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EXPATRIATES

An Examination of Crossover and Spillover Effects of Spousal and Expatriate Cross-Cultural

Adjustment on Expatriate Outcomes

Abstract

Integrating work-family and cross-cultural adjustment literatures, the researchers proposed and tested a spillover and crossover model of expatriates' cross-cultural adjustment with reciprocal relationships. Spillover effects refer to the influence that expatriate attitudes in a particular domain (e.g., work) have on attitudes in other domains (e.g., nonwork), whereas crossover effects refer to the influence of expatriate attitudes on the spouse's attitudes (and vice versa). Data collected from Japanese expatriates, their spouses, and their superiors strongly supported both spillover and crossover effects between expatriate and spousal cross-cultural adjustment. In addition, expatriates' cross-cultural adjustment was found to be related to satisfaction, which, in turn, was found to be negatively related to expatriates' intention to return to their homeland early.

An Examination of Crossover and Spillover Effects of Spousal and Expatriate Cross-Cultural

Adjustment on Expatriate Outcomes

An increasing number of firms are conducting business globally as they explore

opportunities worldwide (Mervosh & McClenahen, 1997). It is widely recognized that

effectively using expatriate employees on international assignments is a critical factor for

companies to succeed in their global ventures (Carpenter, Sanders, & Gregersen, 2000).

However, failure or premature return rates for expatriates are very high, and the outcomes of

international assignments are dependent on many factors (cf. Black, Mendenhall, & Oddou,

1991). One reason for the high failure rates is the problem with the expatriate successfully

adjusting to the foreign culture (e.g., Garonzik, Brockner, & Siegel, 2000). In addition, as Hays

(1974) noted some time ago, another contributing factor is the degree to which the expatriate's

spouse successfully manages the cross-cultural adjustment process.

Despite the gains made in understanding expatriate cross-cultural adjustment, prior

empirical research has tended to neglect the role of spouses (Black & Stephens, 1989; Dowling,

Welch, & Schuler, 1999). More recently, however, scholars have started to examine the effects

of cross-cultural adjustment of spouses on expatriates (e.g., Caligiuri, Hyland, Joshi, & Bross,

1998; Shaffer & Harrison, 1998). In particular, Caligiuri et al. (1998) applied perspectives from

the work-family conflict literature and found spouse-family cross-cultural adjustment to

positively influence expatriates' overall cross-cultural adjustment. These influences of an

expatriate's attitudes and behaviors on those of the spouse (and vice versa) are referred to as

crossover effects (cf. Westman & Etzion, 1995, 1999). Although previous examinations have

examined the effect of spouses on expatriates, little has been done to incorporate the influence

that expatriates may have on their spouses.

Another unique feature of international assignments that presents a significant challenge for expatriates' cross-cultural adjustment is that working in a foreign culture involves not only adjusting to cross-cultural differences at work but also adjusting to the international experience outside of work (Black et al., 1991; Black & Stephens, 1989). Although the work stress literature has long recognized that adjustment at work is influenced by factors that occur outside of the work domain (e.g., Jex & Beehr, 1991; Williams & Alliger, 1994), the extent to which expatriates' experiences in one domain (e.g., nonwork) influence their cross-cultural adjustment in another domain (e.g., work) has not been specifically examined. Consequently, incorporating these types of spillover effects - or the influences of cross-cultural adjustment in one domain on cross-cultural adjustment in another domain - to understand expatriates' cross-cultural adjustment is another feature of the present study. The main objective of this research, then, was to extend and build on previous research by proposing and testing a model that incorporate crossover and spillover effects. Moreover, the current research emphasized the reciprocal (i.e., nonrecursive) relationships between spousal and expatriate cross-cultural adjustment across the work and nonwork domains.

<center>Cross-Cultural Adjustment of Expatriates and Spouses</center>

Cross-cultural adjustment is defined as "the degree of psychological comfort and familiarity that the individual has for the new environment" (Black, 1990, p. 111). The process of adjusting to another culture has been conceptualized as multidimensional, consisting of at least three factors that involve adjustment to the general living environment in the foreign culture, to work expectations and roles, and to interactional situations and norms (e.g., Black, Gregersen, Mendehall, & Stroh, 1999). The general dimension of cross-cultural adjustment refers to the individual's psychological comfort, familiarity, and ease of adjustment regarding

features of the general environment (e.g., weather, food, and living conditions). The work

dimension of cross-cultural adjustment denotes the degree of psychological comfort an

individual feels with various aspects of work (e.g., managing authority relationships). The

interactional dimension of cross-cultural adjustment concerns the individual's psychological

comfort regarding interpersonal communication differences (e.g., socializing with the host

country nationals). To be parsimonious, we refer to these dimensions of cross-cultural

adjustment as simply general, work, and interactional forms of cross-cultural adjustment.

Figure 1 illustrates the proposed spillover and reciprocal crossover model of expatriate

cross-cultural adjustment. Certainly, aspects of the work domain are important for successful

expatriation because of their centrality in influencing intentions to remain in the job; however,

the nonwork domain is likely to be critical as well because of significant changes experienced

outside the immediate job that are associated with the transition to an overseas job assignment

(Adler, 1997). The model emphasizes the process of cross-cultural adjustment as functioning in a

key, mediating role between the predictors and outcomes after prior conceptualization (e.g.,

Kraimer, Wayne, & Jaworski, 2001; Shaffer & Harrison, 1998). As a result, we focused our

attention on expatriates' cross-cultural adjustment to the work (i.e., work adjustment) and

nonwork domains (i.e., general adjustment). In the model, we consider the intent to return to the

homeland early as bridging the work and nonwork boundaries. Unlike turnover in which an

individual leaves the organization, intent to return early for the expatriate entails leaving the

assignment but returning to the same company (Black & Gregersen, 1990) and is likely due to

both work- and nonwork-related issues. Therefore, we discuss the antecedents of intent to return

early as involving spillover effects. We do not attempt to propose a comprehensive framework of

expatriate cross-cultural adjustment because there are existing models (Black et al., 1991;

Naumann, 1992). Our purpose is to present a parsimonious model that follows from an integration between the cross-cultural adjustment and work-family conflict literatures. In the following sections, we develop the logic that leads to the proposed model with a particular focus on the work-family or work-nonwork conflict literatures.

Insert Figure 1 About Here

A Spillover and Reciprocal Crossover Model of Expatriates' Cross-Cultural Adjustment

In general, when examining cross-cultural adjustment from a work/nonwork conflict perspective, the causal relationships between any two variables can be categorized into three types. The first type can be called a within-domain effect, in which a relationship between an independent and a dependent variable occurs within one particular domain (e.g., work). The relationship between role stress (work domain) and job satisfaction (work domain) serves as an example. The second type of relationship in the international assignment context can be described as a spillover effect, in which a relationship between independent and dependent variables intersects different domains, e.g., the relationship between general adjustment (nonwork domain) and job satisfaction (work domain). The first two types of effects occur within individuals. The third type of relationship is a crossover effect and involves the influence of one individual on another with respect to a particular variable. For example, the negative mood of one employee may negatively influence the mood of another employee (e.g., Williams & Alliger, 1994).

The main components of the proposed model are the three types of effects (within domain, spillover, and crossover) noted above. We discuss the hypotheses involving the within-domain effects first, followed by hypotheses related to spillover effects between expatriates'

work and nonwork domains. Then, the crossover effects between spousal general adjustment and

expatriate general and work adjustment are discussed as a prelude to the reciprocal relationships

between spouses and expatriates.

Within Domain Effects for Expatriates

The logic for the expected within-domain relationships between role ambiguity and work

adjustment, work adjustment and job satisfaction, and general adjustment (nonwork domain) and

general satisfaction (nonwork domain) is well supported in the literature (Black, 1988; Black &

Gregersen, 1990; Shaffer & Harrison, 1998; Shaffer, Harrison, & Gilley, 1999). When

expatriates experience role ambiguity at work, they are unclear about the appropriate actions,

behaviors, and codes of conduct. A high level of role ambiguity manifests itself in greater stress

and, hence, decreased work adjustment (Black, 1988; Black & Gregersen, 1991; Black et al.,

1991), which has a negative effect on work attitudes, such as job satisfaction (Fisher & Gitelson,

1983; Shaffer & Harrison, 1998). Fisher and Shaw (1994) found a positive relationship between

satisfaction with the new community and general adjustment in a mixed sample of domestic and

overseas military transferees. In addition, Shaffer and Harrison (1998) proposed and found direct

effects of general adjustment (nonwork domain) on general satisfaction (nonwork domain), and

work adjustment on job satisfaction (work domain). Hence, we offer the following hypotheses:

Hypothesis 1a: Role ambiguity is negatively related to work adjustment.

Hypothesis 2a: General adjustment is positively related to general satisfaction.

Hypothesis 3a: Work adjustment is positively related to job satisfaction.

Spillover Effects for Expatriates

Spillover theory asserts that an employee's experiences at work can carry over into the

home, and experiences at home can affect one's work (Caligiuri et al., 1998). Relocating for

work causes significant disruptions in and outside of work that can create uncertainty and stress (Brett, 1980). Disruptions and resulting levels of stress associated with a move are significantly greater when it involves an overseas relocation (Adler, 1997; Black et al., 1999). Indeed, the term culture shock is used to capture the stress-related traumatic reactions that many experience when moving overseas (Adler, 1997). The negative effects of stress on an employee's attitudes and behaviors have been well documented in the stress literature and include reduced job satisfaction, reduced organizational commitment, and increased intention to leave and actual turnover (e.g., Jex & Beehr, 1991; Kahn & Byosiere, 1990).

Shaffer et al. (1999) found role clarity (i.e., opposite of role ambiguity) to have a positive relationship with both expatriate's work and general adjustment. In addition, Williams and Alliger (1994) found that distress in the work domain spilled over to affect family functioning and vice versa. Hence, it is reasonable to expect that the stress associated with ambiguous role expectations and demands can spill over into expatriates' nonwork domains. Therefore, we offer the following hypothesis:

Hypothesis 1b: Role ambiguity is negatively related to general adjustment.

One of the spillover effects that can be expected between cross-cultural adjustment and satisfaction is between general adjustment (nonwork domain) and job satisfaction (work domain). When expatriates experience difficulties adjusting to the general environment, they experience more stress in their nonwork life. For example, their living quarters may not be adequate to provide for the family needs of security and comfort. Their frustration may be targeted toward the host country in general for not providing for what they view as sufficient standards of living. This generalized feeling of anger or frustration may carryover to work and may negatively influence expatriates' satisfaction with their jobs. On the other hand, if the

expatriates are comfortable with their general surroundings, their feelings toward the host

country are likely to be more positive. Accordingly, we predicted the following:

Hypothesis 2b: General adjustment is positively related to job satisfaction.

In a similar vein, another spillover effect, which was expected, is that between work

adjustment (work domain) and general satisfaction (nonwork domain). Social support may be

one of the primary underlying mechanisms that is likely to be operating in this circumstance (cf.

Thomas & Ganster, 1995). Carlson and Perrewe (1999) found that social support at work played

an indirect role in influencing family satisfaction through lessening work-family conflict.

Consequently, if expatriates successfully adjust to their work situations and are able to cultivate

relationships with host country nationals who provide social support at work, enhanced

adjustment experienced at work can be expected to spill over into the nonwork domain to

produce greater general satisfaction with living in the foreign culture.

In addition, being well adjusted at work may provide expatriates with more cognitive and

physical resources (e.g., spending less time at work on weekdays and on weekends) to attend to

matters that facilitate adjustment to the general environment. For instance, having more time to

spend with family may provide expatriates with opportunities to take short weekend excursions

to see nearby sights. Hence the following hypothesis:

Hypothesis 3b: Work adjustment is positively related to general satisfaction.

The relationship between job satisfaction and intention to turnover has been well

established within the domestic turnover literature (cf. meta-analysis by Hom, Caranikas-Walker,

Prussia, & Griffeth, 1992). Likewise, several researchers have identified a negative relationship

between expatriates' job satisfaction and their intention to prematurely terminate the assignment

or to return early (Black & Gregersen, 1990; Parker & McEvoy, 1993; Shaffer & Harrison,

1998). Consequently, we expected the following relationship:

Hypothesis 4: Job satisfaction is negatively related to expatriates' intention to return

early.

For expatriates, satisfaction (or lack of satisfaction) with the general environment

(nonwork domain) is likely to be important in influencing their intentions to return early (Black

& Gregersen, 1990; Shaffer & Harrison, 1998). Hart (1999) found that daily hassles have a

significant negative effect on nonwork satisfaction. International relocation entails significant

changes in one's daily activities (Guzzo, Noonan, & Elron, 1994) that are likely to affect

satisfaction with the general environment. In fact, Black and Gregersen (1990) found a

significant negative relationship between satisfaction with living conditions in general and

expatriates' intentions to leave early. Shaffer and Harrison (1998) also found a significant

negative relationship between satisfaction with nonwork aspects of living overseas and

expatriates' intentions to terminate their assignments. Hence, we predicted the following:

Hypothesis 5: General satisfaction is negatively related to expatriates' intent to return

early from the international assignment.

Crossover Effects Between Spouses and Expatriates

Within the work-nonwork conflict literature, crossover effects refer to the influence that

stress or strain experienced at work by one individual has on the stress or strain experienced by

one's significant other at home (Bolger, DeLongis, Kessler, & Wethington, 1989), or to the

influence that stress or strain experienced by the individual at home has on the stress or strain

experienced by the significant other at work (Westman, 2001). Because of the relocation

involved in expatriate assignments, the family often becomes more isolated from its physical and

psychosocial support systems (friends, relatives, colleagues, etc.), and this isolation constitutes an important loss of support (e.g., Guzzo et al., 1994; Harvey & Buckley, 1998). As a result of being isolated and losing much of their existing support systems, expatriates and their spouses may become more dependent on one another for support (Harvey & Buckley, 1998). This can create a situation in which the influences that spouses and expatriates have on each other as part of the cross-cultural adjustment process (i.e., crossover effects) are likely to be particularly salient.

One of the processes whereby an individual's influence crosses over to another is the spouse's experience at home to the expatriate employee's experience at work. When spouses become better adjusted to the general environment of the host culture, more emotional and psychological resources may be available to support the expatriate. For example, spouses may be able to inform the expatriates about host country environments, such as the best use of the transportation systems or how to better make (business) connections. The information provided by the spouses may help socialize the expatriate to the host country. Empirical support for this potential crossover effect comes from prior studies (Black & Stephens, 1989; Caligiuri et al., 1998; Shaffer & Harrison, 1998).

Another potential crossover process is from the expatriate's experience at work to the spouse's experience at home. This crossover effect from the expatriate to spouse has not been directly examined previously in expatriate research but can be hypothesized when considering studies on work-family conflict (e.g., Hammer, Allen, & Grigsby, 1997; Westman & Etzion, 1995, 1999). For example, Jackson and Maslach (1982) found that police officers experiencing job stress were more likely to display anger, become less involved in family matters, and report less satisfactory marriages. Jones and Fletcher (1993) found employees' job stress carried over

into their marriages and affected the stress experienced by their spouses. In a typical international assignment, expatriates are likely to be in a familiar environment while they are at work, as compared with spouses who are typically more socially isolated. Expatriates may also receive greater support from their peers at work. If, for example, expatriates are informed about the foreign customs and etiquette from their coworkers, they can transmit this information to their spouses who may benefit in the form of higher cross-cultural adjustment after learning and applying these norms.

These one-way crossover effects from spouses to expatriates and from expatriates to spouses can be expected from previous findings. However, more importantly, five studies within the work-family conflict literature have examined bidirectional crossover of stress or strain (Westman, 2001). Of the five, only one (Jones & Fletcher, 1993) failed to find symmetric crossover effects. The other four studies used cross-sectional (Hammer et al., 1997; Westman & Etzion, 1995) and longitudinal (Barnett, Raudenbush, Brennan, Pleck, & Marshall, 1995; Westman & Vinokur, 1998) designs and found symmetric crossover effects between partners.

Given a significant loss of support structure when relocating to a foreign location, expatriate employees and their spouses may be more likely to depend on each other for mutual support and adjustment. As a result of a lack of other support, it is likely that the frequency and degree of interaction between the expatriates and their spouses will be greater than if other sources of support are available, and therefore, the influence of each partner on the other will be greater. Accordingly, we expected that the crossover effects between spouse general adjustment and expatriate general adjustment, and spouse general adjustment and expatriate work adjustment, would be reciprocal and occur in a mutual and spontaneous fashion.

Hypothesis 6a: Crossover effects between spouse general adjustment and expatriate

general adjustment are reciprocally related.

Hypothesis 6b: Crossover effects between spouse general adjustment and expatriate work

adjustment are reciprocally related.

In summary, Hypotheses 1a, 2a, and 3a depict the relationships between two variables

that are within the same domain, whereas Hypotheses 1b, 2b, and 3b denote those relationships

between two variables that spill over from one domain to the other. Hypotheses 4 and 5 are

concerned with relationships between general and job satisfaction and intent to return early.

Finally, Hypotheses 6a and 6b present reciprocity between spouse and expatriate adjustments.

The hypothesized spillover and reciprocal crossover model of expatriates and spouses as tested

in the current study is incorporated in Figure 1.

Method

Survey Design and Procedure

A director of an association that provides services to Japan-based companies that have

expatriates located in the midwestern United States provided a list of company representatives

for 55 member companies. To secure the cooperation of the company representatives, we

provided presentations to company representatives who were then asked to participate in the

study. After this meeting, representatives from each company were contacted by mail to formally

participate. All 55 companies agreed to participate and provided the names of 298 Japanese

expatriates, their home addresses, phone numbers, and marital status. Participating companies

represented a wide spectrum of industries (e.g., food processing, food distribution, electronics,

and automobile manufacturing).

Although company representatives informed us that most of the Japanese expatriates were comfortable with English, the survey was translated into Japanese. Several steps were taken to ensure the effectiveness of the translation process. First, one of the research team members, a Japanese native who has been studying management in the United States for over a decade, translated the English version into Japanese. Second, another Japanese human resource management professor in Japan who is proficient in English provided assistance in revising the Japanese questionnaire several times in collaboration with the first author. This version was used for the subsequent survey administration. As a final check, a third Japanese native translated the survey back into English, and the Japanese and English versions were compared for any discrepancies; none were detected.

Surveys were distributed in two stages. First, surveys were mailed to the 298 Japanese expatriates identified from the list, along with university-addressed, prepaid envelopes with identification codes (to match spouses and expatriates). A reminder postcard was sent to each expatriate approximately 10 days after the initial survey distribution. A follow-up survey was sent to those nonrespondents two weeks after the reminder.

Of the 243 Japanese expatriates who responded (81.5% response rate), 28 indicated that they were single or divorced. Of the remaining 215 respondents, 29 reported that their spouses were unavailable at the time of the survey administration, for example, temporarily visiting Japan to care for a sick parent. Hence, surveys were mailed to 186 spouses. A postcard reminder and a follow-up survey with the same time lag also were used for spouse survey administration. One hundred seventy-three spouses returned the survey (93% response rate). These response rates are either comparable with (Black & Stephens, 1989) or greater than those obtained in

previous studies in this area (e.g., Black, 1988; Black & Gregersen, 1991; Guzzo et al., 1994; Parker & McEvoy, 1993; Shaffer & Harrison, 1998).

After the surveys were returned, the expatriates were contacted to provide the contact information of a superior who would be familiar with the expatriate. Then, these superiors were contacted by phone to provide an assessment of the expatriate's adjustment at work. Given that survey respondents had already participated in the study and the short length of the phone interview, all of the superiors provided the ratings.

Sample

Expatriates. Two hundred fifteen married expatriates were the primary sample for this study. All of the respondents were male. The average expatriate was approximately 40 years old ($M = 39.80$, $SD = 7.61$), had worked at their company for 11.6 years ($SD = 8.5$ years), and had been on their international assignment for a total of 2.5 years ($SD = 1.9$ years). Approximately 73% of the expatriates had a bachelor's degree or higher. Most of the participants either worked in research and development (40.4%), manufacturing (20%), or an administrative (29.2%) field. Most of the expatriates had traveled to (68.7%), worked in (57.2%), or studied in (6.6%) a foreign country before. In addition, more than half of the expatriates had at least one child accompanying them ($M = 1.19$, $SD = 1.12$).

Spouses. For the variables used in the current study, we had complete data from 169 spouses. To maximize the sample size, we replaced the variables for 42 spouses who were either unavailable ($n = 29$) or did not return the survey ($n = 13$).[1] The mean age of the spouses was 36.21 years ($SD = 6.70$). Less than half of the spouses had at least an associates degree or higher (41.6%), and, although many were working prior to coming to the United States (61%), only a small minority of spouses (11%) were currently working while living in the United States. Most

spouses had traveled (70.5%) overseas, but only 11% of them had worked abroad. The demographics of these samples appear comparable to those of previous studies (Black, 1988, 1990; Black & Stephens, 1989; Gregersen & Black, 1992; Guzzo et al., 1994; Shaffer & Harrison, 1998).

Superiors. Superiors were identified and named by the expatriate employees. Given the nature of the telephone interviews, no demographic variable was available for supervisors. Given the high response rates, nonresponse bias was less likely to be an issue. Nevertheless, we evaluated the potential for nonresponse bias by comparing the respondent and nonrespondent groups of expatriates on available demographic variables (i.e., age and educational level). The two groups were not significantly different from each other on the basis of these variables. We were unable to obtain the necessary demographic data for comparing spousal groups.

Measures

All measures used a 5-point Likert rating format (from 1 = strongly disagree to 5 = strongly agree) except for the cross-cultural adjustment and job satisfaction scales.

Role ambiguity. The degree of role ambiguity of the expatriate was assessed with the five, highest loading items from Rizzo, House, and Lirtzman (1970). A sample item stated, "I feel certain about how much authority I have." Consistent with Rizzo et al. (1970), all five items were reverse coded, which resulted in a scale in which higher scores indicated greater role ambiguity.

Expatriate cross-cultural adjustment. In accordance with the most recent conceptualization of cross-cultural adjustment as being multidimensional, we adopted seven items from the adjustment scale developed by Black and Stephens (1989). This measure has been used by Black and colleagues (e.g., Black, 1990; Black & Stephens, 1989; Gregersen & Black,

1992) and others (Shaffer & Harrison, 1998; Shaffer et al., 1999) and has demonstrated high reliability across multiple samples. In addition, Robie and Ryan (1996) examined the structural equivalence of the cross-cultural adjustment dimensions across culturally dissimilar samples and confirmed the multidimensionality of cross-cultural adjustment. The rating format for the items was a 7-point Likert rating scale with anchors ranging from 1 (not at all adjusted) to 7 (very well adjusted). As noted before, we used general and work adjustment for the current study.

Seven items assessed expatriates' cross-cultural adjustment to the general environment, that is, general adjustment. A sample item was "Please rate your own degree of adjustment to living conditions in general."

Expatriates' work adjustment ratings were obtained for each expatriate from a superior located in the U.S. office (i.e., the foreign country for the expatriates) who was familiar with the expatriate's adjustment at work. The principal investigator conducted telephone interviews and asked the superior to rate the expatriate on the three work adjustment items derived from Black and Stephens (1989). Superior ratings are generally considered a valid alternative to self-ratings in the performance appraisal literature when the supervisor has the opportunity to observe the employee (Atwater, Ostroff, Yammarino, & Fleenor, 1998). A sample item was "Please provide your assessment of the degree of adjustment of an expatriate regarding specific job responsibilities."

Spouse general adjustment. Spouses rated their own level of cross-cultural adjustment to the general environment by using the same seven items and response format used to assess expatriates' general adjustment to the foreign environment.

General satisfaction. We developed a three-item scale that assessed expatriates' nonwork satisfaction with the general environment. The three general satisfaction items were generated

through extensive discussions with the director and board of members prior to administration of the survey as major areas of potential frustration to expatriates and their spouses. The scale items were "I am satisfied with the quality of the public services, " "I am satisfied with the choices of consumer products I have," and "I am satisfied with the convenience in my surroundings."

Overall job satisfaction. Overall job satisfaction was measured by the 20-item short form of the Minnesota Satisfaction Questionnaire (MSQ; Weiss, Dawis, England, & Lofquist, 1967). All 20 items together make up overall job satisfaction. Ratings were made by using a 5-point rating scale (from 1 = very dissatisfied to 5 = very satisfied) in accordance with Weiss et al. Respondents were asked to "circle the number that best describes your feeling regarding your job for the following items" (e.g., the working conditions).

Intent to return early. This scale initially had three items. Two items were adapted from Black and Stephens (1989); "I discuss the possibility of returning home early with my spouse," "I will do anything to keep this assignment for its expected duration [reverse coded]", and an additional item was developed for this study ("I think about going home before the assignment is over"). The second item was dropped from subsequent analyses because of poor factor loading. Furthermore, we asked the spouses to assess the expatriates' intent to return early. We used the same two items with slight changes in the wording to make them applicable to spouses. Spousal assessment of the expatriate's intent to return early correlated significantly with the expatriate's own ratings (r = .50, p < .01), with a reliability of .77, which provided evidence for the validity of expatriate ratings of intent to return early. We therefore used expatriates' self-assessment of their intent to return early to maximize the sample size.

Spouse language proficiency. To provide a more accurate assessment of reciprocal effects when using cross-sectional data (Wong & Law, 1999), we theoretically selected spouses'

language proficiency to be our instrumental variable for the spouse general adjustment because

the importance of language proficiency for cross-cultural adjustment has been demonstrated in

the expatriate adjustment literature (e.g., Adler, 1997). An instrumental variable refers to an

exogenous variable that predicts only one of the endogenous variables in the model (e.g.,

Anderson & Williams, 1992; Wong & Law, 1999). Wong and Law (1999) found that the greater

the effects of the instrumental variable on the corresponding endogenous variables, the more

accurate are the resulting parameter estimates of the nonrecursive model. We conducted

regression analyses with additional variables to check on the validity of role ambiguity and

language proficiency as instrumental variables. The results provided additional support for the

validity of the instrumental variables. Five items were used to measure spouse language

proficiency. The items were: "I feel confident in: a) using English in general, b) writing in

English, c) speaking English, d) reading and understanding English, and e) listening to English."

<div align="center">Results</div>

Given the complexity involved in testing the proposed model (with two reciprocal

relationships and need for instrumental variables), it was necessary to retain the largest possible

sample size for the analyses. As noted earlier, mean replacement for missing values was used;

for most of the variables, there were only 1-5 missing cases, except for spouse general

adjustment, which required replacing approximately 40 (30 spouses were unable to respond

because of a temporary absence) missing values. Supplementary structural equations modeling

(SEM) analyses, including a confirmatory factor analysis, nested model comparisons, and

structural parameters, were conducted with a subset of expatriates ($\underline{n} = 169$) with listwise

deletion to assess the potential influence of mean replacement on the findings. The results were

highly comparable.[2] Therefore, only the results from the larger sample are reported here.[3] The

descriptive statistics of the variables used in this study appear in Table 1.

Insert Table 1 About Here

It is recommended that in SEM, the ratio of respondents to parameters estimated should

be at least 5: 1 (Bentler & Chou, 1987). In SEM, when sample sizes preclude the use of using

items as indictors, many authors have used item parcels (i.e., composites of items used as latent

variable indictors; e.g., Mathieu, 1991). Landis, Beal, and Tesluk (2000) reviewed many

different item parceling approaches and found item parceling to provide better model fit in SEM

when using smaller sample sizes.

In the present study, we used a combination of three different item parceling procedures

used by Mathieu (1991) on the basis of certain decision rules to reduce the number of parameters

estimated in the analyses using item parceling. The first method of using items as indictors was

followed if a variable was assessed with less than or equal to three items, such as for work

adjustment, general satisfaction, and intent to return early. In these cases, each item was used as

an indicator for the latent variable.

A second approach, the single-factor method (Landis et al., 2000, p. 188), was used when

an exploratory maximum likelihood (ML) factor analysis indicated a single-factor structure.

This pairing procedure involves assigning the item with the highest loading to the first indicator,

the second highest to the next indicator, the third highest to the next indicator, and so forth with

the objective of creating 2-4 empirically balanced indicators (Landis et al., 2000). Given that the

intent of the item parceling is to provide a small number of reliable indicators of the latent

variable, we used two indicators when coefficient alphas for the indicators were relatively high.

This procedure was used for role ambiguity, ML solution: $\chi^2_5 = 27.37$, $\underline{N} = 215$, $\underline{p} < .01$, the two

items with the highest and lowest factor loadings were assigned to the first indicator [$\alpha = .63$]

and the middle three items were assigned to the second indicator [$\alpha = .76$]; for expatriate

general adjustment, ML solution: $\chi^2_{14} = 45.84$, $\underline{N} = 215$, $\underline{p} < .001$, the four items with the highest,

the lowest, the next highest, and the next lowest loadings were assigned to the first indicator [$\alpha = .72$] and the remaining three items were assigned to the second [$\alpha = .70$]; for spouse general

adjustment, ML solution: $\chi^2_{14} = 30.77$, $\underline{N} = 215$, $\underline{p} < .01$, the four items with the highest, the

lowest, the next highest, and the next lowest loadings were assigned to the first indicator [$\alpha = .73$] and the three items in the middle were summed to form the second indicator [$\alpha = .64$]; and

for spouse language proficiency, ML solution: $\chi^2_5 = 124.47$, $\underline{N} = 215$, $\underline{p} < .001$, the two items

with highest and lowest factor loadings were summed to construct the first indicator [$\alpha = .94$]

and the middle three items were averaged to form the second indicator [$\alpha = .96$].

Finally, the third approach, the exploratory factor analysis method (Landis et al., 2000, p.

289) was used if an exploratory ML factor analysis revealed multiple factors. In this approach,

item loadings were used to create separate indicators for each factor. In accordance with Mathieu

(1991), who used this procedure for creating indictors for the same job satisfaction measure (i.e.,

MSQ), an exploratory ML factor analysis with oblique rotation of the 20 items was conducted.

Similar to Mathieu (1991), the analysis yielded four statistically significant factors, $\chi^2_{116} = 209.27$, $\underline{N} = 215$, $\underline{p} < .001$. We summed the items that loaded greater than .35 on each factor,

resulting in two ($\alpha = .82$), nine ($\alpha = .85$), six ($\alpha = .83$), and three ($\alpha = .76$) items assigned to

each respective indicator. Thus, four indicators were constructed for the latent job satisfaction

variable.

Measurement Model Testing

We first ran a confirmatory factor analysis on the measurement model with one of the

factor loadings for each latent construct fixed to one to provide a common metric for the

indicators. The results of this analysis indicated a very good fit to the data, $\chi^2_{143} = 175.06$, $\underline{N} =$

215, Comparative fit index [CFI] = .99, and Standardized root mean residual [SRMR] = .04. All

of the factor loadings were significant at $\underline{p} < .001$ and ranged between .51 and .99. The

measurement model was a significant improvement over the null latent model in which all of the

covariances among the latent variables were constrained to be zero, $\Delta\chi^2_{28} = 471.17$, $\underline{N} = 215$, $\underline{p} <$

.001. The results indicated significant relationships between the indicators and their respective

latent variables, suggesting that further examination of the structural models was warranted. All

of the parameter estimates reported in subsequent sections are from standardized solutions.

Structural Model Testing

To begin the model testing, we ran the first structural model, the within-domain model

(M_0) and we evaluated its fit. The model had a $\chi^2_{167} = 359.83$, $\underline{N} = 215$, a CFI of .91, and an

SRMR of .17. The M_0 provided a significant improvement in fit over the null latent model (M_n),

$\Delta\chi^2_4 = 286.40$, $\underline{N} = 215$, $\underline{p} < .001$; however, the overall fit indices also indicated that the model

could be improved. The second structural model analyzed was the spillover model (M_1), which

included the three hypothesized spillover effects. The fit indices for the spillover model (M_1)

were as follows: $\chi^2_{164} = 318.48$, $\underline{N} = 215$, CFI = .93, and SRMR = .13. This model provided a

significant improvement over the within domain model (M_0), $\Delta\chi^2_3 = 41.35$, $\underline{N} = 215$, $\underline{p} < .001$,

indicating significant spillover effects. Table 2 provides the fit statistics for all of the nested

models used for this part of the analysis.

Insert Table 2 About Here

The result of the nested model comparison test of the spillover model to the within-domain model indicated that the inclusion of three spillover effects significantly improved the model fit. The parameter estimates from this spillover model indicated that role ambiguity not only had a negative relationship to expatriate work adjustment ($\beta = -.73$, $p < .001$) but also spilled over to the nonwork domain and had a negative relationship with expatriate general adjustment ($\beta = -.55$, $p < .001$). The direct and spillover effects of role ambiguity on expatriate work and general adjustment provided support for Hypotheses 1a and 1b. Expatriate general adjustment was found to be positively related to general satisfaction such that expatriates who were better adjusted to their living conditions in the foreign country were higher in general satisfaction ($\beta = .64$, $p < .001$). In addition, general adjustment spilled over to the expatriate work domain demonstrating a significant and positive relationship to job satisfaction ($\beta = .28$, $p < .001$). Hypotheses 2a and 2b were therefore supported by the results.

As expected, expatriate work adjustment had a positive relationship with overall job satisfaction ($\beta = .56$, $p < .001$), providing support for Hypothesis 3a. Hypothesis 3b that posited a spillover effect from expatriate work adjustment to general satisfaction was not, however, supported. Overall job satisfaction had a significant, negative relationship with the expatriate's intention to return early ($\beta = -.35$, $p < .001$) such that the more satisfied expatriates were with their job, the less likely they were to seriously consider leaving their international assignment early. Thus, Hypothesis 4 was supported. Hypothesis 5 proposed a negative relationship between general satisfaction and the expatriate's intent to return early. A significant, negative relationship between general satisfaction and intent to return early ($\beta = -.19$, $p < .01$) provided support for this hypothesis.

Next, two models were run that included unidirectional crossover effects from spouse general adjustment to expatriate general adjustment, M_{2a}: $\chi^2_{163} = 289.62$, $\underline{N} = 215$, CFI = .94, and SRMR = .11, and from expatriate general adjustment to spouse general adjustment, M_{2b}: $\chi^2_{163} = 291.40$, N = 215, CFI = .94, and SRMR = .10. Each model provided a significant improvement over the spillover model, M_{2a}: $\Delta\chi^2_1 = 28.86$, $\underline{N} = 215$, $\underline{p} < .001$; and M_{2b}: $\Delta\chi^2_1 = 27.08$, $\underline{N} = 215$, $\underline{p} < .001$. The results of the model comparisons demonstrated that there was a significant unique effect from the spouse's general adjustment to the expatriate's general adjustment and vice versa.

Next, the reciprocal crossover model (M_3) with bidirectional paths between spouse and expatriate general adjustment was tested. This model produced fit indices of $\chi^2_{162} = 284.30$, $\underline{N} = 215$, CFI = .94, and SRMR = .10. The model significantly improved the fit when compared with models with either of the unidirectional paths from spouse general adjustment to expatriate general adjustment ($M2_a$), $\Delta\chi^2_1 = 5.32$, $\underline{N} = 215$, $\underline{p} < .05$, and from expatriate general adjustment to spouse general adjustment ($M2_b$), $\Delta\chi^2_1 = 7.1$, $\underline{N} = 215$, $\underline{p} < .01$). The path coefficient from spouse general adjustment to expatriate general adjustment was .29 ($\underline{p} < .01$), and the path coefficient from expatriate general adjustment to spouse general adjustment was .25 ($\underline{p} < .01$). Thus, crossover effects between spouse and expatriate general adjustment appear to be reciprocal, providing support for Hypothesis 6a. In other words, the results of these nested model comparisons indicate not only the existence of unidirectional crossover effects but also reciprocal crossover effects between spouse and expatriate general adjustment.

Similar steps were used to assess the unidirectional crossover relationship between spouse general adjustment and expatriate work adjustment. First, the fit of the two models with a unique path from spouse general adjustment to expatriate work adjustment (M_{4a}) and from expatriate work adjustment to spouse general adjustment (M_{4b}) were tested. These models

provided a significant improvement over the spillover model (M_1) with $\Delta\chi^2_1 = 9.34$, $\underline{N} = 215$, $\underline{p} <$ .01, and $\Delta\chi^2_1 = 10.45$, $\underline{N} = 215$, $\underline{p} < .01$, respectively. The nested model comparisons demonstrated unique crossover effects from spouse general adjustment to expatriate work adjustment and expatriate work adjustment to spouse general adjustment. The fit indices for M_{4a} and M_{4b}, respectively, were as follows: $\chi^2_{163} = 309.14$, $\underline{N} = 215$, CFI = .93, and SRMR = .12; and $\chi^2_{163} = 308.03$, $\underline{N} = 215$, CFI = .93, and SRMR = .11. The result of the model that included a unidirectional path from spouse general adjustment to expatriate work adjustment (M_{4a}) improved the fit of the model compared with that of the spillover model (M_1), and the path coefficient was significant ($\underline{\beta} = .21$, $\underline{p} < .001$). Furthermore, the crossover model with a path from expatriate work adjustment to spouse general adjustment path (M_{4b}) improved the model fit significantly over that of M_1, and the path coefficient for this effect was also significant ($\underline{\beta} = .25$, $\underline{p} < .001$). Therefore, both sets of crossover effects from the spouse to expatriate and from the expatriate to spouse across nonwork and work domains seem to exist.

These models (M_{4a} and M_{4b}) were compared with a reciprocal crossover model (M_5). The fit indices for M_5 were $\chi^2_{162} = 305.90$, $\underline{N} = 215$, CFI = .93, and SRMR = .11. The model improved the fit only marginally for one, $\Delta\chi^2_1 = 3.24$ for M_{4a}, $\underline{N} = 215$, $\underline{p} < .1$, but not for the other, $\Delta\chi^2_1 = 2.13$ for M_{4b}, $\underline{N} = 215$, $\underline{p} > .1$. The path coefficients associated with M_5 were .13 ($\underline{p}$ < .05) for spouse general adjustment to expatriate work adjustment and .17 ($\underline{p} < .05$) for expatriate work adjustment to spouse general adjustment. Thus, reciprocal crossover effects across domains appear to exist, albeit they were notably weaker than the reciprocal crossover effects within the same domain. These results provided support for Hypothesis 6b. The standardized path coefficients and associated significance levels for M_3 and M_5 are shown in Figure 2.

Finally, the fit of the model with two reciprocal crossover relationships was evaluated. The final model significantly improved the fit in comparison to the models with only one reciprocal relationship, $\Delta\chi^2_2 = 30.03$, $\underline{N} = 215$, $\underline{p} < .001$ for M_3; and $\Delta\chi^2_2 = 51.64$, $N = 215$, $\underline{p} < .001$ for M_5 with $\chi^2_{160} = 254.27$, $\underline{N} = 215$, a CFI of .96, and an SRMR of .08. However, when both reciprocal paths were included simultaneously in the model, the model parameters became uninterpretable because the model became locally underidentified (Mathieu, personal communication, July 15th, 2001). Thus, we did not attempt to interpret the results.

Nevertheless, in sum, the nested model comparisons provided strong evidence for both spillover and crossover effects for expatriate adjustment. Moreover, the results indicated that the crossover effects were not only unidirectional from the spouse to expatriate but also operated in a reciprocal fashion.

We also conducted several additional analyses to examine the nonrecursive model in more detail. First, we allowed disturbance terms in the reciprocal equation to be correlated. The case for nonrecursive paths can be made stronger when disturbance terms are not significantly correlated. By contrasting a model with correlated disturbance terms to the model without disturbance terms enabled us to assess whether the reciprocal effects might be attributable to unmeasured variables that affect the parameter estimates (Anderson & Williams, 1992). We tested this by estimating the disturbance term covariance between spouse general adjustment and expatriate general adjustment (in M_3) and between spouse general adjustment and expatriate work adjustment (in M_5), respectively. The chi-square difference test was not significant for each of the two model comparisons, $\Delta\chi^2_1 = 0.68$, $\underline{N} = 215$, $\underline{p} > .05$; $\Delta\chi^2_1 = 3.02$, $\underline{N} = 215$, $\underline{p} > .05$). Moreover, each covariance term was not significant at .05 significance level (-.04, $\underline{z} = -.86$; -.10,

$\underline{z} = -1.75$). In addition, the beta coefficients were unaffected by the disturbance covariances in this case.

Next, we conducted nested model comparisons in which the reciprocal paths were constrained to be equal (cf. Mathieu, 1991). This allowed us to examine the causal precedence of one path over the other (Mathieu, 1991). The contrast between the bidirectional crossover model (M_3) and the model that constrained the reciprocal paths to be equal was not significant, $\Delta\chi^2_1 = 0.69$, $\underline{N} = 215$, $\underline{p} > .05$. Similarly, the model comparison between the bidirectional crossover model (M_5) and the constrained model was also not significant, $\Delta\chi^2_1 = 1.59$, $\underline{N} = 215$, $\underline{p} > .05$. Taking the analyses as a whole, these results indicate that spouse general adjustment and expatriate general adjustment are reciprocally related, but that neither exerts a stronger causal influence over the other. Similar conclusions can also be drawn for the reciprocal relationship between spouse general adjustment and expatriate work adjustment.

Discussion

The current research demonstrates the importance that cross-cultural adjustment has on the outcomes of international assignments (i.e., premature return) and highlights the difficulty of ensuring success in those assignments. This study focused on two types of effects that have received relatively little attention in the expatriate literature but that appear to be important factors in the cross-cultural adjustment process. Specifically, we investigated the role of spillover effects between the expatriates' work and nonwork domains and crossover effects between spouse and expatriate cross-cultural adjustment and how they operate in the cross-cultural adjustment process. The findings suggest that those effects may be more complex than what was previously considered. First, we found that role ambiguity has a strong negative relationship with expatriates' adjustment at work and spills over to the nonwork domain, that is, general

adjustment. Although international assignments inherently involve significant role ambiguity, multinationals are well advised to take steps to reduce the amount of ambiguity expatriates face in their assignments. It is important to extend the findings to examine the specific predictors of role ambiguity in the international assignment context to help multinationals with strategies for reducing role ambiguity. For instance, one strategy may be an introduction of a mentoring system for those on foreign assignments as a means of helping them manage the ambiguities inherent in the expatriate experience.

Significant spillover effects were identified between the work and nonwork domains in the expatriate cross-cultural adjustment process. Specifically, expatriates' degree of cross-cultural adjustment to living conditions in the foreign country had positive relationships with general and job satisfaction, both of which had a negative relationship to expatriates' intention to terminate the assignment prematurely. Expatriates' level of cross-cultural adjustment at work also had a significant positive association with job satisfaction. However, unlike general adjustment, the effects of work adjustment did not spill over to the opposite domain. That is, the hypothesis that work adjustment is positively associated with general satisfaction was not supported. Given the centrality of the work domain for most employees and given that this type of spillover effect from the work to the nonwork domain has been found in nonexpatriate samples (e.g., Grzywacz & Marks, 2000), the nonfinding was somewhat surprising. Perhaps for expatriates, the tremendous change in the general environment shifts the importance of the work domain to the nonwork domain, thereby overshadowing the spillover effect from the work domain (i.e., work adjustment) to the nonwork arena (i.e., general satisfaction).

A second set of findings from this research demonstrated the importance of considering how the cross-cultural adjustment of the expatriate influences the cross-cultural adjustment of the

spouse and vice versa. Although the crossover effect of spouse general adjustment to expatriate adjustment has been examined in previous research, the present study also considered the effect of the expatriate's cross-cultural adjustment on the spouse and whether these effects are reciprocal.

In sum, we found reciprocal relationships between expatriates and spouses. The implications are that there is a possibility for both negative and positive synergy between spouses and expatriates in terms of the cross-cultural adjustment process. On the one hand, if one of the partners is not adjusting well to the foreign culture, this will negatively affect the adjustment of the significant other. Because the cross-cultural adjustment process between the expatriate and the spouse is mutually dependent and reciprocal, this may induce even greater difficulties in the level of cross-cultural adjustment of the focal partner, ultimately leading to a downward spiral that results in premature termination of the international assignment. On the other hand, it illustrates the potential for positive synergy between spouses and expatriates. In addition to the importance of expatriate cross-cultural adjustment, this research underscores the critical role of spouses' cross-cultural adjustment during international assignments and suggests that companies need to pay closer attention to these issues when selecting and preparing to send expatriates with spouses overseas. Perhaps, there are moderators that influence the strength of the reciprocal relationships included in the model that could be examined in future research, such as organizational support as perceived by the expatriate or community support as experienced by the spouse and expatriate. Examining the effects of children may be another fruitful future research area to consider (Caligiuri et al., 1998).

In viewing the findings regarding both crossover and spillover effects and the significance of general adjustment, we think that companies should be advised to pay closer

attention to the general surroundings and provide support to help expatriates and their families settle into overseas locations. At the minimum, both expatriates and spouses need to be included in predeparture training and training on site. For example, assistance with finding a new home, orientation to community, or general culture transition programs for both expatriates and spouses (Guzzo et al, 1994) may be highly beneficial in helping expatriates and their spouses adjust to a foreign assignment. In addition, providing various support systems (assigning to the expatriates and their spouses a host country national or an expatriate with more experience as a mentor) may also be useful.

This study has certain limitations that should be considered when examining the findings and when setting directions for future research. First, the cross-sectional design prevents making causal inferences. Future research should incorporate longitudinal and quasi-experimental designs to better ascertain causal directions. Second, although three different sources (expatriates, spouses, and superiors) were used in gathering data, common method bias may be a concern with respect to certain relationships. Third, certain measurement limitations in the present study, such as the small number of items for certain scales (i.e., work adjustment, general satisfaction, and intent to return early) and the lower than ideal sample size for testing structural models, highlight the need for future research using larger samples and improved measures. Fourth, given that the respondents were Japanese, the generalizability of the findings may be limited. However, given the high masculinity of the Japanese culture where the roles and influences of women relative to men are more limited (cf. Hofstede, 1980), detecting crossover effects where spouses (typically female) influence the cross-cultural adjustment of expatriates (typically male) is likely to be more difficult with this sample than with expatriates from the United States, for example. The fact that these effects were found in the present study serves to

underscore the importance of expatriates' spouses or significant others in the cross-cultural adjustment process and suggests that the results are likely to generalize to a wider variety of cultures.

Finally, although the objective of this study was to provide a parsimonious model that illustrated crossover and spillover effects on expatriate cross-cultural adjustment, and it was beyond the scope of this effort to test a comprehensive framework, a potential limitation is that important variables were not included. For instance, several of the Big Five personality traits (cf. Barrick & Mount, 1991) specifically, Extraversion, Agreeableness, and Emotional Stability, have been found to predict expatriates' decisions to terminate their assignment early (Caligiuri, 2000). Similarly, different sources of support have been found to be positively related to facets of cross-cultural adjustment (Kraimer et al., 2001). Although not included here, these and other variables such as negative affectivity may be important because those variables' effect on work attitudes have been shown (e.g., Arvey, Bouchard, Segal, & Abraham, 1989) and should be included in future research with situational-contextual variables, such as subsidiary control or structure, and the international human resource management practices by parent headquarters.

Despite these limitations, this is one of the first studies to consider both spillover and crossover effects within the international assignment context. Furthermore, the reciprocal nature of crossover effects has not been examined in prior work. We hope that the current research stimulates additional interest in conducting international research that has significant practical implications for companies moving into the globalized, 21st century.

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Footnotes

[1] To alleviate any concerns regarding mean replacement, we conducted additional supplementary analyses with 169 expatriates with complete spouse data for the analyses shown in Table 2.

[2] The results of the supplementary analyses using listwise deletion (N = 169) were comparable with the results obtained with mean replacement (N = 215). Hence, we only report the results from the larger sample here.

[3] The results of confirmatory factor analysis, regression analysis to validate the instrumental variables, and supplementary analyses with a smaller sample using complete responses from spouses (N = 169) are available upon request to the first author.

Table 1.

Means, Standard Deviations, Cronbach's Alphas, and Intercorrelations

Variables	Means	SD	1	2	3	4	5	6	7	8	9
1. Role ambiguity	2.98	1.04	(.85)								
2. Expatriate general adjustment	4.93	0.84	-.32**	(.81)							
3. Expatriate work adjustment	4.79	0.91	-.55**	.60***	(.81)						
4. Spouse general adjustment	4.99	0.72	-.15*	.39***	.29***	(.80)					
5. Expatriate general satisfaction	3.35	0.66	-.18**	.44***	.29***	.28***	(.76)				
6. Expatriate overall job satisfaction	3.44	0.52	-.49***	.44***	.55***	.25***	.25***	(.92)			
7. Expatriate intent to return early	3.22	1.78	.24***	-.43***	-.46***	-.30***	-.22***	-.30***	(.81)		
8. Expatriate intent to return early (spouse rating)	2.93	1.55	.12	-.34***	-.29***	-.26**	-.13*	-.23***	.50***	(.77)	
9. Spouse language proficiency	2.19	1.17	-.13*	.16**	.21***	.39***	.14*	.18**	-.19**	-.21***	(.97)

Note. $N = 215$, values in parentheses are reliabilities,
         * $p < .05$, ** $p < .01$, *** $p < .001$

Table 2.

Model Fit Statistics

Model	Description	χ^2	df	SRMR	CFI
M_n	Null latent model	646.23	171	.24	.78
M_m	Measurement model	175.06	143	.04	.99
M_0	Within domain model	359.83	167	.17	.91
M_1	Spillover model	318.48	164	.13	.93
M_{2a}	Crossover model with spouse general adjustment $\rightarrow$ expatriates general adjustment	289.62	163	.11	.94
M_{2b}	Crossover model with expatriate general adjustment $\rightarrow$ spouse general adjustment	291.40	163	.10	.94
M_3	Bidirectional crossover model with spouse general adjustment $\leftrightarrow$ expatriate general adjustment	284.30	162	.10	.94
M_{4a}	Crossover model with spouse general adjustment $\rightarrow$ expatriate work adjustment	309.14	163	.12	.93
M_{4b}	Crossover model with expatriate work adjustment $\rightarrow$ spouse general adjustment	308.03	163	.11	.93
M_5	Bidirectional crossover model with spouse general adjustment $\leftrightarrow$ expatriate work adjustment	305.90	162	.11	.93

Note. SRMR = standardized root mean residual; CFI = comparative fit index.

Figure Captions

Figure 1. Proposed spillover and reciprocal crossover model of expatriates' cross-cultural adjustment. The hypothesized paths for the within-domain (baseline) model is depicted by a dotted arrow and solid arrow, respectively. Hypothesized crossover effects are depicted by a bold arrow. Error and disturbance terms are excluded for clarity. The acronyms used for the indicators are described in parentheses for its respective latent variables.

Figure 2. Results of the reciprocal crossover between spouse general adjustment ↔ expatriate general adjustment (M_3) and spouse general adjustment ↔ expatriate work adjustment (M_5). The results of the spouse general adjustment ↔ expatriate work adjustment (M_5) are in parentheses. * $p < .05$. ** $p < .01$. *** $p < .001$.

.39***
(.42***)

Language
Proficiency

Spouse General
Adjustment

.29**   .25**

.67***
(.62***)

General
Satisfaction

(.13*)

Expatriate
General
Adjustment

-.20**
(-.19**)

-.47***
(-.54***)

Role
Ambiguity

NS
(NS)

Intent to
Return Early

(.17*)

.28*
(.25*)

-.73***
(-.71***)

Expatriate Work
Adjustment

Overall Job
Satisfaction

-.34***
(-.35***)

.39***
(.57***)