

A Test Measure Equivalence of Conflict Resolution Strategies in Joint Purchase Decisions

Rina Makgosa

Abstract

The purpose of this study is to demonstrate the importance of ensuring the measure equivalence of marketing concepts in cross-cultural research. It is crucial to give attention to measure equivalence in cross cultural research because it makes it possible for meaningful comparisons to be drawn between and among cultures. Specifically, the present paper focuses on a procedure of testing for the measure equivalence of the concept of conflict resolution strategies using multiple group confirmatory factor analysis. The results provide evidence of partial measure equivalence, which suggests that the concept of conflict resolution strategies is measured or perceived in the same way across the three ethnic groups investigated.

Key Words: *Cross-cultural research, Measure Equivalence, Conflict Resolution Strategies, Joint Purchase Decisions, Multiple group confirmatory factor analysis*

Introduction

Background of the Study

Joint purchase decisions are an outcome of the purchase decision making process in which both husbands and wives make a decision together (Commuri and Gentry, 2000). Research related to this subject is important in the study of consumer behaviour because husbands and wives jointly engage in most major household purchase decisions including domestic appliances, entertainment equipment, furniture, automobile, vacation, house, etc (Kim and Lee, 1996; Spiro, 1983).

Joint purchase decisions also present an enormous challenge to marketing researchers and marketers for several reasons. First, they are complex because more than one individual is involved in purchase decisions (Assael, 1998). Second, they are unstructured as couples are more likely to reach purchase decisions without gathering information on product alternatives due to lack of time, energy, or other resources (Kirchler, 1993, Park, 1982). Third, often husbands and wives are unaware of each other's influence within joint purchase decision-making processes (Kirchler, 1993; Park, 1982; Spiro, 1983). Finally, they are one of the sources of conflict i.e. various disagreements that occur between spouses in a joint purchase decision since spouses are likely to bring different motives, goals, and behaviours to a joint purchase decision (Belch, Belch, and Sciglimpaglia, 1980; Qualls, 1988). The distinct characteristics of joint purchase decisions are particularly critical for marketing managers because their presence within a joint purchase decision could delay a purchase or inhibit repeat purchase (Kirchler, 1993).

Consequently, the key challenge facing marketing researchers and marketers is to understand how couples go through complex and unstructured joint purchase decisions that involve uncertainty and conflict. A few pertinent issues have been investigated in the joint purchase decisions literature including typologies of conflict resolution strategies (e.g., Kim and Lee, 1996; Nelson, 1988), frequency in the use of conflict resolution strategies (Belch, Blech, and Sciglimpalia, 1980), as well as the effects of factors including age, length of marriage, income, education, and occupation and sex role orientation on the different combinations of conflict resolution strategies (Kim and Lee, 1996; Spiro, 1983).

Although the subject of conflict resolution strategies has generated academic attention, it remains relatively under researched. Additionally, research into conflict resolution strategies used by husbands and wives in various cultural contexts is also relatively rare. Existing findings have been based on a single culture mostly among North American samples (e.g., Belch, Belch, and Sciglimpalia, 1980; Nelson, 1988).

Purpose of the Study

The purpose of this study is to address the scarcity of studies examining conflict resolution strategies that are used by husbands and wives in various cultural contexts. This is worth addressing because the common view among cross cultural researchers is that to improve our understanding of consumer behaviour it is critical to investigate whether theories and concepts developed in relation to one society hold in other societies (e.g., Douglas, Morrin, and Craig, 1994; Manrai and Manrai, 1994). Additionally, cross-cultural research presents a host of challenges not usually experienced in intra-cultural research (Maheswaran and Shavitt, 2000; Sekaran, 1983). A critical issue in cross-cultural research is to ensure that any research that seeks to draw meaningful comparisons across cultures investigated should establish the equivalence of the measures used (e.g., Hui and Triandis, 1985; Bensaou, Coyne, and Venkatraman, 1999; Vandenberg, 2002). Hence, numerous calls have been made within the literature of cross-cultural research for more research that test measure equivalence as part of the methodology for ensuring that equivalence is achieved before conclusions about cross cultural comparisons are made (e.g., Mullen, 1995; Steenkamp and Baumgartner, 1998; Vandenberg, 2002).

Specifically, this paper explores the measure equivalence of conflict resolution strategies used by husbands and wives from various cultural contexts when making joint purchase decisions.

Rationales of the Study

The selection of conflict resolution strategies used in joint purchase decisions in the study that tests for its measure equivalence was motivated by two reasons.

First, whilst research into conflict resolution strategies plays an important role in contributing to our understanding of how complex and unstructured joint purchase decisions which also involve conflict are reached (Kirchler, 1993), this subject is relatively understudied. The common approach used in most studies of family purchase decision-making is to investigate relative influence, asking such questions as who influences the decision or who makes the decision (e.g., Na, Son, and Marshall, 1998; Martinez and Polo, 1999). However, this approach has been criticised for failing to delineate what transpires when purchase decisions are reached because it largely stresses the outcomes of purchase decision-making (Commuri and Gentry, 2000).

Second, there is lack of a cross-cultural perspective i.e., a study of different cultural contexts in the literature of conflict resolution strategies. Research on conflict resolution strategies has been

limited to a single culture mostly among North American samples (e.g., Belch, Belch, and Sciglimpaglia, 1980; Nelson, 1988). The gap in the cross-cultural perspective of conflict resolution strategies is contrary to the common view that in order to improve our understanding of consumer behaviour it is critical for consumer researchers to investigate whether theories and concepts developed in relation to one society hold in other societies (e.g., Douglas, Morrin, and Craig, 1994; Manrai and Manrai, 1994). Thus, given that measure equivalence is regarded as a necessary prerequisite for rigorous cross cultural research, it has been investigated in this paper to provide a useful starting point for conducting cross-cultural investigations in conflict resolution strategies.

Cultural context

In order to examine conflict resolution strategies from a cross-cultural perspective, the present study focussed on three ethnic groups residing within Britain — British Whites, Indians, and African Blacks. Studying ethnic groups within the same country facilitates meaningful comparisons because it minimises regional and other environmental differences (Sekaran, 1983).

British White, Indian, and African Black represent husbands and wives who describe themselves as originally from England, India, and Sub Sahara Africa respectively. British Whites are the majority in Britain. In 2000, they represented 93% of the British population. The Indian ethnic group is the largest ethnic minority group in Britain. In 2000, it constituted 1.6% of the British population. The African Blacks are the fourth largest ethnic minority groups in Britain. They accounted for .9% of the British population in 2000 (e.g., Scott, Pearce, and Goldbatt, 2001; Social Trends, 2002).

Previous Research

Measure Equivalence in Cross-cultural Research

Measure equivalence is concerned with whether a construct is measured in the same way across cultures (Cavusgil and Das, 1997; Hui and Triandis, 1985). Many forms of measure equivalence have been recommended in the cross cultural literature including configural equivalence, metric equivalence, scalar equivalence, factor variance equivalence, error variance and many more (e.g., Mullen, 1995; Steenkamp and Baumgartner, 1998; Vandenberg, 2002). However, Vandenberg (2002) observed that the most empirically examined are configural and metric equivalence. Thus, in this study these two tests are conducted. Configural equivalence is concerned with whether the measurement instrument exhibits the same pattern of factor structure across groups and metric equivalence assesses whether the factor loadings are equal across groups (Mullen, 1995; Steenkamp and Baumgartner, 1998; Vandenberg, 2002).

An important purpose of measure equivalence in cross-cultural research is to reduce the threats to reliability and construct validity (Bensaou, Coyne, and Venkatraman, 1999; Mullen, 1995; Steenkamp and Baumgartner, 1998). Reliability refers to the internal consistency of the items that measure a construct (Craig and Douglas, 2005; Garver and Mentzer, 1999). The most popular approach for assessing reliability is Cronbach alpha. Construct validity is the extent to which a construct is captured by its measuring scale (Craig and Douglas, 2005; Garver and Mentzer, 1999). Usually, establishing convergent validity, nomological validity and discriminant validity helps to achieve construct validity (Craig and Douglas, 2005; Garver and Mentzer, 1999). Convergent validity is the extent to which items measuring dimensions of a concept correlate (Craig and Douglas, 2005; Garver and Mentzer, 1999). Significant correlations between items measuring specific dimensions, significant factor loadings and a good model overall fit in multiple

confirmatory factor analysis are used as good indicators of the presence of convergence validity (Garver and Mentzer, 1999). Nomological validity is the extent to which the construct behaves with respect to other construct to which is theoretically related (Craig and Douglas, 2005; Garver and Mentzer, 1999). It is common to assess nomological validity by comparing the derived factor structure to previous studies and if the hypothesised patterns of relationships are ascertained there is strong evidence for nomological validity (Garver and Mentzer, 1999). Discriminant validity is the extent to which the items measuring the construct discriminate it from other items representing different constructs (Craig and Douglas, 2005; Garver and Mentzer, 1999). Naturally, low correlations between constructs demonstrate discriminant validity (Garver and Mentzer, 1999).

Measure equivalence also helps researchers to know whether similarities and differences found between and among cultural groups are in fact real. As noted by Steenkamp and Baumgartner (1998) if there is a lack of evidence in support of measure equivalence or there has been no attempt to test for measure equivalence conclusions based on the concepts will be erroneous and ambiguous.

Conflict Resolution Strategies used in Joint Purchase Decisions

Joint purchase decisions are conceptualised as accommodative decisions that couples achieve by using various types of conflict resolution strategies. Conflict resolution strategies are influence strategies commonly used in accommodative decisions, i.e., when there is conflict in joint purchase decisions (Spiro, 1983; Qualls, 1988).

Various typologies of conflict resolution strategies have been identified in the consumer behaviour literature. For instance, expert influence, referent/reward influence, bargaining, legitimate influence, emotional influence, and impression management were identified as conflict resolution strategies commonly used by both husbands and wives (Spiro, 1983). Punishment, threats, authority, and negative emotions; positive emotions and subtle manipulation; withdrawals and egocentrism; and persuasion and reasoning were also classified as strategies used by both females and males (Nelson, 1988). Couples' conflict resolution strategies included bargaining, authority, impression management, reasoning, playing an emotion, and search for more information (Kim and Lee, 1996). Table I summaries the typologies of conflict resolution strategies derived empirically in the literature

Table I: A Description of Conflict Resolution Strategies

Examples of Influence Tactics	Spiro (1983)	Nelson (1988)	Kim & Lee (1996)
Claiming more knowledge, experience, reasoning	Expert Influence	Persuasion & reason	Reasoning
Asserting legitimacy and authority	Legitimate influence	Punishments & negative emotions	Authority

Compromise, trade-off and negotiation	Bargaining	n/a	Bargaining
Buying a gift, more loving Anger, silence, crying	Reward Influence	Positive emotions & subtle manipulations	Playing an emotion
Silence; threatening to quit the decision	Emotional Influence	Withdrawal & egocentrism	n/a
Misrepresenting other choices, fast talking	Impression Management	n/a	Impression Management
Talking to someone; looking for more information	n/a	n/a	Search for information

Note: n/a means that the strategy did not emerge in a study in question

Although there are various typologies of conflict resolution strategies, they tend to share some common characteristics. For instance, bargaining, legitimate influence, and emotional influence have emerged in all the studies. Additionally, using Spiro's strategies as a basis for comparison, expert influence bear some resemblance to search for information and reasoning (Kim and Lee, 1996) and is also part of persuasion and reason (Nelson, 1988). Reward/referent influence and emotional influence correspond to playing an emotion (Kim and Lee, 1996) and positive emotions and subtle manipulation (Nelson, 1988). Impression management including exaggerating and misrepresenting the other spouse's choice has emerged in both Spiro (1983) and Kim and Lee (1996) and is part of Nelson's withdrawal and egocentrism.

However, some gaps in the literature of conflict resolution strategies are worth pointing out. (i) There is some discrepancy in the typologies of conflict resolution strategies that could be explained by the following reasons. First, with an exception of the study by Kim and Lee (1996) that used a confirmatory approach, other studies lack analytical rigour. For instance, Spiro (1983) did not use any statistical analyses to arrive at their strategies, whereas Nelson (1988) used exploratory factor analyses to derive four strategies. Second, different joint purchase decision scenarios such as major household durable products (e.g., Spiro, 1983); hypothetical joint purchase of automobile (e.g., Nelson, 1988); and house (e.g., Kim and Lee, 1996) have been used. Third, different units of analysis such as pooled samples of husbands and wives (e.g., Spiro, 1983), pooled samples of husbands, wives, and living together as married spouses (e.g., Nelson, 1988) and couples (e.g., Kim and Lee, 1996) have been used. (ii) There is little evidence on specific strategies used by either husbands or wives. As previously described, available typologies have used pooled samples or dyadic data. (iii) As already noted in this paper, research into conflict resolution

strategies is based on a single culture mostly, North American samples (e.g., United States; Canadian) and inadequate attention has been given to a cross-cultural context.

Considering that available typologies of conflict resolution strategies are based on pooled samples of spouses or dyads this study recognises that there is a need for a typology describing conflict resolution strategies used by either husbands or wives. To address this gap, this study establishes the dimensionality of husbands' and wives' conflict resolution strategies. Additionally, to introduce a cross-cultural perspective into conflict resolution strategies a measure equivalence of this concept is tested across three ethnic groups.

Research Method

Sampling Procedures

Samples of husbands and wives for British Whites were selected using a probability sampling. A consumer mailing list containing 1,000 names and addresses of married individuals living in London and Manchester was obtained from a leading list broker. These names were randomly selected from a database of more than 50,000 married individuals in Manchester and 75,000 married individuals in London. The selection criteria used for selecting the 1,000 names from the database was marital status and geography. The names obtained were either for the husband or the wife.

However, as noted by many cross-cultural researchers (e.g., Korgaonkar, Karson, and Lund, 2000; Lindridge, 2002; Quester and Chong, 2001) the ability to administer probability sampling is truly difficult in the investigation of ethnic minority groups. Probability sampling for Indians and African Blacks was made difficult by the restrictions from data protection act that particularly prohibit list brokers to solicit information on ethnic background.

Following recommendations made by previous studies that the most effective approaches for accessing ethnic minorities include working through community organizations (e.g., Burton, 2000) as well as using personal contacts and referrals in a snowball type (e.g., Khairullah and Khairullah, 1999; Quester and Chong, 2001), non probability sampling was deemed necessary. Specifically, husbands and wives of African Black and Indian origin were solicited from community organizations and religious institutions such as churches, temples, etc.

Despite the use of different sampling procedures, samples were matched using gender, marital status, same ethnic group and geography. Specifically, in this study husbands and wives are studied independently. This approach uses gender as a control variable to enhance homogeneity within samples. It also minimises confounding effects of gender related to using a pooled sample of individual spouses (e.g., Nelson, 1988; Spiro, 1983). But, it limits the investigation of gender effects that is feasible when dyads are used (e.g., Kim and Lee, 1996). However, as argued by Kenny (1988) the use of dyads is often perceived as a "nuisance" by many researchers because it requires the responses of both spouses and significant correlations between dyadic data across groups. Hence, these requirements could have increased the complexity of a cross-cultural study of joint purchase decisions (Sullivan and O'Connor, 1988). Marital status helps to eliminate differences between those living together as married spouses and those married. Additionally, only husbands and wives who are from the same ethnic groups were used because those who are married to spouses other than their own ethnic group are more likely to acculturate quickly (e.g., Khairullah and Khairullah, 1999). Moreover, acknowledging limitations of different sampling procedures, the profile of the samples across the three ethnic groups in both the husbands and wives samples

was examined (See, Tables II and III for selected characteristics) as recommended by Sekaran (1983).

Total Sample

The total sample consisted of 583 married spouses (i.e., 295 husbands and 288 wives). Specifically, the husbands' sample consisted of 110 British Whites husbands, 82 Indian husbands, and 103 African Black husbands. The wives' sample consisted of 108 British White wives, 80 Indian wives, and 100 African Black wives. The overall response rate is 17.8%. This was deemed reasonable because often studies of conflict resolution strategies are based on small samples, non-probability sampling procedures, and low response rates. As pointed out in previous studies (Nelson, 1988; Spiro, 1983) the problem is largely compounded by the spouses' unwillingness to participate in studies that require them to disclose their personal influence or they may lack qualities required for participation.

Measures of Conflict Resolution Strategies

To measure conflict resolution strategies in this study, a scale of a total of 30 items adapted from Nelson (1988) and Kim and Lee (1996) was used. When developing the measurement of conflict resolution strategies, (i) items with high factor loadings were selected from Nelson (1988) and Kim and Lee (1996); (ii) original sources of influence strategies were evaluated (e.g., Kipnis, Schmidt and Wilkson, 1980; Falbo and Peplau, 1980) and (iii) the questionnaire was finalised after a pre-testing procedure.

To assess likelihood of use of influence tactic consistent with Nelson (1988), the scale in this study is structured on a five-point scale ranging from 1 = "definitely did not used this" to 5 = "I definitely did used this". In contrast, Kim and Lee (1996) uses a seven-point scale ranging from 1= strongly disagree to 7 = strongly agree. Nelson's five point scale was selected as opposed to Kim and Lee's scale because it measures likelihood of use of each influence tactic whereas the latter is concerned with level of agreement/disagreement in the use of each influence tactic.

Data Collection

Data for the British Whites was collected using mail surveys while data for the Indians and African Blacks was mainly hand distributed to respondents. However, for all three ethnic groups, the survey package contained a participation screening survey and main survey. The participation survey contained four questions that were used to screen out respondents who qualify for participation including (i) the respondent's marital status, (ii) whether the couple have purchased major household consumer durables in the last 12 months together, (iii) respondent's ethnic origin, and (iv) whether the spouse is of the same ethnic origin. The main survey contained two questionnaires — one for the husband and another for the wife that were to be completed separately without consulting with each other. Targeting both spouses was considered time efficient and less costly as in this study separate samples of husbands and wives are used.

Results

Profile of the Sample

As shown in Table II, a significant proportion of Indians are originally from India and a considerable number are from East Africa. A majority of African Blacks are from Nigeria and Ghana. Specifically, 79% of Indian husbands and 65% of Indian wives are originally from India and 71% of African Black husbands and 64% of African Black wives are from Nigeria and Ghana. This corresponds to the general population data that show that East African Indians as well as Ghanaians and Nigerians make the highest proportion of Indians and African Blacks in Britain (e.g., Daley, 1998; Jones, 1993).

Table II: Country of Origin for Husbands and Wives Samples

Place of Birth	Total Sample		British White		Indian		African Black	
Husbands								
East Africa	15	5%	-	-	15	18%	-	-
Britain	113	38%	110	100%	2	2%	1	1%
Cameroon	7	2%	-	-	-	-	7	7%
Gambia	5	2%	-	-	-	-	5	5%
Ghana	30	10%	-	-	-	-	30	29%
India	65	21.7%	-	-	65	79%	-	-
Kenya	4	1%	-	-	-	-	4	4%
Nigeria	43	15%	-	-	-	-	43	42%
Sierra Leone	4	1%	-	-	-	-	4	4%
Tanzania	2	1%	-	-	-	-	2	2%
Uganda	3	1%	-	-	-	-	3	3%
Zambia	1	.3	-	-	-	-	1	1%
Zimbabwe	3	1%	-	-	-	-	3	3%
Total (N)	295	100%	110	100%	82	100%	103	100%
Wives								
Africa	13	5%	-	-	13	16%	-	-
Britain	128	44%	108	100%	15	19%	5	5%

Cameroon	11	4%	-	-	11	11%
Ghana	31	11%	-	-	31	31%
India	52	18%	-	52 65%	-	
Kenya	6	2%	-	-	6	6%
Nigeria	33	10.7%	-	-	33	33%
Sierra Leone	6	2%	-	-	6	6%
Uganda	1	.3%	-	-	1	1%
Zambia	3	1%	-	-	3	3%
Zimbabwe	4	1%	-	-	4	4%
Total (N)	288	100%	108 100%	80 100%	100	100%

Note: - means it is not applicable to the ethnic group in question.

In addition, a comparison of demographic characteristics for British White, Indian, and African Black husbands and wives shows that samples' characteristics in this study correspond to the general population statistics (e.g., Social Trends, 2002). For example, a comparison by length of marriage and age shown in Table III and IV indicates that a majority of British Whites and Indians than African Blacks have been married for more than 10 years and are also concentrated in the age group 50 years or more. Specifically, 83% of British White husbands and 90% of Indian husbands compared with 58% of African Black husbands have been married for more than 10 years, whereas 55% of British White husbands and 59% of Indian husbands compared with 44% of African Blacks fall in the age groups 50 years or more.

Similarly, 86% of British White wives and 71% of Indian wives compared with 56% of African Black wives have been married for more than 10 years, whereas 44% of British White wives and 51% of Indian wives compared with only 22% of African Black wives fall in the age group 50 years or more.

Table III: Length of Marriage and Individual Age for British White, Indians, and African Blacks Husbands

		Entire Husbands Sample			British Whites		Indians		African Blacks				
		Mean			Mean		Mean		Mean				
		N	%	(SD)	N	%	(SD)	n	%	(SD)	n	%	(SD)
		19.00			21.61		21.07		14.56				
Length of marriage		(10.49)			(10.90)		(9.00)		(9.72)				
Less and equal to 10 70 years		24%			19	17%		8	10%		43	42%	
11 years to 20 years		103	35%		36	33%		35	43%		32	31%	
21 years to 30 years		72	24%		28	26%		23	28%		21	20%	
31 years to 40 years		45	15%		24	22%		14	18%		6	6%	
41 years or more		5	2%		3	3%		1	1%		1	1%	
Total (N)		295	100%		110	100%		82	100%		103	100%	
		49.08			49.54		52.28		46.04				
Individual Age		(10.14)			(8.96)		(10.79)		(10.03)				
Under 30 years		3	1%		1	1%					2	2%	
30 years to 39 years		60	20%		18	16%		13	16%		29	28%	
40 years to 49 years		89	30%		31	28%		21	26%		37	36%	
50 years to 59 years		97	33%		48	44%		25	31%		24	23%	

60 years or older	46	16%	12	11%	23	28%	11	11%
Total (N)	295	100%	110	100%	82	100%	103	100%

Table IV: Length of Marriage and Individual Age for British White, Indians, and African Blacks Wives

	Entire Wives Sample			British Whites		Indians		African Blacks			
	N	%	Mean (SD)	n	%	Mean (SD)	n	%	Mean (SD)	Mean (SD)	
			17.94			21.10			18.50	14.08	
Length of marriage			(10.54)			(9.78)			(11.40)	(9.29)	
Less and equal to 10 years	79	27%		15	14%		23	29%		41	41%
11 years to 20 years	90	31%		39	36%		15	19%		36	36%
21 years to 30 years	75	26%		29	27%		29	36%		17	17%
31 years to 40 years	40	14%		24	22%		12	15%		4	4%
41 years or more	4	1%		1	1%		1	1%		2	2%
Total (N)	288	100%		108	100%		80	100%		100	100%

	45.53				47.48				47.44				41.90	
Age	(9.88)				(8.24)				(11.68)				(8.95)	
Under 30 years	11	4%			3	4%			8	8%				
30 years to 39 years	80	28%	20	19%	26	33%			34	34%				
40 years to 49 years	87	30%	41	38%	10	13%			36	36%				
50 years to 59 years	88	31%	41	38%	29	36%			18	18%				
60 years or older	22	8%	6	6%	12	15%			4	4%				
Total (N)	288	100%	108	100%	80	100%			100	100%				

Dimensionality of Husbands and Wives Conflict Resolution Strategies

The dimensionality of husbands' and wives' conflict resolution strategies was tested using two separate exploratory principal component factor analyses with varimax rotation based on the entire husbands sample (N = 295) and entire wives sample (N = 288). The use of separate samples of husbands and wives is consistent with the recommendation by Kim and Lee (1996). These authors stated that it is unrealistic to assume that there is a common structure of conflict resolution strategies for husbands and wives. The exploratory factor analysis results of husbands' and wives' conflict resolution strategies are presented in Table VI.

To identify factors that are meaningful, individual items were considered for elimination using a number of criteria. Specifically, eigenvalues greater than one and factor loadings of .60 or more on a particular factor were used. Only items with high factor loadings of .60 and more were retained because there were deemed good discriminatory measures of conflict resolution strategies.

Both the husbands and the wives factor analyses generated four factors with eigen values greater than 1. The four factors explained 66.19% and 69.63% of husbands and wives total variances respectively. These values of total variance explained are reasonably large and are considered as appropriate indicators that items measuring husbands' and wives' conflict resolution strategies achieve convergent validity. Out of the four factors, three factors were labelled as *Bargaining*, *Playing on an emotion* and *Assertiveness* and these factors emerged in both the husbands and wives samples. In addition, *Disengagement and Supplication* emerged in the husbands and wives samples respectively.

Next, the reliability of items representing the four husbands' and wives' conflict resolution strategies were tested using Cronbach alpha. The reliability tests show the following Cronbach alpha values: *Bargaining* (husbands = .81, wives = .82); *Playing on an emotion* (husbands = .77, wives = .86); *Disengagement* (husbands = .74); *Assertiveness* (husbands = .64, wives = .79); and *Supplication* (wives = .67). Cronbach alphas ranging from .64 to .86 are considered reasonable and are taken to indicate that various items are reliable (Craig and Douglas, 2005).

The strategies derived in this study also share some common traits with those proposed by Nelson's (1988). Specifically, *Bargaining* corresponds closely to persuasion and reason. *Playing on an emotion* shares some resemblance to subtle manipulation and positive emotions. *Disengagement* has some common traits with withdrawals and egocentrism. Items included in *Assertiveness* correspond to authority, negative emotions, and threats. *Supplication* corresponds to one of the factors suggested by Howard, Blumstein, and Schwarts (1986). This suggests that there is sufficient evidence of nomological validity.

Table VI: Husbands and Wives Conflict Resolution Strategies

	Factor
	loadings
Husbands	
Bargaining	
I tried to negotiate something agreeable for both of us (crs7).	.82
I argued my point logically (crs1)	.80
I tried to reach some sort of compromise (crs15).	.80
I tried to convince my spouse by stressing positive points (crs22).	.73
Playing on an Emotion	
I reminded my spouse of past favours I have done (crs12).	.81
I became pleasant and caring in hopes to change his/her mind (crs18).	.77
I appealed for my spouse's love and affection (crs25).	.69
Disengagement	
I withdrew affection, acted cold, or ignored my spouse (crs9).	.82
I tried to make my spouse to give in to my choice by doing things he/she does not like (crs21).	.79
I used the silent treatment (crs26).	.71
Assertiveness	
I simply pointed out what I wanted (crs13).	.77
I suggested that it is my task to make such choice (crs14).	.67
I pointed out that I have more experience with such matters (crs19).	.65
Wives	
Bargaining	

I tried to negotiate something agreeable for both of us (crs7).	.80
I suggested we look for more information (crs30).	.77
I tried to reach some sort of compromise (crs15).	.75
I suggested we discuss our differences and need (crs17).	.72
I simply explained the reasons for my requests (crs29).	.70

Playing on an Emotion

I appealed for my spouse's love and affection (crs25).	.86
I promised to do something that will make my spouse happy if he agrees with my idea (crs27).	.85
I used a silent treatment (crs26).	.84

Assertiveness

I pointed out that I knew more about the matter than he does (crs16).	.85
I suggested it is my task to make such a choice (crs14).	.76
I pointed out that I have more experience with such matters than he does (crs19).	.75

Supplication

I attempted to convince my spouse by making him believe he was doing me a favour (crs6).	.85
I showed my spouse that his position upsets me by looking sad (crs5).	.77

Note: crs1 and so on are the labels that are used to represent the various influence tactics in the multiple group confirmatory factor analysis.

Testing for Measure Equivalence of Husbands and Wives Conflict

Resolution Strategies

Consistent with the analyses strategy recommended by Van Prooijen and Van Der Kloot (2001) multiple confirmatory factor analysis was employed using the same data. Multiple group confirmatory factor analysis was deemed necessary to test for the measure equivalence of conflict resolution strategies employed by husbands and wives of Whites, Indians, and African Blacks. It is

imperative to employ multiple group confirmatory factor analysis to assess measure equivalence in cross-cultural research because it helps researchers to draw meaningful comparisons across cultures (e.g., Byrne, Shavelson, and Muthen, 1989; Steenkamp and Baumgartner, 1998).

A multiple group confirmatory factor analysis procedure also offers an opportunity to assess the fit of the model across the groups investigated through specific statistical indices. However, several fit indices exist and usually there are selected based on their relative strengths and weaknesses in terms of sample size, accuracy, consistency in assessing models and ease of interpretation (Byrne, 2001). In this study, the change in chi-square (Δ of chi-square), goodness of fit index (GFI), the comparative fit index (CFI) and the incremental fit index (IFI) are used. A significant Δ of chi-square suggests that there is lack of measure equivalence whereas a non significant change in chi-square means that equivalence is achieved. The GFI is a commonly used index and it is a measure of the relative amount of variance and covariance jointly accounted for by the model (Byrne, 2001). Unlike the other two indices, the GFI is an absolute fit index as it does not compare the proposed model with any other model at all. The CFI and IFI compares the proposed model's fit to null model. The IFI also compares the proposed model to the null model by comparing the degrees of freedom of the proposed model to those of the null model. Generally, when these indices have values of .90 or more they are accepted as representing adequate measurement fit (Hair, Anderson, Tatham, and Black, 1998).

In particular, the strategy recommended by Steenkamp and Baumgartner (1998) for testing for configural equivalence and metric equivalence is adopted in this study. Additionally, Analysis of Moment Structures (the AMOS 4.0) graphics program was used because it allows the user to work directly from the proposed graphic model (see, Appendix I and Appendix II for examples of models).

As it is important to establish a well fitting baseline model for each group separately before conducting rigorous tests for measure equivalence, the four-factor structures of conflict resolution strategies derived for the husbands and the wives (Table VI) were used as baseline models and were estimated separately for each ethnic group. Appendix I and II, depict one of the examples of the six models estimated separately for husbands and wives across the three ethnic groups. The fit indices for husbands conflict resolution strategies were considered adequate for all the three groups: British Whites ($\chi^2_{(59)} = 99.19, p = .001$; GFI = .88; IFI = .92; CFI = .91); Indians ($\chi^2_{(59)} = 105.95, p = .001$; GFI = .85; IFI = .89; CFI = .89); and African Blacks ($\chi^2_{(59)} = 117.08, p = .001$; GFI = .85; IFI = .87; CFI = .86). Similarly, the fit indices for wives conflict resolution strategies were good for all the three groups: British Whites ($\chi^2_{(59)} = 104.97, p = .001$; GFI = .87; IFI = .92; CFI = .92); Indians ($\chi^2_{(59)} = 111.86, p = .001$; GFI = .85; IFI = .88; CFI = .88); and African Blacks ($\chi^2_{(59)} = 109.75, p = .001$; GFI = .86; IFI = .91; CFI = .91).

GFI of .85 are usually considered marginally acceptable (e.g., Hair, Anderson, Tatham, and Black, 1998). Although the GFI indices of Indians and African Blacks are marginally acceptable the husbands and wives models correspond with theoretical and empirical presentations of previously developed conflict resolution strategies (e.g., Nelson's 1988). Taking into account the statistical indices and existing typologies of conflict resolution strategies as recommended by Byrne, Shavelson, and Muthen (1989), the husbands' and wives' conflict resolution strategies derived in this study were considered appropriate and were used in further tests of measure equivalence.

To test for measure equivalence, firstly, parameters were all freely (factors were not constrained to be equal) and tested simultaneously across ethnic groups (Model 1). The GFI, IFI, and CFI for husbands ($\chi^2_{(177)} = 322.28, p = .001$; GFI = .86; IFI = .89; CFI = .89); and wives ($\chi^2_{(177)} = 326.64, p = .001$; GFI = .86; IFI = .91; CFI = .90) were considered adequate. The standardised regression coefficients depicted in Table VII were assessed and all were found to be significant at $p < .001$, which also demonstrated that husbands' and wives' conflict resolution strategies were adequately captured by the four conflict resolution strategies. Thus convergent validity was achieved.

Table VII: Regression (Standard) Weights of Husbands' and Wives' Conflict Resolution Strategies for the Unconstrained Model (Model 1) across ethnic groups

		British Whites		Indians		African Blacks	
Husbands		FL	SE	FL	SE	FL	SE
crs22	<-- Bargaining	.56	.22	.68	.13	.63	.15
crs7	<-- Bargaining	.66	-	.84	-	.76	-
crs1	<-- Bargaining	.60	.23	.80	.11	.79	.16
crs15	<-- Bargaining	.74	.23	.75	.12	.69	.14
crs26	<-- Disengagement	.74	.18	.89	.21	.63	.16
crs9	<-- Disengagement	.65	-	.72	-	.89	-
crs14	<-- Assertiveness	.70	.56	.63	.36	.74	.33
crs13	<-- Assertiveness	.31	-	.48	-	.47	-
crs19	<-- Assertiveness	.83	.89	.76	.47	.76	.42
crs12	<-- Playing on an emotion	.76	-	.63	-	.74	-

crs18	<--	Playing on an emotion	.54	.15	.90	.25	.72	.13
crs25	<--	Playing on an emotion	.92	.13	.66	.19	.65	.16
crs21	<--	Disengagement	.55	.18	.63	.12	.54	.13
Wives								
crs26	<--	Playing on an emotion	.70	.08	.68	.10	.81	.13
crs27	<--	Playing on an emotion	.93	.08	.87	.10	.79	.13
crs25	<--	Playing on an emotion	.92	-	.93	-	.80	-
crs29	<--	Bargaining	.58	.19	.32)	.13	.71	.21
crs17	<--	Bargaining	.74	.24	.78	.12	.73	.22
crs15	<--	Bargaining	.71	.24	.73	.12	.83	.20
crs30	<--	Bargaining	.56	.21	.52	.13	.71	.20
crs7	<--	Bargaining	.62	-	.88	-	.63	-
crs19	<--	Assertiveness	.68	.14	.82	.17	.86	.14
crs14	<--	Assertiveness	.75	.16	.62	.15	.67	.13
crs16	<--	Assertiveness	.74	-	.76	-	.81	-
crs5	<--	Supplication	.84	.18	.64	.43	.62	.24
crs6	<--	Supplication	.80	-	.73	-	.70	-

Note: FL denotes the standardised factor loadings; SE denotes standard errors;

◀---- In the AMOS program (Graphic) this sign is used to represent factor loadings;

- represents items fixed to 1; The labels crs1 and so on, are described in Table VI.

Secondly, the factor loadings of all four factors were constrained to be equal and were estimated simultaneously across ethnic groups (Model 2). Given that partial configural equivalence was achieved, the husbands' and wives' models that were estimated simultaneously across the three ethnic groups were compared (Model 1) with several models with factor loadings constrained to be equal across groups. Specifically, a series of tests of metric equivalence for husbands in Table VIII indicate that except for *Playing on an emotion*; *bargaining*, *disengagement*, and *assertiveness* depict full metric equivalence

across groups. When sources of lack of full metric equivalence for *Playing on an emotion* were assessed, partial metric equivalence was achieved between British Whites and Indians. Tests of measure equivalence for wives in Table VIII demonstrate full metric equivalence for *Playing on an emotion, assertiveness, and supplication* and partial metric equivalence for *Bargaining*. The main source of lack of full metric equivalence was found in the difference between Indians and African Blacks. Although full metric equivalence was not achieved for *Playing on an emotion* for husbands and *Bargaining* for wives, partial equivalence is commonly recommended as a minimum condition necessary for achieving equivalence (Byrne, Shavelson, and Muthen, 1989). Thus, findings of partial measure equivalence were deemed as providing substantial evidence that the four types of conflict resolution strategies adequately describe husbands' and wives' conflict resolution strategies across ethnic groups.

Table VIII: Tests of Measure Equivalence for Husbands' Conflict Resolution Strategies

Models Descriptions	Groups	Comparative Model	Chi-square						Is Equivalence Achieved	
			square	df	GFI	IFI	CFI	Δ of square	df	Δ of chi-square
Unconstrained model (Model 1)	BW, IN, AB		322.28	177	.86	.89	.89		N/A	
FL for all four factors constrained	BW, IN, AB	Model 1	346.86	195	.85	.89	.88	18	24.59	Yes
FL of bargaining constrained	BW, IN, AB	Model 1	327.56	183	.86	.89	.89	6	5.29	Yes
FL of playing an emotion constrained	BW, IN, AB	Model 1	335.03	181	.85	.89	.89	4	12.76 **	No
FL of disengagement constrained	BW, IN, AB	Model 1	327.66	181	.85	.89	.89	4	5.39	Yes
FL of assertiveness constrained	BW, IN, AB	Model 1	323.81	181	.86	.90	.89	4	1.54	Yes
Item 25 constrained	BW, IN, AB	Model 1	324.21	179	.86	.89	.89	2	1.94	Yes
Item 18 constrained	BW, IN, AB	Model 1	327.22	179	.86	.89	.89	2	4.95 *	Yes
Unconstrained model (Model 2)	BW, IN		205.20	118	.86	.91	.90		N/A	
FL of playing an emotion constrained	BW, IN	Model 2	216.15	120	.85	.90	.89	2	10.95**	No
Item 25 constrained	BW, IN	Model 2	206.10	119	.86	.91	.90	1	.91	Yes
Item 18 constrained	BW, IN	Model 2	210.11	119	.86	.91	.90	1	4.91**	No
Unconstrained Model (Model 3)	BW, AB		216.28	118	.86	.89	.89	N/A		
FL of playing an emotion constrained	BW, AB	Model 3	221.88	120	.86	.90	.88	2	5.59*	No
Item 25 constrained	BW, AB	Model 3	217.72	119	.86	.89	.89	1	1.44	Yes

Item 18 constrained	BW, AB	Model 3	217.91	119	.86	.89	.89	1	1.63	Yes
Unconstrained model (Model 4)	IN, AB		223.05	118	.85	.88	.88		N/A	
FL of playing an emotion constrained	IN, AB	Model 4	223.96	120	.85	.88	.88	2	.92	Yes
Item 25 constrained	IN, AB	Model 4	223.07	119	.85	.88	.88	1	.02	Yes
Item 18 constrained	IN, AB	Model 4	224.83	119	.85	.88	.88	1	.72	Yes

Note: FL Factor loadings, BW= British Whites, IN = Indians, AB = African Blacks
 Δ denotes change
GFI: Goodness of Fit index; CFI: Comparative Fit Index; IFI: Incremental Fit Index
* $p < .05$; ** $p < .01$

Table VIII: Tests of Measure Equivalence for Wives' Conflict Resolution Strategies

Models Descriptions	Groups	Comparative model	Chi square	df	GFI	IFI	CFI	Δ of df	Is Equivalence achieved
Unconstrained Model (Model 1)			326.64	177	.86	.91	.90		N/A
FL for all four factors constrained	BW, IN, AB	Model 1	356.81	195	.85	.90	.90	18	28.27** No
Unconstrained Model (Model 2)	BW, IN		216.88	118	.86	.91	.90		N/A
FL for all four factors constrained	BW, IN	Model 2	230.29	127	.86	.90	.90	9	13.41 Yes
Unconstrained Model (Model 3)	BW, AB		214.72	118	.87	.92	.92		N/A

FL for all four factors constrained	BW, AB	Model 3	226.09	127	.86	.92	.91	9	11.36	Yes
Unconstrained Model (Model 4)	IN, AB		221.64	118	.85	.90	.89		N/A	
FL for all four factors constrained	IN, AB	Model 4	242.6	127	.84	.90	.88	9	20.96**	No
FL of bargaining constrained	BW, IN, AB	Model 1	343.93	185	.86	.90	.90	8	17.91**	No
FL of playing an emotion constrained	BW, IN, AB	Model 1	333.97	181	.86	.91	.90	4	7.33	Yes
FL of assertiveness constrained	BW, IN, AB	Model 1	331.82	181	.86	.91	.91	4	5.18	Yes
FL of supplication constrained	BW, IN, AB	Model 1	326.98	179	.86	.91	.91	2	.34	Yes
FL for Bargaining constrained	BW, IN	Model 2	224.57	122	.86	.90	.90	4	7.68	Yes
FL for Bargaining constrained	BW, AB	Model 3	216.71	122	.87	.92	.92	4	1.99	Yes
FL for Bargaining constrained	IN, AB	Model 4	237.52	122	.85	.88	.88	4	15.88**	No
Item 15 constrained	IN, AB	Model 4	225.33	119	.85	.90	.89	1	3.68*	Yes
Item 17 constrained	IN, AB	Model 4	224.69	119	.85	.90	.89	1	3.05*	Yes
Item 29 constrained	IN, AB	Model 4	235.60	119	.85	.88	.88	1	13.98**	No
Item 30 constrained	IN, AB	Model 4	227.69	119	.85	.89	.89	1	6.05**	No

Note: FL Factor loadings, BW= British Whites, IN = Indians, AB = African Blacks
 Δ denotes change
GFI Goodness of Fit index; CFI: Comparative Fit Index; IFI: Incremental Fit Index
* $p < .05$; ** $p < .01$

Discussion and Conclusions

The present study investigated the measure equivalence of the concept of conflict resolution strategies used in joint purchase decisions across three ethnic groups (i.e., British Whites, Indians, and African Blacks) using multiple group confirmatory factor analysis. Empirical results show that the factorial structure of conflict resolution strategies achieves partial measure equivalence. While full measure equivalence is ideal, partial measure equivalence is taken to suggest that the concept of conflict resolution strategies is measured or perceived in the same way by husbands and wives of British White and two of British ethnic minority groups — Indians and African Blacks (e.g., Byrne, Shavelson, and Muthen, 1989; Steenkamp and Baumgartner, 1998). Given that partial measure equivalence was achieved, the next stage in this study will be to examine similarities and differences in the use of various conflict resolution strategies across the three ethnic groups studied.

Implications

The results of this study make pertinent contributions. First, findings of measure equivalence contribute to the methodology of conducting rigorous cross-cultural research. Cross-cultural research is not only done in marketing it is common in other disciplines including social sciences, organizational behaviour, accounting, strategic management, etc. In particular, findings of this study stresses that any cross-cultural research that seeks to compare findings from different cultures or nations should not infer or assume the existence of measure equivalence. Second, given that the literature of conflict resolution strategies has generally focussed on a single culture mostly North American samples, findings of the current study provide a valuable starting point for cross-cultural investigations in this area. A cross-cultural perspective of conflict resolution strategies will greatly improve our understanding of joint purchase decision making. Third, the increasing trend of globalization of business activities and strategies provides a compelling reason for understanding the cultural context of consumer behaviour concepts (Maheswaran and Shavitt, 2000). Thus, information with respect to whether or not conflict resolution strategies is a universal consumer behaviour concept will enable managers to develop effective global strategies aimed at influencing husbands and wives to reach joint purchase decisions satisfactorily.

Limitations

Cross-cultural research presents a host of challenges not commonly faced in domestic research (See, Hui and Triandis, 1985; Maheswaran and Shavitt, 2000; Sekaran, 1983). Therefore, this study is without limitations. Specifically, sampling and data collection equivalence were not achieved in this study. However, the use of different sample selection and data collection procedures is not only unique in this study. Many cross-cultural researchers (e.g., Korgaonkar, Karson, and Lund, 2000; Quester and Chong, 2001; Wong, Rindfleisch, and Burroughs, 2003) have been daunted by difficulties of ensuring that equivalent sample selection procedures are used across cultures.

Additionally, the approach of using ethnic labels such as the ones adopted in this study is commonly used in marketing (see, Kim and Kang, 2001; Korgaonkar, Karson, and Lund, 2000; Lindridge, 2002), but it assumes homogeneity within ethnic groups.

Although essential steps were taken in ensuring that some meaningful degree of homogeneity is achieved within each group, the following challenges are worth pointing out: (1) It is possible that husbands and wives of Welsh and Irish origin born in England regarded themselves as British White; (2) The Indian subgroup includes Punjabi, Gujarati and East African Indians and these groups may portray distinct cultural values that are likely to shape their perceptions of joint purchase decisions; and (3) The African Black group consists of individuals that are from different Sub Sahara African countries and significant cultural differences may exist between them which may in turn affect the way they make joint purchase decisions.

Future Research Directions

Considering that partial measure equivalence was achieved in this study, this suggests that some measures of conflict resolution strategies (e.g., crs 18 for husbands and crs 29 and crs 30 for wives) are not equivalent across the ethnic groups studied. Thus, more research is required to test the equivalence of conflict resolution strategies. Future studies could use other ethnic groups (e.g., Hispanics, Asian Indians, African Americans, etc) or national culture (e.g., British Whites vs. United States; Batswana vs South Africans, etc). Similarly, for the purpose of this study gender was used as a matching variable to minimize challenges of a cross-cultural perspective of joint purchase decisions. Given that this approach limits the investigation of gender effects, future research could use dyads (i.e., a couple) as a unit of analysis to establish whether conflict resolution strategies are equivalent across husbands and wives.

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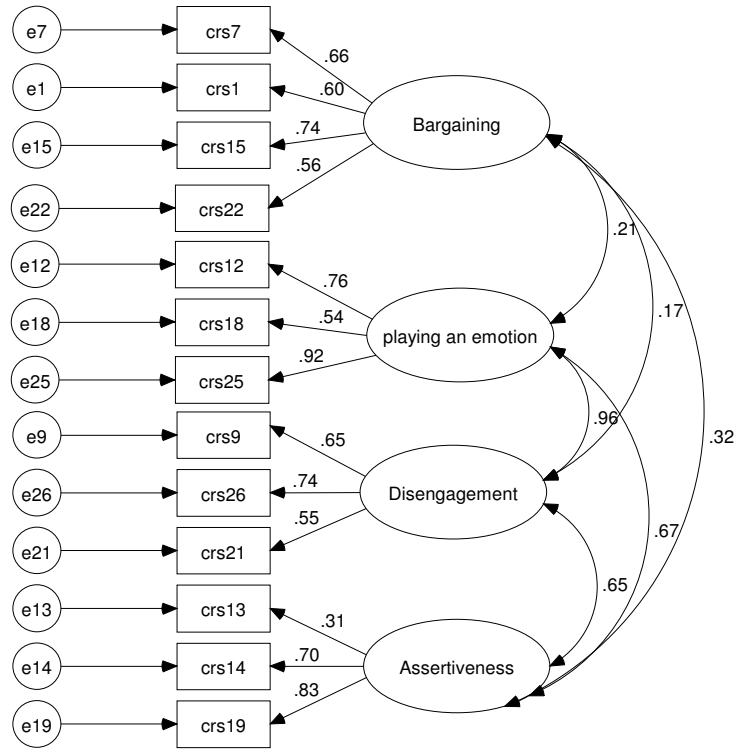
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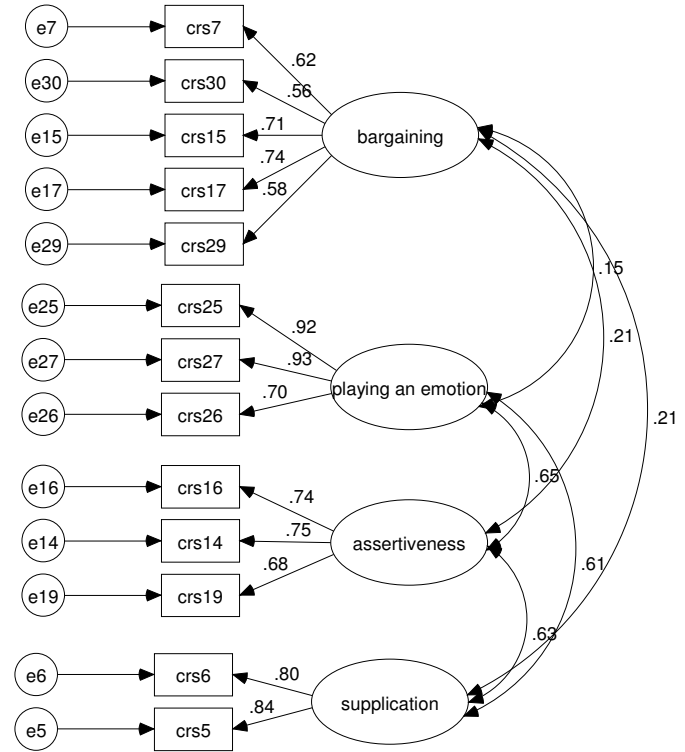
Appendix I: One Example of A Four-Factor Structure of Conflict Resolution Strategies (British White Husbands)



Note:

- crs 1 and so on are different labels of the various items retained in this study
- e1 and so on are different labels for the estimated error terms.

Appendix II: One Example of A Four-Factor Structure of Conflict Resolution Strategies (British White Wives).



Note:

- crs 1 and so on are different labels of the various items retained in this study
- e1 and so on are different labels for the estimated error terms