientation the seven-point scale is anchored at 1 = very unimportant and 7 = very important. To ensure a comparability of the subjects we asked for the possession of a driver's license, the access to car, age, gender and for further demographic information (nationality, nationality at birth, money at disposal) as control variables. The questionnaire was extensively pretested. Following common standards (Brislin 1986) we translated the questionnaire to the national languages of our sample countries.

The experiments were performed in the target countries by one of the researchers. The data was collected between March and June 2010. A student sample, consisting of undergraduate and graduate business students, was chosen as they represent young high-volume car buyers - an essential customer segment of the cooperating multinational car manufacturer. Students represent a homogenous group from an occupational-stage-of-life cycle (Furrer et al. 2000). The data was collected during class room sessions. After a short introduction of the researcher the students were asked to fill out the paper-pencil questionnaires voluntarily. The sample consists of 631 students with 318 subjects from China (62% female) and 313 subjects from the U.S. (53% female). The average age in the Chinese sample is 20.9 and in the U.S. sample 20.5. As expected, the respondents differ with respect to their experience with cars. Whereas in the U.S. sample 98% of the subjects have a driver's license and 77% of these do have access to a car, only 16% of the Chinese respondents possess a driver's license.

DATA ANALYSIS AND RESULTS

To check the intended manipulation of the perceived expectations and the perceived performance by means of the test and experience reports we performed ANOVAS with satisfying results showing significant group differencexs for all manipulation groups. The performed Tuckey-Kramer Test shows significant group differences between the high, medium, and low manipulations at the $p < .0001$ level. The results indicate an effective manipulation of the perceived expectations and perceived performance in both countries (Tables available upon request). Next to the manipulation checks, the examined variables were tested for construct reliability and factorial validity. We examined the data sets by applying confirmatory factor analysis (CFA) with AMOS 16 and the maximum likelihood estimation procedure. For both countries we observed similar factor structures. Table 1 provides the variables with their respective items, factor loadings, and the results of the reliability analysis. All factor loadings were statistically significant and showed squared multiple correlations above the .5 threshold. Next to Cronbach's alphas we estimated composite reliabilities reflecting internal consistency of the indicators measuring a particular factor (Fornell & Larcker, 1981). The required minimum composite reliability of .6 was achieved for all variables. The values for the Cronbach's alphas are at an acceptable level (Numelly 1978). Table 2 summarizes the results of the models' fit. The comparative fit index (CFI) and the root mean square error of approximation (RMSEA) were satisfying for both countries with .90 and .058 for the Chinese sample and .91 and .059 for the U.S. sample respectively. In the next step, we tested for group-invariance of the measurement models. As suggested by Steenkamp and Baumgartner (1998), we used multi-group confirmatory factor analysis (MGCFA) with the maximum likelihood estimation procedure to assess the invariance of the measures across the two countries. Table 2 illustrates the results of the MGCFA. The results of the first model (configural invariance) show an acceptable fit meaning that the factor structure is invariant across the two countries. In the second model, testing for metric invariance, we see that the constructs were measured adequately in both countries. The chi-square difference test ($\Delta\chi^2$ (37) = 143.48) is statistically significant at a $p < .001$ level, which indicates a noninvariance. Still, the CFI difference test show that the factor structure can be considered invariant across the two countries with ΔCFI = .008, which is smaller than the .01 cutoff point as proposed by Cheung and Rensvold (2002). The third model tests scalar invariance. The results of the model show an inadequate fit of the model. The comparison of the second and the third model proofed a scalar noninvariance. Table 3 presents the descriptive statistics and the mean values for the cultural dimensions. A complete correlation matrix for all variables is available upon request.

We used a two-stages least square regression analysis to test the hypotheses. Table 4 shows the results of the regression analysis. We also include a full interaction model for both dependent variables to enable a comparison of the regression results across the two countries. These models include interaction effects for all variables with a dummy variable for the U.S. For the model with disconfirmation as the dependent variable (1st step) we observe a significant positive effect of

the perceived expectations on disconfirmation in the U.S.-American sample ($p < .001$), providing support for hypothesis H3. For the Chinese sample the hypothesis is not supported. Still, the full interaction model shows no significant country-effects for the influence of perceived expectations on disconfirmation. The perceived performance has the expected negative effect on disconfirmation in both samples (U.S. $p < .001$, China $p < .01$) providing support for hypothesis H4. In the second model (2nd step), with satisfaction as the dependent variable, we observe the predicted negative effect of disconfirmation on satisfaction for both countries (U.S., China $p < .001$) supporting hypothesis H5. Hypothesis H2, assuming a positive effect of perceived performance on satisfaction can be observed for the U.S. ($p < .001$) and the Chinese sample ($p < .01$). The full interaction models shows significant group differences with a stronger effect of perceived performance on satisfaction in the U.S. sample ($p < 0.1$). The assumed positive effect of perceived expectations on satisfaction (H1) is only observable for the Chinese sample ($p < .05$).

To test the uncertainty avoidance-related hypotheses as well as the effects of the four remaining dimensions of culture ANOVAs were conducted with the cultural dimensions as independent variables. We performed a median split (Monga & John 2007) on our measures for the cultural dimensions to identify groups of high and low values. Table 5 displays the results for each of the nine experimental groups with disconfirmation and satisfaction as the dependent variables. In group 3, one of the groups in which a negative disconfirmation (expectations > performance) was manipulated, those individuals who are scoring high in uncertainty avoidance were significantly stronger disconfirmed than those scoring low in uncertainty avoidance, supporting hypothesis 6. Individuals that are scoring high in power distance are significantly less strongly disconfirmed than those who are scoring low in that dimension (group 2). Masculinity, collectivism and long-term orientation do not have an effect in the settings of negative disconfirmation. In group 8, one of the groups with a positive disconfirmation manipulation (expectations < performance), we observe a stronger positive disconfirmation for individuals who are scoring high in uncertainty avoidance than those scoring low, indicated by a significantly smaller mean value. Individuals scoring low in power distance show a stronger positive disconfirmation than those scoring high in that dimension, indicated by lower mean values for disconfirmation (groups 4 and 7). Again, masculinity, collectivism and long-term orientation do not have an effect. For satisfaction as the dependent variable, we observe high mean values in the positive disconfirmation settings (groups 4, 7 and 8) in case of high uncertainty avoidance and low mean values for individuals who are scoring high in power distance. Still, these findings are not significant. Considering the groups were confirmation was manipulated (groups 1, 5 and 9) we observe a significantly higher value for satisfaction in case of high uncertainty avoidance than for low uncertainty avoidance in group 5 but, contradicting to that, a significantly smaller value in group 9. In case of power distance we observe a significantly higher value for satisfaction for individuals that score high in that dimensions than for those scoring low (group 9). Individuals scoring high in long-term orientation show a significantly higher satisfaction than those scoring low in that dimension (group 1). For masculinity and collectivism we found no significant results. In the settings with manipulated negative disconfirmation we observe significantly lower values in satisfaction in case of high scores for uncertainty avoidance compared to low scores (supporting hypothesis 7) and in case of high scores in long-term orientation compared to low scores (group 3). No significant effects were found for power distance, masculinity, and collectivism.

CONCLUSION

The study aims at to show first, differences of the classical C/D-paradigm between countries, and second, the effects culture has on disconfirmation and satisfaction of individuals. In a first step we test the relationships between perceived expectations, perceived performance, disconfirmation, and satisfaction following the C/D-paradigm (Churchill & Surprenant 1982) for China and the U.S. We observe a positive effect of the perceived expectations on disconfirmation in the U.S. sample but not for the Chinese sample. The perceived performance has the expected negative effect on disconfirmation in both samples. With respect to satisfaction, we observe the predicted negative effect of disconfirmation

on satisfaction for both countries. The assumed positive effect of perceived performance on satisfaction can be observed for the Chinese and the U.S. samples. Still, we see a significantly stronger effect of perceived performance on satisfaction in the U.S. than in the Chinese sample. The major difference between the country samples is that the perceived expectations have a significant influence on satisfaction in the Chinese sample but not in the U.S. sample. Concluding from that, we see that Chinese consumers consider more the fulfilment of their expectations when it comes to customer satisfaction than the U.S. American consumers. For customers from the U.S. the perceived performance is more important for the assessment of satisfaction than for the Chinese customers. We prove that the relationships between the variables of the C/D-paradigm are different for the two countries. Already previous studies indicated a strong influence of expectations on satisfaction for Chinese consumers (Tam 2005). Future research is necessary to investigate why there are these observed differences in the model. Results of the conducted ANOVAs show an influence of Hofstede's cultural dimensions only to a very limited extend. The influence of culture in disconfirmation and satisfaction needs to be critically reflected. Only for a limited number of the experimental groups we find significant effects of uncertainty avoidance and power distance on disconfirmation. Hypothesis 6 is only supported in one of the nine experimental groups. We also find only for one of the experimental groups that individuals who are scoring high in power distance are significantly less strongly negatively disconfirmed than those who are scoring low in that dimension. We observe a strong positive disconfirmation for individuals who are high in uncertainty avoidance and low in power distance.

Limitations of our study refer to the use of an experimental design in the context of satisfaction research. Despite the advantages of the applied scenario approach it needs to be stressed that the subjects were set in fictive settings. It has to be stated that customer satisfaction is defined as a post-purchase construct as the actual satisfaction judgment is made after the customer used the product. In our experiment it was not possible to try and use the actual product. By means of fictive experience reports the perceived performance was only manipulated. It is not clear how much weight the respondents gave to the fictive test reports compared to the experience reports when it came to their disconfirmation judgment. Also the use of a student sample in the context of our study is critical. Even though they are considered as future car buyers and hence, are an important target croup of car manufactures, results of this study cannot be generalized for other consumer segments. To draw clear conclusions on the impact of culture on the C/D-paradigm data from more than two countries is required. For future research on the determinants of customer satisfaction with respect to cross-cultural differences market data is crucial to examine the actual impact culture has on the examined constructs. Our experimental study offers a data set across national borders to understand and to systematize the impact culture has on customer satisfaction in the car industry. Our results can assist managerial decisions on planning processes of multinational companies to establish long-term customer relationships. This study shows that in the management of customer expectations, disconfirmation, and satisfaction different approaches are necessary across national borders. Already Anderson (1973) indicated that, if marketers want to influence favourably customer satisfaction, they need to understand the influence of customer expectations. We observe that in China marketers should focus more on the management of customer expectations in the context of customer satisfaction as it has a direct effect on satisfaction. U.S. customers build satisfaction rather on their perceived performance. Different strategies are required for both countries to influence satisfaction favourably.

Table 1: Scale Items, Factor Loadings, and Construct Reliability

Variables and Items	Standardized Factor Loadings			α (CR)		
	U.S.	CN	Full	U.S.	CN	Full
Perceived expectations				.97	.97	.95
Reliability	.96	.95	.95	(.96)	(.95)	(.95)
Safety	.93	.94	.93			
Fuel economy	.80	.83	.79			
Overall manufacturing quality	.93	.87	.90			
Driving qualities	.92	.88	.90			
Perceived performance				.97	.98	.97
Reliability	.96	.95	.95	(.96)	(.97)	(.97)
Safety	.93	.93	.93			
Fuel economy	.83	.91	.85			
Overall manufacturing quality	.93	.94	.94			
Driving qualities	.95	.95	.95			
Disconfirmation				.96	.96	.96
Reliability	.94	.93	.93	(.95)	(.97)	(.96)
Safety	.94	.89	.91			
Fuel economy	.84	.87	.86			
Overall manufacturing quality	.91	.89	.90			
Driving qualities	.88	.93	.91			
Satisfaction				.97	.97	.96
Reliability	.95	.94	.93	(.96)	(.96)	(.95)
Safety	.94	.92	.91			
Fuel economy	.81	.89	.86			
Overall manufacturing quality	.94	.91	.90			
Driving qualities	.95	.93	.91			
Power distance				.71	.69	.70
People in higher positions should make most decisions without consulting people in lower positions.	.70	.55	.61	(.71)	(.71)	(.70)
People in higher positions should not ask the opinions of people in lower positions too frequently.	.54	.64	.60			
People in higher positions should avoid social interaction with people in lower positions.	.54	.57	.56			
People in lower positions should not disagree with decisions by people in higher positions.	.52	.58	.52			
People in higher positions should not delegate important tasks to people in lower positions.	.57	.52	.54			
Uncertainty avoidance				.76	.77	.76
It is important to have instructions spelled out in detail so that I always know what I'm expected to do.	.71	.70	.72	(.77)	(.77)	(.76)
It is important to closely follow instructions and procedures.	.66	.60	.54			
Rules and regulations are important because they inform me of what is expected of me.	.69	.77	.73			
Standardized work procedures are helpful.	.50	.47	.50			
Instructions for operations are important.	.61	.63	.63			
Collectivism				.80	.77	.78
Individuals should sacrifice self-interest for the group.	.58	.54	.58	(.84)	(.81)	(.81)
Individuals should stick with the group even through difficulties.	.55	.56	.53			
Group welfare is more important than individual rewards.	.80	.55	.66			
Group success is more important than individual success.	.79	.77	.78			
Individuals should only pursue their goals after considering the welfare of the group.	.46	.63	.52			
Group loyalty should be encouraged even if individual goals suffer.	.66	.53	.59			
Long-term orientation				.81	.66	.74
Careful management of money (Thrift)	.68	.32	.53	(.84)	(.72)	(.78)
Going on resolutely in spite of opposition (Persistence)	.57	.19	.37			
Personal steadiness and stability	.80	.55	.70			
Long-term planning	.62	.68	.65			
Giving up today's fun for success in the future	.45	.58	.50			
Working hard for success in the future	.80	.77	.78			
Masculinity				.67	.70	.67
It is more important for men to have a professional career than it is for women.	.66	.72	.72	(.69)	(.70)	(.69)
Men usually solve problems with logical analysis; women usually solve problems with intuition.	.33	.52	.31			
Solving difficult problems usually requires an active, forcible approach, which is typical of men.	.72	.72	.69			
There are some jobs that a man can always do better than a woman.	.64	.47	.64			

Note: CN = China; α = Coefficient Alpha; CR = Composite Reliabilities, U.S. n = 313, China n = 318.

Table 2: Results of Confirmatory Factor Analysis

Models	Comparative Model	χ^2	df	$\Delta\chi^2$	Δdf	Stat. sig.	CFI	ΔCFI	RMSEA
CFA									
U.S.	-	1980.49	953	-	-	-	.910	-	.059
China	-	1977.88	953	-	-	-	.903	-	.058
MGCFA									
Model 1 Unconstrained Model	-	3958.37	1906	-	-	-	.910	-	.041
Model 2 Equal Measurement Weights	2 vs. 1	4101.95	1943	143.58	37	p < .001	.902	.008	.042
Model 3 Measurement Intercepts	3 vs. 2	5117.90	1989	1015.95	46	p < .001	.858	.044	.050

Note: n = 631, df = Degrees of freedom, CFI = Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation.

Table 3: Descriptive Statistics

Variables	U.S.		China	
	Mean	SE	Mean	SE
Uncertainty avoidance (UA)	5.14	.05	5.33	.05
Power distance (PD)	2.19	.05	2.14	.05
Masculinity (MAS)	3.64	.07	4.60	.07
Collectivism (COL)	4.35	.05	4.46	.05
Long-term orientation (LTO)	5.41	.05	5.47	.05
Age	20.5	.08	20.9	.08
Gender	53% female	-	62% female	-
Driver's License	98%	-	16 %	-
Access to car (of individuals with driver's license)	77%	-	61%	-

Note: U.S. n = 313, China n = 318, mean values of the dependent variables available upon request.

Table 4: Results of the Two-Stages Least Square Regression Analysis

Variables	Disconfirmation (1st step)				Satisfaction (2nd step)			
	U.S.	China	Full Sample	Full Sample Interaction	U.S.	China	Full Sample	Full Sample Interaction
Intercept	3.25 (.78)***	3.81 (2.04)†	3.88 .74***	3.81 1.44**	1.25 (.69)†	.97 (1.42)	1.29 .61*	.97 (1.19)
ExpMani (H)[a]	.55 (.24)*	.21 (.99)	.44 .25†	.21 .70	.06 (.21)	1.30 (.69)†	-.17 .21	-1.30 (.58)*
ExpMani (M)[a]	.32 (.16)*	.07 (.75)	.24 .17	.07 .53	.08 (.14)	-.63 (.52)	-.04 .14	-.63 (.44)
PerfMani (H)[a]	-.94 (.23)***	.47 (.81)	-.57 .23*	.47 .57	1.08 (.20)***	1.67 (.56)**	1.13 .19***	1.67 (.47)***
PerfMani (M)[a]	-.51 (.15)***	.46 (.62)	-.28 .16†	.46 .44	.51 (.14)***	.98 (.43)*	.54 .13***	.98 (.36)**
PercExp	.39 (.05)***	.35 (.23)	.39 .06***	.35 .17*	.05 (.05)	.36 (.16)*	.10 .05*	.36 (.14)**
PercPerf	-.33 (.05)***	-.57 (.19)**	-.40 .05***	-.57 .14***	.69 (.05)***	.36 (.13)**	.64 .04***	.36 (.11)**
Discon	-	-	-	-	-.18 (.05)***	-.33 (.09)***	-.23 .04***	-.33 (.07)***
Age	.01 (.04)	.05 (.10)	.02 .03	.05 .72	-.04 (.03)	.00 (.07)	-.23 .03	.00 (.06)
Gender	-.02 (.10)	.40 (.34)	.07 .10	.40 .24†	-.22 (.08)*	-.22 (.23)	-.20 .08**	-.22 (.20)
Driver's License	.13 (.41)	-.75 (.39)†	-.50 .22*	-.75 .27**	.29 (.36)	-.30 (.27)	-.19 .18	-.30 (.23)
Access to Car	.30 (.28)	.08 (.37)	.25 .19	.08 .26	-.15 (.25)	.44 (.26)†	.10 .15	.44 (.22)*
Country Dummy U.S.				-.56 1.69				.29 (1.39)
ExpMani (H)[a] x CD				.34 .75				1.36 (.62)*
ExpMani (M)[a] x CD				.24 .56				.71 (.46)
PerfMani (H)[a] x CD				-1.41 .63**				-.59 (.52)
PerfMani (M)[a] x CD				-.97 .48**				-.47 (.39)
PercExp x CD				.04 .18				-.31 (.15)*
PercPerf x CD				.24 .15†				.33 (.12)**
Disconf x CD				-				.15 (.09)†
Age x CD				-.03 .08				-.04 (.07)
Gender x CD				-.42 .26				.00 (.22)
Driver's License x CD				.88 .53†				.58 (.44)
Access to Car x CD				.22 .41				-.59 (.34)†
R²	.71	.44	.634	.655	.85	.78	.823	.834
Adjusted R²	.70	.36	.62	.64	.84	.74	.818	.823
Δ R²	-	-	-	.021*	-	-	-	.011*
F	74.23***	5.04***	64.80***	32.76***	150.10***	19.54***	157.49***	78.80***
n	313	318	631	631	313	318	631	631

Note: a = Dummy for manipulation, regression coefficients are unstandardized, standard errors are in parentheses, †p < .1, *p < .05, **p < .01, ***p < .001, China is the reference sample with the Country Dummy set 1 for the U.S.

Table 5: Experimental Treatment Means For Disconfirmation and Satisfaction

Dependent Variable: Disconfirmation

Group (n)	Exp. Man.	Perf. Man.	UA Mean Low (SE)	UA Mean High (SE)	UA p	PD Mean Low (SE)	PD Mean High (SE)	PD p	MAS Mean Low (SE)	MAS Mean High (SE)	MAS p	COL Mean Low (SE)	COL Mean High (SE)	COL p	LTO Mean Low (SE)	LTO Mean High (SE)	LTO p
1 (66)	High	High	3.49 (.16)	3.68 (.15)	.36	3.63 (.15)	3.55 (.19)	1.00	3.70 (.14)	4.45 (.17)	.42	3.41 (.19)	3.70 (.12)	.20	3.66 (.15)	3.66 (.16)	.91
2 (69)	High	Med	5.10 (.20)	5.10 (.22)	.88	5.34 (.21)	4.79 (.20)	.06†	5.33 (.23)	5.05 (.19)	.53	5.23 (.24)	5.00 (.17)	.54	5.11 (.23)	4.97 (.23)	.71
3 (72)	High	Low	5.57 (.24)	5.96 (.24)	.03*	5.85 (.24)	5.79 (.21)	.57	5.88 (.23)	5.77 (.21)	.76	5.70 (.24)	5.91 (.19)	.39	5.91 (.23)	5.76 (.24)	.16
4 (67)	Med	High	3.02 (.20)	3.17 (.21)	.63	2.85 (.20)	3.35 (.18)	.06†	3.19 (.22)	3.10 (.18)	.64	3.13 (.21)	3.10 (.17)	.88	3.35 (.19)	3.03 (.19)	.34
5 (69)	Med	Med	4.16 (.12)	3.87 (.15)	.09†	4.21 (.14)	3.96 (.12)	.21	4.08 (.11)	3.98 (.14)	.65	3.94 (.12)	4.15 (.12)	.13	4.06 (.11)	4.10 (.13)	.69
6 (77)	Med	Low	5.38 (.19)	5.22 (.16)	.96	5.39 (.20)	5.19 (.16)	.41	5.28 (.17)	5.14 (.19)	.59	5.19 (.19)	5.28 (.17)	.31	5.12 (.18)	5.37 (.15)	.19
7 (69)	Low	High	2.55 (.26)	2.36 (.26)	.57	1.91 (.28)	2.67 (.22)	.01**	2.39 (.23)	2.45 (.27)	.79	2.34 (.25)	2.46 (.23)	.73	2.41 (.25)	2.51 (.27)	.76
8 (74)	Low	Med	3.07 (.17)	2.47 (.17)	.02*	2.79 (.19)	2.77 (.18)	.96	2.77 (.16)	2.88 (.21)	.91	2.68 (.17)	2.85 (.18)	.44	2.79 (.17)	2.70 (.18)	.81
9 (68)	Low	Low	4.10 (.23)	4.32 (.22)	.42	4.47 (.25)	4.04 (.19)	.13	4.25 (.22)	4.14 (.22)	.76	4.25 (.23)	4.19 (.20)	.96	4.05 (.23)	4.36 (.22)	.31

Dependent Variable: Satisfaction

Group (n)	Exp. Man.	Perf. Man.	UA Mean Low (SE)	UA Mean High (SE)	UA p	PD Mean Low (SE)	PD Mean High (SE)	PD p	MAS Mean Low (SE)	MAS Mean High (SE)	MAS p	COL Mean Low (SE)	COL Mean High (SE)	COL p	LTO Mean Low (SE)	LTO Mean High (SE)	LTO p
1 (66)	High	High	5.88 (.19)	6.19 (.18)	.33	6.10 (.17)	6.05 (.22)	.16	6.03 (.15)	6.18 (.19)	.97	6.25 (.22)	6.00 (.14)	.63	6.06 (.17)	6.17 (.18)	.05*
2 (69)	High	Med	4.13 (.16)	4.33 (.17)	.54	4.17 (.17)	4.22 (.16)	.97	4.14 (.19)	4.16 (.15)	.78	4.35 (.18)	4.11 (.14)	.27	4.24 (.17)	4.23 (.17)	.78
3 (72)	High	Low	2.34 (.20)	2.04 (.20)	.04*	2.12 (.19)	2.13 (.18)	.15	2.20 (.19)	2.23 (.18)	.57	2.24 (.20)	2.11 (.16)	.24	2.39 (.21)	2.05 (.18)	.08†
4 (67)	Med	High	5.53 (.14)	5.65 (.15)	.83	5.77 (.15)	5.45 (.13)	.10	5.68 (.16)	5.49 (.13)	.36	5.50 (.15)	5.69 (.12)	.14	5.47 (.14)	5.77 (.14)	.15
5 (69)	Med	Med	4.11 (.16)	4.78 (.20)	.02*	4.51 (.19)	4.31 (.18)	.54	4.24 (.16)	4.46 (.21)	.37	4.09 (.17)	4.53 (.17)	.10†	4.37 (.14)	4.28 (.20)	.73
6 (77)	Med	Low	2.76 (.22)	2.19 (.18)	.13	2.11 (.22)	2.55 (.18)	.25	2.30 (.19)	2.66 (.21)	.20	2.51 (.21)	2.26 (.18)	.41	2.51 (.21)	2.36 (.18)	.68
7 (69)	Low	High	5.51 (.19)	5.56 (.19)	.58	5.63 (.22)	5.42 (.18)	.34	5.65 (.17)	5.43 (.20)	.25	5.66 (.19)	5.50 (.17)	.65	5.74 (.19)	5.49 (.21)	.40
8 (74)	Low	Med	3.77 (.19)	3.84 (.19)	.95	3.89 (.19)	3.62 (.18)	.27	3.76 (.17)	3.87 (.21)	.69	3.70 (.17)	3.91 (.18)	.29	3.73 (.19)	3.75 (.21)	.88
9 (68)	Low	Low	2.25 (.16)	1.72 (.15)	.01**	1.53 (.17)	2.19 (.12)	.00***	1.86 (.15)	2.05 (.14)	.22	2.04 (.16)	1.92 (.14)	.41	2.13 (.16)	1.85 (.15)	.09†

Note:, †$p < .1$, *$p < .05$, **$p < .01$, ***$p < .001$, SE = Standard Error, UA = uncertainty avoidance, PD = power distance, MAS = masculinity, COL = collectivism, LTO = long-term orientation, disconfirmation was measured on a 7-point scale with 1 = much too low: it was better than I thought, and 7 = much too high: it was worse than I thought, satisfaction was measured on a 7-point scale with 1 = completely unsatisfied to 7 = completely satisfied.

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