

CRANFIELD UNIVERSITY

School of Management
People and Organisations Group

**Ph.D Thesis
Academic Year 2005/06**

ROHAYU ABDUL GHANI

**THE INFLUENCE OF WORK-FAMILY CONFLICT ON
INTERNATIONAL ADJUSTMENT OF
INTERNATIONAL POSTGRADUATE STUDENTS
WITH FAMILIES IN THE UK**

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**Supervisors:
Hilary Harris and Susan Vinnicombe**

September 2006

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ABSTRACT

This thesis explores the international adjustment experience of international postgraduate students who have come to the UK to pursue postgraduate degrees with their families accompanying them. The focus of the study is to examine the influence of simultaneous demands from the work and family domains on the adjustment of these international postgraduate students to living in the UK. The work-family literature is drawn upon in developing a framework to examine international adjustment and what influence work-family conflict has on it.

The author believes that this is the first research to examine the link between work-family conflict and international adjustment. The author also believes no research has been done before on the adjustment of international postgraduate students who have relocated to a foreign country, particularly the UK, with their families accompanying them.

The main stage of the research involved a survey using both the online and hardcopy questionnaire distributed to international postgraduate students registered at universities around the UK. Prior to this, exploratory interviews were conducted on a selected group of international postgraduate students to identify potential variables that may influence the relationship between work-family conflict and international adjustment. Analysis of the interview data was performed using *Nvivo*[®], whilst the main study data was analysed using hierarchical regression analysis.

The main contribution of this thesis is the negative relationship found between work-family conflict and international adjustment of international postgraduate students with families in the UK. The findings of this research provide evidence for the incorporation of work-family conflict as an additional non-work factor into the existing international adjustment framework.

A secondary contribution of this thesis is the findings on the direction of permeation between work and family domain. Although studies on work-family conflict within domestic boundaries found family domain to be more permeable than work domain, evidence from this study showed that during international adjustment domain permeation is in the opposite direction as more permeation originates from the family domain into the work domain.

ACKNOWLEDGEMENT

The decision to undertake this PhD was made only after serious and careful considerations, particularly as I knew from the onset that it would affect the lives of my husband and my three young children. The first major effect was our relocation to the UK, followed by the inherent challenges of a PhD programme, which at times were so daunting that I did not think I would ever reach the end!

The last four years was full of challenges which I would not have been able to overcome without the support of many people. I take this opportunity to thank each and every one of them, knowing what they gave me deserves so much more! I am forever grateful to all of you.

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Cranfield, 14th September 2006

GLOSSARY

CUHO	Cranfield University Housing Office
DPA 1998	Data Protection Act 1998
FWC	Family-into-Work Conflict
FPG	First Pilot Group
GHQ	General Health Questionnaire
HESA	Higher Education Statistics Agency
SCAS	Sociocultural Adaptation Scale
SPG	Second Pilot Group
SSQ	Social Situations Questionnaire
UKCGE	UK Council for Graduate Education
WFC	Work-into-Family Conflict
ZSDS	Zung Self-rating Depression Scale

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

This book is intended to be a guide for the reader, providing a clear and concise overview of the research and findings of the study. The book is organized into four main sections: Introduction, Research Methodology, Results, and Conclusion. Each section is further divided into sub-sections, providing a detailed and comprehensive overview of the study.

1.2 Research Objectives

The research objectives of this study are to explore the experiences of international students in the UK, focusing on their academic, social, and cultural adjustment. The study aims to identify the challenges and opportunities faced by these students and to provide recommendations for supporting them. The research is based on a qualitative approach, using interviews and focus groups to gather data. The findings of the study are presented in the Results section, and the conclusions are drawn in the Conclusion section. The book is intended to be a valuable resource for international students, their families, and university staff.

**With Love to:
My Husband, My Parents and My Children.**

1.3 Research Rationale

There are three main reasons why I believe it is important to conduct this study. Firstly, my own experience of adjusting to life in the UK has been a challenging one, and I believe that my research will help other international students to navigate this process more effectively. Secondly, the research will provide valuable insights into the experiences of international students, which can be used to inform policy and practice. Finally, the research will contribute to the academic literature on international student adjustment.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter introduces the Thesis by first discussing the objectives of the research, followed by its research rationale. Then, the contribution of the research to knowledge is outlined, the structure of the Thesis is summarised and finally a Figure with an overview of each stage of the study is presented.

1.1 Research Objectives

This thesis explores the international adjustment experience of international postgraduate students who have come to the UK to pursue postgraduate degrees with their families accompanying them. The focus of the study is to examine the influence of simultaneous demands from the work and family domains on the adjustment of these international postgraduate students to living in the UK. The work-family literature is drawn upon in developing a framework to examine international adjustment and what influence work-family conflict has on it. Evidence is presented based on results from the exploratory interviews and the subsequent questionnaire survey analysis that there is a negative relationship between work-family conflict and international adjustment of international postgraduate students with families in the UK. Evidence is also presented to show that during international adjustment, more conflict originates from the family domain into the work domain to affect adjustment of international postgraduate students with families.

1.2 Research Rationale

There are three main reasons why I believe it is relevant to conduct this study. Firstly, my own experience of adjusting to life in the UK having moved to this country with my family to pursue my degree has challenged my understanding of the phenomenon. The adjustment experience presented me with many challenges which I

had not thought to be an issue before. Secondly, the interest was further deepened by the large community of international postgraduate students with families at Cranfield, which I became a part of. Through associations with my neighbours, the majority of whom were international students; I became more interested in issues relating to adjustment to life in the UK, particularly when family is involved. Thirdly, in trying to understand my own adjustment issues, I found very little research is available in the literature on adjustment of international postgraduate students with families. These reasons will be discussed in detail in the following sections.

1.2.1 International Adjustment of International Postgraduate Students with Families: A Personal Perspective

Before coming to the UK to pursue this doctoral degree, I have experienced international relocation and adjustment when I move to the USA with my husband and my 15 month-old daughter in 1994-1997. Having had that experience, I did not anticipate this move to be that much different. Nevertheless, to a degree my family circumstance was different as my daughter was already 9 years old and her two brothers were each aged 6 and 3; and I also had to take my 19 year-old brother to help while we wait for my husband to join us eight months after we came. However, it was clear after a few months that venturing into a doctoral degree programme in a foreign country, with three young children and a husband who was thousands of miles away was not a good combination. My naivety and possibly under-estimation of the challenges that came with the move may have compounded the degree of intensity I experienced in adjusting to life here.

The different family circumstance that I have in this move turned out to be a very significant aspect of the challenge for me to deal with. The demand to be a full-time mother to my children and supporting their adjustment to life here especially during the first few months made it very difficult for me to perform my role as a full-time PhD student. To have my 3 year old son crying every morning that I left him at home with his uncle (whom he had only seen occasionally before) whilst I and his older siblings went out to school, the constant query from my children about their dad's long absence (something that had never happened before) and their initial longings for the life we left back home are only some issues that added to the strains during those first

few months. Of course, my brother tried his best to assist, but as this was his first time living overseas he had issues of his own to deal with.

My previous experience of relocation to the US did not help buffer the strain I was experiencing. In fact, it was a negative factor in this adjustment as I kept making comparisons between how it had been in my move to the US and how it was in the UK. The adjustment was further challenged by the need to learn my way around the PhD programme which was not as structured as my other degree programmes. In addition, the demands for my time and attention by my children made it very hard for me to focus on my studies during those months. Initially, I thought it was all due to my own inability to perform my roles at home and at school that made it all seemed almost impossible. However, having talked to other international students who were also living in family housing on campus, I later realised that the issues I faced were not isolated as many of these students voiced similar concerns. Although my family and I managed to overcome the various challenges encountered in our adjustment, the experience remained as a major area of interest.

Following a discussion with my supervisors about this, I decided to try to further explore international adjustment and issues of family as a potential research area. However, my personal interest and view on the subject would not be enough to justify a research to interest others, such as the academic community or the administrators in charge of international postgraduates. The following two sections will set out the key reasons why this topic is of importance in these areas.

1.2.2 International Adjustment of International Postgraduate Students with Families: An Economic Perspective

The number of students undertaking tertiary education in overseas universities is reported to have reached a total of approximately 1.6 million (UNESCO Facts and Figures, 2000). For a variety of reasons, the greatest growth has been in postgraduate study programmes (Lambert, 1993 in Bourke, 2000) as foreign students go abroad to pursue postgraduate degrees (Altbach, 1991). It was reported that between the academic years of 1995/6 and 2001/2 the number of international postgraduate students in the UK grew by 50% to 120,000 (out of a total postgraduate population of 470,000), and this rapid growth rate is said to likely continue (Woodward et al., 2004, p.11). In fact, as the

second most popular destination for international students after the USA, it is predicted that by the year 2010 the majority of international students in the UK will be studying at postgraduate level (British Council, 2004). This growing trend suggests a potential change in the present composition of international students, which warrants a research with specific focus on international postgraduate students.

Furthermore, international students attending degree programmes at UK universities have to pay higher fees than their British counterparts. Thus, the number of international students attending postgraduate degree programmes at UK universities is often associated with large revenue for their host universities, although the impact of international postgraduate students on individual university may vary (Times Higher Education Supplement (THES), November 2004). It may be argued that dependence on international students as a source of revenue is rather risky because the market is often volatile. However, many prestigious universities in the UK have shown that such volatility did not affect them (*ibid*). The THES article went so far as to conclude that “[i]n general, the most prestigious universities have the highest proportions of postgraduate students and the highest proportions of overseas students.” This suggests that postgraduate degree programme subscribed by international students is one of the few lucrative areas which financially benefit host universities.

In addition, the value of international postgraduate students to a host country, in this case the UK, extends beyond the financial argument through the process of “*cultural enrichment of the campus post-life, the advance of international understanding and the cultivation of long-term trading relationships*” enabled by the international students’ attendance at various universities (Gibbon, 1999, p.26). In addition, contacts made during the study programmes have been cited by alumni of leading international business schools as one of the key benefits received when studying abroad (Watts, 1999). Hence, graduates with living abroad experience forms a good pool of potential expatriates which may benefit organisations as reported by Black and Gregersen (1999), particularly when the experience involves their relocations with the families.

1.2.3 International Adjustment of International Postgraduate Students with Families: A Theoretical Need

The interest in this subject was also driven by the surroundings at Cranfield University which include a large international postgraduate student community living on the campus housing, with students coming from 106 different countries (Perspective, 2004). Cranfield University is recently reported to have the second highest proportion of international postgraduate students in the overall student body compared to other universities in the UK international students (THES, November 2004). A large number of these students have come to the UK with their spouses and/or children along. A review of the literature highlighted the important influence that family adjustment has on individual adjustment. However, this importance was not found examined in studies on international students.

The bulk of the research on international students has made little distinction between postgraduate and undergraduate students with regard to their adjustment in the host country. Even when there are few who did distinguish between the two, there was scant reference to the students and their families. My experience and personal circumstances made it impossible to identify my experience of relocating internationally with my family, with the existing studies on adjustment of international students. Often one may be so quick to cluster international postgraduate students as simply part of the international student community, without realising that these students are unique in their own right, particularly when their adjustment experience is in question. Further exploration of the adjustment literature found that where family is involved, very little can actually be inferred from research on international students to this population. This took me into the exploration and review of research on expatriate adjustment. Figure 1-1 below provides an outline of similarities and differences between international postgraduate students and expatriates based on selected characteristics found in the literature to refer to each group. A more detailed discussion of the international students' characteristics is provided later in Chapter Two.

	Expatriates	International p/graduate students
Age group	Mature	Mature
Accompanying spouse/partner	Often	Often
Accompanying children	Often	Often
Choice of destination	Organisational	Own
Financial support	Some	Some
Work experience	Often yes	Often yes
Reason for relocation	Work-related	Work-related

Figure 1-1: Similarities and Differences between Expatriates and International Postgraduate Students

Within the research conducted on international adjustment of expatriates, a number of studies were found to have examined family adjustment (e.g., Caligiuri et al., 1998a; Shaffer and Harrison, 2001) or family characteristics (e.g., Caligiuri et al., 1998b), which identified the family and specifically the family's adjustment to affect individual adjustment. However, these studies examined the family's adjustment or failure to adjust on expatriates' adjustment but not the influence of the dynamics between work and family lives on adjustment. Further exploration of these studies demonstrated that there is still very little empirical support on the influence of work and family dynamics within the international relocation scenario. There have been reports on the influence of family adjustment on expatriates' work performance (Caligiuri et al., 1998b) or premature returns (Shaffer et al., 2001b), but no clear empirical link has been made for the influence of work-family interface, particularly work-family conflict on international adjustment. Although studies that examined family adjustment influence on expatriates' poor performance or premature returns may be used to infer or indicate poor adjustment, such inference does not provide empirical evidence that would contribute to the international adjustment literature.

1.3 Research Questions

From the above discussion two research questions, which will be addressed by this study, are derived. These two questions listed below:

1. What influence does work-family conflict have on international adjustment?
and
2. What is the direction of work-family conflict in the context of international adjustment?

1.4 Research Contribution

The present research study makes a number of significant contributions with the aim to broaden the scope of the international adjustment literature. First, at the theory extension level, this study extended the literature using theories and frameworks from the international adjustment and work-family interface. In this respect, the research set out to examine in more detail the influence of work-family conflict on international adjustment of international postgraduate students who have relocated to the UK with their families. The study contributed to the work-family literature through its examination of work-family conflict in an international relocation context. No study is known to have explored work-family conflict in this context before. Following the above discussion on research rationale, the four main areas explored in identifying the research area of this study are illustrated below in Figure 1-2.

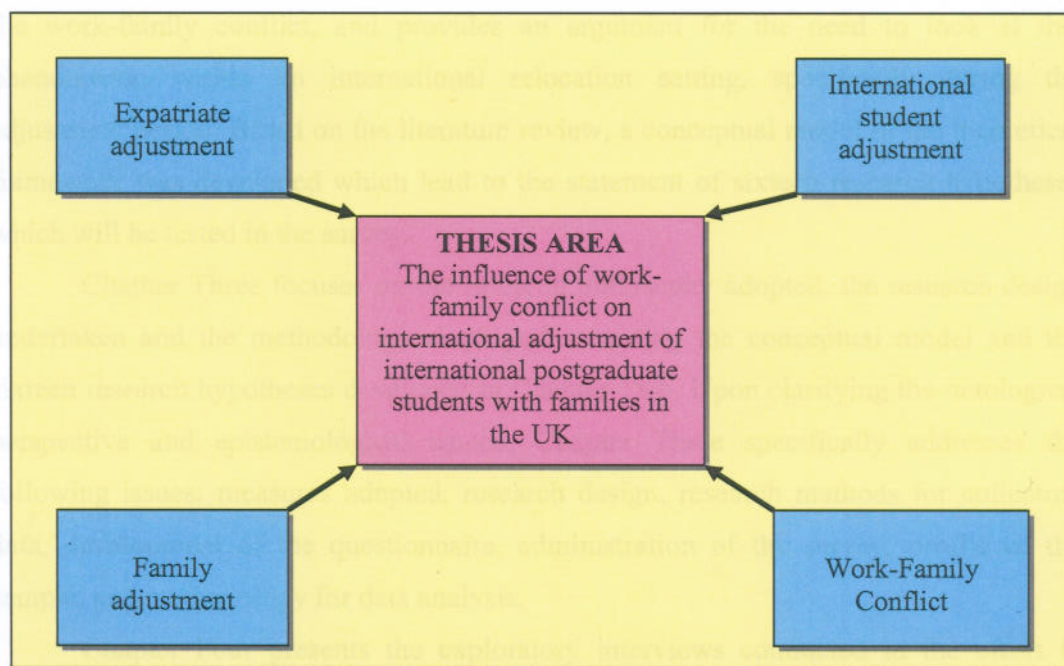


Figure 1-2: Identification of Gap in the Literature

Furthermore, this research has managed to highlight the need to distinguish international postgraduate students with families as a unique group compared to single postgraduate or undergraduate international students, particularly in examination of their adjustment experience with trailing spouses or families. This is a contribution to

the adjustment literature which has thus far ignored this particular group of international students. The roles that international postgraduate students play in their family domain, as demonstrated in this research have highlighted a clear difference in personal milieu that influences the students' adjustment.

1.4 Summary of the Thesis Structure

This Thesis is divided into seven chapters, the first of which is the introduction. The remaining six chapters are organised as follows:

Chapter Two reviews the literature and is broken up into three main parts. The first part is concerned with the international relocation. It reviews the nature of international relocation in the literature. The second part of the literature review focuses the international postgraduate students with families and their unique characteristics that require a research with specific focus. The third part of the literature review examined the work-family conflict, and provides an argument for the need to look at this phenomenon within an international relocation setting, specifically during the adjustment period. Based on the literature review, a conceptual model of the theoretical framework was developed which lead to the statement of sixteen research hypotheses which will be tested in the survey.

Chapter Three focuses on the research philosophy adopted, the research design undertaken and the methodology employed in testing the conceptual model and the sixteen research hypotheses developed in Chapter Two. Upon clarifying the ontological perspective and epistemological stance, Chapter Three specifically addresses the following issues: measures adopted, research design, research methods for collecting data, development of the questionnaire, administration of the survey, profile of the sample, and methodology for data analysis.

Chapter Four presents the exploratory interviews conducted in the effort to develop a comprehensive questionnaire. This chapter describes the interview process undertaken to gather data using in-depth semi-structured interview, and the method of analysis chosen for the analysis of this qualitative data. This is followed by Chapter Five which describes the piloting of the questionnaire conducted prior to the distribution of this instrument to the population of this research.

Chapter Six presents the results generated from the main enquiry. During the survey, data were collected from 201 postgraduate students with families in the UK who came from 62 nations around the world. Results of the analysis found support for seven hypotheses, but seven others were not supported whilst the remaining two hypotheses were not tested.

Finally, Chapter Seven provides a discussion that relates the research results to the literature and the contribution of this research to existing theory. The theoretical background on which each hypothesis was based and the findings of previous empirical studies conducted on the issue supports the discussion. A general conclusion from the research findings and the key implications for the management of international postgraduate students with families is discussed. A number of research limitations are described, and some suggestions for further research are indicated.

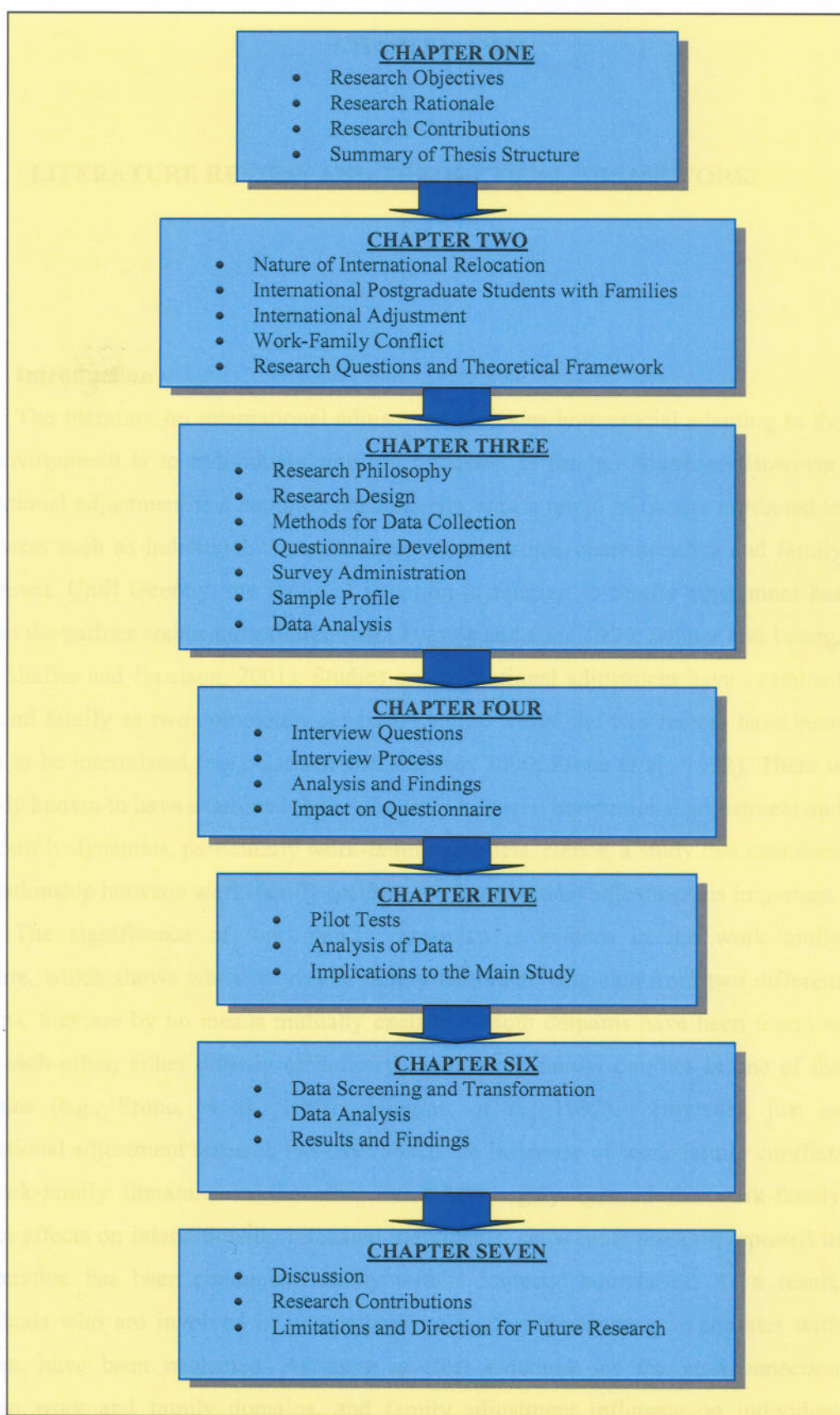


Figure 1-3: Thesis Structure

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

The literature on international adjustment indicates how crucial adapting to the new environment is to individuals who are relocated to foreign countries. However, international adjustment is a complex phenomenon with a range of factors attributed to its success such as individual characteristics, organisational characteristics and family adjustment. Until recently, the focus of attention in relation to family adjustment has been on the partner and/or the children (e.g., Fukuda and Chu, 1994; Selmer and Leung, 2003; Shaffer and Harrison, 2001). Studies on international adjustment have examined work and family as two completely separate factors; whilst the two factors have been shown to be interrelated (e.g., Carlson and Kacmar, 2000; Frone et al., 1992). There is no study known to have examined the relationship between international adjustment and work-family dynamics, particularly work-family conflicts. Hence, a study that examines the relationship between work-family conflict and international adjustment is important.

The significance of work-family dynamics is evident in the work-family literature, which shows whilst work and family factors do originate from two different domains, they are by no means mutually exclusive. Both domains have been found to affect each other, either directly or indirectly with work-family conflict as one of the outcomes (e.g., Frone, et al., 1997b; Higgins, et al., 1992). However, just as international adjustment research has overlooked the influence of work-family conflict; the work-family literature on the other hand has largely ignored the work-family conflict effects on internationally-relocated individuals, since most research reported in the literature has been conducted mainly within domestic boundaries. As a result, individuals who are involved in international relocation, particularly expatriates with families, have been neglected. As there is clear evidence for the interconnection between work and family domains, and family adjustment influence on individual

adjustment, the literature still lacks empirical evidence for the direct influence of work-family conflict on expatriates, especially its influence on their international adjustment.

The focus of this study, as explained in Chapter One is on international postgraduate student population, specifically those who have relocated to the UK with their families. Although there have been reports on the continuing growth of the international postgraduate students' population (Whitaker's Almanac, 2003; Woodward et al., 2004, p.11), the majority of research on adjustment of international students has been carried out without any clear distinctions made between undergraduate and postgraduate students (e.g. Al-Shawi, 1990; Matsumoto et al., 2001). Even when distinctions were made between the two, the studies neglected the influence of family life on students' adjustment (e.g., Kendall, 1986), or at most only examined the adjustment of the students' spouses (e.g., de Verthelyi, 1995). Direct inferences made about the adjustment on the international postgraduate students with families based on research conducted on the indiscriminate group of undergraduate and postgraduate international students or those of the spouses renders inaccurate and quite possibly misleading conclusions, especially when family dynamics had not been incorporated into those studies. On the other hand, inferences from research on expatriates would not be appropriate since the two groups are not exactly identical (see Chapter One).

This chapter reviews the literature to develop a theoretical framework that aims to address these issues. Firstly, the nature of international relocation is presented because it is this circumstance that creates the need for expatriates to adjust. Then, an analysis of international adjustment, its nature and facets and the role of family in adjustment follow. Next, a detailed consideration of the link between the work-family and adjustment literature is offered, and finally, the chapter concludes with a summary of the research propositions and the conceptual model developed in order to take the study forward.

2.2 The Nature of International Relocations

According to the definition provided by Ward et al. (2001), international relocation refers to a temporary move overseas for a set period of time, usually on a voluntary basis and often associated with a specific assignment. The decision to relocate is frequently seen as a stepping-stone for future career progression of individuals

involved because an international assignment provides the opportunity for personal and professional development of managers concerned (Stahl, Miller and Tung, 2002) as it may help improve their managerial skills and cross-cultural competencies (Mendenhall, 2001). These skills are deemed necessary in a global leader (Black and Gregersen, 1999), and hence could potentially be an advantage for an individual's global career advancement (Stahl, et al., 2002).

Acceptance of an international assignment usually occurs when the perceived long-term benefits of global experience to the person's career progression outweigh the short-term risks involved. However, particularly for individuals who are in dual-income relationships such risks include losing out financially should their significant other fail to get paid jobs in the host country (Leonard and Sommer, 1995). Research has shown that approximately 20 to 25% of trailing spouses fail to secure employment in the host country (Harvey, 1995), which often happens due to legal restrictions of the host nation (Harvey, 1998), that would not be present in domestic relocations. Obviously, the loss of a spouse's income may lead to a fall in the standard of living (Selmer and Leung, 2003), a fear that may result in reluctance to accept an assignment.

International relocation also presents a challenge to an individual's ability to adapt to new surroundings (Torbiorn, 1982). It involves more complex physical and psychological challenges and higher degrees of uncertainty (Aryee and Stone, 1996) compared to domestic transfers because greater disruptions to old routines usually take place (Black et al., 1991), which according to Black et al. (1991), are greater because international relocation involves not only the common pressures often experienced during a domestic relocation but also other additional pressures unique to a move abroad. These challenges are discussed next.

First, international relocation entails a physical geographic relocation that can cause tremendous disruption in the lives of all family members (Guzzo et al., 1994), and propels a change in life that goes beyond the change of address as it involves physical distance between the expatriates and people they know in their home countries like their parents, extended families and friends. Technological advancement may help reduce the strain or feeling of loss, as expatriates are able to keep in touch via the internet and be in contact with their family and friends in the home country (Sanchez et al., 2000), but the social network established previously in the home country is no longer as easily

accessible, and it is, therefore important for expatriates and their families to establish a new social network for support and interaction closer to their new homes (Ayman, 1997; Church 1982; Feldman and Bolino, 1999).

However, a new social network may not be as easy to establish with the host nationals as it had been with home nationals due to cultural or language difference (de Verthelyi, 1995), with the consequence that expatriates are found to form their own enclaves in order to fulfil this need for support. However, such enclaves or 'expatriate ghettos' isolate the expatriates from the real experiences of living in a foreign country or the chance to acquire new knowledge and experience (Church, 1982; Bell and Harrison, 1996; Sanchez et al., 2000) which they were expected to gain from the global experience (Black et al., 1999).

In addition, changes following international relocation often prompt concerns about culture and its effects on daily life as these changes bring to the fore the issue of cultural distance, which as Kogut and Singh (1988) note is the degree of difference between the home culture and the culture in the host country. There is often a perception of higher uncertainties associated with cultures that are truly foreign to an individual (Caves, 1982), and such anxieties about cultural distance have been reported to cause reluctance to accept assignments in certain countries more than others (Lowe et al., 1999). Moreover, studies have reported that expatriates find it easier to adjust to the new surroundings when relocation is to a country with a culture similar to their own, as the level of uncertainty in the new surroundings is less than it would be in a more distant culture (Church, 1982; Mendenhall and Oddou, 1985).

Internationally-relocated individuals find themselves exposed to societies or countries with different distinct values, originating in the differences in history, religion and geography (Hofstede, 1980; Triandis, 1994). These differences create the potential for problems of misunderstanding which may be detrimental to expatriates and their expatriating organisations (Adler, 1997) as failure to understand cultural distance may influence interpersonal relations of individuals (Tung, 1998). Hence the need not only for expatriates to have technical skills (Baker and Ivancevich, 1971; Harvey, 1985; Lanier, 1979; Mendenhall et al., 1987), but more importantly to have psychosocial skills (Tung, 1981) and exhibit culturally appropriate behaviours (Black and Porter, 1991), as these will allow for their adaptation to new surroundings, their acceptance and

appreciation of cultural differences and thus permit them to become comfortable in their environment. Without these elements of comfort, expatriates cannot be productive. These skills and behaviours should help ensure a successful adjustment process and a positive expatriation experience for those involved.

In addition, international relocation presents a different type of expatriation experience for single individuals than for those who are married or with families (Linehan and Walsh, 2000). Family life can affect an individual's work performance in an international assignment because the personal and psychological well-being of that person is influenced by the well-being of his/her spouse and/or family. There is evidence to show that the less adjusted spouses are, the less adjusted the individuals will be (Black and Stephens, 1989; Shaffer et al., 2001). This will then influence the expatriates' ability to adjust to their new surroundings and may subsequently result in premature returns. The role of family in adjustment will be discussed in more detail in a later section.

On a separate note, there has been an enhanced willingness by women managers to accept international assignments (Harvey and Wiese, 1998), as shown by an increase to 14% from just 5% of total female expatriates a decade ago (Dual Careers and International Assignments Survey, 2002). With this change, the international relocation of employees which has predominantly been an exercise involving male employees with trailing families, must now take into account issues and concerns related to the expatriation of female employees with male trailing spouses (Selmer and Leung, 2003). Consequently, a further challenge is presented to the existing perception of work-family interface and international assignments, especially when these women relocate with their husbands or families in tow.

Faced with such challenges as those described above, it is inevitable that international relocations can result in a profound personal transformation of those who are removed from the comfort of their home country and relocated in new surroundings (Sanchez et al., 2000). These challenges test not only their cognitive ability but also their psychophysiological state (Anderzen and Arnetz, 1999) and emotional abilities (Aycan, 1997). Such relocation also results in changes to both the work and social surroundings of expatriates and, more often than not, involves uprooting their families to new and culturally-different countries (Hechanova et al., 2003). Therefore,

expatriates and their families must learn about the new culture and how they may adapt to it. This would not be necessary in cases of domestic relocation (Black et al., 1991). As can be appreciated from the above discussion, there are unique challenges associated with international relocation that are absent when moves are made in the domestic context.

The next section will discuss international postgraduate students with family, as the population in the examination of the relationship between work-family conflict and international adjustment, and will justify the use of this particular population in meeting the aims of the present research.

2.3 International Postgraduate Students with Family

The distinct characteristics of international postgraduate students as compared to their undergraduate counterparts, particularly for those coming to the UK have been recognised and highlighted in a recent report by the UK Council of Graduate Education (UKCGE) (1999). A large proportion of international postgraduate students have come to the UK for their career development, with substantial numbers being members of staff in their home countries and often with a number of years of work experience (Bride, 1999, p.31). Moreover, the report shows that on average 70% of first year postgraduate students in universities in the UK are individuals aged 25 years or over (Whitaker's Almanac, 2003) compared to the larger undergraduate student general population where the average age is less than 21 years old (HESA Annual Abstract of Statistics, 2005). Thus, this group of international students do not exactly fit the traditional student profile.

In addition, unlike their undergraduate counterparts, international postgraduate students are more likely to be married and accompanied by their spouses and families in their move to the UK (Bride, 1999, p.28). These characteristics can be used to infer that by and large, international postgraduate students are different from the traditional characteristics of undergraduate students, as described earlier. The fact that international postgraduate students are more likely to be married and would come to the UK with their families therefore suggests that their adjustment and work-family circumstances will be different to international undergraduate students. However, a review of the

international students' adjustment literature found that very little has been said about international postgraduate students, specifically those with families.

As family adjustment affects individual adjustment (Shaffer et al., 2001) and family life has spillover effects on expatriate work performance (Caligiuri et al., 1998a), adopting the expatriate adjustment literature to examine work-family conflict influence on the adjustment of international postgraduate students with family is appropriate. These international postgraduate students are no longer relocating and adjusting as single individuals like most international undergraduate students, but instead as a member or possibly even the leader of a family unit. Moreover, a review of the international students' adjustment literature also did not reveal much empirical or theoretical research about the adjustment of international postgraduate students with families.

Much like expatriate workers, international postgraduate students with family may require childcare facilities and social support for their partners, and this may imply a greater responsibility than when they are at home. However, these needs have not been examined in the international student literature. The literature has largely examined international undergraduate and postgraduate students as individuals who belong to the same group (e.g., Al-Shawi, 1990; Matsumoto et al., 2001; Pruit, 1978), and the clear distinctions made by their dissimilar circumstances identified earlier suggest the strong need for additional research in this area.

Additionally, within this study the term 'work' adopts a wider definition that goes beyond paid employment or jobs in a particular organisation. This is supported by definitions found in the Oxford English Dictionary (2000) and the American Heritage® Dictionary of the English Language (2000), both of which offer the first definition for 'work' as something that does not refer to paid-employment. Instead, the former dictionary defines it as '*a thing done, an act, a deed specifically one involving toil or strenuous effort*', whilst the latter defines it as '*physical or mental effort or activity directed toward the production of or accomplishment of something.*' In reference to the sample in this study, these definitions qualify the effort put by individuals into their study programme as work, because they are required to exert strenuous effort, including both physical and mental labour as well as time, in order to obtain their postgraduate degrees.

From the onset, the differences in the nature of the work undertaken by international postgraduate students compared to that typically associated with other expatriates, and the larger role played by organisations in the selection of expatriates and their destinations, compared to the students' mainly self-initiated relocation and more freedom in determining their countries of study, are rightly acknowledged. To some extent a postgraduate study programme is different from the typical expatriation assignment, and hence, international postgraduate students may not appear to fit the exact expatriate stereotype. However, other aspects, such as the requirement for performance and the need to adapt to the environment in a foreign country, are very similar.

These similarities are further highlighted by the like need to juggle between the personal/family life and work demands whilst adjusting to life in the UK, since successful adjustment is equally crucial to the success of expatriate workers and international postgraduate students. Whilst work performance is one of the main concerns for expatriates, academic achievement is one of the most important concerns for international postgraduate students. Much like the expatriates, failure for international postgraduate students to adjust may result in academic failure and drop out, with negative psychological, social and economic consequences on the students, their families and even their funding agencies (Zwingmann and Gunn, 1983). These negative consequences are very similar to those reported by studies on expatriates (e.g., Bird and Dunbar, 1991; Copeland, 1990).

Furthermore, this study is not intended to focus on the actual tasks performed at work or the organisational influence on adjustment, but rather to examine individuals' perceptions of the demands made by their work and family domains and their influence on their adjustment in the UK. The degree of similarities in the circumstances between expatriates and international postgraduate students (as outlined in Chapter One), such as the pressure to perform, the membership and role within a family unit, and the need to adjust in a foreign country whilst meeting the demands of both work and family domains, should not be overshadowed by the differences. These similarities are more pertinent to the issue of work-family conflict and international adjustment as it is focused on in this research. Moreover, there are earlier studies that have used

postgraduate students with family as the population studied (e.g., Campbell-Clark, 2002; Carlson, Derr and Wadsworth, 2003; Parasuraman and Simmer, 2003).

Therefore, the suitability of international postgraduate students with family as the population for the present research is justified. It is further supported by evidence from the literature review that the main body of literature on adjustment has overlooked this particular group of internationally-relocated individuals. The next section will now present an in-depth examination of international adjustment.

2.4 International Adjustment

International adjustment has been found to affect both the personal and work lives of expatriates. Failure to adjust can have negative effects not only on the expatriates' psychology and personal life (Bird, et al., 1991), but also on their host and home organisations (McFarland, 1997), and expatriates who fail in this respect may abandon the assignment and return to their home countries prematurely. In a study on US expatriates, Black and Gregersen (1999) reported that up to 20% of managers in their study returned early because of difficulty in adjusting to the assigned foreign country.

The complexity of international adjustment is intensified when expatriating individuals are accompanied by their families (Caligiuri et al., 1998a; Caligiuri et al., 1998b; Shaffer and Harrison, 1998, 2001), because these individuals face the added challenge of having to cope with their families' adjustment issues as well as their own. In addition, they also have to cope with the contextual change to their work-family interface. Although family adjustment takes place within the home domain, its outcomes have been shown to influence the adjustment of expatriates at work (Caligiuri, et al., 1998a, 1998b). Whilst pressures are experienced in the work environment such as learning the new job and becoming acclimatised to the new workplace, simultaneous pressures arise in the new domestic environment, where the requirement to be supportive of the needs and adjustment of the family members is urgent. These pressures may not exist for single expatriates (Linehan and Walsh, 2000). Hence, the added pressures from the family domain could make the adjustment of expatriates with family a much bigger challenge than those faced by single expatriates. The following section will discuss the conceptualisations of the international adjustment construct.

2.4.1 Conceptualisations of International Adjustment

The literature demonstrates an extensive body of research conducted on international adjustment. However, there are problems associated with its definition and operationalisation (Church, 1982), and alternative terms like *adaptation*, *accommodation*, *assimilation* and *acculturation* are found in the literature to refer to similar phenomena as adjustment. As yet no universally-accepted term has emerged (Searle and Ward, 1990), but for the purposes of this research the term *adjustment* is chosen as it is found to be the most commonly utilised term within the expatriation literature. Also, the term *adjustment* and *international adjustment* will be used interchangeably.

The varying definitions of adjustments and their subsequent theoretical models are said to be more an attribute of the emphasis given to the phenomenon by each researcher, than an issue of substance (Anderson, 1994). This can be seen from the following definitions. International adjustment has been defined in both a pessimistic and optimistic view. On the pessimistic side, adjustment is said to refer to the lack of mental health problems such as stress or depression (Berry and Kim, 1988). In contrast, the optimistic view defines it as the acquisition of culturally acceptable skills and behaviour (Bochner et al., 1977) or as an indication of feelings of general acceptance and satisfaction (Brislin, 1981).

In addition, international adjustment has also been studied as a process and a state (Haslberger, 1999). For example, according to Berry (1992, p.73), adjustment is '*a state whereby changes occur in the individual in a direction of increased fit and reduced conflict between environmental demands and the individual attitudinal and behavioural inclinations.*' Brewster (1995, p.115), on the other hand, said that adjustment is '*the process whereby expatriates adjust their behaviour to the usually accepted social behaviour of the host culture.*' Such varied definitions can be taken as a clear indication of the complexity of the phenomenon. However, it can be concluded that adjustment can be either a state or a process. As for which of the two is adopted in any study, the matter is contingent upon the focus of the research.

The present research is not aimed at examining the objective measure of adjustment through the use of psychological inventories or scales, but at discovering the subjective adjustment that is reported by the expatriate. Hence, international adjustment

within the present study is conceptualised as a perceived state of psychological comfort that an individual feels in a new situation, as defined by Black and Gregersen (1991). This is because the study is not aimed at examining the process involved throughout the adjustment period, but instead at an examination of the adjustment as perceived by expatriates.

The complexity of the international adjustment construct is further demonstrated by the different facets suggested in the literature. Although it was initially considered to be a unitary construct (Church, 1982; Torbiorn, 1982), later studies demonstrated that international adjustment is in fact multi-dimensional (Black, 1988; Black and Gregersen, 1991; Black and Stephens, 1989; Parker and McEvoy, 1993; Searle and Ward, 1990; Shaffer et al., 2001a; Tanaka et al., 1994; Yavas, 2001; Ward and Kennedy, 1996). However, there are several distinctions made by different researchers in relation to the facets or dimensions of adjustment. This variance is attributed to the different approaches and theories employed in examining this complex construct (Haslberger, 1999).

According to Ward and colleagues (Searle and Ward, 1990; Ward and Kennedy, 1992, 1996), adjustment can be categorised into two forms, i.e., psychological adjustment and sociocultural adjustment. Psychological adjustment, described in terms of psychological and emotional well-being, is said to be the adjustment that is affected by factors like an individual's personality, life changes and coping styles. These factors are mainly associated with personal flexibility, internal locus of control, relationship satisfaction and use of humour (Searle and Ward, 1990; Stone et al., 1991; Ward and Kennedy, 1994; Ward and Rana-Deuba, 1999).

In measuring psychological adjustment, studies found in the literature have employed various psychological measures such as General Health Questionnaire (GHQ) (e.g., Nicholson and Imaizumi, 1993; Anderzen and Arnetz, 1999; Selmer and Leung, 2003), and Zung Self-rating Depression Scale (ZSDS) (see Searle and Ward, 1990; Ward and Chang, 1997). For example, Ward and Chang (1997) employed ZSDS to examine levels of psychological adjustment through affective, physiological and psychological aspects of depression; whilst Anderzen and Arnetz (1999) utilised GHQ as part of their measures of psychological adjustment, together with measures of stressor-related hormones (i.e., serum prolactin, testosterone and cortisol) for

psychophysiological indicators of adjustment levels. Thus, the measure of psychological adjustment utilised by a study is found to be contingent upon the research objectives of that study.

By contrast, sociocultural adjustment is defined as the behavioural competence or ability of relocated individuals to 'fit in' with the host environment and to handle the new aspects of the host country (Searle and Ward, 1990; Ward and Kennedy, 1993, 1994; Ward and Searle, 1991). Sociocultural adaptation measures the difficulty faced by individuals in areas such as making friends, finding food that they enjoy or following rules and regulations (see Appendix A) using the Sociocultural Adaptation Scale (SCAS). The SCAS was developed based on Furnham and Bochner's (1982) 40-item Social Situations Questionnaire (SSQ) and was first used by Searle and Ward (1990) as a sixteen-item scale. The scale measures the degree of difficulty experienced by internationally-relocated individuals on a five-point scale. The SCAS had originally been developed as an assessment of intercultural competence using twenty-nine items with emphasis on behavioural domains (Ward and Kennedy, 1999). The SCAS was later refined by Ward and Kennedy (1999) to include several cognitive items, e.g. "understanding of local's world view", "taking a local's perspective on the culture" and "understanding the locals' point of view". The final list of SCAS items employed in a study is said to be contingent upon the characteristics of a sample and the sojourners' destinations (Ward and Kennedy, 1999).

To an extent, the 'flexible' nature of this instrument may be seen as an advantage because it allows customisation of a questionnaire according to the sample of a particular study using content validation or 'expert' judgement. However, the *judgement call* exercised in deciding on items to be employed in a study is very subjective and does not provide any empirical justification for the decision. It is the characteristics or the host-country destinations of the sample studied which determines the final list of items. The 'flexibility' offered by the scale presumed that all twenty nine items in the list has equal loading onto one factor, i.e. sociocultural adjustment, and that dropping an item would not affect the composite loading of the items on the scale, regardless of the sample it is tested on. It also seems to presume that no new factor would emerge within the existing adjustment facet. Such presumptions would not be

accurate as the items may not have equal loading on the sociocultural adjustment factor and may even load onto more than one factor.

On the other hand, Black et al. (1991) proposed that adjustment be examined as a three-faceted construct, in which work, general and interaction adjustment comprise the dimensions. Work adjustment is the adjustment that relates to the specific job responsibilities, performance standards and expectations, and supervisory responsibilities in the host country. General adjustment refers to the degree of comfort with general living conditions, such as climate, housing, food, cost of living, transportation and health facilities. Interaction adjustment is concerned with the degree of comfort in socialising and interacting with host nationals.

Based on the literature on work role adjustments (e.g. Dawis and Lofquist, 1984; Nicholson, 1984) and international relocation (e.g. Hawes and Kealey, 1981; Torbiorn, 1982; Tung, 1981), Black (1988) developed a multidimensional measure of international adjustment to extend the unidimensional measures of international adjustment forwarded by Torbiorn (1982). Black adopted the general adjustment facet, i.e., adjustment to the daily life and general living conditions, from Torbiorn (1982) and hypothesised two additional facets in the study, i.e. interaction adjustment and work adjustment. Black (1982) argued that internationally relocated individuals have to adjust not only to their new work role, but also to the new factors outside of work and to learn to interact with their host national colleagues or subordinates. For these hypothesised facets of international adjustment, Black (1988) developed two new items to measure interaction adjustment and three other items to measure work adjustment. The items for general adjustment from Torbiorn (1982) and the five items for the two hypothesised facets were factor analysed. From the analysis, Black (1988) reported eleven items which were found to load on three different factor structures (see Table 2-1 below). Items with loadings less than 0.30 were omitted from the final list reported in this study.

It must be noted here that in this study (Black, 1988), the general adjustment and interaction adjustment items were found to be highly correlated. Therefore, these two factors were combined to form a single dimension, labelled as general adjustment. Nevertheless, the study managed to demonstrate that international adjustment is a multifaceted construct and not unidimensional, as had previously been viewed.

Facets	Items	Adapted from
General	1. Transportation system	Torbiorn (1982)
	2. Food	
	3. Weather	
	4. Shopping	
	5. General living	
	6. Entertainment	
Work	7. Job and responsibilities	Hypothesised in Black (1988)
	8. Interacting with Japanese peers	
	9. Interacting with Japanese subordinates	
Interaction	10. Working with Japanese outside of their company	Hypothesised in Black (1988)
	11. Interacting with Japanese in general	

Table 2-1: Summary of Items in Black (1988)

Black and Stephens (1989) later extended Black (1988) by conducting a further test of the hypothesised three faceted nature of international adjustment. Here, Black and Stephens (1989) used 14-items for interaction, general and work adjustments (see Appendix B) based on Black (1988). In this study, Black and Stephens (1989) managed to statistically verify the three facets of adjustment using principal component analysis. They found that the 14-items loaded onto three separate factor structures, namely interaction (four items), general (seven items) and work adjustment (three items). Each factor had good reliability levels of .89, 0.82 and 0.91 respectively, with eigenvalues greater than one.

In the same study, Black and Stephens (1989) also conducted a test of those adjustment measures on the expatriates' spouses. However, based on evidence from an earlier study by Stephens and Black (1988) which suggested that eighty percent of trailing spouses did not work in the foreign countries, the items for work adjustment was excluded in the examination on the group of trailing spouses. Hence, for the Spouse group Black and Stephens (1989) only examined nine items which measures interaction adjustment and general adjustments, i.e., six items for interaction adjustment and three items for general adjustments. With the exception of one item in the interaction adjustment (i.e. "interaction with host national or co-worker), which pertains to the work interaction, the test of interaction and general adjustments items on the spouse sample found the measures to load onto two separate factor structures of interaction and general adjustments, with reliability levels of 0.91 and 0.86 respectively. These results were identical to the results received from the expatriate sample, and thus provided further statistical support for the distinctions of international adjustment as general, interaction and work adjustments.

This three-faceted distinction was later incorporated into a comprehensive theoretical framework of adjustment by Black et al. (1991). A review of the literature showed that Black et al.'s (1991) framework of international adjustment has provided the basis for many subsequent studies on international adjustment, both in the work and the personal domains. The measures and dimensions of international adjustment provided by Black (1988) and Black and Stephens (1989) which were used in Black et al.'s (1991) has been adopted and tested in examinations of international adjustment by various researchers across the globe (e.g., Parker and McEvoy, 1993; Selmer, 1999, 2000; Shaffer et al., 2001a).

For example, Parker and McEvoy (1993) forwarded a model for international adjustment based on the three faceted distinctions of the construct from Black and Stephens (1989). The model proposed the examination of individual, organizational and contextual variables as antecedents of international adjustment which subsequently leads to expatriate performance level (i.e. turnover, absenteeism, early returns and output). Although the model provides a different categorisation to the antecedents of international adjustment, Parker and McEvoy (1993) did not put forward any new measures for the examination of international adjustment. The study adopted Black and Stephens (1989) three-faceted distinctions as the conceptualisation of the international adjustment construct.

The three-faceted distinction of international adjustment by Black et al. (1991) has not only been applied to various samples, but also examined by other researchers to confirm its three-faceted dimensions (e.g., Shaffer et al., 2001a). More importantly, the recent confirmatory factor analysis performed by Shaffer et al. (2001a) has further supported the three-faceted distinctions of the international adjustment construct. This provides further empirical support to the conceptualisation of international adjustment as work, interaction and general adjustments.

It is interesting to note that in recent years, some researchers have made attempts to bring together the two dimensions of adjustment by Ward and colleagues (1990, 1992 and 1996), and the three dimensions by Black (1988) and Black and Stephens (1989). Ayman (1997) for example, argued that psychological adjustment and sociocultural adjustment, as defined by Ward et al. (1996) are similar to the general and interaction adjustment described by Black (1988) and Black and Stephens (1989); whilst Selmer

(1999) proposed interaction and general adjustments as part of sociocultural adjustment. As yet, no empirical studies have been undertaken to support (or refute) these theoretical propositions.

In addition, although work, interaction and general adjustments are labelled as sociocultural adjustment in a recent study by Selmer (2005), the study did not empirically test the dimensions. Instead, Selmer (2005) used Black and Stephens' (1989) three-faceted adjustment dimensions and labelled them as sociocultural adjustment in addition to using a psychological analysis tool to examine the psychological adjustment dimension. Although Selmer (e.g., 1999, 2003, 2005) used the label sociocultural adjustment in his study, he did not adopt the items with similar labels like the one forwarded by Ward and colleagues. Instead, Selmer used only the conceptualisation of international adjustment as psychological and sociocultural adjustment but adopts the adjustment measures forwarded by Black and Stephens (1989) to represent sociocultural adjustment, used along with psychological tests like General Health Questionnaire (GHQ-12) (see Selmer, 1999, 2005) to measure psychological adjustment.

Selmer's effort (e.g., 1999, 2003, 2005) may be considered as a different or possibly even new perspective in examining international adjustment, much like the earlier work by Parker and McEvoy (1993). But, the more important finding to be noted here is the fact that the factor analyses conducted in his studies provide further support for the conceptualisation of work, international and general adjustment as the three facets for the international adjustment construct. Furthermore, a review of the literature shows that the conceptualisation of international adjustment as forwarded by Selmer (e.g., 1999, 2003, 2005) has had very little following. This is possibly due to the fact that Selmer's use of psychological measures to examine international adjustment is much like the work of Ward and colleagues (1992, 1996).

In addition, Selmer's categorisation of international adjustment dimensions as described above (e.g., 1999, 2003, 2005) does little in extending the existing construct because in actual fact, Selmer used the existing international adjustment measures by Black and Stephens (1989) and only added a psychological variable measures in examining expatriated individuals. This is only necessary in cases where such psychological variable is the focus or necessary in meeting the objectives of a research.

On the other hand, it must be noted that more recently, a new set of dimensions to measure international adjustment has been forwarded by Haslberger (2005). The dimensions by Haslberger (2005) proposed for the international adjustment construct to be measured using a 12-item questionnaire on individuals' cognition and emotion. Although Haslberger's (2005) measures aimed to provide a more refined measurement of adaptation outcomes based on a critique of the existing measures by Black and Stephens (1989), the new measures have been forwarded following an analysis of two out of three facets from the earlier study, i.e. interaction and general adjustment but omitted the work adjustment facet from its analysis. To a degree, this recent study may have refined the existing one-dimensional scale (adjusted/unadjusted) of adjustment by Black and Stephens (1989) *via* its two-dimensional measures of adjustment outcome (i.e. cognition and emotion). However, in its present state, this new measures of adjustment from Haslberger (2005) cannot be regarded as a clear replacement to Black and Stephens' (1989) measures of international adjustment for two main reasons.

First, the study by Haslberger (2005) did not examine its measures against **all** measures in Black and Stephens (1989) as it had omitted work adjustment from its analysis. Although Haslberger did not explicitly state his reasons for omitting work adjustment, further examination of the study showed that the sample on which the measures were tested comprises of 50% expatriates and 42% trailing spouses, whilst 8% of the sample did not identify themselves as one or the other. Hence, this later study by Haslberger was not able to provide any conclusive evidence which the present research can use to justify rejecting the earlier measures from Black and Stephens (1989). Secondly, since Haslberger's (2005) measures are fairly new and have only been subjected to a test on one sample of expatriated individuals and their spouses, the level of rigour (i.e. test-retest) for the new measures relative to the earlier ones by Black and Stephens (1989) may be questioned. As demonstrated in the literature, the existing measures of international adjustment by Black and Stephens (1989) have been subjected to various expatriate samples across a range of context and nationalities and have been supported, as was described in earlier paragraphs.

Based on the findings of earlier studies and the fact that the present research is not aimed at measuring the objective performance of the expatriate, but at exploring its subjective perception, the facets of adjustment as presented in the Black and Stephens

(1989) and subsequently included in the Black et al.'s (1991) international framework are most appropriate for use here. The following section provides further discussions on these facets to demonstrate the framework's validity and reliability for use in this research.

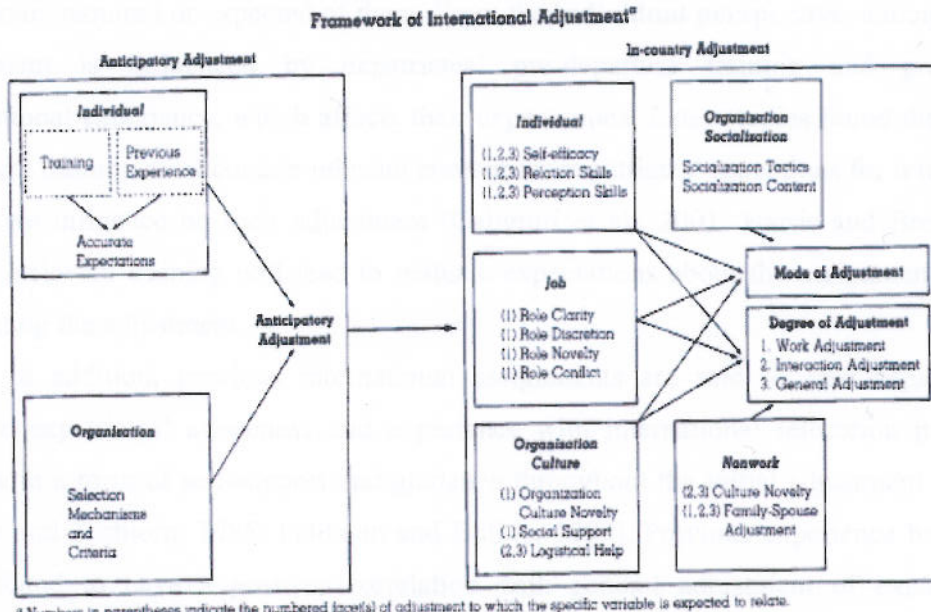


Figure 2-1: Framework of International Adjustment (Black et al., 1991)

The three-faceted construct of adjustment is best discussed using the framework proposed by Black et al., (1991) since this allows for a more structured discussion about the phenomenon. In this model, international adjustment is conceptualised as a two-phase process, consisting of anticipatory adjustment and in-country adjustment. Anticipatory adjustment refers to adjustment prior to departure to the host country. Antecedents to anticipatory adjustment include pre-departure training, previous international experience and organisation selection mechanisms and criteria. On the other hand, in-country adjustment takes place upon arrival at the home country. Antecedents to in-country adjustment can be grouped into individual, job, organisation culture, organisational socialisation and non-work factors. Each of these antecedents will now be discussed in more detail.

2.4.1.1 Anticipatory Adjustment

According to Black et al. (1991), expatriates experience some degree of anticipation about the move prior to their entry into the new country and this is called anticipatory adjustment. This adjustment is a result of information received about new behaviours required or expected of them. From the **individual perspective**, anticipatory adjustment is influenced by expatriates' pre-departure training and previous international experience, which affects their expectations. Later studies found that pre-departure training must contain relevant content for expatriates' transitions for it to have a positive influence on their adjustment (Caligiuri et al., 2001; Harris and Brewster, 1999). Relevant training will lead to realistic expectations about the assignment, thus facilitating the adjustment.

In addition, previous international assignments are said to ease adjustment because expatriates' awareness and experience with international relocation provide them with a form of self-support and guidance throughout the initial adjustment stages (Grove and Torbiorn, 1985; Feldman and Bolino, 1999). Previous experience has also been found to have a positive correlation with general adjustment of expatriates (Takeuchi et al., 2002; Parker and McEvoy, 1993). To a degree, the experience may have desensitised expatriates to the differences they find in the new environment.

From an **organisational perspective**, selection mechanisms and criteria are seen to influence international adjustment. As noted by Hodgetts and Luthans (2000), selection criteria constitute one of the main predictors of expatriate failure, and in this respect, the majority of organisations rely on managerial experience and technical or functional expertise as the primary criterion (Black and Gregersen, 1991; Kealey, 1994; Mendenhall et al., 1987; Swaak, 1995; Tung, 1981). However, research shows that more individual traits and interpersonal skills such as adaptability of the expatriate and the family, and knowledge of the host country language, are key factors in expatriate success (Black et al., 1992; Bhaskar-Srinivas et al., 2004). This suggestion in no way rejects the importance of technical expertise associated with the assignment, as in fact it is the possession of this technical or managerial competence that is the main reason for sending these employees abroad. However, organisations' sole-reliance on technical competence and persistent disregard for the importance of interpersonal skills in expatriation may result in failed assignments.

Although the need for a selection system that emphasises interpersonal and cross-cultural skills, i.e. 'soft-skills' has been underlined in the expatriate selection literature as one of the determinants of success for international assignments, in an examination of expatriate selection practices, Harris and Brewster (1999) found not only do organisations continually place emphasis on traditional criteria, but they also use an informal/closed selection system, referred to as the 'coffee-machine system', in expatriate selection decisions. This demonstrates the discrepancy between management theories and organisational practices; and at the same time stresses the critical role of the organisation in facilitating the anticipatory adjustment of expatriates.

2.4.1.2 In-country Adjustment

Once expatriates enter the new country, they will have to deal with the other component of adjustment i.e., *in-country adjustment* (Black et al., 1991). According to Black et al. (1991) adjustment is a three-faceted construct, categorised as adjustment to work, adjustment to interaction with host nationals, and adjustment to the general environment. Adjustment to work involves adjustment to job responsibilities and supervision, which means expatriates must not impose their work values on host nationals, but must instead understand the host values and learn to work accordingly. Interaction adjustment relates to expatriates' adaptation to the social norms like changing their interaction style to fit in with the style of the host society. This includes the feeling of comfort in communicating with host nationals both at work and outside of the work context. General adjustment requires that expatriates learn to adapt to their surroundings in general, such as the housing conditions, local foods or the infrastructure available in the host country (Black et al., 1991).

The degree of adjustment for each of these dimensions is influenced by several factors in the individual, job, organisation culture and non-work domains of expatriates. According to Black and Gregersen (1991) expatriate adjustment is affected by three **individual factors** i.e. self-efficacy, relation skills and perception skills. Self-efficacy, conceptualised as a person's ability to believe in him/herself and the ability to succeed in a foreign surrounding, has been shown to have a significant positive relationship with general, interaction, and work adjustment (Harrison et al., 1996). Relational and

perceptual skills have also been found to have a significant relationship with all three dimensions of adjustment (Black and Gregersen, 1991).

As for the **job factors** i.e. role clarity, role discretion, role novelty and role conflict, all four factors have been found to have a significant relationship with work adjustment (Black and Gregesen, 1991). Further support for this relationship is provided by Shaffer et al. (2001a), who found that high degrees of role clarity and role discretion facilitate adjustment, whilst high role conflict inhibits it. Although job factors are found to have the strongest effects on work adjustment, role novelty is found to have significantly negative impact on general adjustment (Shaffer et al., 2001a).

Organisational cultural antecedents for in-country adjustment include organisation culture novelty, social support and logistical help (Black et al., 1991). Later studies confirmed that expatriate adjustment is facilitated by the support they receive from organisations (Caligiuri et al., 1999; Hays, 1999; Shaffer et al., 2001). Since expatriation involves a major relocation of expatriates and often their accompanying families, the logistical and social support provided by organisations, especially during the transitional period, have significant influence on the adjustment process. This support includes housing, shipping personal belongings, children's schooling, transportation and medical service facilities, which will ease the transition of expatriates and their families in the new country.

Although organisation culture novelty is said to have an influence on adjustment, the relationships between this factor and all three facets of adjustment were found to be non-significant in a study by Black and Gregersen (1991). Subsequent research attempting to examine this factor has attributed such a finding to be due to the difficulty in distinguishing between the organisational culture novelty and general/national culture novelty (Shaffer et al., 1999). Consequently, whilst it may be theoretically possible to argue the distinction between the two types of culture novelty, expatriates may not be able to clearly differentiate them, particularly during their initial years in the host country. On the other hand, both factors in the **non-work** domain i.e., culture novelty (national) and family-spouse adjustment, have significant relationships with general adjustment and interactions adjustment (Black and Gregersen 1991, Shaffer et al., 1999). However, no direct empirical support is yet available for the influence of family/spouse adjustment on expatriates' work adjustment.

Factors	General adjustment ($\Delta_{Av}=0.84$) r_c	Interaction adjustment ($\Delta_{Av}=0.89$) r_c	Work adjustment ($\Delta_{Av}=0.87$) r_c
Gender	n/s	0.15	n/s
Self-efficacy	0.27	0.37	0.41
Interpersonal skills	0.24	n/a	n/a
Role ambiguity	-0.16	-0.17	0.41
Role discretion	n/s	0.19	0.43
Role conflict	0.20	n/s	-0.46
Frequency of interaction with host nationals	0.24	0.49	0.28
Culture novelty	n/s	-0.23	n/s
Family adjustment	0.86	0.62*	0.18
Spouse interaction adjustment	0.42	0.36	0.15
Spouse general adjustment	0.64	0.32	0.12

Δ_{Av} is the average internal consistency reliability coefficient, r_c is the sample weighted-average correcting for unreliability of measurement, n/a = not available, n/s = not significant; * data received through correspondence with author

Table 2-2: Selected Results Showing Correlation of Various Antecedents to General, Interaction and Work Adjustment (from Hechanova et al., 2003)

Whilst Black et al.'s (1991) framework provides a comprehensive categorisation of the factors influencing adjustment; it treats work and family factors as two separate and mutually exclusive antecedents to international adjustment. The significance of family influence on international adjustment has recently been highlighted in a recent meta-analytic review of studies that utilised Black (1988) and Black and Stephen's (1989) measures and constructs of international adjustment by Hechanova et al. (2003). Their meta-review found family adjustment and spouse adjustment to be two of the four common factors that predict all three dimensions of adjustment (see Table 2-2, items in bold are the four reported common factors). This finding further highlights the significant influence of family on adjustment. However, it also demonstrates that work and family has been examined separately, ignoring the dynamics that exist in the interface between the two domains. The absence of studies that investigate this dynamic factor on international adjustment, justifies the need for a study on work-family conflict as an antecedent to international adjustment.

2.4.2 Dynamic Nature of Adjustment

Another important aspect of international adjustment that must be considered is its dynamic nature. Although various studies have suggested the changes that expatriates go through in reaching the adjusted stage, debate still continues over their

exactness. Whilst Lysgaard (1950) suggested that adjustment takes the form of a U-curve, Gullahorn and Gullahorn (1963) extended this and proposed a W-curve. Using time as its function and focusing more on emotional adjustment, the process has been described by the U-curve theory as a period wherein expatriates proceed through four stages. These stages are namely the honeymoon stage, culture shock stage, adjustment stage and mastery stage, which are characterised by different levels of adjustment beginning with a moderate level during the honeymoon stage, followed by low, moderate and high levels of adjustment for each subsequent stage. Although the theory appears to be supported by some (e.g., Torbiorn, 1982), it has received strong critiques from others (Black and Mendenhall, 1990; Church, 1982) who argued that the stages and characteristics that it described could not be applicable to all expatriates.

The debate is ongoing as to whether adjustment takes the form of a *W*-curve, a *J*-curve or some other shape (Ward et al., 2001), with attempts being made to provide a simplified depiction of levels of adjustment achieved through time. However, no 'curve' has yet been found to withstand empirical tests, which is not surprising considering there are a multitude of factors involved in the process. In addition, the effect that each factor has on adjustment also varies between individuals.

Nevertheless, based on the review it can be concluded that time spent in a host country influence adjustment (Black, 1988; Black and Gregersen, 1992; Stahl and Caligiuri, 2005). In addition, adjustment is also shaped by different stages of highs and lows that affect expatriates' feelings of comfort and satisfaction with the new surroundings at different times, causing a tumultuous range of emotions and psychological experience that differs between them. This highlights the dynamic nature of international adjustment that expatriates face during the international relocation exercise. At one extreme, expatriates who manage to adjust may in the end integrate and be able to function successfully in their new surroundings, whilst at the other, those who do not may experience feelings of confusion, doubt, loss and disgust, leading to culture shock (Oberg, 1960). Since there is no clear evidence to either reject or accept any of the proposed adjustment curves (Black et al., 1991), the subject remains open to debate.

In addition, this researcher is not aware of any research that provides conclusive evidence of the exact period required by an expatriate to successfully adjust. Whilst Torbiorn (1982) said adjustment is more significant during the first two years of the

expatriate assignment, a longitudinal study by Anderzen and Arnetz (1999) suggests that the first twelve months upon arrival in a new country require the most adjustment by expatriates. However, establishing the shape of the adjustment curve or the actual time required to fully adjust is not the aim of the present research. The more important aspect to note here is the dynamic nature of adjustment that the literature suggests. Thus, based on Anderzen and Arnetz (1999) this study adopts the first twelve months of the expatriates' entry into a new country as the timeframe for examination of the adjustment experience.

The wide range of factors that affect international adjustment are clearly indicated in the discussion so far, but it is also evident that within this varied range of adjustment, the adjustment of single expatriates is different compared to that of expatriates with trailing families. Hence, the next section will discuss the role of family in international adjustment prior to linking it to the work-family literature.

2.5 The Role of Family in Adjustment

Although the literature provides a significant number of studies on work or organisational factors on adjustment to a new environment, the influence of non-work factors are just as crucial. As defined earlier, the incompatible pressures between work and home may cause expatriates to experience an imbalance or a conflict between the two major life domains. When such an imbalance exists, expatriates face difficulty in attaining high adjustment levels as their adjustment to the new environment is not solely contingent upon the work life but also on home life. For some, this may involve their spouses or partners, and for others children may also be part of the equation.

Past research has provided evidence that families' inability or failure to adapt is one of the major reasons for expatriates' failure to adjust (Hays, 1972; McFarland, 1997). Relocation is found to have a negative impact on the social networks of the spouses due to the loss of support from friends and other family members in the home country (Dussert, 1994) and the difficulty in building new ones in the host country (de Verthelyi, 1995). The relocation is also reported to have deleterious effects on the careers of the accompanying spouses (Munton, 1990; Harvey, 1998). In addition, studies on relocated children also reported negative effects as a result of the move as it

is found to cause problems with the progression of the children's education (Fukuda and Chu, 1994).

These difficulties will exacerbate the many difficulties faced by expatriates in establishing a 'new life' within the personal, work and social domains in the host country. Since international relocation has already imposed work demands on the pre-existing issues of work and family interface, these are pre-sets to conflict that may negatively affect expatriates' ability to adjust and perform on the assignment. Such a close relationship between expatriates' family and work lives explains why family maladjustment is often cited as the main cause of failure in international assignment. Despite this, the influences of demands by the work and family domains on expatriate adjustment have received only scant research attention.

In addition, expatriates who are in dual-career marriages or relationships often have a dilemma when considering acceptance of an assignment because of the impact of the relocation to the spouses' own careers (Harvey, 1998). At first glance this dilemma may appear to concern females more than it would males, as the number of female expatriates is relatively small (Global Relocation Trends 2000 Survey Report, 2001). However, it has been argued that dual-career issues are increasingly becoming a major concern for adjustment (Harris, 2004) and reluctance to relocate amongst expatriates (Leonard and Sommer, 1995; Linehan and Walsh, 2000; Selmer and Leung, 2003). The decision is not easy to make as trailing spouses often face many severe difficulties in securing suitable jobs abroad, not least because of legal restrictions imposed on them by the government of the host country (Schell and Solomon, 1997). Even if they manage to find work, it usually means a cut in pay (Harvey, 1998; Leonard and Sommer, 1995) or having to settle for jobs that are not related to their career skills and experience (de Verthelyi, 1995). Even if having the spouses with them may provide support for the expatriates (Linehan, 2002), the negative circumstances described above may potentially result in higher stress within the household and subsequently affect the spouse's adjustment.

In providing a link between family adjustment and expatriate adjustment, the seminal work of Caligiuri et al. (1998a) proposed a model that shows how expatriates' spouses and children influence international assignments (see Figure 2-2). The model examined the impact of international relocation on the whole family using the Double

ABCX and Spillover theories. The model proposed for international assignment to be viewed as a change that requires the family to restructure, develop and adapt in response to the demands of life in the new setting. If families can adequately adapt to their foreign environment, then they will maintain continuity and facilitate each family member's psychological growth and adjustment to the new environment encountered in the host country. This is a pertinent factor to the family dynamics because one individual can disrupt the balance in the relationships between family members (Caligiuri, et al., 1998a). For example, a child in the family may have a difficult time in making new friends at school. The frustration brought about by this tension may affect other family members and thus affecting the balance or equilibrium of the family.

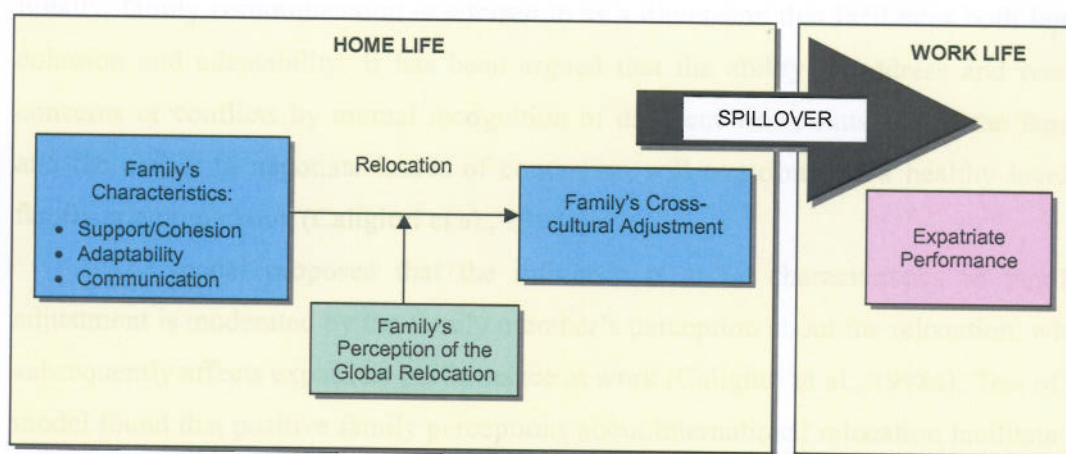


Figure 2-2: Theoretical Model of Family Adjustment and Expatriate Performance (Caligiuri et al., 1998a)

Based on a prior study by Olson et al. (1984), three family characteristics i.e. support, adaptation and communication; were applied by Caligiuri and her colleagues in the model as indicators of the family's ability to function. Since international relocation is a form of stressor, following the description by Wiggins-Frame and Shehan (1994, in Caligiuri et al., 1998a), these characteristics provide indications of how the family cope with the stressor. Family cohesion is defined as the degree of emotional bonding among family members (Olson et al., 1984, p. 60). A moderate level of cohesion among family members provides the necessary level of emotional support for its members to develop relationships beyond the boundaries of the family unit (Caligiuri, et al., 1998a), such as

the ability of a child to make friends with other children. On the other hand, too much or too little of the closeness would be damaging to the family (Olson et al., 1984).

Next, family adaptability refers to the ability of a family system to change its power structure, role relationships, and relationship rules in response to situational and developmental stressor (Olson et al., 1984, p. 60). This adaptability indicates the degree of flexibility within a family to change its functioning following a stressor (Olson et al., 1984, p. 48). The family's ability to adapt is critical in order to deal with the stressors from within the family and those from the external environment (Caligiuri et al., 1998a). For example, when faced with high amount of workloads in the workplace following the relocation to the host country, expatriates may be forced to reduce the amount of time spent with the family so as to accommodate the demands of work. Finally, family communication is referred to as a dimension that facilitates both family cohesion and adaptability. It has been argued that the ability to address and resolve concerns or conflicts by mutual recognition of different viewpoints within the family, and the ability to negotiate issues of contention will contribute to a healthy level of family communication (Caligiuri et al., 1998a).

The model proposed that the influence of these characteristics to family's adjustment is moderated by the family member's perception about the relocation, which subsequently affects expatriate performance at work (Caligiuri et al., 1998a). Test of the model found that positive family perceptions about international relocation facilitate the expatriate's success on an international assignment, whilst negative views about the move may cause difficulty for them to adjust to the new life, hence unfavourably affecting expatriate adjustment (Caligiuri et al., 1998b). Findings from the study highlight the spillover effect of family life on expatriates' work performance, which further underlines the influence of family on expatriates, in terms of whether an international assignment is successful or otherwise.

This study highlights the dynamic nature of the interaction of family adaptation in the context of international relocation. However, it did not address one of the potential outcomes of work-family interaction, which is work-family conflict. The following section will now discuss work-family conflict in detail before presenting its relevance to the international adjustment phenomenon.

2.6 The Nature of Work-Family Conflict

Over the last thirty years, there has been substantial research into the interface of work and family domains encompassing a range of theoretical perspectives such as spillover, accommodation and border theories. Defined as simultaneous pressures from the work and family domains that are mutually incompatible in some respect such that meeting the demands of one role makes it difficult to meet the demands of the other role (Greenhaus and Beutell, 1985; Kahn et al., 1964), work-family conflict is a phenomenon that results from the pressures of performing multiple roles in the work and family domains. As stated by Kahn et al. (1964), a role is a result of others' expectations about what is an appropriate behaviour in a particular position. Therefore, when these roles become incompatible, the result is psychological tensions brought about by the conflicting role demands.

There are two primary roles for a majority of adults, one being the role at work and the other being that in the family domain (Zedeck, 1992). As both these roles are of significant importance to the individual as a person, it is inevitable that at one time or another some incompatibility will occur, particularly when the demands of a role in one domain conflict the demands of a role in the other. The extensive pool of research on conflict has determined a multitude of factors that result in work-family conflict, which are found to originate from both the work domain (e.g. time pressures and workplace culture) and the family domain (e.g. the need to care for children who become ill).

Sometimes referred to as negative spillover, work-family conflict can take different forms and can originate either in the work domain or the family domain. According to Greenhaus and Beutell (1985), conflict is categorised into three main types: time-based, strain-based and behaviour-based conflicts (see Figure 2-3).

2.6.1 Three Types of Work-Family Conflict

Time-based conflict occurs when role pressures stemming from the two domains of work and family compete for an individual's time. On the premise of limited time available, individuals are unable to fulfil the competing demands made on them by the two domains (Greenhaus and Beutell, 1985). For example, when a person is required to

work during the weekend, it would not be possible for family obligations, like taking the children for a day out, to be met.

Strain-based conflict occurs when the strains experienced in one role domain interfere with the effective performance of role behaviours in the other domain. The roles are incompatible in the sense that the strain created by one makes it difficult to comply with the demands of the other (*ibid*, 1985). For example, feeling stressed with work duties and responsibilities may cause individuals to be less attentive or appear preoccupied with work when they are at home. On the other hand, when children are unwell, working parents may feel fatigued or irritable at work due to loss of sleep time at home, hence leading to low work performance. As human energy is fixed, multiple roles will eventually reduce the amount of time and energy available to meet all role demands, resulting in conflict (Marks, 1977).

Behaviour-based conflict is conflict that occurs when incompatible behaviours are demanded by competing roles in the two domains (Greenhaus and Beutell, 1985). An example of this is the circumstance where a female employee needs to be tough and assertive to lead and take charge of activities when at work, yet at the same time she is expected to be gentle and warm to the children, or even subservient with the husband when at home.

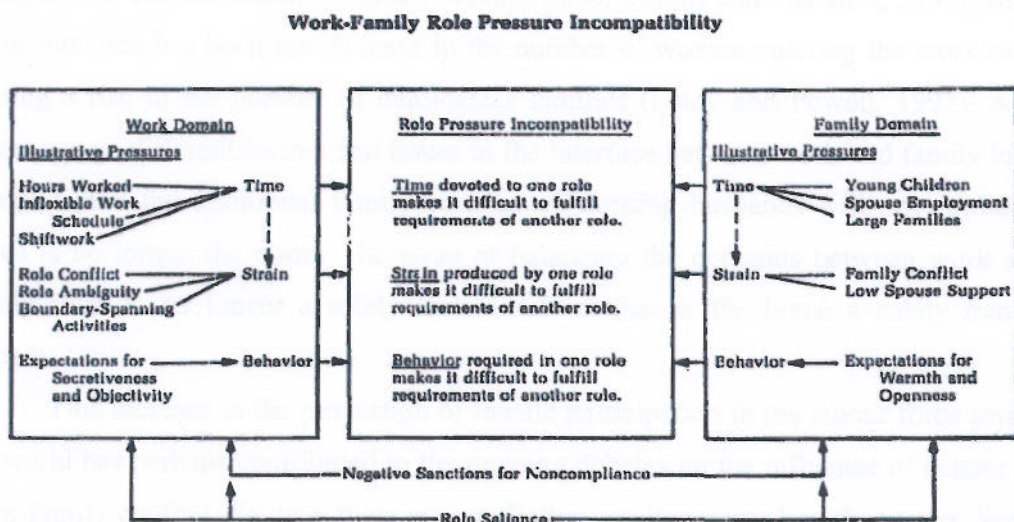


Figure 2-3: Sources of Conflict between Work and Family Roles
(Greenhaus and Beutell, 1985)

These conflicts are intensified when a high degree of salience is placed on a role in a domain and the sanctions for failure to perform a role is strongly negative (Greenhaus and Beutell, 1985). High salience or importance placed on a work (home) role causes higher role pressures and work-family conflict in performing the roles at home (work), which consequently affects individual well-being (Martire et al., 2000) or causes parenting stress (Simon, 1992).

In all three types of work-family conflict, the domains are found to conflict as the roles compete for the same finite resources (Goode, 1960), and such competition may present threats to the well-being of those concerned (Judge et al., 1994; Higgins et al., 2000; Tenbrunsel et al., 1995) as some studies have found work-family conflict to consequently result in absenteeism (Goff et al., 1990; Thomas and Ganster, 1995), intention to leave (Aryee, 1994), decreased job, family and life satisfaction (Higgins et al., 1992), stress (Allen et al., 2000), heavy use of alcohol (Frone et al., 1997a) and long-term problem drinking (i.e., a person's negative perception of his/her own drinking habit) (Roos, Lahelma and Rahkonen, 2006). However, the review shows that in these studies, like most other studies in the literature, the focus has mainly been on individuals within the domestic boundary.

It must be noted that the social demographic scenario across the world has changed over the last decade (World's Women 2000: Trends and Statistics, 2001), and a major outcome has been the increase in the number of women entering the workforce, causing a rise in the number of dual-career families (Foley and Powell, 1997). As a consequence, different factors and issues in the interface between work and family have emerged, and the traditional family concept of working husbands with stay-at-home wives is no longer the norm. The issue of balancing the demands between work and family roles is no longer a solely male issue; neither is the home a solely female domain.

This increase in the proportion of female participation in the labour force across the world has perhaps contributed to the ongoing debates on the influence of gender on work-family conflict. To date, there are conflicting results reported on the matter. Some research on work-family conflict found working women to generally report greater levels of conflict compared to their male counterparts. This is said to be an outcome of their participation in the work domain i.e. paid employment, whilst maintaining their

traditional role as the main caregiver in the family domain (Hammer et al., 1997; Aryee and Luk, 1996; Aryee et al., 1999a). However, other studies found no gender difference in the experience of work-family conflict (e.g. Pleck et al., 1980; Kinnunen and Mauno, 1998), although Pleck et al. (1980) did find that the two gender groups experience conflict in different ways. Whilst men experience more conflict due to excessive working hours, women experience greater conflict such as fatigue and irritability as a result of trying to perform their responsibilities both at home and at work. Therefore, gender is a factor that has to be considered in the analysis of the present research to enable a contribution to the existing debate.

Further, there is also conflicting opinion in the literature on factors with regard to children in the household. Whilst some studies found the presence of children to contribute to work-family conflict (Barnett, 1994; Campbell and Campbell, 1994); others found the age of the children (Frone and Yardley, 1996; Rosenbaum and Cohen, 1999), or the number of children in the household (Crouter, 1984) to be predictors of work-family conflict. A need to further explore this matter remains, but it can be said that when children are present, particularly younger children, there will be more demands made on the parents than when there are older children. Quite possibly, women with older children may find their role at home supported to a certain degree through the assistance of their elder children with household duties. Thus, these characteristics of children in the household will be included in the present research.

2.6.2 Directions of Conflicts

One other important focus of work-family research that must be included is the direction of work-family conflict. Although there are studies that continue to use a global measure of work-family conflict (e.g., Carlson and Perrewe, 1999; Yang et al., 2000), a review of the literature shows that work-family conflict should actually be examined in its bi-directional nature, i.e. as work-family conflict and as family-work conflict. The work-family and family-work conflicts should be analysed simultaneously, but with a clear distinction made between the two so as to enable more distinct identifications of the relationship that each has with its predicted variable (Frone et al., 1992; 1997). Such distinction between the relationships would not be possible should the two constructs be measured universally.

In addition, analysing work-family conflict separately will present a limitation to the understanding of the actual interface between the two domains, causing failure in examining the reciprocal relationship between them, as there is a positive bi-directional relationship between work and family conflict, and family and work conflict (Frone et al., 1997; Carlson and Frone, 2003). The reciprocal relationship suggests that if work interferes with family, this may cause family obligations to go unfulfilled. These obligations would in turn spill over into the work domain, thereby causing it to interfere with work. It must be noted here that the use of the term work-family conflict within this research follows the generic association of the concept and thus incorporates both directions of the link between the work and family domains. The specific direction of conflict will only be explicitly stated where necessary, using the abbreviations WFC or FWC.

Since conflict is a multi-dimensional construct (Greenhaus and Beutell, 1985), it cannot be studied unitarily because factors that affect the work domain would not necessarily have similar effects on the family domain. Likewise, one would not expect factors in the work domain to have exact similar effects on factors in the family domain. The literature also shows that there is much more research that considers work-family conflict than family-work conflict (Eagle et al., 1997; Higgins and Duxbury, 1992). This may be because work-family conflict is more prevalent than family-work conflict (Gutek et al., 1991; Kinnunen and Mauno, 1998). Hence, examining the work-family interface in the context of international adjustment must include an analysis that assesses the bi-directional and distinct relationships between the work and family domains.

However, a review of the work-family conflict literature found that except for a recent measure by Carlson et al. (2000), other measures in the literature are limited in comparison because the measures:

- provide items measuring WFC but not FWC (e.g., Aryee and Luk, 1996; Kopelman et al., 1983);
- have items to measure only one or two of the 3 types of conflict (e.g., Frone et al., 1992, 1994; Netemeyer et al., 1996); or

- do not include simultaneous measure of the directions of conflict from work and family domains (e.g., Duxbury and Higgins, 1991; Thomas and Ganster, 1995).

A summary of measures found in the literature, which were reviewed for this study is shown in Table 2-3 below. As it is pertinent that an examination of work-family conflict measures not only the different types of conflict but simultaneously makes clear distinctions of its bi-directional nature, comparisons between these measures were made on the basis of the measures' ability to distinguish between the types and directions of each conflict. From the table it is evident that the measure by Carlson et al. (2000) is the only known measure available to date, which is able to do so within the use of one instrument. A more detailed description of the items in Carlson et al. (2000) is presented later in Chapter Three.

The next section will now demonstrate the link between the work-family conflict literature and the adjustment literature. In order to do so, it will simultaneously discuss the role of family in expatriates' international adjustment and the various aspects of conflict that may influence adjustment.

Authors	Types of Conflict Measured	Sources of Scale	Distinctions made for:			All (6) types of conflict included?
			Directions	Types		
Kopelman, Greenhaus and Connolly (1983)	Inter-role Conflict	Pleck (1980); Quinn and Staines (1978)	No	No	No	No
Bedeian, Burke and Moffett (1988)	General WFC	Burke, Weir, and Du Wors (1980)	No	No	No	No
Greenhaus, Parasuraman, Granrose, Robinowitz, and Beutell (1989)	Time-based WFC	Kopelman et al. (1983)	No	Yes	No	No
Loerch, Russel, and Rush (1989)	Strain-based WFC	Kopelman et al. (1983)	No	Yes	No	No
	Time-based WFC	Thompson (1985)	No	Yes	No	No
	Strain-based WFC	Wiley (1983)				
	Behaviour-based WFC	Developed by authors				
Parasuraman, Greenhaus, Rabinowitz, Bedeian, and Mossholder (1989)	General WFC	Burke, Weir, and Du Wors (1979)	No	No	No	No
Goff, Mount and Jamison (1990)						
	Time & Strain based WFC	Kopelman et al., 1983	Yes	Yes	No	No
Duxbury and Higgins (1991)	Time & Strain-based FWC	Kopelman et al., 1983 (reversed WFC)				
Gutek, Searle and Klepa (1991)	Strain WFC	Bohen and Viveros-Long (1981); Pleck (1978)	No	Yes	No	No
	Time & Strain WFC	Kopelman et al. (1983)	Yes	No	No	No
	Time & Strain FWC	Burley (1989)				
Aryee (1992)	General WFC	Small and Riley (1990)	No	No	No	No
Duxbury and Higgins (1992)	Strain FWC	Bohen and Viveros-Long (1981); Pleck (1979)	Yes	Yes	No	No
	Time & Strain WFC					
O'Driscoll, Ilgen, and Hildreth (1992)	Time WNW	Developed by authors	Yes	Yes	No	No
	Time NWW	Developed by authors				

Parasuraman, Greenhaus and Granrose (1992)	Time WFC	Developed by authors	No	Yes	No
Rice, Frone and McFarlin (1992)	Strain WFC	Kopelman et al. (1983)			
Frone, Russell and Cooper (1992)	Time and Strain WFC	Developed by authors	No	Yes	No
	Time and Strain FWC	Developed by authors	Yes	No	No
Frone, Russell and Cooper (1994)	Time & Strain WFC	Developed by authors	Yes	No	No
Judge, Boudreau, and Bretz (1994)	Time and Strain WFC	Gutek et al. (1991); Frone et al. (1992a)	Yes	No	No
	Time and Strain FWC	Gutek et al. (1991); Frone et al. (1992a)			
Matsui, Ohsawa, and Onglatco (1995)	Time & Strain WFC	Developed by authors	Yes	No	No
	Time and Strain FWC	Developed by authors			
Thomas and Ganster (1995)	Time & Strain WFC	Kopelman et al. (1983)	No	No	No
Adams, King and King (1996)	Time & Strain WFC	Kopelman, Greenhaus and Connolly (1983)	Yes	No	No
	Time & Strain FWC	Burley (1989)			
Aryee and Luk (1996)	General WFC	Kopelman et al. (1983)	No	No	No
Netemeyer, Boles and McMurrian (1996)	Time & Strain WFC	Developed by authors; Kopelman et al., (1983)	Yes	No	No
	Time & Strain FWC	Developed by authors			
Kinnunen and Mauno (1998)	General WFC	Frone et al., 1992; Brett and Yogeve (1985)	Yes	No	No
	General FWC				
Carlson, Kacmar and Williams (2000)	Time, Strain & Behaviour based WFC/FWC	Stephens and Sommer (1996); Developed by authors	Yes	Yes	Yes
	Time, Strain & Behaviour based WFC/FWC	Stephens and Sommer (1996); Developed by authors			

Table 2-3: List of Work-Family Conflict Measures Selected from the Literature (adapted from Carlson et al., 2000)

2.7 The Theoretical Framework for this Research

Borrowing the suggestions from the proponents of border theory in the work-family literature, one can argue that there have to be clear boundaries and some degree of separation between work and family domains (Campbell-Clark, 2003). However, as international relocation usually involves the expatriate and his/her family moving to a foreign country or even being separated from the family, the boundaries between work and family become blurred (Harvey, 1997), and for expatriates, work demands significantly encroach into the family domain. Consequently, the boundaries and separation between their work and family lives are in abeyance as work has already largely affected family life with the actual relocation.

The review of the literature clearly demonstrates the potentially negative influence of work-family conflict on work, interaction and general adjustment of expatriates. It also highlights the lack of research that links work-family conflict to adjustment, and the outcomes reported by studies of work-family conflict, such as the increase in absenteeism or turnover rate have only been echoed in essence by studies that examined the family influence on international assignments. For example, it has been argued separately that family adjustment is said to increase expatriates' psychological withdrawal (Shaffer and Harrison, 1998), negatively affecting work performance (Caligiuri et al., 1998b), or has only indirect effects on expatriate work adjustment (Shaffer et al., 1999). However, these findings provide evidence for the influence of family adjustment on expatriates. It is then arguable that family adjustment *per se* may not directly affect expatriate adjustment, but instead it is the work-family conflict that has a direct relationship to it. As this direct relationship has not been established in the literature, this is where the present research will be able to contribute its findings.

Furthermore, as international relocation strongly imposes work demands on the family domain, the degree of interconnection between work and family may be intensified. As discussed earlier, evidence from previous studies have demonstrated that work demands affect family life during domestic relocation (Hall and Richter, 1988). With changes taking place in both the family and work surroundings, pressures from both these domains may also increase. Faced with a change to their work environment, expatriates may spend longer hours outside the home domain in order to familiarise

themselves with the new task at hand. Indeed, such action is noted as one of the coping strategies of people who face job changes (Feldman and Brett, 1983; Feldman and Thompson, 1993).

At the same time, the relocated family will also demand more of the expatriate's time in the home domain to assist with various aspects of settling down. As time is a finite resource (Goode, 1960), once spent it is not available for other tasks either within the same domain or other domains (Hobfoll, 1989). If expatriates spend more hours in the work domain, there is less time available to spend at home with the spouse or the family because the devotion of greater resources in one domain requires that lesser resources be devoted to the role in the other domain (Edwards and Rothbard, 2000). Expatriates may then find themselves unable to fulfil the demands of the collection of roles they need to play in both the work and family domains, bringing about role conflict which may negatively affect their work, interaction or general adjustments (Hechanova et al., 2003; Morley and Flynn, 2003), resulting in a family domain which has a more permeable boundary compared to work domain (Frone et al., 1992).

The interconnection between work and family domains is thus highlighted further in international relocation because the host national environment often present additional challenges such as cultural differences for the expatriates to adjust, which are absent from the domestic relocation environment. Consequently, expatriates will eventually have to make choices because they cannot be in two places at the same time, creating a tug of war for time between their work needs and family needs, subsequently resulting in time-conflict that may affect expatriates' work, interaction and general adjustment.

From a work perspective, expatriates are likely to face higher levels of strain or emotional pressure following the greater demands associated with a new role (Feldman and Thompson, 1993; Moyle and Parkes, 1999), in addition to the unfamiliar cultural setting of the host nation. After all, prior research have reported strains experienced in the work domain to hinder work performance (Sullivan and Bhagat, 1992; Takeuchi, Wang and Marinova, 2005). On the other hand, from a family perspective losing existing social networks increases the interdependence between the family and the expatriate (Caligiuri and Lazarova, 2002). The feeling of loss and the need for social support will require more energy to be devoted by the expatriates to the family.

However, much like time, the energy available to an individual is also an exhaustible commodity (Hobfoll, 1989). Hence, once energy is used within the family (or work) domain, it is no longer available for use within the work (or family) domain. Demands from both domains would cause strains on expatriates (Takeuchi et al., 2005), resulting in a spillover of strain from the work domain into the family domain, and vice versa. This spillover has the potential to result in work-family conflict, which may negatively influence expatriates' adjustment to work, interaction and general settings in the host country.

In addition, in as much as the family is demonstrated to provide social support to individuals (e.g., Frone et al., 1992; Linehan, 2000) which may be useful in helping them develop new relationships in the new environment (Caligiuri et al., 1998a), this same support has also been reported to contribute to work-family conflict (Wallace, 2005). According to Wallace (2005), social support from the family, for example the sharing of negative feelings or experiences between spouses may result in the reinforcement of the those feelings because both individuals are feeling the negative effects of the situation, thus exacerbating the effects of the stressing factor. In the case of internationally relocated individuals, the stressor is the international relocation and adjustments they experience and the negative feelings may be any difficulty faced in adjusting to the host country. Based on Karasek, Triantis and Chaudhry (1982), the international adjustment experienced by expatriates and their families can be characterised as 'a group crisis' in which the members of the group may not be able to comfort each other as they are exposed to the same problem. This suggests a further potential for strain on individuals who relocate with their families because the family/spouse they take with them and which should offer support, encouragement and care may in contrast heightens the level of conflict experienced.

Moreover, following their move into the new surroundings, expatriates face a new culture in the work settings, and encounter pressures to learn the different ways to behave and interact in their daily conduct in order to adjust to the host country. As they learn the 'new' behaviour both in the work and social settings, they may become more aware of how they behave at work and at home. Expatriates may find that the roles they previously play either at work or at home have been altered or changed following the relocation. They may need to demonstrate new or different behaviours in these domains.

Both international and domestic relocation literatures have shown that during international relocation expatriates have a general desire to reduce uncertainty found in their new setting, particularly those pertaining to the new behaviours that may be expected or required and old behaviours that may no longer be deemed acceptable or appropriate. According to Black (1988), most major role transitions have been associated with role ambiguity. During international adjustment, expatriates may experience greater ambiguity to the role they are expected to play (Black, 1988). Such ambiguity may influence the degree of international adjustments they achieve at work and in their interactions with others in the host country (Hechanova et al., 2003; Black, 1988). With this higher degree of ambiguity, expatriates have a higher possibility of exhibiting behaviours that are incompatible with those expected of them, hence resulting in behaviour conflicts which may subsequently influence their ability to adjust to work and to interaction with their colleagues, supervisors or others in the host country.

2.8 Research Model and Hypotheses

Building on the argument developed in the Literature Review, two research questions have been identified:

Research question 1: What is the relationship between the different types of work-family conflicts and the three facets of international adjustment?

Research question 2: What is the direction of work-family conflict during international adjustment?

These questions will be examined using a model proposed for this research, as shown below in Figure 2-4.

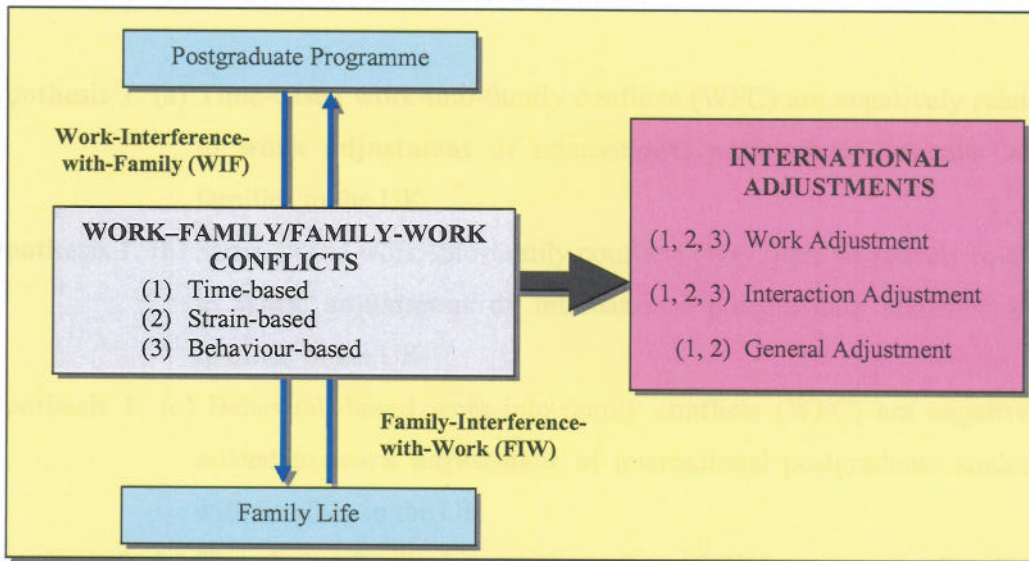


Figure 2-4: Conceptual Framework for the Research

The model posits that work-family time-, strain- and behaviour-based conflicts are antecedents to cross-cultural adjustment i.e. work, interaction and general adjustments. Work-family conflict and international adjustment are expected to be inversely (negatively) related. The relevant factors that affect adjustment or work-family conflict reviewed and discussed earlier will be incorporated into the research, as these must be controlled for in order to capture the true relationship between international adjustment and work-family conflict.

2.8.1 Research Hypotheses

Overwhelmingly, the work-family conflict literature posits a negative spillover relationship between the predictor and criterion variables in work-family interface. An increase to the levels of conflict from work (or family) domain is often found to reduce various aspects or outcome in the family (or work) life, indicating an inverse relationship. In addition, the adjustment literature also posits a negative relationship between family life (i.e. family maladjustment) and the different facets of international adjustment, i.e. work, interaction and general adjustments. The dynamic relationship between work and family interface however, has not been examined within the international adjustment scenario. Hence, a set of hypotheses as listed below has been developed to empirically examine the proposed relationship between work-family

conflict and the three facets of international adjustment.

- Hypothesis 1:** (a) Time-based work-into-family conflicts (WFC) are negatively related to **work adjustment** of international postgraduate students with families in the UK.
- Hypothesis 1:** (b) Strain-based work-into-family conflicts (WFC) are negatively related to **work adjustment** of international postgraduate students with families in the UK.
- Hypothesis 1:** (c) Behaviour-based work-into-family conflicts (WFC) are negatively related to **work adjustment** of international postgraduate students with families in the UK.
- Hypothesis 2:** (a) Time-based family-into-work conflicts (FWC) are negatively related to **work adjustment** of international postgraduate students with families in the UK.
- Hypothesis 2:** (b) Strain-based family-into-work conflicts (FWC) are negatively related to **work adjustment** of international postgraduate students with families in the UK.
- Hypothesis 2:** (c) Behaviour-based family-into-work conflicts (FWC) are negatively related to **work adjustment** of international postgraduate students with families in the UK.
- Hypothesis 3:** (a) Time-based work-into-family conflicts (WFC) are negatively related to **interaction adjustment** of international postgraduate students with families in the UK.
- Hypothesis 3:** (b) Strain-based work-into-family conflicts (WFC) are negatively related to **interaction adjustment** of international postgraduate students with families in the UK.
- Hypothesis 3:** (c) Behaviour-based work-into-family conflicts (WFC) are negatively related to **interaction adjustment** of international postgraduate students with families in the UK.
- Hypothesis 4:** (a) Time-based, (b) Strain-based and (c) Behaviour-based family-into-work conflicts (FWC) are negatively related to **interaction adjustment** of international postgraduate students with family in the

UK.

Hypothesis 4: (b) Strain-based family-into-work conflicts (FWC) are negatively related to **interaction adjustment** of international postgraduate students with family in the UK.

Hypothesis 4: (c) Behaviour-based family-into-work conflicts (FWC) are negatively related to **interaction adjustment** of international postgraduate students with family in the UK.

Hypothesis 5: (a) Time-based and (b) Strain-based work-into-family conflicts (WFC) are negatively related to **general adjustment** of international postgraduate students with families in the UK.

Hypothesis 5: (b) Strain-based work-into-family conflicts (WFC) are negatively related to **general adjustment** of international postgraduate students with families in the UK.

Hypothesis 6: (a) Time-based and (b) Strain-based family-into-work conflicts (FWC) are negatively related to **general adjustment** of international postgraduate students with families in the UK.

Hypothesis 6: (b) Strain-based family-into-work conflicts (FWC) are negatively related to **general adjustment** of international postgraduate students with families in the UK.

2.9 Chapter Conclusion

This chapter has presented the research gap identified in the literature and a possible way forward to address it. In Chapter Three, the research strategy for the proposed study and the methods employed in its execution are presented.

CHAPTER THREE

RESEARCH DESIGN AND METHODS

3.1 Introduction

Two basic purposes of a research design are to provide answers to the research questions and to control for any variance (Kerlinger, 1986). This chapter presents the research design choices relating to both purposes. The structure of the chapter is as follows: first, a review of the philosophical perspectives and their implications in the context of the aims of the current research, then a discussion of the research design that is consistent with the adopted philosophical approach and overall research aim.

3.2 Research Philosophy

Central to all social research is the understanding of research philosophy, i.e., its ontology and epistemology (Grix, 2002). Exploration of research philosophy with reference to research methodology is said to be significant for three reasons (Easterby-Smith et al., 2002). Research philosophy:

- i. can guide a researcher in refining and specifying the research methods to be used in a study by helping to clarify the overall research strategy to be used. This includes the type of evidence gathered and its origin, the way in which such evidence is interpreted, and how it helps to answer the research questions posed;
- ii. enables a researcher to evaluate different methodologies and methods to be employed in the research. It also helps a researcher avoid inappropriate use and unnecessary work by identifying the limitations of particular approaches at an early stage; and
- iii. may help the researcher to be creative and innovative in either selection or adaptation of methods that were previously outside his or her experience.

3.2.1 Positivism and Interpretivism

Generally, ontology relates to questions such as “what is the form and nature of social reality and what is there that can be known about it” (Denzin and Lincoln, 1994). More specifically, ontology is defined by Blaikie (2000, p.8) as:

“claims and assumptions that are made about the nature of social reality, claims about what exists, what it looks like, what unit makes it up and how these units interact with each other. In short, ontological assumptions are concerned with what we believe constitutes social reality.”

Ontological positions range from the scientific and objective, where social phenomena and their meanings have an existence that is independent of social actors, to the subjective and interpretive where “social phenomena and categories are not only produced through social interaction but they are in a constant state of revision” (Bryman, 2001, pp.16-18). A researcher must first explore and understand these two extremes of the continuum before deciding on a research method (Proctor, 1988). Although contrasts between the two ontologies are often the avenue taken in such debates, it is not possible to identify a philosopher who ascribes to all aspects of either one of the views (Easterby-Smith, 2001). Nevertheless, the confidence provided by understanding different philosophical positions provides the researcher with the power to argue for different research approaches and allows him/her to choose a sphere of activity with confidence (Dobson, 2002). Thus, the exploration and understanding of issues raised within the philosophical perspective debates are necessary before a discussion of the ontological and epistemological stances of the present research can be presented.

The positivist approach, with an emphasis on empirically quantifiable observations, seeks to discover any causal relationships that could be used for the prediction of future occurrences (Davidson and Tolich, 1999). Positivist research is independent of the observer, with uniformities that can be observed and explained. Its design allows flexibility in the treatment of data, in terms of comparative analyses, statistical analyses, and repeatability of data collection in order to verify reliability. Positivists believe that there is one reality that is stable and observable from an objective point of view (Levin, 1988).

On the other extreme, the interpretive approach emphasises the holistic and qualitative information (Husen, 1997), through which interpretations and sense are

made by the social beings (Davidson and Tolich, 1999). Interpretive research designs are characterised by the assumption that human behaviour can be explained by social facts, investigated using methodologies that utilise deductive logic (Horna, 1994). Interpretivists are less concerned with uncovering causal relationships between the social elements, and more interested in the social actors and their interpretation of the social phenomena. They believe that social reality is the product of these social actors' or participants' interaction with "a world which is already interpreted by the meanings which participants produce and reproduce as a necessary part of everyday activities together" (Blaikie, 1993, p.48). This means there is the possibility of co-existing multiple realities.

However, between these two extremes of the continuum, there are various other perspectives that do not completely reject all tenets of either of the other two. These perspectives may adhere to the views that reality is socially constructed with its meanings given by people, thus disputing the stance of positivism; whilst at the same time they may challenge interpretivist notions of reality as being purely socially constructed (Denzin and Lincoln, 1994; Easterby-Smith et al., 2002). One such perspective is realism.

3.2.2 Realism

Realism has been described as "an alternative to the conventional positivist notion" and attempts to preserve a "scientific attitude towards social analysis at the same time as recognising the actors' meanings" (Layder, 1993, p.16). It assumes that "social reality exists independent of the observer and the activities of social science, that this reality is ordered, and that these uniformities can be observed and explained" (Blaikie, 1993, p.202). To realists, unlike natural science, society is both produced and reproduced by its members; therefore it is both a condition and an outcome of their activities (Blaikie, 1993, p.59).

A realist perspective is underpinned by the ontological position that the world and the universe exist without any human awareness of this existence being necessary (Connelly, 2000), and that real phenomena may exist that cannot be measured by our senses. Social enquiries could at best provide an explanation for the phenomena but can not go as far as to predict them. According to Bhaskar (1989) "causal laws must be

analysed as the tendencies” for events to repeat themselves in the real world, and not regarded as deterministic laws. Realism shares the same underlying ontology of positivism in that it accepts the notion that reality exists independently of the observer, but at the same time extends beyond positivism by acknowledging the existence of several legitimate ways of knowing the reality. Realists do not reject positivist methods, but rather the positivist notion of absolutism (Johnson and Duberley, 2000).

Thus, realism can be viewed as a combination of positivists’ desire for producing causal explanations, and interpretivists’ views of nature of social reality (Blaikie, 1993). For the realist, perceptions of reality change continually but the underlying structures and mechanisms constituting that reality are ‘relatively enduring’, and the aim of realist research is to develop a better understanding of these enduring structures and mechanisms (Dobson, 2002). The goal is neither to predict social phenomena nor to interpret social meanings, but rather, realists attempt to understand and explain the causal relationship between different entities in the social world as tendencies of social phenomena.

3.2.3 The Realist Philosophy Adopted

Whilst there are many different philosophical perspectives proffered by earlier research, the decision to choose one in particular is contingent upon several factors. With regard to the ontological stance, this researcher is inclined towards the realist perspective as it satisfies her own view of reality, which does not accept the positivist argument that only one reality exists, nor the idea that reality is only socially-constructed. This researcher is more inclined to believe that reality, as described by Dobson (2002), changes continually whilst there is relative endurance of the underlying structures and mechanisms which constitute that reality. Hence, as a realist, the most important factors to consider include the purpose of the research, the process of theory construction and testing, and the ontological and epistemological assumptions held (Blaikie, 1993, p.202). This takes the discussion into the issue of epistemology.

3.2.4 Epistemology and Research Strategy Adopted

Whilst ontology is about “what we may know”, epistemology is concerned with the theory of knowledge. According to Blaikie (2000, p.8), epistemology is:

“...ways of gaining knowledge of social reality, whatever it is understood to be.

In short, claims about how what is assumed to exist can be known.”

Although at a higher or philosophical level the two ontological extremes, i.e., positivism and interpretivism appear irreconcilable, the distinction is not as well-defined at the lower or technical level. The debates on research philosophy have commonly placed the focus of distinctions on whether research is quantitative or qualitative. However, this debate is said to be lacking in coherent definitions and concentrates more on the methods employed by research rather than exploration of the underlying philosophy (Crosssan, 2003). Nevertheless, it is germane that a researcher is clear about his/her ontological position because it will affect the manner in which the research is undertaken. This has been done in the earlier section.

With regard to epistemology, realists believe that research approaches should be defined not by a researcher's skills and background but principally by the nature of what is to be investigated. The primary focus is to identify the underlying objects of research, which then helps to define the approaches that should be adopted. For this, realists do not insist on the use of one single method because the main concern is more on developing methods that are most appropriate to the subject matter being studied (Blaikie, 1993).

A researcher does not have to perceive qualitative and quantitative research methods as mutually exclusive (Hammersley, 1996) because research tools are complementary to each other (Bryman, 2001; Cresswell, 2003; Datta, 1994; Hammersley, 1996; Husen, 1997; Yin, 1993). Furthermore, Curran and Blackburn (2001) argue that it is not necessary for a researcher to adopt the view that only one research method is valid in a particular research area. Both quantitative and qualitative research methods are equally scientific. This position is in line with the realists' argument that the choice of method is dependent upon the context of the study and the nature of its research questions. No one method or combination of methods can be said to be better than another without reference to the specific research question. Moreover,

no research method can claim to be perfect; hence many empirical studies now combine both inductive and deductive processes (Blaikie, 1993).

Ultimately, it is the consistency between the aim of a research study, the research questions, the chosen methods, and the personal philosophy of the researcher that is essential in underpinning and providing the rationale for any research project. Therefore, instead of employing an epistemological approach, this research chose to take an alternative approach called a technical version (Bryman, 2001). Under this approach, quantitative and qualitative research strategies are seen as compatible, giving the strength of one approach that may possibly offset the weakness of the other, or vice versa (Brewer and Hunter, 1989). Moreover, the technical approach allows for a *leading* or “dominant” research strategy to be employed, which in the case of the present research is the quantitative data collection, together with the “less-dominant” qualitative strategy, i.e. the exploratory interviews (Creswell, 2003).

3.3 Research Design

This section discusses the design developed for this research, which is depicted in Figure 3-1. From this it can be seen that there are three main stages. Having identified the area of research interest, an extensive literature review in the area of adjustment and work-family, was conducted to establish the theoretical and conceptual framework. This researcher have not come across any study on work-family conflict within the international adjustment literature, and therefore, it was decided that an in-depth interview strategy conducted with a representative sample of this population would help to provide a better understanding of the phenomenon prior to the main study data collection. These interviews acted as an exploratory investigation, and their findings were subsequently used to inform the construction of the questionnaire.

Next, hypotheses and research instruments were developed. The choice was made to collect data for the main enquiry through a questionnaire survey, and the international adjustment (Black, 1988; Black and Stephens, 1989) and work-family conflict scales (Carlson, et al., 2000), which have been validated in earlier studies, were utilised in this respect. Justifications for the adoption of these measures are provided in a later section on measures. Once developed, the questionnaire was then pilot-tested, and upon confirmation of its usability, the questionnaire was distributed to the

population. Finally, the data collected was analysed, its results interpreted and discussed; and conclusions made by referencing the findings against the literature.

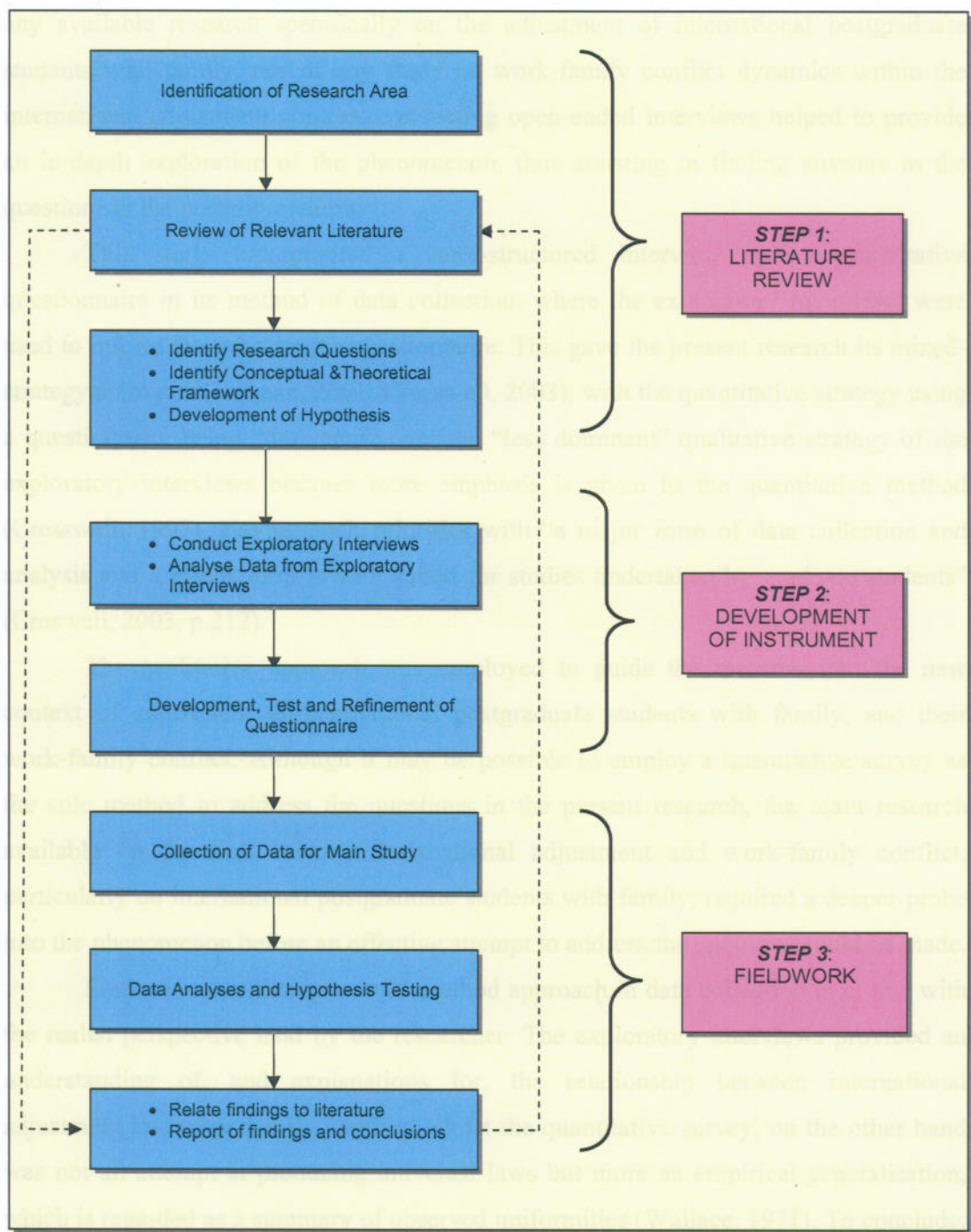


Figure 3-1: The Research Design

By employing the technical approach, the integrated design of the research benefits from multiple perspectives and connections that are not available when one approach is chosen over the other (Bryman, 2001). Since the researcher is not aware of any available research specifically on the adjustment of international postgraduate students with family, nor of any study on work-family conflict dynamics within the international adjustment context, conducting open-ended interviews helped to provide an in-depth exploration of the phenomenon, thus assisting in finding answers to the questions in the present research.

This study incorporated a semi-structured interview and a quantitative questionnaire in its method of data collection, where the exploratory interviews were used to inform the quantitative questionnaire. This gave the present research its mixed-strategy approach (Bryman, 2001; Creswell, 2003), with the quantitative strategy using a questionnaire being “dominant” over the “less dominant” qualitative strategy of the exploratory interviews because more emphasis is given to the quantitative method (Creswell, 1997). Having such priorities with “a major form of data collection and analysis and a minor form is well suited for studies undertaken by graduate students” (Creswell, 2003, p.212).

The qualitative approach was employed to guide the research into the new context of adjustment of international postgraduate students with family, and their work-family conflict. Although it may be possible to employ a quantitative survey as the sole method to address the questions in the present research, the scant research available on the link between international adjustment and work-family conflict, particularly on international postgraduate students with family, required a deeper probe into the phenomenon before an effective attempt to address the enquiries could be made.

Furthermore, utilising a multi-method approach in data collection is in line with the realist perspective held by the researcher. The exploratory interviews provided an understanding of, and explanations for, the relationship between international adjustment and work family conflict, whilst the quantitative survey, on the other hand was not an attempt at producing universal laws but more an empirical generalisation, which is regarded as a summary of observed uniformities (Wallace, 1971). To conclude, in reference to the research question and research objectives as presented in Chapter Two, which are to explore and examine the relationship between work-family conflict

and international adjustment among the international postgraduate international students with family in the UK, the strategy adopted for the present research is highly appropriate.

3.4 Exploratory Interviews

In order to develop a research instrument that would best fit the investigation at hand, an in-depth interview was conducted to provide closer and clearer insights into the phenomenon. Since no known research has linked the work-family conflict and international adjustment literatures, this interview exercise was deemed necessary for the development of an extensive questionnaire and also to explore the possibility of including additional items in the questionnaire. Based on the literature, a set of eight open-ended questions was formulated for this purpose (see Appendix C). The questions were used as a guide to ensure that each interview was able to provide responses for all aspects of interest.

The descriptive and open nature of the questions in the exploratory interviews called for qualitative measures. Thus, the QSR NVivo[®] version 2.0 qualitative analysis package was used in the analysis. The semi-structured interviews helped the researcher to gain more insight into how the interviewees felt about their move to the UK with their families and their overall experience of adjusting to the new life here. This format allowed the researcher to encourage conversations from participants, as well as giving them the flexibility to contribute additional information that they thought was relevant to the research topic (Mann and Stewart, 2000). The findings from these exploratory interviews were then used to inform the development of the questionnaire. A more detailed description of this exploratory interview exercise and its findings are presented in Chapter Four.

3.5 Measures

In order to design good questions for a survey, there must be a close link between theories and practice (Gill and Johnson, 1997). Therefore, the measurement of variables in this study was based on the conceptual framework operationalised in the literature, as described in Chapter Two, but with some modifications to the scales in order to specifically fit the measures for this study. In addition, two further items were

added based on findings from the exploratory interviews. All four sets of measures are described in the following paragraphs.

3.5.1 Work-Family Conflict Measures (Questionnaire: Section 1)

Assessment of the work-family conflict construct was made using eighteen items for the work-family conflict scale taken from Carlson et al. (2000). Compared to other measures found in the literature, for example those of Stephens and Sommer (1996), which consist of work-into-family items but not family-into-work conflict, or Frone et al. (1992), whose measure does not make distinctions between the three types of work-family conflict, the adopted measure from Carlson et al. (2000) is able to assess not only the three types of conflict, i.e. time-, strain- and behaviour-based, but also the directions of conflict, i.e., family-into-work or work-into-family conflict. This is crucial to the present study because the aim is not only to examine the types of conflict that affect international adjustments, but also to determine which of the two domains is the source of a particular conflict that has influence on adjustment. Therefore, the adoption of the measure by Carlson et al. (2000) is justified in meeting the aims of this research.

The eighteen items in this measure are comprised of three items for each type of conflict. These items also form two different groups of six items in each group to measure the direction of the conflict i.e., work-into-family conflict (WIF) and family-into-work (FIW) conflict. In their study, Carlson et al (2000) demonstrated discriminant validity and internal consistency across samples for each of the scales. In addition, each of the scales was differentially related to various antecedents and consequences of work-family conflict, further suggesting the potential for predictive validity of the scales. Later studies that utilised this measure (e.g., Grzywacz and Bass, 2003; Rotondo et al., 2002) also provide support for its reliability. All eighteen items in their original form are listed in Appendix D.

The scale used to measure the work-family conflict construct was a five point Likert-scale with a range of 1 (mainly disagree) to 5 (fully agree). Respondents were asked to rate how much they agreed or disagreed with a given statement. In order to properly adapt the measures to the sample in this study, some items were reworded to reflect the actual circumstances of the population. All items with the word 'work' in them were changed into 'study' or 'studies'. For example, respondents were asked how

much they agreed or disagreed with the statements: *"My studies keep me from my family activities more than I would like"* or *"Tension and anxiety from my family life often weaken my ability to study"*.

detailed discussion of the measures for the adaptation of this measure is presented in

Chapter 3.5.2 International Adjustment Measures (Questionnaire: Section 2)

The measure of adjustment used in this study was adapted from Black's (1988) and Black and Stephens' (1989) adjustment scale. The measure consists of fifteen items measuring three different facets: general, interaction, and work adjustment. To reiterate the points made earlier in Chapter Two, this measure has been widely utilised by numerous studies on adjustment (see Hechanova et al., 2003), particularly those aimed at examining work adjustment (e.g., Selmer, 1999). The measure is also most suitable for the present study because of its focus on subjective rather than objective measures of adjustment such as psychological inventories or objective work performance measure. As stated earlier, objective measures are not the interest in this research. Furthermore, the distinction of adjustment as a three-faceted construct has been supported by later research (Parker and McEvoy, 1993; Shaffer et al., 2001a). Therefore, the decision to adopt this measure of adjustment was made as it was deemed most appropriate for meeting the aims of the present research.

There are fifteen items in the international adjustment scale in this study to measure work, interaction and general adjustments. Of these, fourteen items were taken from Black and Stephens (1989), whilst one item (i.e. 'adjustment to the weather in the UK') was taken from Black (1988). The addition of 'adjustment to the weather' item was made following findings from the exploratory interviews that suggested adjustment to the weather in the UK to be one of the significant issues. This item is not a newly-developed item as it had been used as one of the general adjustment items in an earlier study by Black (1988). Of the fifteen items, three items measured work adjustment, four items measured interaction adjustment and eight items measured adjustment to general environment in the UK. A list of all items from Black (1988) and Black and Stephens (1989) in their original form is provided in Appendix B.

In addition, to properly adapt the measures to the sample in this study, the work adjustment sub-scale was reworded to reflect academic adjustment. For example, adjustment to 'work responsibilities' was reworded to adjustment to 'study

responsibilities'. The instrument utilised a seven-point Likert scale ranging from 1 (not adjusted at all) to 7 (completely adjusted). For example, respondents were asked how adjusted they were to "Health care facilities" or "Socialising with host nationals". A detailed discussion of the reasons for the adoption of this measure is presented in Chapter Five.

3.5.3 Measures from Exploratory Interviews (Questionnaire: Section 3)

Two additional items were included following the findings from the exploratory interviews. For consistency purposes, these items also utilised a five point Likert-scale with a range of 1 (mainly disagree) to 5 (fully agree). Respondents were asked to rate how much they agreed or disagreed with the following two statements: "*My daily schedule was more demanding before I came to the UK*" and "*I spend more time on the following activities now than I did before: a) childcare (please leave blank if you had no child at the time), (b) cooking, and (c) cleaning*". These items were placed in Section 3 of the questionnaire (see Appendix E). A detailed explanation of these additional items is provided later in Chapter Four.

3.5.4 Demographic Information (Questionnaire: Section 4)

Some demographic variables that have been shown to be related to either or both work-family conflict and international adjustments were included in Section 4. These variables have been found significant in other studies. They include age (D1) (Black, 1988; Frone et al., 1996), gender (D2) (Adler, 1997; Frone et al., 1996), country of origin and nationality (D3 and D4) (Black and Stephens, 1989; Church, 1982; Waxin, 2004), marital status (D5a) (Gregersen and Black, 1990), number and ages of children in the household (D5b and D5c) (Keith and Schafer, 1980; Greenhaus and Kopelman, 1981; Kinnunen and Mauno, 1998), language ability (D6a) (Black and Gregersen, 1991; Shaffer et al., 1999), source of financing received (D9) (Tanaka et al., 1994), length of time in the UK (D11) (Black, 1988; Black and Gregersen, 1992; Stahl and Caligiuri, 2005) and previous international experience (D15, D15a to 15d) (Black, 1988; Black et al., 1991).

In addition, several other demographic factors were also included as they were considered necessary to control for potential variance in the sample, and without which

any conclusion to the findings of this research would be open to debate. These factors include types of postgraduate degree programme (D7), expected date of completion (D8), financing for family and perception of financing adequacy (D10a to D10c), decision to study in the UK (D12), spouse's arrival in the UK (D13a and b), children's arrival in the UK (D14 a and b), trailing spouse in previous international experience (D16a and b), domestic help prior to move to the UK (D17a to c) and domestic help now (D18a and b). A more detailed discussion on the inclusion of these variables is provided in Chapter Four.

3.6 Questionnaire Design

A questionnaire must be simple and easy to use in order to secure the maximum response rate and accuracy of data provision (Youngman, 1984), and consequently, these criteria were given strong emphasis in the design of the questionnaire for this research. Data usage and analysis routines – coding and data manipulation, must also be considered from the outset (Hibberd, 1994) so as to facilitate all analysis steps taken in the research. A copy of the final version of this questionnaire is attached as Appendix E.

In terms of survey design, the questionnaire was reviewed for appropriate ordering to meet the demands of logic (questions divided into sections, moving from factual to more opinion-based questions), encouraging people to respond (avoiding respondent frustration through signposting) and reducing the effect of answers to earlier questions on later ones (avoiding measurement bias due to previous frames of reference being projected onto new questions where not appropriate, and respondent attempts at consistency) (Sudman and Bradburn, 1982). To reduce any systematic biases in the response, questions in the questionnaire can be placed randomly. However, this is very rarely done because of subsequent confusion whilst categorising, coding and analysing the responses (Sekaran, 2000, p.240).

The rating scales were given either five or seven options, as had been used in the original scales. Labels were given to all response options to make the choices clearer than would be the case with a numerical scale with only the two end points named. Rating options were consistently ordered from the negative (or least desirable) to the positive (or most desirable) to ensure a logical sequence for the respondent, to encourage people to read all of the options progressively, and to reduce the risk of error

(Sudman and Bradburn, 1982). However, this did run the risk of position bias (i.e. tendency towards the positive or the negative due to the layout). It has been suggested that in order to reduce both risks, two versions of the questionnaire can be produced with opposite ordering of the statements so that order bias may be monitored (Jobber and Watts, 1987). However, this leaves the questionnaires with the order of most desirable through to least desirable options, further open to bias due to social desirability. Therefore, it was decided to produce a single version of ordering in the questionnaire. It has been shown that ordering of blocks of related questions within a questionnaire does not impact on overall order effects (Sudman and Bradburn, 1982, p.145).

Pre-coded questions, i.e., questions with pre-assigned codes and response boxes, were used throughout to ensure that respondents provided responses both to the topic and the dimensions in which answers were desired (e.g., B1 or B2). Pre-coding was done to facilitate entry of data directly into the statistical software, particularly when the hard copy questionnaires were returned (Brace, 2004, p.56). Numerical codes were also included for the hard copy version of the questionnaire alongside the answer options (i.e., ☐1 to ☐7). This is more clearly exemplified by the shaded columns in Figure 3-2 relating to the questions from Section 2 as shown below:

Not Adjusted At All	Somewhat not Adjusted	Slightly not Adjusted	Not sure	Slightly adjusted	Somewhat adjusted	Completely Adjusted
☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7

B1.	Your study responsibilities	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
B2.	Speaking with host nationals	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7

Figure 3-2: Examples of Pre-coded Scale and Questions

However, such a step was not necessary for the online version of the questionnaire as the coding had been programmed or embedded into the questionnaire during the construction stage. The embedded codes allowed for the online responses to be downloaded directly from *FormEditor*® into *Excel*® and later converted to an *SPSS*® 12.0 file for analysis.

Demographic data were sought in order to enable the researcher to examine any potential difference between groups based on such background information. These questions were placed at the end of the questionnaire to avoid the respondents feeling that the questionnaire was overly personal or threatening (Sudman and Bradburn, 1982). The majority of the questions were closed questions in which a choice of alternative replies was offered to the respondents.

On the other hand, several questions were set out as open-ended which gave the respondents freedom to respond. The use of open-ended questions can be effective in mailed surveys (de Chernatony, 1989). However, this type of questions was confined to the questions listed in Table 3-1 below:

Section and Item no.	Questions
D1	Age
D3 & D4	Country of origin and nationality
D5b & D5c	Number and ages of children in the household
D6a & D6b	"Other" types of test and Score received in language tests
D7	Other types of degree programme if not in the choices offered
D8	Expected completion date (in month and year only)
D9	Source of financing (if not in list of choice offered)
D11	Length of time in the UK (in months and years)
D12	Decision to study in the UK (if other than self or sponsor)
D15b-d	Previous international move: date, host country and length of stay
D18b	Relationship to domestic help (if domestic help received)
	Comments or suggestions on issues raised in questionnaire

Table 3-1: List of Open-ended Questions

These variables were structured as open-ended questions for the following reasons:

- i. listing all options possible for the question was impractical e.g., listing of all possible countries for the respondent to choose from, would make the questionnaire too long without any significant impact to the study.
- ii. no clear band or forced-choice could be pre-determined because the range of combination was large and difficult to ascertain, for example the number of children in the household and how old they were. Allowing the respondents to provide this information themselves was more practical and still allowed for effectiveness in analysis.

In addition to this list of questions, open-ended responses were also allowed for comments by respondents in relation to issues raised in the questionnaire which they believed were important to them but had not been addressed in the instrument. At the end of the questionnaire, the respondents were also asked if they would like to receive a summary report of the findings of this research in return for their co-operation, and to provide either their postal or email address for the report to be sent to them.

Apart from the layout and contents of the questionnaire, this researcher also paid careful attention to the composition of the letter of invitation, to ensure a professional and informative document. There were two types of letter sent. One was sent to relevant university officials requesting their assistance in distributing the questionnaire to students at their universities (see Appendix F). The letters/emails were sent with the questionnaire as a sample so that the recipients would be clear about the research objectives. In addition, the letter also stated the interest shown by the UKCGE in the present research, and the fact that this researcher plans to share her findings from the research with the Council. There is some evidence that a survey sponsored by organisations like the Council have the significant advantage that response rates may be enhanced (de Chernatony, 1989). Consequently, this was mentioned in the hope that it would encourage participation.

The second letter was addressed to the international postgraduate students inviting them to participate (see Appendix G). It was enclosed with each mailing of the questionnaire (or email link to the questionnaire) that was distributed to participating universities. The letter made it clear that the invitation to participate was extended only to international postgraduate students with family, and it gave a brief description of the research purpose. It also emphasised that participation was voluntary and only for individuals who met the four stipulated criteria (see next section).

3.6.1 Sampling Frame

All expatriate research faces difficulty in defining its population and is often conducted through a form of convenience sampling, suggesting a lack of representativeness (Haslberger, 1999). The present study was conducted on a population of international students who were enrolled in postgraduate degree programmes in universities in the UK, which may appear to be readily available and accessible.

However, like many studies on expatriates, the present one also had to depend on a convenience sample, for the following two main reasons.

Firstly, there is no known database that can provide information on international postgraduate students who have come to the UK with their families. Although most universities have demographic records on their international students, none has records on whether those students have brought their spouses/families, or whether the spouses/families have been left in the home country. Despite numerous attempts, it was impossible to obtain a list of all international postgraduate students who are with family in the UK from any of the universities or relevant agencies (e.g., HESA or UKCGE). Secondly, although some universities may have such records, albeit of a limited nature such as records of international postgraduate students living in university housing like the student housing at Cranfield University, this information could not be shared with the researcher without prior consent from the individuals concerned due to the Data Protection Act (DPA) 1998.

Since the unit of analysis in this research was the individual international postgraduate student, this restriction posed a problem. However, upon careful consideration there was still room for manoeuvre, and it was decided that in order to gain access to the population whilst still remaining in compliance with the DPA 1998, the researcher had to approach university officials and request their assistance in distributing the questionnaire to relevant students at their universities. For this, universities in the UK that were listed as offering full-time postgraduate degree programmes in *The World of Learning 2002* were identified as potential sources of access to the population of the study (as listed in Appendix H).

However, this still did not enable this researcher to identify the individual students nor the population of study for the same two reasons described earlier. Hence, it was necessary to resort to convenience sampling.

In addition, for theoretical and practical reasons, participation in this study includes only respondents who met all the following four criteria:

- i. Individuals must be international students;
- ii. Individuals must attend a full-time, postgraduate degree programme in the UK;
- iii. Individuals must have a spouse/partner and/or children with them;

- iv. Individuals must only be in the programme for a period of no longer than twelve months when completing the questionnaire.

These criteria were based on the findings of earlier studies and the desire to align the sample to the needs of the present research. Firstly, to meet the aims of the present study, respondents had to be international students who were undertaking postgraduate programmes in the UK because this is the core of the present research. It was necessary to state these two criteria explicitly to ensure that UK-citizens or undergraduate international students did not attempt to respond to the questionnaire. In addition, respondents had to be registered as full-time students because students on part-time programmes may not have similar programme demands as their full-time counterparts, rendering them unsuitable for the scope of this research.

Next, it was crucial that the respondents were individuals who had relocated to the UK with their spouse/partner or their child(ren), or both. This was vital to the research because students who had left a spouse or a family in their home countries were not expected to meet similar work-family circumstances as those who had brought their families with them. This included those who arrived in the UK separately, e.g. the students arrived first to register whilst the spouse/family arrived a month later. A more detailed justification for this point is provided in Chapter Four.

The issue of period of stay in the UK also shaped the fourth criterion for participation. This condition, however, was decided upon following the literature on the dynamic nature of adjustment which has been described in Chapter Two. Although the literature provides no clear consensus on the time required for adjustment, this study draws upon the Anderzen and Arnetz (1999) study which suggested the first twelve months as crucial to adjustment. In addition, the exploratory interviews conducted for this research also found some agreement with this point. These criteria were set to help frame the sample better, and are considered most appropriate for meeting the research aims, as they helped frame and reduce variances in the sample and thus enable meaningful analysis on the influence of simultaneous demands of work and family lives on the different dimensions of adjustment.

3.6.2 Piloting the Questionnaire

According to Oppenheim (1992, p.48) "it is dangerous to assume that we know in advance how respondents or fieldwork will react", and, therefore before a questionnaire is finalised, every aspect of the design should be tested. In addition, piloting should be conducted on a group of individuals that is as similar as possible to the actual sample and the testing should take place under circumstances that reflect conditions of the actual survey (Babbie, 1990, p.226; Oppenheim, 1992, p.62).

Following these advice, piloting of the questionnaire was conducted in two phases. Firstly, the contents and layout of the questionnaire were tested on a small group of ten individuals of various nationalities at Cranfield University to assess the face-validity and content-validity of the questionnaire. This was done as a precaution against any possible ambiguous questions or unclear instructions in the questionnaire. Following the feedback received on this draft of the questionnaire, some changes were made before the final version was piloted.

In the second phase, the questionnaire was then sent to a group of 60 international students at Cranfield University. This group of individuals were chosen because they shared characteristics that closely reflected the circumstances of the desired respondents in the actual survey. A total of twenty-five responses were used in analysing the reliability of the measures adopted. This process is discussed at length in Chapter Five in order to provide a clear description of actions taken prior to the main enquiry.

3.6.3 Online Versus Hard Copy Questionnaire

The collection of data using the questionnaire mailing method was chosen, as it is the lowest cost method of surveying, which can be carried out by one individual (Dillman, 1978). Although this method is said to have a lower response rate compared to other methods such as face-to-face interview, respondents to self-administered questionnaires are less inclined to provide socially-desirable answers and are instead more likely to honestly answer the questions without the added pressure of having the researcher around should they need to interact with an interviewer (Dillman, 1991). Respondents may feel more at ease in responding truthfully since they have the comfort of being completely anonymous in the research. They are also less limited by rigid time

constraints as they can respond in their own free time. The use of a self-administered questionnaire as a method of data collection used in this study ensured a minimum of interviewer bias (Oppenheim, 1992, p.103).

Both hardcopy and online versions of the questionnaire were utilised within this study to allow for the highest possible number of participants. This was necessary due to the restrictions regarding access to the population discussed earlier. The hardcopy version of the questionnaire was developed using Microsoft Word®, and a postage-paid self-addressed return envelope was included with each questionnaire to encourage responses (Emory and Cooper, 1991, p.334).

On the other hand, an additional test had to be conducted on the online version of the questionnaire as its distribution required the use of computer technology, so it was necessary to remove the likelihood of technical problems that might occur. Some of these problems are related to screen size or computer settings used in the design (see Grandcolas et al., 2003). Hence, the online questionnaire was designed using conservative measures (i.e., respondents were assumed not to have the latest version of computer software). This step was crucial only to this version of the questionnaire because the use of Internet may have an impact on access to the questionnaire (opening of the files) or the respondents' ability to complete with ease and accuracy. These issues did not arise for the hardcopy version. Testing for technical problems was essential since any online difficulties could result in the loss of response.

First, the researcher worked with a member of staff at the School of Management Computer Studio to test the effectiveness of access to this questionnaire. The survey was placed on the Internet at a site provided by the Cranfield School of Management. The use of *FormEditor* a programme developed in-house, allowed for the planned conservative design for the layout. Once all items were uploaded and the design completed, the researcher worked with the staff member in testing access to the questionnaire on several different computer settings.

Following this, to ensure that all foreseeable problems with data transfer had been eliminated or resolved, the questionnaire was tested with a wider scope. For this, a total of 12 emails with links to the questionnaire were sent to different individuals across the UK who had agreed to test the technical aspect of this method of data collection in the study. These individuals were personal contacts of this researcher and

their participation bears no influence on the actual data collected in this study because their responses were not included in the data set. This simulation of the online response process was a success as all twelve individuals managed to access, respond and return the questionnaire to the researcher.

It should be noted that paper-based mailed questionnaire has been reported to have context-effects because a respondent can see all the questions (Neuman, 1996, p.284). These effects can be overcome when online questionnaire is used (Brace, 2004, p.39), i.e. by setting a command during programming stage, which restricts such action. However, since this study employed both the paper-based and the online questionnaire as its methods of data collection, such restriction was not implemented in the programming of the online questionnaire to avoid the possibility of response difference between the respondents of the two methods. It is unlikely that respondents would go completely through the questionnaire and then return to the beginning of the questionnaire to change all their answers (*ibid*, p.40). Nevertheless, as a precaution the T-test procedure was used for comparison between the two groups of respondents to determine if there were differences that existed due to the methods employed in data collection.

3.7 Questionnaire Administration

Upon completion of the pilot study, work began on the questionnaire distribution to relevant universities, based on the list identified through *World of Learning 2002*. The letter of invitation was sent to officers whose email addresses were on the website, whilst paper-based invitations were sent to officers who only had postal addresses listed. These officers were chosen because their organisational positions, such as International Students Advisors, Postgraduate Programme Co-ordinators or Campus Housing Managers, were considered to have high possibilities of access to potential respondents for this study. At this stage, some university officers were very forthcoming and positive replies were received almost immediately.

However, there were those who did not respond quickly or who gave a negative reply. Two weeks after the first batch of mailings were sent out, these officers were contacted again via telephone with the aim of convincing them to participate, or learning their reasons for refusal. Of the 26 universities contacted via follow-up calls,

officers from 20 universities then gave their agreement to assist with distributing the questionnaire. From the enquiries about reasons for the non-response to the initial email or letters, the majority of the officers gave workload as the main reason for their non-response. Four of the officers who declined did not provide clear reasons for refusal, whilst two others cited an ongoing, or recent in-house survey on international students in progress at his/her university. Nevertheless, the series of telephone calls made was fruitful in the effort to encourage participation.

In addition, the criteria for participation were explained at length to these officers, either verbally (for those contacted through telephone) or in writing (for those contacted through letters or emails), so that they clearly understood to whom they should distribute the questionnaires. Then, a link to the questionnaire was emailed to each officer who requested the online version of the questionnaire (whilst hard copies were sent to those who requested this version of the questionnaire). Each of these mailings contained a link to the online questionnaire and the letter of invitation.

The respondents were also assured of their anonymity should they decide to participate in the research. It must be emphasised that no information about the individuals was passed on by these officers to the researcher. In addition, officers who sent contact details of potential respondents to this researcher (for direct emailing of links to the questionnaire) did so only with prior consent from the individuals themselves.

In distributing the questionnaire, this study also benefited from the assistance of the National Postgraduate Committee and the Association of Commonwealth Universities. Upon learning about this research, these two bodies showed interest in the study and offered their assistance with distributing the online questionnaire and its letter of introduction to individuals in their respective databases. As described earlier, the study had to rely on convenience sampling because it was not possible to identify the entire population. Therefore, the offer of assistance from these two bodies was welcomed in the effort to boost the sample size.

The fieldwork was intended to run for five weeks, which is slightly longer than the thirty-five day average but does not exceed the higher end of fifty-seven days as reported by de Chernatony (1989). This generous period was given because of the use of a 'middle-person' (i.e. university officers) in distributing the questionnaires to the

population. The literature suggested sending out reminders when the response rate shows signs of tailing-off (ibid, 1989, p.10). Although this reminding step was taken, due to the nature of the sample in this study the reminders were made to the university officers via telephone calls. However, although many of the officers assured this researcher that they had sent reminders to their respective students, only a slight increase to the response rate was shown after this process. Bailey (1987) states that follow-up reminders can lead to an increase in response rate by up to about 20%. Apparently, since in this study the reminders could not be sent directly to the respondents but were sent through the university officers, i.e. 'middle-person', this action did not bring similar results.

However, following requests made by a number of universities during these reminder calls, the researcher then extended the deadline for a further two weeks, and this did allow for some additional, though minimal, increase to the total number of responses received. Hence, at the end of this two-week extension period, giving the total data collection period of seven weeks, data collection was concluded to allow for the data screening and analysis process to begin.

3.8 Data Screening and Transformation

Once the online responses were received or a questionnaire returned, data was entered into the statistical package, SPSS®. All predictor and criterion data collected were metric (scalar, ordinal or dichotomous categorical). Where necessary, data was transformed to allow for a proper undertaking of the necessary statistical analysis. Prior to data analysis, all variables and responses in the data set were examined through SPSS® Frequencies and SPSS® Regression procedures for accuracy of data entry, missing values and fit between their distributions and the assumptions of multivariate analysis. Only metric variables are included in the analysis.

3.8.1 Missing data

Responses with missing data for either the work-family conflict or adjustment variables were treated using the expectation-maximisation (EM) method available through the SPSS® 12.0 Missing Value Analysis (MVA) procedure. EM methods offer the simplest and most reasonable approach to imputation when data is missing

randomly (Tabachnick and Fidell, 2001, p.66). Compared to the listwise or mean replacement treatment, EM provides more accurate imputation to the missing values. The listwise method will reduce the size of the sample whilst mean replacement can lead to significant results that would otherwise be non-significant (Field, 2000).

3.8.2 Outliers

Following the advice of Tabachnick and Fidell (2001, p.122), cases of multivariate outliers were identified using Mahalanobis distance ($p < .001$), when $N < 1000$. Once multivariate outliers were identified, cases with extreme variables were examined individually to determine the reasons for the deviant score. The scores for cases with outliers were then adjusted by one unit smaller than the extreme score on the distribution (*ibid*, p.71). This was done to allow for the cases to remain in the sample and their responses included in the analysis.

3.8.3 Ratio of Cases to Independent Variables

Whilst there are no absolute rules for the number of cases needed relative to the number of variables assessed in a multiple regression analysis, a ratio of at least five cases to every predictive variable as suggested by Hair et al. (1998) has been applied in this research. Applying this ratio prevents the use of too many variables without the sample size to support them.

3.8.4 Multicollinearity and Singularity

Multicollinearity and singularity are problems with a correlation matrix that occur when variables are too highly correlated. The problem of multicollinearity occurs when there is a substantial correlation amongst the IVs, which could result in three distinct problems – the substantive interpretation of partial coefficients, their sampling stability and computational accuracy (Cohen and Cohen, 1983). Singularity, on the other hand is a problem when the variables are redundant, wherein one of the variables is a combination of two or more of the other variables (Tabachnick and Fidell, 2001, p.118). These problems can be detected using SMC (squared multiple correlations) of variables. A high SMC indicates that the variable is highly related to the others in the set and multicollinearity exists. If the SMC is 1, a variable is perfectly related to the

others in the set and singularity exists. Like most statistical programs, SPSS® converts the SMC values for each variable to tolerance ($1 - \text{SMC}$) and deals with tolerance instead of SMC. For tolerance, a level lower than 0.20 (Menard, 1995) or higher than 0.90 (Tabachnick and Fidell, 2001, p.82) indicates a problem. These levels are considered through examination of the ‘excluded variables’ output. The table below illustrates that in this example, the tolerance level is 0.709. This tolerance level is well above 0.20 and much lower than 0.90; hence neither multicollinearity nor singularity is a problem here.

Excluded Variables(c)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	WF Time	-.169(a)	-2.508	.013	-.178	.952
	WF	-.222(a)	-3.311	.001	-.232	.934
	Strain	-.221(a)	-3.268	.001	-.229	.925
	WF Bhvr	-.147(b)	-1.920	.056	-.138	.709
2	WF Bhvr					

a Predictors in the Model: (Constant), c2a to c2c, fncgdv4, Period since arrival, Child age Less than 6 in Home, Schedule Before Move, Cultural Distance

b Predictors in the Model: (Constant), c2a to c2c, fncgdv4, Period since arrival, Child age Less than 6 in Home, Schedule Before Move, Cultural Distance, WF Time, WF Strain

c Dependent Variable: Work Adjustment

Figure 3-3: Example of SPSS® Output - Tolerance

3.8.5 Normality, Linearity and Homoscedasticity

Three other routine pre-analysis screening procedures conducted were tests of assumptions of normality, linearity and homoscedasticity. *Normality* is the degree to which the distribution of the sample corresponds to a normal distribution, where the scores on the variables are clustered around the mean in a symmetrical, bell-shaped curve (Hair et al., 1998). *Linearity* assumes that there is a straight-line relationship between two variables. Linearity is important because Pearson’s *r* only captures the linear relationships and ignores any non-linear relationship among variables. An oval-shaped bivariate scatterplot will show the linear relationship between the work-family conflict and adjustment variables (*ibid*). On the other hand, *homoscedasticity* assumes that the variability in scores for one continuous variable is roughly the same for all values of another continuous variable. Homoscedasticity is related to the assumption of normality because when the assumption of multivariate normality is met, the relationships between variables are homoscedastic (*ibid*). Residual scatterplots and

statistics table between the predicted variables and errors of prediction were examined to simultaneously assess all three assumptions.

3.8.6 Cultural Distance

As explained earlier, one of the control variables of the present research is “Country of Origin” of the respondents. As this variable was open-ended (i.e. string-variable), it was necessary to transform it into a metric variable so that it may be included in the regression analysis. The new variable was labelled as “Cultural distance” which was a product of a computation using the formula by Kogut and Singh (1988). This formula utilises the four cultural dimensions indices from Hofstede (1981) (i.e., power distance, individualism, uncertainty avoidance and masculinity/femininity).

$$CD_j = \sum_{i=1}^4 \{(I_{ij} - I_{iu})^2 / V_i\} / 4$$

I_{ij} = index for the i th cultural dimensions and the j th country

V_i = variance of the index of the i th dimensions

Using this formula, a composite index was formed based on the deviation along each of the four cultural dimensions indices from the UK ranking. The deviations were corrected for differences in the variances of each dimension and then arithmetically averaged (Kogut and Singh, 1988). The scores for all four dimensions of each country in the sample were taken from Hofstede (1981) for countries that were included in the original IBM data set. For nations not in this data set, estimated index was used based on Hofstede (2001) or inferences made where necessary. With the cultural distance indices as a control variable, it was then possible to partial out any potential influence of this factor in the regression analysis.

3.8.7 Common Method Variance

The quantitative data in the present research is based on a self-report questionnaire-based survey. One major concern raised with regard to the self-report questionnaire is the common method variance (Kline et. al, 2000; Podsakoff and Organ, 1986). However, as much as it is an issue of concern, self-report surveys remains the most common method of data capture (Harrison et al, 1996) as evident in the large

volume of studies found in both the adjustment and work-family literature. This study utilised two strategies in an effort to reduce common method variance. First, at the instrument development stage, method bias is diminished by the use of different scale endpoints and formats for the independent and dependent measures (Podsakoff et al., 2001). This strategy was implemented in the present study with a five-point Likert scale used for the work-family conflict measures, whilst a seven-point Likert scale was utilised in the international adjustment measures.

Later, the Harmon one-factor test suggested by Podsakoff and Organ (1986) was utilised at the analysis stage. Using this technique, all variables were loaded into an exploratory factor analysis procedure and the unrotated factor solution was then examined to determine the number of factors necessary to account for the variance in the variables. If a substantial amount of common method variance is present, either (a) a single factor will emerge from the factor analysis or (b) one general factor will account for the majority of the co-variance among the measures. This diagnostic technique is one of the most widely used techniques by researchers for assessing the extent to which common method variance may be a problem (Podsakoff et al., 2001).

3.9 Methods of Data Analysis

The data in this study was analysed mainly using the quantitative method. Although the qualitative method was also involved, this was only at the exploratory stage with regard to analysis of interview data for instrument development. The tools and techniques employed in the analysis are described below.

3.9.1 Qualitative Analysis

Data from the exploratory investigation conducted prior to the fieldwork was transcribed by the researcher and then analysed using NVivo® version 2.0. The analysis was aimed at identifying possible common themes that emerged from participants' responses to each question put to them. This method of analysis was confined to the data collected at this exploratory stage only. A detailed discussion of this analysis is presented in Chapter Four.

3.9.2 Quantitative Analysis

Analysis of the quantitative data was conducted using the *SPSS*[®] version 12.0 (Statistical Package for the Social Sciences). The data were analysed by descriptive and inferential statistical test analysis. The model was generated by multivariate regression techniques. Methods of analysis undertaken in this analysis are discussed in the following sections.

3.9.2.1 Profiling Respondents

Parsimonious and meaningful description of a series of observations/cases gives an idea about the data set (Sekaran, 2000). Hence, descriptive analysis was used to analyse the international postgraduate student background profiles. These measures were needed to see the proportion and the spread of the data. For instance, the international students' background characteristics include age, gender, type of postgraduate programme undertaken in the UK universities, number of children in the household etc. It was tabulated according to either non-categorical or categorical variables. Descriptive statistics for non-categorical variables depict the minimum and maximum values of the variables, the mean values and their standard deviation. On the other hand, descriptive statistics for categorical variables show the frequency of the variables and their percentage components within the total sample size.

3.9.2.2 Inferential Statistics

This analysis allowed for the association or differentiation to be made between work-family, adjustment and demographic variables, through the use of tests of correlation, t-Tests, analysis of variance and hierarchical regressions.

Correlation analysis shows the nature, direction and significance of the bivariate relationships of the work-family conflict variables and the international adjustment variables. Pearson's correlation was used to indicate the direction and significance of relationships between all relevant variables of the study (Sekaran, 2000). Pearson's correlation was used as an initial test of relationship between the different types of work-family conflict (predictor variables) and international adjustment (criterion variables). Correlation coefficients of this test show any significant correlation between the different types of work-family conflict and their direction, and the work, interaction

and general adjustments.

T-test is one of the most common methods to compare between two groups, as an indication whether or not there is significant mean difference in a dependent variable between two groups (Coakes and Steed, 2003, p.70). For example, a t-test was conducted to see if there was significant difference between the adjustments of male versus female respondents in the sample. The output for the independent t-test contains only two tables. The first table, shown as Figure 3-4 below as an example provides the summary statistics i.e. the number of cases in each group (N), their means, standard deviations and standard errors, whilst the second table, as shown in Figure 3-5 contains the main test statistics. The grouping variable distinguishes between Male and Female when comparing their adjustment.

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Work Adjustment	Male	121	5.67769	.979355	.089032
	Female	80	5.45833	.966929	.108106
Interaction Adjustment	Male	121	4.68959	1.541508	.140137
	Female	80	4.81975	1.332990	.149033
General Adjustment	Male	121	4.93362	1.223403	.111218
	Female	80	4.93150	1.133752	.126757

Figure 3-4: Example of SPSS® T-test output – Group Statistics

T-test compares the difference between the means of the two groups with the standard error of the difference in the means of different samples. However, the latter has to be estimated as it is not known for the population of this study. Estimation is done by referring to the Levene’s test for equality of variances, as shown below. If Levene’s test is significant ($p \leq 0.05$), we can assume that the population variances are relatively unequal and read the test statistics in the second row labelled *Equal variances not assumed* (Field, 2000, p.238). However, the result of the Levene’s test in this example was not significant because $p=0.623$ is greater than 0.05, hence *Equal variances are assumed* for the Male and Female respondents in the sample.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper

Work Adjust ment	Equal variances assumed	.242	.623	1.562	199	.120	.21935 3	.14041 6	-.057541	.49624 6
	Equal variances not assumed			1.566	170.78 5	.119	.21935 3	.14004 9	-.057097	.49580 2
Interac tion Adjust ment	Equal variances assumed	1.511	.220	-.618	199	.537	.13016 3	.21071 5	-.545683	.28535 7
	Equal variances not assumed			-.636	185.16 3	.525	.13016 3	.20457 1	-.533752	.27342 6
Genera l Adjust ment	Equal variances assumed	.145	.704	.012	199	.990	.00212 3	.17127 9	-.335632	.33987 7
	Equal variances not assumed			.013	178.00 5	.990	.00212 3	.16863 3	-.330654	.33489 9

Figure 3-5: Example of SPSS® T-test Output – Main Test Statistics

Analysis of Variance (ANOVA) is much like the t-test, but ANOVA examines the significant mean differences among more than two groups of predictor variables, as indicated by the F statistics (Field, 2000, p.243). In order to analyse those variables, dummy coding was utilised. Dummy coding for variables with more than two categories was performed using the step by step guide by Field (2005, p.233), where the group with the majority for each variable was selected as the base group and given the code “0” before comparison with a selected group (coded as 1) was made. If the groups within these variables were of unequal sizes, it was important that the base category contained a fairly large number of cases to ensure that the estimates of the regression coefficients were reliable (Field, 2000, p.247).

To determine the significance of F-ratio, the value of F-probability value is read. To illustrate, the result for test of ANOVA between “Types of study financing” and adjustment is shown in Figure 3-6 below. Looking at the result for “Work adjustment” $F=3.023$ at $p=0.019$. So, the F-ratio is significant at $p<0.05$. This indicates that work adjustment is different across the different types of financing received by the respondents. Variables that show significant results must be included in the regression analysis as controls to partial out their influence on the relationship between the predictor and criterion variables of this study.

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Work Adjustment	Between Groups	11.116	4	2.779	3.023	.019
	Within Groups	180.159	196	.919		
	Total	191.275	200			
Interaction Adjustment	Between Groups	11.537	4	2.884	1.363	.248
	Within Groups	414.800	196	2.116		
	Total	426.338	200			
General Adjustment	Between Groups	5.118	4	1.280	.909	.460
	Within Groups	276.034	196	1.408		
	Total	281.152	200			

Figure 3-6: Example of SPSS® Output - ANOVA

Multiple regression analysis estimates linear relationships between variables and indicates the variance in the criterion variable (work, interaction or general adjustments) that is explained when several predictor variables (work-family time-, strain- or behaviour-based conflict) are simultaneously exerted on it (Hair et al., 1995). In a regression equation, β represents the slope of the regression curve and the intercept point; whilst ε is the probable error in the estimates. This is expressed in the following equation:

$$Y_i = a + \beta_1 * X_1 + \beta_2 * X_2 + \dots + \beta_n * X_n + \varepsilon_i$$

where:

Y = the criterion variables (work, interaction or general adjustment);

X = the predictor variables (time-, strain-, behaviour-based work-family or family-work conflicts);

β = regression coefficients (determine the contribution of the corresponding predictor variable);

ε = error term reflected in the residuals;

$i = 1, 2, \dots n$ number of predictor variables.

Multiple regression analysis also provides two main pieces of information for the model tested. The first information is the *adjusted R-square* (R^2), a value that ranges from 0.00 to 1.00, indicating the proportion of variation in the criterion variable as explained by the regression model, i.e., how well the predictor variables explain the criterion variables, having adjusted for the corresponding degrees of freedom in the

model when additional variables are entered (Draper and Smith, 1998, p.139). The second main information is β (beta), i.e. the standardised regression coefficient, which provides information on which of the predictor variable, is important in providing the explanation for the variance in the sample, (Field, 2000, p.114). The β -coefficient represents the size and direction of change in the adjustment variable as a result of a unit of change in the conflict variable. This information was derived through examination of the t -value and β -coefficient (beta) in the coefficient table of the output (*ibid*, p.115). The t -value indicates which of the conflict variables was significant in the model, whilst the value of β -coefficient is the individual contribution of each predictor to the model. A positive β value indicates a positive relationship between a particular predictor variable and the criterion variable, whereas a negative β coefficient represents a negative relationship (Field, 2000, p.149). Thus, a negative β means as conflict increases, the level of adjustment decrease. An example of the output for the regression procedure in this study is shown in Figure 3-7.

Hierarchical regression analysis is the main statistical technique used in testing the significance of the conflict variables in the adjustment models. Using this procedure, analysis was conducted by first entering the control variables followed by the controlled work-family conflict and family-work conflict variables (time-, strain-, or behaviour-based) in Step 2, and finally the hypothesised variable in Step 3. This method allowed for the regression model to be tested by controlling for other variables prior to the inclusion of a particular predictor variable (i.e., the work-family/family work conflict variables) using the Enter procedure (Field, 2000, p.119). In doing so, the variance explained by a particular work-family/family-work conflict variable that was tested, as entered in Step 3 of each regression analysis, was shown by the model. This was not possible had the all three work-family/family work conflict variables been entered as one block in Step 2, although the contributions of the variables are shown by the respective standardised beta coefficient. A two-step method shows a change in R^2 due to the entry of all three work-family or family-work conflict variables, and does not provide results for the variance explained by each hypothesised variable. Using a three step method, as was done in this study provided not only the standardised beta value that shows the strength of the contribution by each predictor variable, but also the variance explained by that particular variable as shown by the result of the change in R^2 .

Also, within this procedure, separate regression analysis was conducted on each facet of adjustment based on the hypothesised relationships. The overall effect of the variable entered in the equation was also indicated by the significance of the regression model. Such a procedure has been employed in many earlier studies reported in the literature (e.g., Netemeyer et al., 1996; Noor, 2003).

As can be seen in Figure 3-7 below, the adjusted R^2 is 0.136, i.e. which indicates that 13.6% of the variance in the criterion variable is explained by the predictor variables. The ANOVA table tells us whether the overall model results in a significantly good degree of prediction of the criterion variable. The advantage of this method is that the addition of the new predictor variable into the regression model in Step 3 was able to demonstrate how much that particular variable contributed or improved upon the previous model. This is indicated by the change in R^2 values (Tabachnick and Fidell, 1992, p.165). Thus, a change in R^2 shows if the final conflict variable that was added in Step 3 can account for any of the variance in each adjustment and improve the model. The statistical significance of each predictor variable is shown in the coefficient table, which in hierarchical regression is given by the rows in Step 3, along with the contribution of each variable shown by the Beta-coefficient values. So, from this example it can be said that time-based WFC is a significant contributor to interaction adjustment with a negative impact of -0.180 (at $p < 0.05$).

Model Summary(d)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.260(a)	.068	.039	1.431447	.068	2.344	6	194	.033
2	.397(b)	.157	.122	1.367771	.090	10.242	2	192	.000
3	.418(c)	.175	.136	1.357166	.017	4.012	1	191	.047

a Predictors: (Constant), c2a to c2c, fncgdv4, Period since arrival, Child age Less than 6 in Home, Schedule Before Move, Cultural Distance

b Predictors: (Constant), c2a to c2c, fncgdv4, Period since arrival, Child age Less than 6 in Home, Schedule Before Move, Cultural Distance, WF Strain, WF Bhvr

c Predictors: (Constant), c2a to c2c, fncgdv4, Period since arrival, Child age Less than 6 in Home, Schedule Before Move, Cultural Distance, WF Strain, WF Bhvr, WF Time

d Dependent Variable: Interaction Adjustment

ANOVA(d)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.824	6	4.804	2.344	.033(a)
	Residual	397.514	194	2.049		

2	Total	426.338	200			
	Regression	67.145	8	8.393	4.486	.000(b)
	Residual	359.193	192	1.871		
3	Total	426.338	200			
	Regression	74.535	9	8.282	4.496	.000(c)
	Residual	351.803	191	1.842		
	Total	426.338	200			

a Predictors: (Constant), c2a to c2c, fncgdv4, Period since arrival, Child age Less than 6 in Home, Schedule Before Move, Cultural Distance

b Predictors: (Constant), c2a to c2c, fncgdv4, Period since arrival, Child age Less than 6 in Home, Schedule Before Move, Cultural Distance, WF Strain, WF Bhvr

c Predictors: (Constant), c2a to c2c, fncgdv4, Period since arrival, Child age Less than 6 in Home, Schedule Before Move, Cultural Distance, WF Strain, WF Bhvr, WF Time

d Dependent Variable: Interaction Adjustment

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.539	.527		6.717	.000
	Cultural Distance	-.014	.074	-.013	-.187	.852
	Child age Less than 6 in Home	-.069	.211	-.023	-.325	.745
	fncgdv4	.580	.263	.154	2.208	.028
	Period since arrival	.034	.035	.070	.976	.330
	Schedule Before Move	.195	.076	.181	2.567	.011
	c2a to c2c	.091	.088	.074	1.038	.301
2	(Constant)	4.696	.592		7.935	.000
	Cultural Distance	-.024	.071	-.023	-.338	.736
	Child age Less than 6 in Home	.047	.204	.016	.230	.818
	fncgdv4	.466	.253	.124	1.846	.066
	Period since arrival	.061	.034	.125	1.794	.074
	Schedule Before Move	.170	.074	.159	2.303	.022
	c2a to c2c	.132	.085	.106	1.555	.122
3	WF Strain	-.168	.109	-.119	-1.536	.126
	WF Bhvr	-.322	.105	-.239	-3.076	.002
	(Constant)	4.918	.598		8.230	.000
	Cultural Distance	-.037	.071	-.036	-.517	.605
	Child age Less than 6 in Home	.103	.204	.034	.505	.614
	fncgdv4	.500	.251	.133	1.991	.048
	Period since arrival	.062	.034	.127	1.833	.068
	Schedule Before Move	.190	.074	.177	2.572	.011
	c2a to c2c	.131	.084	.106	1.562	.120
	WF Strain	-.018	.132	-.013	-.140	.889
	WF Bhvr	-.286	.105	-.212	-2.715	.007
	WF Time	-.249	.124	-.180	-2.003	.047

a Dependent Variable: Interaction Adjustment

Figure 3-7: Example of SPSS® Output – Multiple Regressions

In each regression analysis, control variables were included as covariates to ensure that the effects that are being found are actually due to the variables of interest and not other factors. By including these control variables in the analysis, any variance due to these factors is partialled out and the relationships of interest are tested without the confounding effects of these variables (Hair et al., 1995). These variations had to be controlled for in order to derive meaningful conclusions about the results and findings of this study, and allow no alternative explanation to the results of the tests.

However, the final set of control variables to be included in the regression analysis was contingent upon the results of *t*-test and ANOVA performed on these predetermined variables. Only variables that showed significant difference within the sample were included in the regression analysis. At this stage, interpretation of significance was made only on the broad pattern. A more robust and controlled test of the relationships between work-family conflict and international adjustment was obtained through the hierarchical regression procedure.

It should be noted here that this study focuses on the value of *adjusted* R^2 and not R^2 . By choosing the adjusted R^2 , an adjustment has been made for the corresponding degrees of freedom in the model when additional variables are entered in Step 3 of the regression analysis. This meant that the improvement in R^2 has some real significance to the model and was not due to the fact that the number of parameters in the model was getting close to saturation point, a concern when R^2 is used (Draper and Smith, 1998, p.139). Furthermore, "*whereas R^2 tells us how much of the variance in Y is accounted for by the regression model from our sample, the adjusted R^2 tells us how much variance in Y would be accounted for if the model had been derived from the population from which the sample was taken*" (Field, 2000, p.130). Therefore, the statistic adjusted R^2 can be used to compare two or more entirely different sets of data (Draper and Smith, 1998, p.140).

3.10 Research Validity, Reliability and Generalisability

Reliability of a scale can be defined as "the degree to which measures are free from error and therefore yield consistent results" (Peter, 1979, p.6). Validity, the degree to which a measure or set of measures correctly represents the concept of study (Hair, et al., 1998) refers to the extent to which a study accurately reflects or assesses the specific

concept that a researcher is attempting to measure. Reliability analysis tests the reliability of a scale calculated from a range of variables. It is concerned with the question of how things are measured. A reliability test provides results about the degree of confidence in the relevance of a scale, i.e. it relates to the extent to which a conflict or adjustment variable is consistent in what it is intended to measure, and hence is replicable over time. To gauge the reliability of the instrument, it is necessary to ensure that for measures that test the same major constructs, consistent, repeatable results are obtained, apart from those due to random factors (Cortina, 1993).

There is a range of reliability test methods available in the SPSS® package. However, following the recommendation of Carmines and Zeller (1979), the present study used Cronbach's alpha coefficient because Cronbach's alpha measures the internal consistency of the instrument (Emory and Cooper, 1991, p.187). Cronbach's alpha accounts for variances due to subjects and the interaction between the subjects and the items (Churchill, 1979). In almost all cases, Cronbach's alpha can be considered a perfectly adequate index of the inter-item consistency reliability (Sekaran, 2000, p.206). The results of the reliability test were then interpreted using the *Standards of Reliability* from Robinson et al. (1991) (see Appendix I).

Another crucial test of a research instrument is its validity. Research validity relates to the extent to which a measure correctly represents the concept being studied. It is concerned with the question of what is being measured. There are three levels of research validity; namely construct validity, which is concerned with the operationalisation of variables, internal validity, which is concerned with causality, and external validity, which is concerned with issues of generalisability. Although the present research utilised validated scales adapted from the literature, the reliability and validity of these scales were tested to further justify its adoption.

Most of the scales used in this study were taken from previously well-designed measurements developed based on extensive literature review or other theoretical framework. These measurements have been test-retested for reliability and factor analysed for relative validity. The content or face-validity of the scales was therefore assured by the way they had been constructed and tested previously. However, these measurements, particularly the work-family conflict scales, are not known to have been tested on a sample within an international relocation scenario. Therefore, the validity of

the scale, particularly the construct validity which seeks agreement between a theoretical concept and a specific measuring device or procedure, has to be established for this study.

Three different methods were used to estimate the construct validity of multi-item scales in this study as suggested by Hair et al. (1998).

- i. *Item-to-total correlation analysis* tests the extent of homogeneity of the scale.

A positive and significant correlation of an item indicates its contribution to its relative measures.

- ii. *Correlation analysis.* Correlations among items under the same construct were measured to provide evidence of the scale validity. The higher the correlation coefficient, the more accurate the underlying scale is in representing a particular construct.

- iii. *Factor analysis* was used to measure the representativeness of constructs or the underlying dimension for the scales and to assure a reliable measure. The unidimensionality of the construct showed the convergent validity of the items for each construct. In addition, the measure of sampling adequacy (MSA) derived from factor analysis was also used to test the degree of interrelations amongst the items and the appropriateness of the analysis. For MSA, Kaiser's (1974) guide on general acceptable level of 0.60 was used.

Most of the questions in the questionnaire in the present study, particularly those measuring the predictor and criterion variables, were closed-format questions to help ensure respondents used the researcher's frame of reference. This reduced some of the detail and richness of responses, and also assumed that respondents perceived the question in the same way as the researcher (Sudman and Bradburn, 1982). However, this enabled the researcher to code the responses more easily and the respondents to complete the questionnaire more quickly (Sekaran, 2000, p.237). Moreover, this format provided a standardised set of comparable responses (Babbie, 2001, p.240), which is important for the quantification of results in this study.

Measurement error can result from problems with respondents' memories, knowledge or state of mind when completing the questionnaire. This risk was minimised by reducing the number of questions asking about events or facts from the

past rather than their current state of experience. In terms of generalisability, external validity of this study is limited. The study was designed to address the issues within a specific context, i.e. international postgraduate students attending universities in the UK accompanied by their families. Nevertheless, generalisation of findings from the sample to this population should be high due to the specificity of the population (international postgraduate students with families attending universities in the UK), although any generalisation beyond the population is limited. The internal validity of the questionnaire and the conceptual model has been discussed earlier.

With regard to sampling error, as such error is known to be lowest for the largest sample sizes, the mailed/online questionnaire survey utilised in this research has helped to address this matter. In addition, the use of mailed/online questionnaire has also provided a more honest response from the respondents, compared to the face-to-face response. The anonymity provided by such a method made a more honest response easier for the respondents (Silverman, 2001). The mention of anonymity brings the discussion to the issue of ethics in the conduct of this research.

3.11 Ethical Issues

In its Code of Conduct regarding Research Activities, Cranfield School of Management specifies the rule of always aspiring to subject ideas to the most stringent and appropriate tests and to draw conclusions only from within the context of the data and well-founded theory (Cranfield SOM, 1999). This includes the need for researchers to make their own biases known (USAMJ, 1992). Furthermore, all research activity must consider its consequences on the communities served by it, and especially aim to preserve and protect the privacy, dignity, well-being and freedom of research participants (Cranfield SOM, 1999; Sapsford, 1999).

For the reasons stated above, informed consent was sought from all respondents (Sapsford, 1999). In addition, raw data was carefully safeguarded and individual relationships are only revealed at the aggregate level to the officers of participating universities (Cranfield SOM, 1999). Although this research was subjected to 'third-party review' (USAMJ, 1992) by the researcher's supervisor and review committee, confidentiality and anonymity of each respondent was given high priority so as to ensure no data revealed violates this promise.

3.12 Chapter Conclusion

From the preceding discussion, it is evident that the present research has adopted a realist perspective. Using the methodology outlined in this chapter, the next chapter provides a discussion on the exploratory interviews and their findings, which were used in the development of the questionnaire for the main enquiry.

CHAPTER FOUR

EXPLORATORY INTERVIEWS

4.1 Introduction

This chapter discusses the exploratory interviews that were conducted prior to the development of the questionnaire for the main study. The findings from these interviews have significant bearings in this study as they helped shape the questionnaire. The interviews were successfully conducted between April and July of 2002. The discussion is preceded by a detailed explanation of the questions listed for the interview and the description of the interview process. This is followed by a discussion on the analysis conducted on the interview data. Finally, findings from the analysis are presented, and are followed by a discussion on how these are relevant to the next stage of the research.

4.2 Interview Questions

This section will discuss the questions prepared for this exploratory stage. Eight sets of questions based on the work-family conflict and adjustment literatures were developed (see Appendix C), to elicit potential additional items for the main study in a semi-structured manner. This format was appropriate for the purpose of the exploratory stage because semi-structured interviews enable a researcher to obtain individuals' views (Easterby-Smith et al., 2002). Hence, these questions were used to guide the interview exercise, providing a frame for the interview whilst allowing the participants' freedom to relay their own experience of relocating and adjusting to life in the UK with their families. It should be noted here that the use of the term 'spouse' refers to a wife, a husband or a partner. Also, unless otherwise stated, the use of the term 'family' refers to both the spouse and the children in the household.

4.2.1 Question 1: Introduction/Demographic Data

This introduction section relates to both the interviewer and the participants. Firstly, the researcher briefly explained the aim of the interview to each participant to remind them of the nature of the research, which had been provided to them in the invitation letters. The participants were then requested to provide some information about themselves, with regard to their nationality/country of origin, marital status, the number of children they had at home and the children's ages, how their study in the UK was financed, and whether they had any previous experience of living overseas. These factors were necessary as the literature has demonstrated their influence on either work-family conflict or international adjustment (the list of each factor and its source in the literature has been provided in Section 3.5.4 of Chapter 3 and, thus, is not repeated here).

4.2.2 Question 2: Home Life

International relocations have been reported to cause a profound personal transformation on individuals when they are removed from their familiar home country (Sanchez et al., 2000). In addition, a change to the work environment is said to affect the way individuals manage their lives following that change (Feldman and Brett, 1983). Hence, participants were asked to describe their daily activities both at home and at work since coming to the UK to study. This was aimed at learning about their schedule and the daily activities in which they were involved. They were also asked to compare their current schedule to their previous one. The questions here aimed to identify the extent to which that daily schedule had changed for them, apart from the change in geography, and how they were managing these changes.

4.2.3 Question 3: Work Life

The questions in this second set were intended to obtain the interview participants' perceptions about their lives as students and the challenges they face in coming to the UK to study. They also explored how the participants' study programme affects their home lives; in comparison to the routines they had before the move. Since there is reciprocal relationship between work and family domains (Frone et al., 1997, Carlson and Frone, 2003), the change experienced in the work domain could have

affected the way they managed their work-life (Feldman and Brett, 1983) and may subsequently affect their family-life.

4.2.4 Question 4: Expectations

Previous studies have shown that some degrees of anticipation do take place before entering the host country (Black et al., 1991), and that prior knowledge does influence adjustment (Tung, 1981). Considering the influence of anticipations and prior knowledge to adjustment, questions were asked to seek information on how much the participants gathered information about life at Cranfield or the UK, in advance of their move. This may help explain the extent to which those expectations were met and if the participants' adjustment were affected by them.

4.2.5 Question 5: Life in General

Individuals' adaptability has been known to affect their levels of adjustment (Black et al., 1992). In addition, international adjustment is influenced by numerous individual factors (Berry and Sam, 1997, p.318). So, different individuals may perceive and adapt differently to different challenges. Hence, this fifth set of questions sought the participants' perceptions on factors or challenges that they had to adjust to since arriving in the UK and what they did to cope with those challenges.

4.2.6 Question 6: Family Adjustment

The sixth set of the questions explored the issue of the students' families' role in the move to the UK. According to de Verthelyi (1995), spouses who were not involved in the decision to move abroad, reported lower adjustment as compared to those who had some input in the decision. In addition, unfavourable views about the move abroad may cause difficulty for the family to adjust, hence negatively affecting expatriate adjustment (Caligiuri et al., 1998a). Therefore, it was necessary to find out how involved the families were in the decision to move to the UK. By letting the participants describe their spouses' or families' role in the decision, the discussion was able to proceed to ask their perceptions about the families' adjustment to life here and what role the participants' perceive they play in assisting this adjustment. This is important

because research has shown that adjustment of spouses affects individual adjustment in the same direction (Black and Stephens, 1989; Shaffer, et al., 2001).

In order to gauge the extent that family causes pressures and demands on the students' time or causes strain, the hypothetical question of whether they would have preferred to come to the UK alone and leave their families behind, was put to interviewees. This question was asked on the premise of role scarcity (Goode, 1960), to determine if the students would prefer to have relocated alone so that they had less role demands made on them, and more time and energy for their studies.

The participants were also asked what effect the move had had on their spouses' careers. Studies have reported the loss of income or negative effect on a spouse's career as a result of international move, to have an impact on international adjustment (Harvey, 1995; Selmer and Leung, 2003). This question sought to find out if the students were facing such issues.

4.2.7 Question 7: Support Received

Support received when relocating has been reported to ease or facilitate international relocation (see Caligiuri et al., 1999; Shaffer et al., 2001). This question looked at the type of support received since the students had arrived in the UK and to what extent that support was beneficial to them. Depending on a participant's response to the earlier question, s/he was asked if support from a particular person or group of persons would have been desirable. This allowed the researcher not only to learn of the types of assistance students had in relocating, but also to learn about their expectations on the matter.

4.2.8 Question 8: Adjusting to the New Life

As the participants entered a postgraduate programme, it was anticipated that they would encounter a different set of characteristics with regard to their work, i.e. their study programme. As the characteristics and degree of change experience at a new workplace have been found to have effects on adjustment (Feldman and Tompson, 1993), these changes may subsequently affect the participants' behaviour (Feldman and Brett, 1983). More importantly, not only did the participants face new work dimensions as a result of entering the study programme, they were also faced by these changes in

the setting of a new country. Therefore, it was necessary to seek the participants' perceptions about life as a student and if they had learned to cope with the demands of their study programme. In addition, this final set of questions also looked into their perceptions about the current life as a result of the change of status, how the change had affected them and how they had coped with life as a student in the UK.

Having discussed the above questions, the following section will now describe the interview process by explaining how the participants were identified, invited to participate, and subsequently interviewed.

4.3 The Participants and the Interview Process

The list of questions above served as a guide to the semi-structured in-depth interviews conducted. According to Seidman (1998), the goal of an in-depth interview is to have the participants reconstruct their experience with the topic through a series of open-ended questions that enable the interviewer to build upon and explore the answers to each question. Thus, although all interviews followed a common order, the sessions were not restricted to the listed format, but were allowed to progress according to the responses given by each participant. This allowed the participants to elaborate on issues they viewed as important (Robson, 1993, pp.229-238) to address a particular interview question. For example, whilst answering the question on challenges faced since coming to the UK, a participant may offer information about a different area such as describing his/her perception about cultural difference or stress level.

In addition, some participants were asked probing questions when explanation or expansion to their responses was deemed necessary. For example, after the question about support received in relocating, a very different sub-set of questions followed if the participants described assistance received from their fellow countrymen, than if they did not receive support from other party. However, these probing questions were asked only to provide further clarification to the respondents' answers and at all times their privacy was respected (Lincoln and Guba, 1985).

These semi-structured interviews were conducted with international postgraduate students who attended different programmes at Cranfield, and who were accompanied by their families, during the 2002/2003 academic year. Initial efforts to contact and invite participation in the research were made through the Cranfield

University Housing Office (CUHO) as the majority of new international students register with the office to apply for accommodation. To comply with the Data Protection Act (DPA) 1998, the CUHO did not disclose the names of these individuals to the researcher. However, it assisted by identifying 25 houses with tenants who were new arrivals from overseas. No other information was shared. Considering that the Cranfield University is a postgraduate university and these campus houses are only offered to students who are with a partner or a family, one can infer the high possibility of these students having characteristics that meet the focus of this research.

Based on this list, the researcher sent an invitation to all 25 students by putting a letter through each of their mailboxes at home. The letter briefly described the research, explained its academic nature and invited participation (see Appendix J(a)). It also provided the researcher's contact details should students decide to participate (i.e., home, office and mobile telephone numbers, email address and the researcher's home address). Of those invited, only ten people directly contacted the researcher either via email or telephone, to which the researcher responded by arranging the timetable for interviews with each of them. All but one student was able to attend the session as scheduled. The student who failed to arrive later left a message on the researcher's mobile telephone to withdraw himself from the study due to heavy workload.

Further efforts were made to invite more students to participate in this interview exercise by sending a second wave of invitations to students who had initially been identified but failed to respond. An additional paragraph was added to the original letter to gain their attention and seek a response (see Appendix J(b)). This managed to bring a further six positive responses and all those who agreed were successfully interviewed. Table 4-1 provides a brief description of all the students who participated in this exploratory interview. For reasons of confidentiality and anonymity, the details of participants' Nationality and Study Programme have been masked here to protect their identity, as guaranteed by the researcher. The details of this information however, have been shared with the researcher's supervisors, with participants' consent.

No.	Gender*	Nationality	Study programme [#]	Accompanying Family member(s)
1.	M	Scandinavian	Master	Wife only
2.	F	Scandinavian	Master	Husband and 2 children
3.	M	South East Asian	PhD	Wife and 2 children
4.	M	South East Asian	Master	Wife and 4 children
5.	F	West African	Master	2 children and a nanny
6.	M	West African	Master	Wife, 2 children and a parent-in-law
7.	M	South Asian	Master	Wife and 1 child
8.	M	Chinese	Master	Wife only
9.	M	Chinese	Master	Wife and 1 child
10.	M	Middle Eastern	Master	Wife only
11.	M	Middle Eastern	Master	Wife only
12.	M	Middle Eastern	Master	Wife only
13.	F	Chinese	Master	1 child only
14.	M	North American	Master	Wife and 3 children
15.	M	South American	PhD	Wife and 2 children

*M=Male, F=Female; [#] Master = MBA and MSc

Table 4-1: List of Interview Participants and Their Background Information

When scheduling the session, the researcher gave participants the freedom to decide on the place and time, and most offered a few slots for this researcher to work with, thus making the scheduling process fairly easy. Except for four participants, who requested for the session to be held at their homes, most students chose to have the interviews at the researcher's office. At the beginning of each session, the interviewer sought permission from each participant to audiotape record the session, and all participants consented to this procedure. By tape-recording the interviews, data could then be analysed in detail after the sessions (Oppenheim, 1992, p.67). In addition, the researcher was able to concentrate on the quality of the responses instead of on trying to record them by writing. This helped maximise the accuracy in reporting the interviews

Next, the researcher also assured the interviewees of their anonymity and the confidentiality of their participation, and guaranteed that no single individual would be identifiable in any report produced. It was also made clear to the participants at the beginning of each session that they may stop the interview at any time should they wish to do so. After these issues were made clear, the researcher began each session by asking Question One and then continued to ask the other questions in sequence.

On average, each interview session lasted one hour, and none of the participants refused to answer any of the questions posed to them. In addition to the listed questions, probing questions were asked to explore what the participants had said in more depth. As the participants provided their responses to a question, the researcher sometimes looked at her interview guide or made short notes of the points made, in order to see

which areas were being covered by the answer. In this way, any areas that needed further exploration or explanation were able to be identified for probing. This is referred to as 'rapid mental traffic management' conducted throughout an interview session to allow information to be prioritised and further exploration identified (*ibid*, 1992, p.72). In general, all respondents said that they found the questions clear and relevant.

The participants appeared to be open and enthusiastic in sharing their experiences with the researcher. The researcher managed to create a warm and friendly atmosphere throughout the interviews and, thus, was able to attain smooth-flowing interview sessions. The issues discussed appeared to be very close to the participants' hearts, as evidenced when the researcher had to briefly pause two interview sessions to comfort participants who cried when they were overcome by emotions during the interviews. However, this did not disrupt the sessions as the researcher managed to "soothe the respondents by discussing more superficial topics" to ease the situation (*ibid*, 1992, p.75). The session resumed when both participants assured the researcher that they wanted to continue with the interviews. At the end of each session, the participants were asked to give comments about the session and were also thanked for their co-operation before the session was brought to a close. It can be concluded that the responses received were of good quality and depth. This confirmed the appropriateness of the qualitative method adopted for this stage of the research.

4.4 Methods of Analysis

All interviews were transcribed by the researcher. The transcripts were first written as Microsoft® Word® files, but later these were converted into hypertext format for analysis using the NVivo software package. The researcher read and re-read the transcripts to familiarise herself with the data. Using NVivo, the researcher was able to code and categorise the data into a more structured format through coding of texts and creating of nodes.

According to Rubin and Rubin (1995), coding is the "process of grouping participants' responses into categories that bring together the similar ideas, concepts, or themes you have discovered" (p.238). Coding involves "the development of conceptual categories, typologies or theories that interpret the data for the reader" (Merriam, 1988, p. 133) by looking for recurring regularities in the data and comparing one unit of

information with the next. Following this advice, the coding process was conducted in stages. First, a few main coding categories were set up (see Appendix K(a)) based on the categories of questions developed earlier. Miles and Huberman (1994, p.57) call these descriptive codes as they entail little interpretation because “the researcher attributed a class of phenomena to a segment of text”.

Then, some new codes were added whilst the interview scripts were being revised. At this stage, the researcher coded anything believed to be of help in the data analysis. This involved identifying themes as inferred by the data. Periodic readings of the scripts and the descriptive codes brought to the surface more conceptual categories from the coding made to show interpretations of the data (*ibid*, 1994, p.58). Fortunately, the use of NVivo software in the analysis eased the researcher in her retrieval of the data and in making changes to codes. As the analysis progressed, the coding was revised because some codes did not work any longer or have decayed (*ibid*, 1994, p.61). For example, the initial six categories based on the eight sets of questions were later collapsed into only four themes, whilst “Weekend Activities” that was initially coded under “Daily Life Now” was later moved because issues described within this context were more relevant to the “Coping strategies” nodes. These revisions and analysis of the interview data resulted in the identification of four conceptual categories successfully extracted from the responses provided by the participants to the eight sets of interview questions (see Appendix K(b)). The next section will discuss these categories in detail.

4.5 Findings Based on the Interviews

The four main themes identified through analysis of the exploratory interview data analysis are Relocation, Challenges, Outcomes and Strategies, with sub-themes in each of these themes, along with some emergent issues, as shown in Figure 4-1. This section discusses the findings according to these four categories, as well as highlighting issues raised within them. At the end of this discussion, the additional issues that emerged within the categories are discussed.

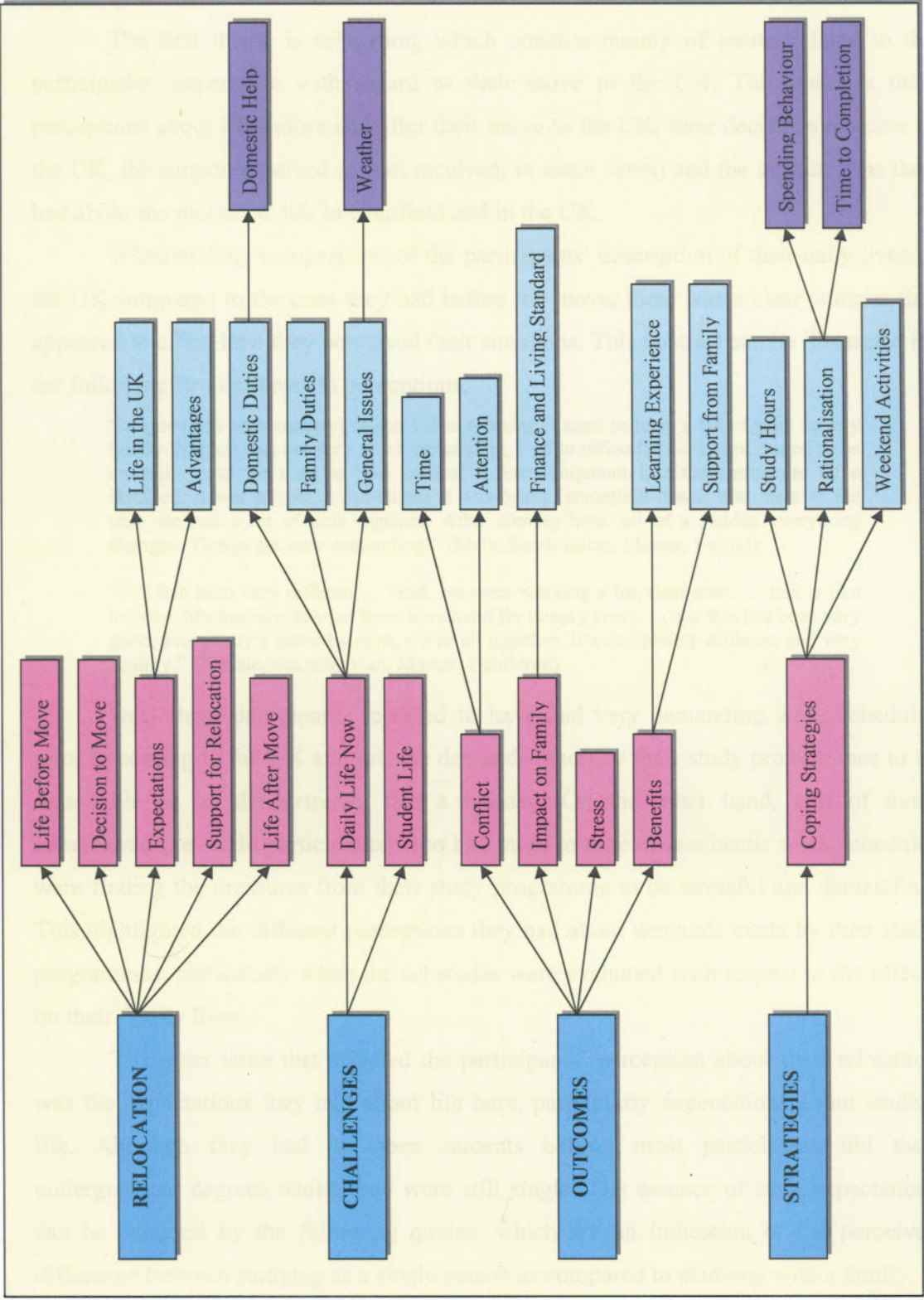


Figure 4-1: Coding Trails

4.5.1 Relocation

The first theme is relocation, which consists mainly of issues related to the participants' experience with regard to their move to the UK. This includes their perceptions about life before and after their move to the UK, their decisions to come to the UK, the support received (or not received, in some cases) and the expectations they had about the move, i.e. life in Cranfield and in the UK.

When making comparisons of the participants' description of their daily lives in the UK compared to the ones they had before the move, there was a clear contrast that appeared to affect how they perceived their situations. This contrast can be illustrated by the following two extremes in perceptions.

"In [previous host country], when I was working, I used to have a lot of time for my family. My job was not very much demanding, I go to office for 4-5 hours, I used to be on call ...and we used to take care of a few equipment that the companies have installed. It was alright... sometimes it was hectic, sometime it was not, most of the time we had a lot of time together. After coming here, all of a sudden everything changed. Things got very demanding!" (Male, South Asian, Master, 1 child)

"...It has been very different... First, we were working a lot, then now. ... this is like holiday. My husband has not been so relaxed for twenty years. ... So, this has been very good, everybody's home by 4pm, we're all together. It's completely different and very healthy." (Female, Scandinavian, Master, 2 children)

Only three participants reported to have had very demanding work schedules prior to coming to the UK and felt the demands made by their study programmes to be reasonable or on the extreme, like a holiday. On the other hand, half of those interviewed (i.e. eight participants) who had more routine or less hectic work schedules were finding the pressures from their study programme to be stressful and demanding. This highlighted the different perceptions they had about demands made by their study programmes, particularly when the schedules were evaluated with respect to the effects on their family lives.

The other issue that affected the participants' perception about their relocation was the expectations they had about life here, particularly expectations about student life. Although they had all been students before, most participants did their undergraduate degrees whilst they were still single. The essence of such expectations can be captured by the following quotes, which are an indication of the perceived difference between studying as a single person as compared to studying with a family.

"When I was studying [in the US before], I was married for a few months [towards the end of the programme] ... [but] the life [was] different because there was just me and my wife. But here, we have four children, you can imagine living with four

children ... I don't have problem with my children, I love them, but with children it's different. They totally change your life, in a way." (Male, South East Asian, Master, 4 children)

"Sometimes I envy single friends here who are able to work even on [a] Sunday, to be free to do so ... But [I] recognise the responsibilities of being married [and] don't wish to change my own circumstance as a family man now."

(Male, South American, PhD, 2 children)

In addition, the participants also described the expectations they had about the move. Most participants discussed these expectations in relation to the study programme they were undertaking and also their expectation about daily life in the UK generally, and Cranfield specifically.

"I needed [a degree], where I thought I needed to go to school where the quality of the experience in class would be right. There's no point going to school which, with all due respect, there'll many young graduates and all those things and I thought I'll be a [inaudible] by the class. I'm here to learn from people's experiences working and see how it affects people's lives. I actually asked around and checked about Cranfield and someone told me to apply and that's how I got it." (Female, West African, Master, 2 children)

"Because I always look forward. I believe my skill, my experience and my characteristic. So, I think after I graduate I should, can earn more than this ... it is an investment. (Male, Chinese, Master, wife only)

"A better future, number one, and better position in an organisation, better financial [unclear] and better status. And of course, when you have better degree, your chances to go up an organisation is better, maybe faster." (Male, South Asian, Master, 1 child)

All participants mentioned some long-term benefits they were expecting to achieve by coming to live and take-up studying in the UK. These benefits included the experience of, and exposure to, living abroad and the opportunity to learn the language not only for themselves, but also for the family.

"I wouldn't want to come alone ... the kids ... the family will miss out on the experience. [My husband and I] both wanted to give the children a chance to live in another country and learn a new language. So, it's not just really for me studying but more all of us taking a break doing something new." (Female, Scandinavian, Master, 2 children)

"It's actually for my children. I'd like them to have the early exposure of different life, so that when they grow up, they'll be a better person, adapt much better to environment faster to any changes. I think children they tend to pick up things faster when they are young." (Male, South East Asian, Master, 4 children)

"For the family, it is a good opportunity about what life in a foreign country, in the UK, compared to China. I want [my child] to learn in a different learning environment, make some new friends here, learn some English here, know what life/study in a new foreign country." (Male, Chinese, Master, 1 child)

However, the participants also had issues with the amount of support they received in settling down and learning their way around the new place. Except for the one participant from South America, all other participants said they had some form of assistance from their fellow countrymen when they first arrived. However, it was interesting to note that by and large, the participants' acquaintances with these fellow countrymen were formed in a very ad-hoc manner, for example a chance meeting at the bus-stop, or getting neighbours who came from their country. No person mentioned the use of a formal means such as a national society or the Embassy. Nevertheless, these acquaintances appear to have helped the participants settle down to the new life here.

"There's someone on the [same programme as I am] who is from my country, I was told by a friend. I never really met them before. So when we got here, we met and then there's another person [from my country] who is doing his PhD. We just met by chance at the bus stop, while walking my kids going to school, we introduced ourselves. That was how we started networking. Before we knew it (smiles) ... we were good friends." (Female, West African, Master, 2 children)

"I still remember that the first half-term of my daughter's school, I was so surprised that my daughter was going to have one week off, and I have full classes to attend, what should I do with my daughter? But, I met a kind Chinese family, she promised to take care of my daughter during that week so it was a great help from a neighbour." (Female, Chinese, Master, with child only)

The other sources of support for the relocation mentioned were from the university, either through the Community Centre or the orientation programme organised by the School. However, the orientation programmes were only reported by those who were in the MBA programme, and not by participants in the MSc or PhD programme.

4.5.2 Challenges

All of the interview participants expressed concern over the need to strike a balance between the family and their studies. There were concerns voiced over the difficulty experienced in trying to fulfil both work and home roles. Hence, the challenges reported by the participants can be categorised as their daily life in the UK, which relates to the more personal aspects of the challenge, and the student life challenge.

The challenge in the daily life they experienced after coming to the UK refers to three personal challenges which are the daily domestic duties, the family duties, and their own adjustment to the general living in the UK. With regard to the challenges in

their daily lives, this involved the demands to perform their domestic and family duties such as cooking, cleaning, taking care of the children or helping them with the schoolwork.

Almost all (i.e. twelve people) participants mentioned that home duties such as cooking and cleaning were mainly left to their spouses. Although there was no purposeful reluctance to perform home duties, the division of labour within the household was seen to arise due to demands of time by the study programme that did not allow for the participants to contribute more to these duties. It was not possible to make any gender inference as only one female participant had a trailing husband, whilst the other two female participants did not come with their husbands.

"Like I said, it's not that I don't want to do things, to help my wife or whatever, but the thing is that I don't have much time ... because like I said, I spend one whole day at school."

(Male, South East Asian, Master, 4 children)

"I do not do housework. My wife does everything, cleaning, preparing food, washing clothes."

(Male, Chinese, Master, 1 daughter)

My husband usually cooks so we eat dinner around 7pm. I probably more often help my [child] to do homework, listen to my [child] read, or sometimes my husband does. My husband does 90% of the cooking, 100% of the washing and 100% of the grocery shopping."

(Female, Scandinavian, Master, 2 children)

Nevertheless, many participants expressed concerns about not being able to do things they used to do before the move. Again, this inability was mainly attributed to the issue of time.

"I was worried [before coming here] about how much time I would actually have compared to my previous assignment or whether we are going to have free time, time to do the things that you would normally do around the house that require ... like fixing projects, or things that require an hour or two of your time. Whereas, now I maybe have only 15 minutes or 20 minutes or 30 minutes at a time. Do you see what I'm saying ... you know, to get little interactions in here. Whereas back at work, normally I have time to do projects, [have] longer interactions with the family."

(Male, North American, Master, 3 children)

"I mean, because I have my own house in [my home country], and I have my own garden and I love doing gardening very very much, that is one of the ways for me to relieve my stress. But I don't have much opportunity to do it here ... because of time..."

(Male, South East Asian, Master, 4 children)

In addition, concerns over lack of time and the inability to contribute to home duties often transpired when the participants elaborated on the arrangements they had established in their lives previously, through some form of domestic assistance received. More than half of those interviewed (i.e. nine participants) mentioned getting

assistance either from a paid-help like a domestic helper, or from an extended family member, such as the mother-in-law or a brother.

"My day at home [before the move] could be hectic but then because I had families and friends around me, and I know the system very well it wasn't that difficult. The boys would be in school, and normally they go with me and I drop them off at school, and then my brother picks them up and takes them home, I can talk to them ... I have a nanny ... she's [the nanny] been with me for two years." (Female, West African, Master, 2 children)

I'm obviously doing much less now than I did before. But then again, before, we also had a maid so I wasn't that active in the house anyway." (Male, Scandinavian, Master, wife only)

"I do more here since back home I have my mother-in-law to help me. We are neighbours. So, usually I don't cook. I just go to her house and enjoy dinner with them [but] now I have to cook for myself, so there's more work."
(Female, Chinese, Master, 1 child)

"Back home, I still do the washing up of the kids in the morning ... I'll wash them, then send them downstairs to our housemaid to feed them."
(Male, South East Asian, PhD, 3 children)

"I had a [inaudible] of staff, I had a driver, a house help, and my mother-in-law would come and stay regularly... Here is a big change ... A whole totally different world." (Male, West African, Master, 2 children)

The demand to perform such duties that were previously 'outsourced' to other individuals appears to present a challenge that affected how the participants perceived their roles at home and the ability to fulfil those roles. In addition to the challenges of home and university roles, almost all participants mentioned the challenge they had in adjusting to the cultural difference encountered in the UK, which involved differences such as language, business hours and interaction with the locals.

"... the hardest thing was ... because the business hours here ... they are not open at night, they are not on weekends, they are not open Sundays, it was ... getting used to that whereas in [my home country] it's 24 hours a day ... and you can get to it even on weekends ... that was pretty hard to adapt to for us. The access to stores, the food thing ... and the language barrier ... there was a little bit of language barrier, but not much. The words and phrases are sometimes a little bit different ..." (Male, North American, Master, 3 children)

"For example, our team meeting, when I was in my team meeting we can discuss on the same level. I don't like that situation ... six team mates in your group but four of them, sometimes five of them, they discuss some topics, very educationally, but I can't understand at the first point. Then my thoughts [are] confused because of ... I must think in English. [inaudible] ... so difficult to express my ideas, so I was a little bit isolated. I don't like that situation at all because I am open ... I am not a closed-person." (Male, Chinese, Master, wife only)

"It was during Christmas, she just had one friend and that friend went back home to France for Christmas and didn't come back to school for the first day and it was a horrible period ... I think it's just the English way ... they claim to be very disciplined, everybody's in uniform, you can't even wear brown shoes, they have to

be black but you can have chips and chocolate for your lunch ... that's ok if you are having very unhealthy eating ... my children were really looked at when they came at first, with their kiwi and carrots, and everything ... healthy foods ... like we're used to back home. You can't even have sandwiches with hazelnut spread, because that's very unhealthy, they can't bring that to school back home ... but here they can have chips and chocolate." (Female, Scandinavian, Master, 2 children)

"... because the whole environment, the whole new society, [my children] feel under pressure to behave "properly" and that just takes the fun out of the whole thing." (Male, West African, Master, 2 children)

In addition, one of the major issues mentioned as an important challenge for all but two of the fifteen participants was the need to adjust to the weather in the UK, particularly in reference to the winter they spent here.

"The weather ... the weather is another harsh factor for me. Since it is very very cold for me. I come from the tropical zone ... Well, the most ... depress[ing] ... because ... you cannot overcome [it]. The people, you just try to be people, ok, you can overcome more easily. But the factor of the weather is more harsh for me ... So, [I] always feel depress about the weather ... every morning I open the window, "well, another rainy day", "well, another snowy day", "well, another rainy day ..." just depressed." (Female, Chinese, Master, with child only)

"I think, the first thing was the winter. All the time I was here before [for holidays] it's been the spring and summer, so winter was a big shock ... it was too cold, it was dark ... I was like ... oh my god! Is this what life is going to be? And it was a bit depressing. So, having to combine your work with the weather that's really 'uplifting' (rolling her eyes). It was tough." (Female, West African, Master, 2 children)

"I have to say this, because my children ... they like to go and play outside but here it's different. It's not that we don't let them to go out, but the weather ... because I think November, December, it was wet and cold ... Basically everybody had to stay inside. So, ... it's different." (Male, South East Asian, Master, 4 children)

4.5.3 Outcomes

The third theme is outcomes, which consisted of four main issues. These issues are conflict, impact on the family, stress and benefits. First, all participants mentioned that a proper allocation of time for both their families and studies posed a conflict for them. As described earlier, many perceived that such demand would not be there if they were single or without children, as was evident from such remarks as exemplified below.

"If I come alone, it would be ok for my studies, I will have more time and there's no need to put time aside for the family." (Female, Scandinavian, Master, 2 children)

"... if I come here by myself it would allow me to concentrate at school, maybe do better at school ..." (Male, North American, Master, 3 children)

"[H]ere the time is also an issue. ... Even if there are activities [with my course mates] from 6 to 10pm but that's the time I want to spend with my family."
(Male, West African, Master, 2 children)

The view of simultaneous pressures from demands made on them was expressed by almost all participants. The essence of such experience is much like the excerpts from the interviews shown below.

"Talk about tense or stresses there will always be that kind of thing. But, I find that studying with family requires your patience. Because you have on one hand your study, on the other hand your family... I know sometimes [my family] have problems, the children are sick, but you have to, to do that otherwise ... because like I said, exams I cannot postpone, assignment submission I cannot postpone ... You have to do it. In a way you have to ask the family to sacrifice something."

(Male, South East Asian, Master, 4 children)

"My wife has to commute to [town] on [a] daily basis [for my daughter's therapy]. So, that will take a lot of her time and also my time because I have to take care of the second child when she [my wife] is not at home ... I think I'm spending less time than I should on campus because on campus is the only place where I can really concentrate on my studies. And moreover, my nature of this programme is experimental so I have to be at the lab." (Male, South East Asian, PhD, 3 children)

Furthermore, all participants mentioned concerns about the pressure they feel to divide their time between the family and their studies. For this, time conflict was the most frequent issue that participants had experienced in trying to perform their work duties and their family responsibilities. In addition, four participants also expressed feeling the need to spend more time with their families to support their adjustment to life in the UK.

"... Back home I could do a lot of things with my family and also do them within the comforts of doing some kind of social working, kind of networking working. I usually have my family with me. [But] I can't do that here, because again they are going through trying time and you want to cushion that by being there for them and spending time specifically with them." (Male, West African, Master, 2 children)

"You want to be home and you want to be at school at the same time ... I don't feel right going out with friends ... because [if] my kids ask me, "Mom, what are you doing today?" So it is difficult to explain if I'm not working ... One of the biggest challenges I had was trying to get the boys to settle down and make friends and they'll be fine at school. A few times I was worried about them. They come home with some stories about somebody saying something and all that. It can be a bit (sighs), I know they felt a bit in the minority, being black, and that everybody is different and all that. So trying to get them to realise it is not a big deal. Well ... you have to deal with your own challenges, it was tough initially when I had no time for them because they couldn't ... I couldn't give them the support they needed from me and deep down it was affecting him." (Female, West African, Master, 2 children)

One other outcome mentioned by all of the participants was the stress experienced due to pressures from their study programme and the demands from their family roles.

"The challenges became for present, more urgent. I mean, I needed more time to deal with my studies and deal with the work I have to do and suddenly there was a big demand on my time at home ... at both ends I was getting stretched ... something

had to give ... so, I just gave the social aspect ... I mean there are days when I've just had enough, up to my head that I can't deal with it and do whatever you like ... especially when I had too much, and say I have had enough." (Male, West Africa, Master, 2 children)

"Although we don't have a lot of classes to attend we still got a lot of assignments and also the preparation for the thesis. So you feel ... I feel that I'm jammed with a lot of things." (Female, Chinese, Master, with child only)

"There's quite a lot of pressure, a lot of work required. I was under pressure at some point and I've seen how hard it would be and I know at what point of time I left early in the morning and come back late at night just to sleep ... sometimes even dream about it ... not a pleasant one"(Male, Middle East, Master, wife only)

"I don't have the time and the chance to participate in all the things that the students can do to relieve the pressure. Because the extra minute I have I think about my children ... I want to be around them. My motherly instincts, it hurts me that I just can't be there for them. It's just difficult, very difficult." (Female, West African, Master, 2 children)

When discussing their status as postgraduate students, several issues arose, particularly with regard to their lowered financial capabilities and depreciated lifestyles as a result of the change to becoming students. This was an issue mentioned by all but one participant.

"So, for my family, the sponsorship does not provide for them so I have to use my savings for them ... Yes, because we have much less income for family now. We have to use our savings." (Male, Chinese, Master, wife only)

"Our financial standing drop, but it should be ok for one year, we have some savings, because we will both return to our [good] jobs in [my home country]." (Female, Scandinavian, Master, 2 children)

"Yes, financially. Here I don't have chances of saving. My sponsorship covers what is needed but there's nothing extra. e.g. to travel, it has to come from my savings ... We are not able to save, to buy a camcorder or whatever, it has to come from my savings." (Male, South American, PhD, 2 children)

This lower income resulted in a standard of living below that afforded before the move. Except for one participant, all others mentioned the need to change their spending behaviour or use their savings to compensate for this 'loss of income'. Further explorations of the participants' background showed that the participant who did not mention such need was a Middle Eastern Master's student who was sponsored by his employer. However, there was no way to ascertain why this student did not mention financial constraints as this was not within the focus of the present study. Nevertheless, financial issues appeared consistent amongst the majority of the participants.

"Our financial standing [has] dropped, but it should be ok for one year, we have some savings ... for short term it is ok." (Female, Scandinavian, Master student, 2 children)

"Yes, obviously we have spent a lot of money here, and we began to worry about money. Because I have no income, we have no income, both of us ... before that I worked for my own company and my wife working for a media company. So, all was very good at that time. But now, not at all." (Male, Chinese, Master, wife only)

"One thing for sure is that our financial .. Our fund is not enough ... We are just getting about GBP950 so, GBP450 goes to the house, and then we are left with another GBP500 for electricity, phone bills etc." (Male, South East Asian, Master, 4 children)

However, when asked if they would prefer to have come to the UK by themselves, all except for two people said that this was not something they would consider at all. All expressed the need to be with their families. In general, the participants felt they needed to stay together as a family unit and that as much as there was pressure, there was also support that they were getting by having the family with them.

"I cannot have this kind of thing ... my family not around ... it's like part of me, something that motivates me." (Male, South East Asian, Master, 4 children)

"[A]s a family it is different to be by yourself, be alone, it feels lonely. Also, with my family here I'm happier and get more support from my wife and get to spend time with my child. She supports me emotionally and in taking care of me."

(Male, Chinese, Master, 1 child)

Considering evidence from the literature which shows family as a source of social support for expatriates that positively influence their adjustment (Caligiuri, 1998b), it is not surprising that the participants preferred to have their families with them especially through such trying times. To quote one of the participants on this:

"Even when I'm snappy and it's my off day, I come home to them and look at them, it gives me the push I need to go on, if I have to do it again, I'll just do it the same way" (Female, West African, Master, 2 children)

On the other hand, the two individuals who voiced their preference to have come to the UK by themselves were participants who reported their families to have had a very hard time adjusting to life in the UK during their first few months here.

"Based on my five months experience, I would have preferred to have left them ... Not the whole duration, maybe the first year because I myself cannot stand being away from my children for too long." (Male, South East Asian, PhD, 3 children)

"If you asked me this question three months ago I would have said yes ... because it was difficult. It was difficult. [sighs] Stress level ... I was stressed out ... School work, family, my wife, my kids ... everyone was just stressed out. And the family didn't adjust. And the [study programme] and the other problem I was going through

... a low, a very deep low ... and my self-esteem was really battered then." (Male, West African, MBA, 2 children)

Their replies indicated their concerns over the difficulty of their families to adjust since coming to the UK, thus causing second thoughts about their relocation with the families. These two participants were not absolute about leaving their families at home, but voiced a preference to do so due to the frustrations they faced during their initial months here. Their feeling was that their families might have been protected from the difficulties of settling down, if they (the students) had come on ahead, but they did not want to be without their families for the whole duration of their stay here.

All participants mentioned the experience of living in the UK as one they wanted both for themselves and the family. Living and experiencing life in the UK were seen to provide long-term benefits that they and their families could benefit from, and would not have received without having gone through it.

"And ultimately, I think I have benefited from it, long term. And also, in terms of ... something that is very important to me as a person, my self-confidence. I went through a very traumatic period and it's getting back up, becoming what I want to be. All in all, we haven't lost anything, it's been good ..." (Male, West African, Master, 2 children)

"Very good degree. And I get advance knowledge. Because I think if Chinese economies continue to follow this trend, this market-driven, and also Chinese economy is very late, if they continue. I think the knowledge today that I have learned can be used in future, may be two years ahead. So that's a big advantage if I can use it, I can think in advance level than other Chinese people ... so I think that's very good." (Male, Chinese, Master, wife only)

"It's been tasky. It tests the limit of your endurance and all those things. Looking back, you have to learn to deal with the difficult situation, situations that you think so difficult is really good experience." (Female, West African, Master, 2 children)

All participants identified some type of benefit that the family had achieved as a result of their life in the UK, and generally such benefit was defined as long term, following the experience they had whilst living here.

"I think for them, first thing is the opportunity to see life in a different way, meet different people from different countries, realise that there are many people in the world from different nationalities that we can be friends [with], it's been good. Actually working themselves to be comfortable with international communities is good. It's the key advantage in having them here. Anywhere they go, whether they go to school anywhere, now they'll remember this year and they'll remember that they can work themselves up to making friend of different nationalities. Which is what they've done, they meet the big world."

(Female, West African, Master, 2 children)

4.5.4 Strategies

The fourth theme is concerned with the strategies employed by each participant in coping with the challenges faced since their move to the UK. These strategies relate both to their effort in arranging the study hours so that they were able to meet the needs of both work and family lives, and the strategies in dealing with their status as students.

First, with regard to incorporating family needs for time and attention into their schedule, whilst twelve participants mentioned that they actively arranged time to spend with their families after school or in the evenings, five participants said that they reserved one day at the weekend for family activities. These arrangements were made in their efforts to perform their roles at home and at work.

"I put one day aside to do things with my family, get out of Cranfield then the other day I study."
(Female, Scandinavian, Master, 2 children)

"Actually I have two days holiday, Saturday and Sunday ... On Friday, I have half a day session, so we plan for our shopping usually on Friday. (Male, South Asian, Master, 1 child)

"In the day time if I don't have classes to attend I will spend time in the library 2 or 3 hours in the morning or afternoon, after 4pm I will spend about 1 hour with my [child] at the library since she needs to write Chinese assignment." (Female, Chinese, Master, 1 child)

"Usually I like to get home by 6pm so I can spend some time with my kids and watch TV with them. Usually at about 9pm they go to bed and I'll have some time [to] talk to my wife till about 10 or 11 and when she goes to bed then I can sit down and do some work, till about 1 to 2am, depending on how much work I have to do" (Male, West African, Master, 2 children)

As for the need to cope with the financial issues described earlier in the Outcome section, the majority of the participants mentioned coping by changing their spending habits or using their savings to compensate for the loss of income.

"The fact that I don't have any income and I'm living on my savings, which obviously has limits to it, means that certain luxuries like a lot of weekend travelling that we would have been doing in [where we lived before], we are more restricted, we're driving a smaller car, we are buying a lot of Tesco value [products] but a lot of things we still do, I mean I still play golf, [my wife] still buys very exclusive foods, Asian foods and I think that's important. We still have our moments of luxury." (Male, Scandinavian, Master, wife only)

"... you'll always want more, but we don't complain about what we have now, it's not that we have reduced it ... Considering how it is in our country, economically, we look at this as an endeavour, we'll return to a better life."

(Male, South American, PhD, 2 children)

We have to manage things accordingly. For one year while we're studying, we don't have any income and we have to get into our savings.

(Male, South Asian, Master, 1 child)

In addition, a number of participants mentioned the short term nature of their study programme or a focus on the months remaining in the UK before going back to the home country, as a way to cope with the pressures in adjusting to the relocation and the challenges faced in the UK.

"I think the fact that it is for a year, I know that I'm half way through, there's only six months more that I have to do it so that's fine." (Male, Scandinavian, Master, wife only)

"It's for one year and after that our status is going to be much higher than it was before." (Male, South Asian, Master, 1 child)

"I think here I have high stress level for maybe 5 more months then it'll be ok, so I don't mind going through that experience. Maybe it's an interesting experience also." (Male, South East Asian, 4 kids)

"One year is not so long ... [I] tell myself don't give up and try to overcome all the difficulties that I may have. If I cannot solve, may be it's just short, not long for me to tolerate everything" (Female, Chinese, Master, only with child)

However, only participants who were in the Masters programmes mentioned such context of rationalisation. It is quite possible that the one-year programme they were registered on was seen as a durable short stint, which was very different from the three-year PhD programme. As this could influence an individual's perception about demands made on them by the study programme and their subsequent view of life since coming to the UK, consideration to this difference was of importance to this study.

4.6 Implications for the Main Study

The interview exercise managed to achieve its objective which was to identify issues to inform the questionnaire development process. Many of the issues raised by the participants have been discussed earlier in Chapter Two, as they can be found in both the adjustment and the work-family literature. A list of these is recapitulated and presented in Table 4-2. Although these issues transpired from the interview data, three of them were not incorporated into the questionnaire because they were beyond the scope of the present research, i.e. loss of dual-income, spouse's contribution to the decision to move to the UK, and support for relocation. On the other hand, other issues were added to Section 4 of the questionnaire (see Appendix E) as they were considered relevant to the unit of analysis in this study and may influence the test of relationship between work-family conflict and adjustment of international postgraduate students studying in the UK. These are language ability (D6); previous international experience

(D15), type of financing received (D9), and the number and ages of children in the household (D5a-b). However, issues on cultural difference and conflicts raised by the participants did not need additional items because these have already been measured by the items in the work-family and international adjustment scales.

Issues/Factors	Selected evidence in the literature
International Adjustment:	
Loss of income (dual-income)	Harvey, 1995; Leonard and Solomon, 1995
Language	Black et al., 1992
Decision to move	de Verthelyi, 1995
Support in relocation	Feldman and Bolino, 1999
Previous international experience	Parker and McEvoy, 1993; Feldman and Bolino, 1999
Type of financing	Tanaka et al., 1994
Cultural difference	Adler, 1997; Sanchez et al., 2000
Work-family conflict	
Time conflict / Work hours	Pleck et al., 1980
Stress	Allen et al., 2000, Moyle and Parkes, 1999
Number of children in household	Campbell and Campbell, 1994; Crouter, 1984
Ages of children in household	Frone and Yardley, 1996; Rosenbaum and Cohen, 1999

Table 4-2: Issues Raised and Selected Evidence from the Literature

More importantly, several emerging issues have been flagged as additional concerns in considering the relationships between work-family conflict and adjustment, which should be included the questionnaire. The first issue was the individuals' perceptions about their work-family context prior to the relocation. Their move to the UK has presented a change to their work setting. Such change has been reported to influence the way individuals manage their life (Feldman and Brett, 1983; Feldman and Tompson, 1993). The different perspectives that the participants reported about the demands of their study programmes appear to be of importance here. Although they were in a similar study programme, the participants have different views about it. Further analysis of the data highlighted that participants with highly demanding or hectic previous work-life, viewed the demands of their study programme more positively than those who had less demanding previous work-family circumstances.

As described in the earlier section on relocation, this line of thinking appeared consistent with most participants. Since such a view may subsequently affect the way they perceive their present adjustment and work-family circumstance, this factor must be accounted for in the present study. Hence, the perception about work-family context before and after the move was included in the questionnaire (Section 3: Question C1

and C2) to control for any possibility of influence as indicated by the findings from this exploratory study.

The second important emergent issue found was the domestic duties prior to the relocation. As all the participants had been working before they came to the UK, each had specific arrangements that they had probably grown accustomed to in performing their work and family roles. The international relocation to the UK however, has caused changes and disruptions to these arrangements. As home roles influence the level of demands made on an individual (Carlson and Frone, 2003), a change to home duties arrangement, particularly with the 'loss' of domestic assistance, may cause the home domain to demand more from the participants than it did before.

Compounded by the needs of the participants and their family members to adjust, the requirement to perform home duties, which had not previously been a problem, may become burdensome. This may then affect the students' perception about work-family circumstances and subsequently influence their own adjustment. Therefore, the questionnaire must include items that determine how much home duty has been taken on by an individual since coming to the UK as compared to before (Section 4: Question D17). Furthermore, additional items had to be incorporated into the questionnaire to distinguish between individuals who previously had domestic assistance and those who did not, and for those who did, whether such assistance is still available after their relocation to the UK (Section 4: Question D18).

The more recent measures of adjustment by Black et al. (1991) adopted for this study did not include adjustment to the weather in the host country as one of the items. However, findings from this exploratory study showed the need for this item to be included because the majority of the participants in this study found the weather in the UK to be a challenge in their adjustment experience. This indicated the importance of the weather factor to this research and so this item was included in the questionnaire. Although Black et al.'s (1991) more recent measures of adjustment did not include adjustment to the weather; this item had been used as one of the items in an earlier study (see Black, 1989). Through this researcher's correspondence with Black (see Appendix L), it is clear that the item 'adjustment to the weather' was dropped only because it did not load well in the sample for the latter study. Therefore, this item was

included (Section 2: Question B5) and statistical tests conducted to confirm its relevance as a factor for international adjustment (see Chapter Six).

In addition, following the findings from these exploratory interviews, a further five additional items were included in the questionnaire. This was necessary to allow for some degree of control over the potentially diverse characteristics of the postgraduate student population. First, there was a need to make a distinction between students in the Masters programme and those in the doctoral programme, because those in the shorter-term programme like the MBA or MSc may perceive demands made by their study programme differently than those who are in the longer-term PhD programme. It was not possible to ascertain whether this was due to the type of programmes the participants were enrolled in or the length of time they had spent in the programme. Nevertheless, this indicated a need to control for both factors i.e. type of programme and the length of time individuals had spent in the UK, to avoid alternative explanations to the findings. The influence of time in a host country can be inferred from the dynamic nature of adjustment as discussed earlier in Chapter Two (e.g., Torbiorn, 1982). Hence, there was a need to include the type of programme the students were undertaking (Section 4: Question D7), the duration of their study programme (Section 4; Question D8) and the length of time they had been in the UK (Section 4: Question D11) into the questionnaire so that any potential difference could be accounted for. However, within this study, time spent in the UK was included as a variable, not in order to plot the changes over time, but to ascertain whether those who had been in the UK longer would have a different adjustment level to those who had only been here a short time.

Next, the financial issues mentioned by the participants did not come as a surprise because taking-up a study programme meant the participants had to live on a stipend or on their savings. The literature has reported the influence of financial problems on adjustment of international students. A study by Tanaka et al. (1994) found that the type of sponsoring received by international students influenced their adjustment, but it made no distinctions concerning marital status or whether funding was provided for the spouse/family. Thus, based on the literature and following the findings from the interview, the present study needed to include the source of financing as a variable in the questionnaire (Section 4: Question D9). In addition, it was also

necessary to seek information about the financing provided to the spouse or family (Section 4: Question D10) because no study is yet known to take this into account.

Hence, this factor was enquired about using a three-part question where the first was to establish the type of financing received whilst undergoing the programme. Should the source of financing received have come from the students' or their families' savings i.e. self-sponsored, it was not necessary to enquire about funding for the family as the students would have had to prove their ability to fund the family when applying for a visa to enter the UK (see Immigration Rules Part 3, 2005). However, should the students be financed by their home-government or other sponsoring bodies, it had to be ascertained if there was funding provision for the spouse and the children, and what the students' perception was about the adequacy of the financing received.

4.7 Chapter Conclusion

The majority of the issues or concerns voiced by the participants in this exploratory study provided initial support for the need to examine the relationship between work-family conflict and international adjustment. The frequent mentions of conflict experienced by the participants indicated the existence of conflict between their family and study roles. However, more importantly, as discussed in the above section, the interview data has identified several factors that needed to be accounted for in the main study in order for clear explanations for the hypothesised relationships to be provided. Therefore, the next step was to incorporate the factors identified in this study into the questionnaire alongside the measures identified from the literature, and then to test the questionnaire before its distribution in the main study data collection. This piloting stage of the research is presented in Chapter Five.

CHAPTER FIVE

PILOT STUDY

5.1 Introduction

The questionnaire was designed following the exploratory interviews intended to identify items for inclusion in the questionnaire, alongside the work-family and adjustment measures. This chapter describes the steps taken in piloting the questionnaire to test for its reliability for use in the main data collection.

5.2 Piloting the Questionnaire

The piloting of the questionnaire in this research was conducted in two phases. Even though the items in the study were adopted from the literature and had been validated by other studies, piloting this instrument was still important (Neuman, 2003, p.181) to make sure that it worked as it was intended with the international postgraduate student population, and was able to yield the required data (Oppenheim, 1992, p.47). The first phase of this piloting involved testing the questionnaire for its face-validity and content-validity with a group of ten individuals i.e., First Pilot Group (FPG). The second phase commenced after amendments were made to the draft, following feedback from the FPG. This phase involved testing the final draft of the questionnaire to ensure that a set of response categories for each question had been devised (Wilson, 1996, p.103) and to ascertain the reliability of the measures used (Neuman, 2003, p.181). Discussion of this pilot testing begins with a description of the first phase of the test.

5.2.1 Piloting: Phase One

Having made the decision to collect the data for this study using mailed and online self-report questionnaires, the researcher would not be “on hand to clarify questions or repair misunderstandings” that the respondents may have had (Brace, 2004, p.41), and hence, this first phase included a precautionary step taken to avoid any possible ambiguous questions or unclear instructions in the questionnaire (Neuman,

2003, p.181). This was also important because some context-specific adaptations had been made to the actual items from the literature, such as changes to items in the work-family conflict scale which had the term 'work' or 'workplace' that were replaced with 'study' or 'studies'. In addition, this test allowed the researcher to ensure that phrases and instructions within the questionnaire were clear and easily understood by individuals outside of this field of research. Thus, feedback received from this FPG was then taken into account in drawing up the final version of the questionnaire for its piloting.

The ten individuals in this FPG were of various nationalities and fields of specialisations at Cranfield University, and a detailed description of these participants is shown in Table 5-1. It should be noted that this test was not conducted on individuals who specifically met the characteristics defined for the main enquiry sample. This was done for several reasons.

No.	Nationality	Highest qualification/Field	Experience with international move
1.	South African	MSc / Accounting	USA – 1995
2.	Taiwanese.	MSc / Finance	UK – 2000
3.	Pakistani	MBA	UK – 2000
4.	Malaysian	MBA	USA – 1994
5.	Malaysian	MSc / Management	UK – 1997
6.	Chinese	MSc / Operations Management	UK – 2000
7.	Malaysian	MSc / Information Technology	UK – 2001
8.	Iranian	MBA	USA - 1994
9.	2 Members from the Research panel *	PhD/ Marketing PhD/ Human Resource Mgt.	

*Based on feedback given via the Review Meeting

Table 5-1: Background Information of First Pilot Group Participants

Firstly, the number of individuals who fully met the characteristics of the sample for this study was very limited. The restrictions posed by the Data Protection Act 1998 made identification and access to this limited pool of potential respondents not as open and flexible as was desired. As the pilot sample is very small and highly specific, the researcher had to seek an alternative sample with comparable knowledge and ways of thinking to those of the sample (Oppenheim, 1992, p.62). Thus, it was thought to be more beneficial to safeguard the sample and allow their participation only in the actual piloting of the questionnaire rather than in the test of its contents and layout.

Second, as the aim at this stage of the test was to assess the contents of the questionnaire and its structure and not to make statistical inferences, the suitability of

the individuals who participated in this content testing was not of significance. It was not their responses *per se* that the researcher wanted, but more their feedback on completing the questionnaire as unbiased individuals who were less familiar with issues within this research area. Their feedback helped with the phrasing of questions and instructions in the questionnaire for more effective and efficient use by the respondents in the pilot and main study.

Nevertheless, caution had been taken in the selection of participants for this test, each having a level of education equivalent to that expected of the actual respondents, and experience living in a foreign country. This helped ensure that their knowledge and ways of thinking were comparable to the sample, and that they were able to relate to the issues raised in the questionnaire. The following paragraphs describe the changes or amendments made to the items in the questionnaire following feedback from this FPG.

Although there were comments made by two FPG participants about the possibility of respondents' lethargy when responding to multiple-item questions regarding a similar construct in the work-family conflict scale, no item was dropped from this scale. This was because the use of three items in measuring a particular variable should be statistically better than the use of only two items (Levin and Rubin, 1998). Furthermore, to be able to choose two items out of three which had been validated in the literature requires several major steps to be taken. A large enough size of sample had to be available to respond to the questionnaire, and a factor analysis had to be conducted of the data from this sample before the two items with the highest loadings in a component produced by this analysis could be selected (see Hair and Anderson, 1998, p.99; Tabachnick and Fidell, 2001, p.582-590). In addition, the modified scale must then be tested again before it can be used for data collection (Sekaran, 2000, p.209). Such a task is very extensive and may detract the present research from its main objectives as described in Chapter Two. Moreover, the luxury of access to a large sample size was not afforded in this research due to the restrictions previously explained in the sampling section. Hence, the work-family measures were left to remain as three items per construct.

Nevertheless, a change was made to the work-family scale by phrasing three items in the work-family conflict scale in reverse, i.e., items A4, A8 and A12, to prevent response bias, i.e. the tendency for a respondent to answer a series of questions on a

certain direction regardless of their content. This was done because the use of mixed-wording of items in a scale has been suggested to help reduce the dangers of response bias such as acquiescence (Churchill, 1979; Nunnally, 1978).

In addition, a change was made to the term 'frazzled' used in the original scale (see Appendix E: Item No. 7) into 'exhausted' following comments made by five members of the panel about the term. One panel member who was English remarked that the term was 'possibly very American', whilst four others (who spoke English as a second language) had asked the researcher to explain the meaning of the word to them. Hence, a search was made in the English dictionary for the closest substitute to the word that could be easily understood by the respondents whilst keeping the meaning in context, which resulted in the term 'exhausted'. No other word raised similar concerns.

The estimated 20 minutes to complete the questionnaire was confirmed as reasonable by participants in this FPG. However, some suggestions were given on the layout and general appearance of the questionnaire. As the layout of a questionnaire is of great importance (Neuman, 2003, p.284; Oppenheim, 1992, p.59), additional considerations were given to ensure the final design of the questionnaire appeared presentable and professional. For this, some minor changes were made to the layout such as the use of bold and italic fonts in the instructions or to highlight a particular point in a question. Having made all the above changes, the final draft of the questionnaire was completed and ready to be tested in the second phase.

5.2.2 Piloting: Phase Two

The second phase of this pilot study was conducted to test the instrument, and not the collection of data to test the hypothesis. Any response frequencies from a pilot study should not be interpreted as its findings since the pilot sample is not likely to be representative of the population (Oppenheim, 1992, p.63). Nevertheless, piloting should be conducted on a group of individuals that is as similar as possible to the actual sample and the testing should take place under circumstances that reflect conditions of the actual survey (Babbie, 1990, p.226; Oppenheim, 1992, p.62). Much like in the first phase of this pilot study, it was not feasible to meet both these conditions due to the DPA 1998 restrictions described earlier. However, the test managed to recruit a group

of postgraduate students at Cranfield University with similar characteristics to the population for this pilot testing.

It was not possible in this phase to test the planned distribution strategy described for the main study earlier in Chapter Three because the CUHO did not have complete email details for which to forward the invitation and questionnaire link. As a result, a similar avenue was pursued here as was done in the exploratory interview in recruiting participants, in order to remain in compliance with the restrictions under DPA 1998. Thus, the pilot sample was identified through the assistance of the CUHO. It must be reiterated here that the CUHO only informed the researcher of the address of international students who had just enrolled at Cranfield for the 2003/2004 academic year and had secured a family house on campus. This recruiting strategy was the best available under the constraints of this research.

A total of 60 hardcopy questionnaires were distributed to these students and 27 questionnaires were returned giving a 45% response rate. The initial screening of respondent profiles showed that two (2) respondents had to be excluded as they had actually lived in the UK for more than twelve months before enrolling at Cranfield. Thus, the final total of usable responses for this sample was 25. Most of the completed questionnaires were returned using the self-addressed envelopes provided ($n=18$), whilst some respondents telephoned the researcher to arrange for collection of the questionnaires from them ($n=9$).

For a clearer and more detailed description of the respondents in the SPG, basic profiles of the sample are provided below. This description is followed by the results of the test of reliability of the scales.

5.2.2.1 Gender

Although an even distribution in gender is preferred for the analysis, only 12% ($n=3$) were female whilst 88% ($n=22$) were male. The low number of female respondents coincided with the very small number of female international students registered as living in campus family housing (estimated as less than ten; CUHO, 2004).

5.2.1.2 Age

Respondents were of various ages with a mean age of 34.29, whilst the highest proportion with 16% ($n=4$) is represented by those who were 35 years old.

5.2.2.3 Marital Status

The majority of the students i.e. 92%, are either married or living with a partner. Only one respondent reported herself as 'separated or divorced', whilst one other respondent failed to provide this information. Only one respondent reported that her husband/partner would not be joining her and her two children in their stay here at all. All other respondents reported that their partners/spouses arrived either at the same time they did or arrived within one week to three months of their arrival. It can then be inferred that these students had their partners living with them at the time they completed the questionnaire.

5.2.2.4 Nationality

The sample consists of students from sixteen nations, four were from Malaysia, three from South Korea and two each from Libya, Pakistan, People's Republic of China and Saudi Arabia. The remaining ten respondents were each from the following nations: Japan, Malta, Nigeria, Italy, Palestine, Singapore, New Zealand, Zimbabwe, Taiwan and the Netherlands.

5.2.2.5 The Number and Ages of Children in the Household

Of the 25 respondents, 56% (n=14) had two children living with them, 32% (n=8) had only one child whilst three people had no children at all in their household. This meant that the majority of the respondents, i.e. 88% were international postgraduate students with children and only a small number of them (n=3) were with partner only. Additionally, the mean age for these children was approximately 5 years old, with the majority of them (77%) between the ages of 2.5 and 9 years old.

5.2.2.6 The Types of Study Programme and Date of Completion

The respondents were mainly students undertaking their masters degree, with 28% (n=7) of them registered in the MBA programme whilst 44% (n=11) were in the MSc programme. Only 20% (n=5) of the respondents were students in a PhD programme, whilst the remaining 8% (n=2) were undergoing a "Special Programme" at the School of Engineering.

Of these, 76% (n=19) were students expecting to complete their respective degree programmes in about six months, whilst 16% (n=4) of the respondents were expecting to complete in two years. One respondent was expecting to complete in another one year whilst another was expecting to complete in three years.

5.2.2.7 Source of Financing

A total of 40% (n=10) of the respondents in this study were self-sponsored, of which all were students undertaking the masters degrees. Whilst 16% (n=4) of the respondents received financing from their employers, 32% (n=8) of them were funded by their home-governments and 12% (n=3) were students funded by other scholarship bodies (e.g., the British Council, the BEIT Fellowship).

5.2.2.8 Total Time Spent in the UK

Of the 25 respondents included in the pilot sample, 92% (n=23) of them had been in the UK between 3-6 months, whilst one student had been here for less than 3 months and one other had been here between 7-9 months. Except for the two respondents excluded from the analysis (for reasons explained earlier), no other respondent reported to have been in the UK for longer than 12 months. This was in line with the criteria set for the selection of participants in this study.

The results above can be taken as an indication of the variance in demographic factors that can be expected from the population of international postgraduate students with families in this study. These variances must be identified through the respective items in the questionnaire, and subsequently controlled for in the analysis of the main study data. Next, the result for the test of reliability is presented.

5.3 Test of Scale Reliability

A test of reliability is important in surveys that employ multiple-item instruments (Neuman, 2003, p.165), and often the Cronbach's alpha is used as the measure of internal reliability. The test of reliability was performed in this pilot study data set to determine how consistent the multiple items of both the work-family conflict measures and the international adjustment measures were with each other (Black, 1999, p.197). Results of this test showed that the measures had good levels of reliability with alphas above 0.60 (Robinson et al., 1991) for both measures, see Table 5-2 below.

In addition, a bivariate correlation test was also conducted to test for correlations between items of the measures. Results of this test showed significant inter-item relationships for both work-family conflict and international adjustment measures

($p < 0.05$ and $p < 0.01$) (see Appendix M). The results provide further support for the use of the designed questionnaire and its measures in the main study data collection.

Measures	Cronbach Alpha (α)
Work Adjustment	0.756
Interaction Adjustment	0.831
General Adjustment	0.848
WF Time-based Conflict	0.899
WF Strain-based Conflict	0.769
WF Behaviour-based Conflict	0.877
FW Time-based Conflict	0.889
FW Strain-based Conflict	0.780
FW Behaviour-based Conflict	0.802

Table 5-2: Pilot Study Results for Reliability Test

Lastly, several respondents in this SPG gave feedback which necessitated additional changes to the questionnaire, which were made to further ‘sharpen’ the tool for use in the main study. The following were the additional changes made to the questionnaire:

- i. adding the instruction “*Please leave blank if you had no child at the time*” in Section C: Question D2a; and
- ii. adding explicit instructions to guide respondents to their next relevant question in cases of the “If Yes” or “If No” type questions, e.g. Section 4: Question D15 “*If YES, please answer questions D15a-d, if NO please go to question D16*”.

Having made all the changes and amendments to the questionnaire as described throughout this chapter, the researcher believed that all aspects of the questionnaire had been tested and the instrument was then ready to be sent out for data collection. The final outcome was a questionnaire which comprised 53 items printed on 6 pages of A4 paper for the hardcopy version; whilst the online version appeared on a white-screen background with movements from one question to the next enabled by the use of the scroll-down function of a mouse or a keyboard.

5.4 Chapter Conclusion

Following the results of the analysis and its ensuing discussion, it can be concluded that the instrument designed for collection of data in this research, i.e. the proposed questionnaire, has demonstrated reliability for its utilisation in the main study. The next chapter will discuss the analysis and results of the data collected using this instrument.

CHAPTER SIX

RESULTS AND FINDINGS

6.1 Introduction

Results for the analysis of data collected using the distributed questionnaire are presented in this chapter.

6.2 Sampling and Data Collection

The following section will describe and discuss the sample for this study and the method employed in its data collection.

6.2.1 Sample

Invitation to participate was sent to 99 universities identified from the list in the *World of Learning 2002* website. Of these, 66 universities replied and gave consent for either a link to the questionnaire or mailed questionnaire to be sent to them for distribution to relevant students. In total, 336 responses were received from both hardcopy mailings and online respondents. However, only 158 online-responses and 43 hardcopy returned-questionnaires were usable, giving a total of 201 respondents which consists of individuals from 62 countries. Returned responses were considered non-usable for two main reasons:

Firstly, although it had been stated clearly that this study invited participation from individuals who had only been here for twelve months or less, there were several respondents who provided a response 'knowing' that they did not fit the sample design. One of the comments received from such an individual was that she "felt the need to share her concern over issues raised in this study as no one had ever asked her about her experience on such issues". As tempting as it was to include such respondents in the sample, merely increasing sample size will not help serve the objectives set for this study. Next, some cases that did not provide information relating to one or all of the four criteria set for participation had to be excluded because the researcher could not guarantee that they were a genuine fit for this study.

It had been recognised from the onset that the size of the population for this study could not be determined due to the limitations described in Chapter Three, hence its convenience sampling. Therefore, it was not possible to report the response rate of this study against the size of the population. However, to provide a general picture about the sample, the total number of respondents according to the university they attended is provided (see Appendix H). This information was only used to derive a general report about the participating universities, and will in no way disclose or lead to the disclosure of the individuals who participated in this study.

6.2.2 Data Collection Method

Universities in the UK that were listed to offer full-time postgraduate degree programs in *The World of Learning 2002* were identified as potential sources of access to the sample of the study. Subsequently, relevant university officials were contacted in the effort to invite participation in the research. In compliance with Data Protection Act 1998, the researcher must not disclose the identity of these individuals. Consequently, only the names of the universities that participated in this study are provided here.

Initially, invitation letters were sent via emails and hardcopy to the officials requesting their assistance with the research. The letter also explained the mutual benefits that could be achieved through their participation. These officers were chosen because their organisational positions, such as International Students Advisors, Postgraduate Programme Co-ordinators or Campus Housing Managers were deemed to provide high possibilities of access to potential respondents for this study. The electronic version of the invitation was sent to officers whose email addresses were listed in the *World of Learning 2002* website, whilst paper-based invitations were sent to officers for whom there were only postal addresses.

In order to encourage participation, follow-up telephone calls were made to officers at universities that did not respond to the initial invite. Of the 26 universities contacted through these follow-up calls, officers from 20 universities then gave their agreement to assist with distributing the questionnaire to students at their universities. When asked why they had not responded to the email or letters sent earlier, the majority gave work-load priority as the main reason for non-response. However, the series of telephone calls made was fruitful in the effort to encourage participation.

It has to be noted that the majority of the officers contacted requested that the online version of the questionnaire to be sent to them, whilst only five asked for hardcopy questionnaires. A total of 40 hardcopy questionnaires with postage paid, self-addressed return envelopes were sent out after the initial invitation, and a further 55 questionnaires were mailed (15 copies to one university and 20 copies each to the other two) after the follow-up calls, making a total of 95 mailed hardcopy questionnaires. It was not possible to determine the total number of recipients of email links.

The study also benefited from the assistance of the National Postgraduate Committee and the Association of Commonwealth Universities. These two organisations showed interest in the study and extended their assistance by distributing the online questionnaire and its letter of introduction to international postgraduate students in their databases. Of the 201 usable responses in the sample, a total of 28 and 20 respondents respectively, were received through the links distributed by these two bodies.

6.3 Respondents' Profile

The following is a series of descriptive analysis conducted using *SPSS® version 12.0* to provide a profile of the respondents included in the study. Profiling research participants helps reveal the sources and pattern of replies in this study. The descriptive procedure provides statistics that are useful for describing many types of variables. The following paragraphs profiled the respondents by their age, gender, marital status, types of study programme, nationalities and time since arrival in the UK. Except for the categorical variables i.e. gender, marital status and types of study programme, means of the variables are presented to describe the sample in this study.

6.3.1 Age

Respondents were individuals with age ranging between 22 years old and 47 years old. The mean age of the respondents was 33.33. The highest proportion of the respondents is for those aged 32 (10.4%). Of the 201 responses in this sample, only one person did not provide information about her age (0.5%).

6.3.2 Gender

The majority of the respondents in the study were male at 60.7% (n=122), whilst female respondents comprised 39.3% of the total sample (n=79). The dominance of

male respondents found in this sample is in line with the reported higher number of male students in the population in the UK (Whitaker's Almanac, 2003).

6.3.3 Marital Status

Results showed that 95.6% of the respondents in the study were individuals who were "Married or currently living with a partner" (n=192), whilst only 4.4% (n=9) were those in the "Separated, Divorced or Other" group. Although respondents in the latter group did not have spouses/partners, further examination of this group of respondents found that they were relevant to the present study because all nine respondents (who were all female) had come to the UK with their children.

6.3.4 Postgraduate Degree Programme

The sample consists of 57 respondents who were in Masters Programmes (i.e. MBA, MSc and MA), which comprised 28.1% of the total sample, whilst 129 respondents (i.e. 69%) were in Doctoral Programmes. In addition, there were seven respondents in the MPhil category and eight who responded to the 'Other programme' option (i.e., n=1 for EngD. and n=7 for New Route PhD). These latter two categories were both considered similar to the Doctoral Programme and so were categorised as such, thus bringing the total respondents for Doctoral Programmes to 144 (71.3%). Respondents in the MSc, MBA and MA programmes were categorised as Non-doctoral Programmes, which gave a total of n=57 (28.7%).

6.3.5 Nationality

The sample consisted of international postgraduate students from 62 nations around the world. The largest representation was from Malaysia with 24.3% (n=49), followed by India with 5.5% (n=11), People's Republic of China with 4.5% (n=9), Brunei with 3% (n=6), whilst Canada, Jordan and Saudi Arabia each registered 2.5% (n=5). Representation for other nations ranges between one and four. The details of the sample tabulated against their home nations are shown in Appendix O.

6.3.6 Time Since Arrival in the UK

The shortest amount of time that the respondents had been in the UK was one month (n=3) whilst the longest was 12 months (n=35). The mean for the sample was 7.85 months, whilst the largest proportion of the sample was for those who had been in the UK for 6 months with 22.8% (n=46).

6.4 Data Screening and Transformation

Results for missing value analysis of the adjustment and conflict variables showed that there was only a maximum of 1% missing values in the data set (see Appendix N). These missing values were subsequently treated using the EM (expectation-maximisation) method, whereby responses with missing data for either the conflict or the adjustment variables were replaced with the EM means produced by the method. EM was used because it has the advantages of avoiding impossible matrices, avoiding overfitting (making the solution look better than it actually is) and producing realistic estimates of variance (Tabachnick and Fidell, 2001, p.63).

Set against the ratio of five cases-to-every predictor variable suggested by Hair et al. (1998), the present study should have at least 30 cases (six predictors multiplied by five cases) in its sample. As the present study had 201 cases with six predictor variables, and the ratio of cases-to-predictor variables was well above the minimum required for a multiple regression analysis.

In addition, the data collected was also examined to ensure that it met all the underlying assumptions of a parametric data set in order to be able to generalise a regression model. The data set was examined to identify any potential outliers that may cause the model to be biased and affect the values of the estimated regression coefficients. Examinations of the residual statistics table found three extreme cases (see Figure 6-1). The scores for these three cases were then adjusted by one unit smaller than the extreme score on the distribution (Tabachnick and Fidell, 2001, p.71), hence allowing the cases to remain in the sample and their responses included in the analysis.

Casewise Diagnostics (a)		
Case Number	Std. Residual	Work Adjustment
6	-3.142	2.000
103	-3.591	2.000
131	-3.095	3.333

a Dependent Variable: Work Adjustment

Figure 6-1: Example of Casewise Diagnostic Output

Upon the adjustment of these extreme cases as described above, examination of the residual plot found that the data was normally distributed within the range of ± 3.3 (see Figure 6-2). Since the standardised residuals did not exceed the absolute value of 3, there was no further cause for concern (Field, 2000, p.123).

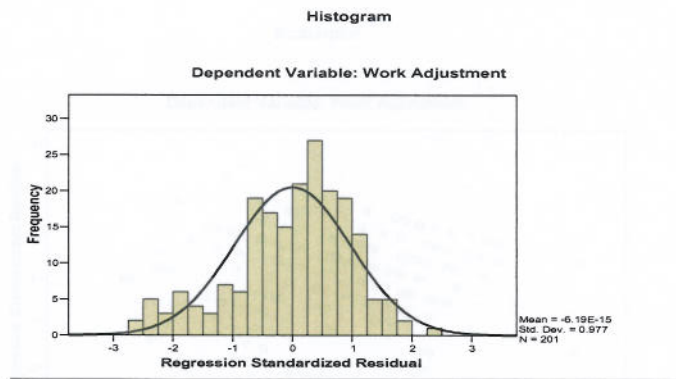


Figure 6-2: Normal distribution of the Model Standardised Residuals

Next, examination of Figure 6-3 showed that there was a straight-line relationship between the predictor and criterion variables, whilst Figure 6-4 showed an oval-shaped bivariate scatterplot. These figures provided evidence of the linear relationships between the work-family conflict and adjustment variables (Hair et al., 1998). In addition, when the assumption of multivariate normality is met, the relationships between variables are homoscedastic (*ibid*). Thus, the assumptions of linearity and homoscedasticity were also found fulfilled by the data set of this study. It can then be concluded that the data set has met all the assumptions of a parametric data set and may be subjected to parametric data analysis procedures.

Normal P-P Plot of Regression Standardized Residual

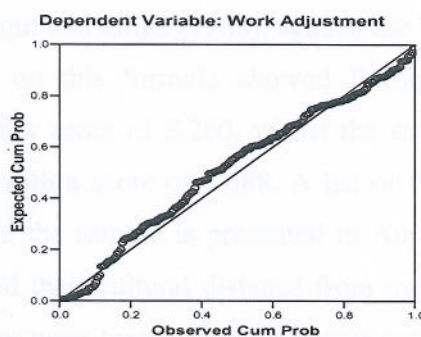


Figure 6-3: Normally Distributed Residuals

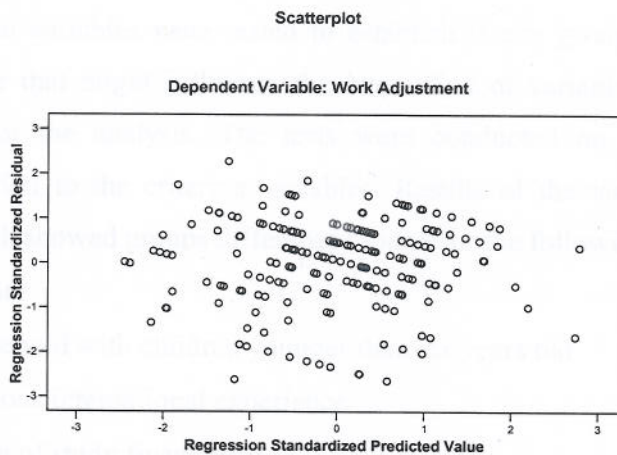


Figure 6-4: Plots of *ZRESID against *ZPRED

With regard to cultural distance, although the indices for the majority of the nations represented in the sample were available either from the Hofstede (1981) original IBM data set or the recently published estimation in Hofstede (2001), inferences was still necessary for nations that were not found in either of the two references. These inferences were then suggested to Hofstede through personal correspondence between this researcher and Hofstede (see Appendix P). Such inferences were necessary as no known data on the four cultural dimensions was available for these nations. These inferences along with some suggested changes from Hofstede were then used to compute the cultural distance of each nation in the sample using the formula from Kogut and Singh (1988), against the UK ranking. Results for the computation made based on this formula showed Portugal as having the biggest distance from the UK with a score of 5.260, whilst the smallest distance was for the United States of America with a score of 0.088. A list of the cultural distance indices computed for all nations in the sample is presented in Appendix Q, which includes a table of 19 nations that had their cultural distance from the UK inferred, as described earlier. The resultant indices were then utilised as a continuous variable in Step 1 of the hierarchical regression analysis.

Next, a t-test and a one-way ANOVA were used to determine whether the respondents had characteristics that differed systematically. Using evidence from earlier studies in the literature (e.g., Black et al., 1991; Shaffer et al., 1999) and from the

findings of the exploratory interviews (as described in Section 3.5.4 of Chapter Three), those demographic variables were tested to establish if any group difference existed within the sample that might influence the interaction of variables in the regression model planned for the analysis. The tests were conducted on those demographic variables in addition to the criterion variables. Results of the tests are presented in Appendix R, which showed groups differences found for the following variables only:

- Gender
- Household with children younger than six years old
- Previous international experience
- Types of study financing
- Cultural distance
- Schedule before move to the UK
- Home duties performed previously; and
- Length of time since arrival in the UK.

Hence, there was a need to control for these variables to avoid any potential for alternative explanations to the results of the analysis between the predictor variables of work-family conflict and the criterion variables of international adjustment. However, predictors in regression models need to be continuous or categorical with only two categories (Field, 2005, p.233; Tabachnick and Fidell, 2001, p.112). Thus, before all the above variables were included in the regressions, the first four variables listed above had to be dummy coded. Failure to dummy code provides regression results that may be distorted and renders the ensuing interpretation of the results invalid (Field, 2005). Except for four control variables i.e., cultural distance, schedule before move to the UK, the amount of home duties performed previously, and the length of time since arrival in the UK, which were entered as continuous variables, all other variables were dummy coded, e.g. 0 = "No child less than six years old in the household", 1 = "Youngest child in household age less than 6".

For variables with more than two categories dummy coding was performed, whereby for each variable the group with the largest size was selected as the base group and given the code "0" before comparison with a selected group (coded as 1) was made. For example, the "Type of study financing" variable had to be converted into four

dummy variables (dummy variables = total variable groups minus one). Then, "Financing by government" was chosen as the base group because it was the largest of the five groups (n=99), two other groups were also coded as "0", whilst the "Self-financed" group was coded as "1" to be compared to the other four groups. The process continued until all groups had been coded and compared. Variables with significant results in this test were entered as a block in Step 1 of the regression procedure to control for their potential effects on each model, prior to entering any predictor variables in the subsequent steps.

In addition, to address the issue of common method variance at the analysis stage, Harmon's one-factor test (Podsakoff and Organ, 1986) was performed on the data set. According to this test, common method variance is a problem if all variables load on a single factor. The test produced nine factors instead of one single factor (see Appendix S). This result meant that common method variance was not a problem in the data set of this study.

Furthermore, as the adjustment and conflict variables were measured using multi-item scales, a composite of each subscale was created by computing the mean for all items in a construct, and subsequently used in the analysis. The decision on items to be included was based on the results of the reliability tests, followed by item-to-total correlations and factor analyses, which are discussed in the next section.

6.5 Reliability and Validity of Research Instrument

Prior to tests of relationships between the predictor and criterion variables hypothesised in this research, a test of reliability and validity of the scales used was conducted. Whilst reliability is concerned with the accuracy of the actual measuring instrument or procedure, validity is concerned with the study's success at measuring what a researcher sets out to measure. In this study, Cronbach's alphas were used to measure the internal consistency. Then, all multiple items were subjected to the three methods described in Chapter Three, i.e. item-to-total correlations, factor analysis and correlations analysis, to estimate their construct validity.

Results for reliability and validity tests are discussed according to each construct that the scales were intended to measure. For each construct, results of the reliability test are presented; followed by its respective item-to-total correlations, factor analysis and

correlation analysis. With regard to factor analysis, the approach taken to determine the unidimensionality of the constructs utilised the Principal Component Analysis (PCA) with varimax rotation. PCA was chosen because it is a psychometrically sound procedure that helps establish the existence of linear components within the data and how a variable contributes to the component (Field, 2000, p.434). The measures that did not load properly or had cross loadings were dropped. Following the deletion of these items, the appropriate set of items for each scale was subsequently assessed again through the use of reliability test and correlation analysis on the improved scale.

6.5.1 Work Adjustment

Reliability alpha for the work adjustment variable was 0.720 (see Appendix T), whilst results of factor analysis showed all three work adjustment items, i.e. study responsibilities, performance standards and expectations and working with host national professors, loaded on one factor with high loadings of 0.817, 0.789 and 0.798 respectively (see Appendix U). These items contributed to 64% of the variance.

6.5.2 Interaction Adjustment

Reliability alpha for the interaction adjustment variable was 0.856 (see Appendix T). All four interaction adjustment items i.e. Interaction with host nationals outside of work, Interaction with host nationals on a daily basis, Socialising with host nationals and Speaking with host nationals, loaded on one factor with high loadings of 0.857, 0.856, 0.823 and 0.815 respectively (see Appendix T). These items contributed to 70% of the variance.

6.5.3 General Adjustment

Initial result for general adjustment alpha level was 0.766. Factor analysis of the general adjustment sub-scale produced two factors with six items loading on factor one and two items on factor two (see Appendix U). Items in factor one, which contributed to 36% of the variance were items on adjustment to "Housing conditions", "General living conditions", "Weather", "Cost of Living", "Health-care facilities" and "Shopping", as shown in Table 6-1 below. Hence, these items were retained to represent the general adjustment construct as they described the general adjustment better. On the other hand,

the two items that loaded on the second factor, i.e. Adjustment to entertainment and to local food were dropped from further analysis because they did not load on the same factor.

General Adjustment items	Factors	
	1	2
Housing Condition	.853	
General Living Conditions	.819	
Weather	.720	
Cost of Living	.577	
Health Care Facilities	.573	
Shopping	.507	
Entertainment		.801
Local Food		.727

Table 6-1: Principal Component Analysis for General Adjustment

Upon deletion of the two items that loaded on factor two, reliability was increased to 0.788 and item-to-total correlations were well above 0.30 (see Appendix T). The items representing the improved scale were used as the indicators for the general adjustment sub-scale for all subsequent analysis. Examination of the MSA showed a value of 0.752, which is close to meritorious (see Appendix I), indicating a good proportion of variance in the variables which is common variance.

6.5.4 Work-Family Time-, Strain- and Behaviour-based Conflicts (WFC)

Reliability for the time-, strain- and behaviour-based WFC sub-scales was 0.843, 0.747 and 0.818 respectively. Item-to-total correlations ranged between 0.739 and 0.693 for time-based, 0.592 and 0.555 for strain-based, and between 0.733 and 0.625 for behaviour-based WFC. Factor analysis showed that the three sub-scales had their respective three items loaded highly on one factor, as shown in Table 6-2 below. The WFC items contributed 76%, 66% and 74% of the variance in the scale.

Items	Factor loadings	Variance
Time-based WFC:		
• My studies keep me from my family activities more than I would like.	.890	
• The time I must devote to my studies keeps me from participating equally in household responsibilities and activities.	.864	76%
• I have to miss family activities due to the amount of	.863	

time I must spend on study responsibilities		
<u>Strain-based WFC:</u>		
• When I get home from studying I am often too exhausted to participate in family activities/responsibilities.	.828	
• I am often so emotionally drained when I get home from studying that it prevents me from contributing to my family.	.817	66%
• Due to all the pressures in studying, sometimes when I come home I am too stressed to do the things I enjoy.	.801	
<u>Behaviour-based WFC:</u>		
• The behaviours I perform that make me effective in my studies do not help me to be a better parent and spouse.	.824	
• Behaviour that is effective and necessary for me in my studies would be productive at home.	.855	74%
• The problem-solving behaviours I use in my academic role are not effective in resolving problems at home.	.893	

Table 6-2: Factor Loadings and Variance for Time-, Strain- and Behaviour-based Family-Work Conflict (FWC)

6.5.5 Family-Work Time-, Strain- and Behaviour-based Conflicts (FWC)

Reliability for the time-, strain- and behaviour-based FWC sub-scales was 0.791, 0.819 and -0.483 respectively. To provide a more consistent flow of discussion, the focus in this section is on the first two sub-scales, i.e. time- and strain-based FWC, whilst the result for behaviour-based FWC is discussed later. Item-to-total correlation ranged between 0.907 and 0.786 for time-based FWC, 0.878 and 0.834 for strain-based WFC, and -0.059 and -0.084 for behaviour-based FWC. Factor analysis showed that the time- and strain-based sub-scales had their respective three items loaded highly on one factor with variance 71% and 73% explained by the items; whilst behaviour-based FWC had negative loadings as shown in Table 6-3 below.

Items	Factor loadings	Variance
<u>Time-based FWC:</u>		
• The time I spend with my family often causes me not to spend time in activities at school that could be helpful to my studies	.907	
• The time I spend on family responsibilities seldom interfere with my study responsibilities.	.824	71%
• I have to miss my study activities due to the amount of time I must spend on family responsibilities.	.786	
<u>Strain-based FWC:</u>		
• Due to stress at home, I am often preoccupied with family matters when I am studying.	.878	
• Because I am often stressed from family responsibilities, I have a hard time concentrating on my studies.	.846	73%
• Tension and anxiety from my family life often weakens my	.834	

ability to study.

Behaviour-based FWC:	-.755	
• Behaviour that is effective and necessary for me at home would be productive in my studies.	.706	
• The problem-solving behaviour that works for me at home does not seem to be as useful in my studies.	.662	50%
• The behaviours that work for me at home do not seem to be effective in my studies.		

Table 6-3: Factor Loadings and Variance for Time-, Strain- and Behaviour-based Family-Work Conflict (FWC)

The negative alpha produced in the test of reliability for the behaviour-based FWC sub-scale, implied a negative covariance among the items in that scale. Since the scale has been widely used and found to have good levels of reliability by previous studies (Carlson et al., 2000), and had indicated good levels of validity and reliability in the pilot testing stage (see Chapter Five) prior to the data collection, this result was totally unexpected. Based on item-to-total statistics, deletion of Item A12 may reverse this sub-scale and give it a positive alpha of 0.331. However, this deletion would not increase the alpha level of this sub-scale beyond the minimum acceptable level (i.e., $\alpha < .60$, see Robinson et al., 1991 in Appendix I).

According to Nichols (1999) there are three possibilities for such an extreme case. The first is that all items that were reversed to alleviate response biases have not been appropriately recoded. The second possibility is that the data has small sample sizes and small numbers of items; whilst the third possibility is that “the items do not truly have positive covariances, and therefore may not form a useful single scale because they are not measuring the same thing” (Nichols, 1999). These possibilities were given careful consideration in the examination of the behaviour-based FWC sub-scale to provide an explanation for such result. It was evident that the first two possibilities suggested by Nichols (1999) were not the case here. The only probable explanation left is that within this sample the behaviour-based FWC sub-scale did not successfully measure the same construct it was designed to do. On this basis, the behaviour-based FWC sub-scale with low validity and alpha level lower than 0.60 had to be excluded from further analysis in this study. Therefore, except for the behaviour-based FWC sub-scale, the results above demonstrated that the measures employed in this study have good internal consistency reliability, with Cronbach’s alpha values

ranging from 0.720 to 0.856 that met the threshold for acceptability (Robinson, et al., 1991) (see Appendix I).

6.5.6 Correlations and Measures of Sampling Adequacy

Table 6-4 presents the rank order correlation matrix with Pearson Correlation Coefficients among the final five predictor variables of this study. This was a one-tailed test because the study set out to test both the relationship between work-family conflict variables, and also to predict the direction of the relationship. Pearson's r ranges from -1.0 to 1.0 in measuring the strength of linear relationship, whereby a larger absolute value of r indicates a stronger linear relationship between the variables. Pearson correlation coefficients also indicate normality and linearity (Bryman and Cramer, 2001). The highest correlation between the predictor variables was 0.644 ($p < 0.01$) whilst the lowest was 0.244 ($p < 0.01$). Although there are no guidelines that have received substantial consensus, for the interpretation of correlations, based on Cohen and Holiday (1982) these levels of correlations fell between the low and modest range (see Appendix I). A very high level of correlation between two conflict variables reduces the reliability of the regression coefficients in the multiple regression analysis (Levin and Rubin, 1991). Since these correlation levels did not go beyond 0.80, they do not correlate very highly (Field, 2000), hence reducing the potential problem of multicollinearity.

In addition, the measure of sampling adequacy (MSA) derived from factor analysis also showed that there was a good degree of interrelations amongst the items with values ranging from 0.605 to 0.819 (see Appendix U). These values were all above 0.6 and thus indicated good factor analysis and its appropriateness of use in the study (Tabachnick and Fidell, 2001). Overall, the results provided further support for the use of the adopted scales in this study.

	Mean	s.d.	1	2	3	4	5	6	7	8
<u>Conflicts:</u>										
1. WF Time	10.05	3.17	(.843)							
2. WF Strain	9.09	3.09	.644**	(.747)						
3. WF Bhvr	8.47	2.00	.437**	.475**	(.818)					
4. FW Time	9.10	3.15	.300**	.377**	.244**	(.791)				
5. FW Strain	8.38	3.22	.403**	.585**	.338**	.621**	(.812)			
<u>Adjustments:</u>										
6. Work Adj.	16.81	2.89	-.142*	-.220**	-.169*	-.131*	-.256**	(.720)		
7. I/action Adj.	18.97	5.84	-.262**	-.255**	-.269**	-.135*	-.253**	.419**	(.856)	
8. General Adj.	29.60	7.11	-.141*	-.120*	-.209**	-.023	-.136*	.397**	.433**	(.788)

** significant at 0.01 level ; * significant at 0.05 level (All tests are 1-tailed). Values in parentheses refer to internal reliability.

Table 6-4: Descriptive Statistics, Alpha and Correlations of Work-Family Conflict and Adjustments Variables

6.6 Results and Tests of Hypothesis

This section presents the results of the study following the hierarchical regressions between the work-family and international adjustment variables. This discussion is preceded by a brief explanation on how the final list of control variables was obtained prior to the final analysis. It should be noted here that the testing of hypotheses in this study used an alpha level of 0.10. Although the use of alpha level at 0.05 is a convention, the level of α is actually subjective and arbitrarily determined (Henkel, 1976; Sheskin, 2000). Other significance levels can and often have been advocated, as noted in many references on statistics (e.g. Sheskin, 2000; Siegel and Castellan, 1988). According to Draper and Smith (1998), "if we wish to go to $\alpha = 0.10$... that is up to us" as long as this alpha level remains consistent throughout the testing (p.5) because alpha level "should be thought of as a guidepost, not a boundary" (p.6). Thus, the decision to use an alpha level at 0.10 to test the hypotheses of this study is acceptable.

6.6.1 Control Variables

Although several variables were found to have significant difference between groups through t-Tests and ANOVA, not all these variables gave a significant contribution to the regression model. Based on the results of regression procedures conducted with those variables included, several of those control variables were dropped from further analysis as they were found to provide no significant influence to the models of this study. The variables that were excluded from the final regression

procedures were age, gender, overseas experience, and dummy-coded variable with “financing by employer”. The exclusion of control variables in this manner was done when their inclusion had no meaningful effect on the model being tested, as can be found in earlier studies (e.g. Aryee et al., 1999; Frone et al., 1992).

This left the analysis with six control variables, which were cultural distance, financing dv4, period since arrival in the UK, schedule before move to the UK, amount of home duties performed previously, and youngest child in household younger than 6 years old, as presented in Table 6-5 to Table 6-11. With regard to the “Financing dv4”, this variable represents the dummy coded variable of “Financing by Other” compared against the four other types of financing. Upon further examination of the data, this category represented international postgraduate students whose study programmes were financed from sources such as the Commonwealth Scholarships, a partial scholarship from the student’s employer and his/her attending university, a partial scholarship from the UK, and a personal loan or some other such combinations that did not fall into the other four categories.

6.6.2 Work Adjustment

Results of the multiple regression analyses between WFC variables and work adjustment showed that behaviour-based WFC have significant relationships to international adjustment, but no significance was found for time-based or strain-based WFC. The model was significant at $p < 0.001$ with $F_{(9, 191)} = 5.391$, and an adjusted R^2 of 0.165. Behaviour-based WFC showed a change in R^2 of 0.015 ($p < 0.1$) which meant having controlled for all other variables in the analysis, this variable provided a significant contribution of 1.5% to the variance in work adjustment with $\beta = -0.147$ and $t = -1.920$ ($p < 0.10$) as shown in Table 6-5 below. The results provided support for **Hypothesis 1c** that behaviour-based WFC is negatively related to work adjustment, but no support was found for **Hypotheses 1a or 1b**.

Variables	Test of Hypothesis 1c: Work Adjustment		
	Step 1	Step 2	Step 3
<i>Step 1:</i>			
Cultural distance	-0.121 [#]	-0.131 [#]	-0.131 [#]
Has child age <6 years old	-0.055 ns	-0.033 ns	-0.023 ns
Financing source4	0.155*	0.132*	0.128 [#]
Period since arrival	0.282***	0.299***	0.322***

Schedule before move	0.113 [#]	0.078 ns	0.086 ns
Previous home duties	-0.037 ns	-0.022 ns	-0.012 ns
<i>Step 2:</i>			
Time-based WFC	-	-0.045 ns	-0.016 ns
Strain-based WFC	-	-0.193*	-0.145 ns
<i>Step 3:</i>			
Behaviour-based WFC		-	-0.147 [#]
ΔR^2	0.140***	0.047**	0.015 [#]
Adjusted R^2	0.113***	0.153**	0.165 [#]

*** p<0.001; **p<0.01; * p<0.05; [#]p<0.10; all tests are one-tailed.

Table 6-5: Hierarchical Regression Results for Work Adjustment and Behaviour-based Work-Family Conflict

Regression of the FWC variables on work adjustment also showed a significant relationship with an adjusted R^2 of 0.191 ($p<0.001$) and a model significance of $F(9, 191) = 6.913$ at $p<0.001$. However, for work adjustment only strain-based FWC was significant, contributing 7.3% to the variance in work adjustment with $\beta=-0.360$ and $t=-4.255$ at $p<0.001$ (see Table 6-6). Time-based FWC, however, did not have significant regression relations to the model. Therefore, support was found only for **Hypothesis 2b** which meant a support for the hypothesised negative influence of strain-based FWC on work adjustment. However, **Hypothesis 2a** which hypothesised a negative relationship between time-based FWC and work adjustment did not find support in this study, whilst **Hypothesis 2c** was not tested in this study for reasons explained earlier (see Section 6.5.5).

Variables	Test of Hypothesis 2b: Work Adjustment		
	Step 1	Step 2	Step 3
<i>Step 1:</i>			
Cultural distance	-0.121 [#]	-0.111 ns	-0.124 [#]
Has child age <6 years old	-0.055 ns	-0.025 ns	-0.030 ns
Financing source ⁴	0.155*	0.154*	0.142*
Period since arrival	0.282***	0.290***	0.330***
Schedule before move	0.113 [#]	0.094 ns	0.054 ns
Previous home duties	-0.037 ns	-0.015 ns	0.041 ns
<i>Step 2:</i>			
Time-based FWC	-	-0.112 ns	-0.091 ns
<i>Step 3:</i>			
Strain-based FWC	-	-	-0.360***
ΔR^2	0.140***	0.011 ns	0.073***

Adjusted R^2	0.113***	0.120 ns	0.191***
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*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; # $p < 0.10$; all tests are one-tailed.

Table 6-6: Hierarchical Regression Results for Work Adjustment and Strain-based Family-Work Conflict

6.6.3 Interaction Adjustment

Results for the regression analysis of WFC variables on interaction adjustment showed that there were significant relationships between time-based and behaviour-based WFC and interaction adjustment. For time-based WFC, the results showed a significant regression model with $F(9, 191) = 4.496$ at $p < 0.001$ and an adjusted R^2 of 0.136 ($p < 0.05$). The change in R^2 for this model was 0.017 ($p < 0.05$). This meant that time-based WFC was able to explain 1.7% of the variance in interaction adjustment having controlled for other factors in the analysis with $\beta = -0.180$ ($p < 0.05$) (see Table 6-7). These results provided support for **Hypothesis 3a** that time-based WFC is negatively related to interaction adjustment. No support was found for **Hypothesis 3b**.

Variables	Test of Hypothesis 3a: Interaction Adjustment		
	Step 1	Step 2	Step 3
<i>Step 1:</i>			
Cultural distance	-0.013 ns	-0.023 ns	-0.036 ns
Has child age <6 years old	-0.023 ns	0.016 ns	0.034 ns
Financing source ⁴	0.154*	0.124 [#]	0.133*
Period since arrival	0.070 ns	0.125 [#]	0.127 [#]
Schedule before move	0.181*	0.159*	0.177*
Previous home duties	0.074 ns	0.106 ns	0.106 ns
<i>Step 2:</i>			
Strain-based WFC	-	-0.119 ns	0.013 ns
Behaviour-based WFC	-	-0.239**	-0.212**
<i>Step 3:</i>			
Time-based WFC	-	-	-0.180*
ΔR^2	0.068*	0.090***	0.017*
Adjusted R^2	0.039**	0.122***	0.136*

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; # $p < 0.10$; all tests are one-tailed.

Table 6-7: Hierarchical Regression Results for Interaction Adjustment and Time-based Work-Family Conflict

As for the behaviour-based WFC and interaction adjustment predicted in **Hypothesis 3c**, results of the multiple regression on interaction adjustment showed a significant relationship with model significance $F(9, 191) = 4.496$ at $p < 0.001$ and an adjusted R^2 of 0.136 ($p < 0.01$). The change in R^2 of 0.032 ($p < 0.01$) showed that

behaviour-based WFC explained 3.2% of the variance in interaction adjustment (see Table 6-8). These results meant that **Hypothesis 3c** which proposed a negative relationship between behaviour-based WFC and interaction adjustment is supported in this study.

Variables	Test of Hypothesis 3c: Interaction Adjustment		
	Step 1	Step 2	Step 3
<i>Step 1:</i>			
Cultural distance	-0.013 ns	-0.036 ns	-0.036 ns
Has child age <6 years old	-0.023 ns	0.020 ns	0.034 ns
Financing source ⁴	0.154*	0.255*	0.133*
Period since arrival	0.070 ns	0.034 ns	0.127 [#]
Schedule before move	0.181*	0.075*	0.177*
Previous home duties	0.074 ns	0.091 ns	0.106 ns
<i>Step 2:</i>			
Time-based WFC	-	-0.221*	-0.180*
Strain-based WFC	-	-0.083 ns	0.013 ns
<i>Step 3:</i>			
Behaviour-based WFC	-	-	-0.212**
ΔR^2	0.068*	0.075***	0.032**
Adjusted R^2	0.039*	0.107***	0.136**

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; [#] $p < 0.10$; all tests are one-tailed.

Table 6-8: Hierarchical Regression Results for Interaction Adjustment and Behaviour-based Work-Family Conflict

In addition, multiple regressions of the FWC variables on interaction adjustment also showed significant relationships with the model significance $F_{(9, 191)} = 3.772$ at $p < 0.001$ and an adjusted R^2 of 0.100 ($p < 0.01$). However, of the two FWC variables analysed, only strain-based FWC had a significant contribution to the model, explaining 5.2% of the variance in interaction adjustment with $\beta = -0.304$ ($p < 0.01$), as shown in Table 6-9 below. The results provided support for **Hypothesis 4b**, which meant that there is evidence for a negative relationship between strain-based FWC and interaction adjustment. However, no support was provided for **Hypothesis 4a**, indicating within this study, there is no evidence for the hypothesised relationship between time-based FWC and interaction adjustment. Again, since the behaviour-based FWC variable had to be dropped from analysis, no test was able to be conducted for **Hypothesis 4c**.

Variables	Test of Hypothesis 4b: Interaction Adjustment		
	Step 1	Step 2	Step 3
<i>Step 1:</i>			
Cultural distance	-0.013 ns	-0.001 ns	-0.011 ns
Has child age <6 years old	-0.023 ns	0.014 ns	0.009 ns
Financing source ⁴	0.154*	0.154*	0.143*
Period since arrival	0.070 ns	0.079 ns	0.113 ns
Schedule before move	0.181*	0.159*	0.125 [#]
Previous home duties	0.074 ns	0.102 ns	0.149*
<i>Step 2:</i>			
Time-based FWC	-	-0.138 [#]	0.034 ns
<i>Step 3:</i>			
Strain-based FWC	-	-	-0.304**
ΔR^2	0.068*	0.016 [#]	0.052**
Adjusted R^2	0.039*	0.050 [#]	0.100**

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; [#] $p < 0.10$; all tests are one-tailed.

Table 6-9: Hierarchical Regression Results for Interaction Adjustment and Strain-based Family-Work Conflict

6.6.4 General Adjustment

Results of the multiple regression showed that there was a significant regression relation between FWC variables and general adjustment with $F_{(9, 191)} = 2.331$ at $p < 0.05$ and an adjusted R^2 of 0.051 ($p < 0.1$). Moreover, the results showed that having controlled for all other variables the time-based FWC explained 1.5% of the variance in general adjustment at $\beta = -0.164$ ($p < 0.10$), as shown in Table 6-10 below. These results provided support for **Hypothesis 6a** that time-based FWC relates negatively to general adjustment.

Variables	Test of Hypothesis 6a: General Adjustment		
	Step 1	Step 2	Step 3
<i>Step 1:</i>			
Cultural distance	0.053 ns	0.055 ns	0.042 ns
Has child age <6 years old	-0.165*	-0.149*	-0.180*
Financing source ⁴	0.096 ns	0.091 ns	0.089 ns
Period since arrival	0.121 [#]	0.139 [#]	0.142*
Schedule before move	0.034 ns	0.010 ns	0.018 ns
Previous home duties	-0.084 ns	-0.053 ns	-0.061 ns
<i>Step 2:</i>			
Strain-based FWC	-	-0.116 ns	-0.210*
<i>Step 3:</i>			
Time-based FWC	-	-	-0.164*

ΔR^2	0.062*	0.011 ns	0.015 [#]
Adjusted R^2	0.033*	0.040 ns	0.051 [#]

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; [#] $p < 0.10$; all tests are one-tailed.

Table 6-10: Hierarchical Regression Results Between General Adjustment and Time-based Family-Work Conflict

In addition, strain-based FWC also showed a significant contribution to the model with 2.5% variance in general adjustment which is explained by this FWC variable at $\beta = -0.215$ ($p < 0.05$) (see Table 6-11). The results provide support for **Hypothesis 6b**, which states that strain-based FWC has negative influence on general adjustment. However, no support was found for **Hypotheses 5a or 5b**.

Variables	Test of Hypothesis 6b: General Adjustment		
	Step 1	Step 2	Step 3
<i>Step 1:</i>			
Cultural distance	0.053 ns	0.049 ns	0.042 ns
Has child age <6 years old	-0.165*	-0.177*	-0.180*
Financing source ⁴	0.096 ns	0.096 ns	0.089 ns
Period since arrival	0.121 [#]	0.118 ns	0.142*
Schedule before move	0.034 ns	0.041 ns	0.018 ns
Previous home duties	-0.084 ns	-0.093 ns	-0.061 ns
<i>Step 2:</i>			
Time-based FWC	-	-0.046 ns	-0.164 [#]
<i>Step 3:</i>			
Strain-based FWC	-	-	-0.210*
ΔR^2	0.062 [#]	0.002 ns	0.025*
Adjusted R^2	0.033**	0.030 ns	0.051*

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; [#] $p < 0.10$; all tests are one-tailed.

Table 6-11: Hierarchical Regression Results for General Adjustment and Strain-based Family-Work Conflict

6.7 Significance of the Regression Models

To further demonstrate the goodness of fit of the regression models above, the residuals statistics were examined using Cook's distance statistic, leverage value, and Mahalanobis distance. This was done to ensure that the models fit the observed data well and were not influenced by a small number of influential cases. Cook's distance statistic was used to determine if the model was stable across the sample or whether it was biased by a few influential cases (Field, 2000, p.124). Cook and Weisberg (1982, p.118) suggested that a value that is greater than 1 may be a cause for concern. As

shown in Table 6-12, the Cook's distance found for the sample in this study was less than 1.

Next, leverage value was used to gauge the influence of the observed variable over the predicted values. Results for this sample showed value far below the cut-off point of 1, indicating that no case had undue influence over the model (Field, 2000, p.125). In addition, Mahalanobis distance measures the distance of cases from the means of the predictive variables. The values of Mahalanobis distance in Table 6-12 showed no value greater than the critical value of chi-square at an alpha level of 0.001, i.e. a value of 26.13. This value was obtained from a critical value table of χ^2 (see Tabachnick and Fidell, 2001, p.933), which indicated no multivariate outliers (Coakes and Steed, 2003, p.175). Residual statistics for models on interaction and general adjustments are shown in Appendix V. From these results, it was evident that the diagnostic statistics for model goodness of fit in this study were within the range of acceptable values, and thus allowed for the conclusion that the interpretation of the results is sound (*ibid*, 2003).

Residuals Statistics(a)					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.56902	6.81466	5.61525	.414445	201
Std. Predicted Value	-2.524	2.894	.000	1.000	201
Standard Error of Predicted Value	.111	.278	.185	.033	201
Adjusted Predicted Value	4.56325	6.80031	5.61440	.417690	201
Residual	-2.655163	1.546532	.000000	.822279	201
Std. Residual	-3.156	1.838	.000	.977	201
Stud. Residual	-3.240	1.923	.000	1.001	201
Deleted Residual	-2.800020	1.692948	.000855	.863464	201
Stud. Deleted Residual	-3.325	1.937	-.001	1.007	201
Mahal. Distance	2.478	20.894	8.955	3.608	201
Cook's Distance	.000	.057	.005	.008	201
Centered Leverage Value	.012	.104	.045	.018	201

a Dependent Variable: Work Adjustment

Table 6-12: Summary of Residuals Statistics of the Work Adjustment Model

6.8 Results Summary

In summary, the tests of hypotheses results for this study showed that seven of the proposed hypotheses were supported, but not the others, as shown in Table 6-13. The hypotheses presented in Chapter Two are revisited here to show how they relate to

each of the analysis results. The shaded areas in the table below highlight the supported hypotheses.

	Hypotheses	Test Results	Direction
1a.	Time-based WFC is negatively related to work adjustment of international postgraduate students with families in the UK.	Not supported	Negative
1b.	Strain-based WFC is negatively related to work adjustment of international postgraduate students with families in the UK.	Not supported	Negative
1c.	Behaviour-based WFC is negatively related to work adjustment of international postgraduate students with families in the UK.	Supported	Negative
2a.	Time-based FWC is negatively related to work adjustment of international postgraduate students with families in the UK.	Not supported	Positive
2b.	Strain-based FWC is negatively related to work adjustment of international postgraduate students with families in the UK.	Supported	Negative
2c.	Behaviour based FWC is negatively related to work adjustment of international postgraduate students with families in the UK.	<i>Not tested</i>	<i>Not tested</i>
3a.	Time-based WFC is negatively related to interaction adjustment of international postgraduate students with families in the UK.	Supported	Negative
3b.	Strain-based WFC is negatively related to interaction adjustment of international postgraduate students with families in the UK.	Not supported	Negative
3c.	Behaviour-based WFC is negatively related to interaction adjustment of international postgraduate students with families in the UK.	Supported	Negative
4a.	Time-based FWC is negatively related to interaction adjustment of international postgraduate students with family in the UK.	Not supported	Positive
4b.	Strain-based FWC is negatively related to interaction adjustment of international postgraduate students with family in the UK.	Supported	Negative
4c.	Behaviour-based FWC is negatively related to interaction adjustment of international postgraduate students with family in the UK.	<i>Not tested</i>	<i>Not tested</i>
5a.	Time-based WFC is negatively related to general adjustment of international postgraduate students with families in the UK.	Not supported	Negative
5b.	Strain-based WFC is negatively related to general adjustment of international postgraduate students with families in the UK.	Not supported	Positive
6a.	Time-based FWC is negatively related to general adjustment of international postgraduate students with families in the UK.	Supported	Negative
6b.	Strain-based FWC is negatively related to general adjustment of international postgraduate students	Supported	Negative

Table 6-13: Summary of Hypotheses, Test Results and Direction of Relationships

The literature review as presented in Chapter Two has demonstrated that the three types of work-family conflict and the three different facets of international adjustment may be negatively related. However, interestingly enough, within the sample of this study only seven hypothesised relationships were supported. These supported hypotheses are highlighted in Table 6-13. A detailed explanation of the hypotheses and their link to the literature are presented later in Chapter Seven.

It is surprising to find that the hypothesised relationships between time-based FWC and work adjustment, time-based FWC and interaction adjustment; and strain-based WFC and general adjustment did not find support in this study. Based on the review of the literature and the findings from the exploratory interviews discussed in earlier chapters, the lack of support for these hypotheses came as a total surprise.

It is even more surprising to find that not only are the negative relationships between time-based FWC and work adjustment and interaction adjustment not significant, time-based FWC also showed a change in the direction of its relationship to work and interaction adjustment when other variables are factored into the relationships. Although these results were not significant, the change in direction from the predicted negative into a positive relationship is totally unexpected and gave rise to speculations about the influence of a different variable i.e., period since arrival, in the relationships between these particular conflict variables and their respective facets of international adjustments.

6.9 Explaining Unsupported Hypotheses

The following paragraphs focus mainly on a discussion of those hypotheses which did not find support and attempt to provide explanations for them. Prior to doing so, some relevant results from the hierarchical regression analysis for the unsupported hypotheses are listed below in Table 6-14. The table provides the β -value and results of bivariate correlations between the criterion and predictor variables of each corresponding hypothesis. The discussion of and explanations for the results are presented using these two values and the meanings that can be inferred from them.

Hypotheses	β -value	Correlations
1(a) Time-based WFC & Work adj.	-0.016	-0.142*
1(b) Strain-based WFC & Work adj.	-0.145	-0.220**
2(a) Time-based FWC & Work adj.	0.091	-0.131*
2(c) Behaviour-based FWC & Work adj.		Untested
3(b) Strain-based WFC & Interaction adj.	-0.013	-0.255***
4(a) Time-based FWC & Interaction adj.	0.034	-0.135*
4(c) Behaviour-based FWC & Interaction adj.		Untested
5(a) Time-based WFC & General adj.	-0.051	-0.141*
5(b) Strain-based WFC & General adj.	0.023	-0.120*

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; # $p < 0.10$

Table 6-14: Selected Test Results for Unsupported Hypotheses

Table 6-14 above shows that for all hypotheses tested and listed in the table, there are significantly negative relationships between each predictor variable and its corresponding criterion variable in a bivariate correlations analysis. However, the relationships between these predictor variables and their respective criterion variables changed when the variables were subjected to hierarchical regression analysis (see β -values). Some predictor variables continued to show negative relationship to the criterion variables, whilst some others had the opposite (i.e., positive) relationships.

More specifically, Hypotheses 1(a), 1(b), 3(b) and 5(a) showed significant negative relationships between the predictor and criterion variables when tested as bivariate correlations. These variables then continued to show negative relationships (negative β -value) between the WFC/FWC variables and their respective facets of adjustment when entered into hierarchical regression analysis. The results indicated that although the predictor variables in these hypotheses were not significant in the regression models, these variables were still negatively related to the criterion variables.

However, the strength of the relationships between these four conflict variables and their corresponding work, interaction or general adjustment variables were later reduced and became non-significant when the variables were entered into the hierarchical regression models, as shown by the non-significant β -value (β -value = -0.016, -0.145, -0.013, and -0.051; all at $p < 0.10$). It can be inferred from these results that the strength of the relationships between each predictor variable in these hypotheses (i.e., time- and strain-based WFC) and its corresponding criterion variables (i.e., work, interaction or general adjustment) were no longer significant when other factors were factored into the relationship.

On the other hand, the remaining three hypotheses, namely Hypotheses 2(a), 4(a) and 5(b) showed a change in the direction of relationships between the predictor variables and its criterion variables (i.e. from a negative to a positive β -value) and subsequently showing non-significant relationships between these variables (non-significant β -value=0.091, 0.034, 0.023; all at $p<0.10$). These results indicated that although the predictor and criterion variables were all significantly negatively related in bivariate correlations analysis, the same did not hold true when the variables were subjected to hierarchical regression analysis. The change to the relationships found through hierarchical regression analysis indicated that when other variables were included the strength of the relationships between the relevant predictor variables and their respective criterion variables were not only reduced from significant to non-significant, but also moved in the opposite direction.

The change in direction found in tests of Hypotheses 2(a), 4(a) and 5(b) may have been the result of the large variance found within the sample. Although variables found to have significant influence on the relationship between the predictor and criterion variables in this study had been included in the tests as control variables, the strength of a particular control variable may have affected the relationship tested in these three hypotheses. This may explain the 'surprising' results found for the three aforementioned hypotheses.

Control Variables	Work Adjustment	Interaction Adjustment	General Adjustment
Cultural Distance	<i>Significant</i>		
Financing from 'Others'	<i>Significant</i>	<i>Significant</i>	
Period since arrival in the UK	<i>Significant</i>	<i>Significant</i>	<i>Significant</i>
Schedule before move to the UK		<i>Significant</i>	
Previous home duties		<i>Significant</i>	
Child less than 6 years old in household			<i>Significant</i>

Table 6-15: Control Variables Found Significant in the Test of Hypotheses

A closer examination of the results from the analysis highlighted the influence of "period since arrival" (i.e., length of time in the UK since arrival) on the relationship of each tested hypothesis (see Table 6-15 above). As the potential for time spent in a host country to influence the hypothesised relationship has been considered from the onset based on the findings of earlier research on international adjustment (e.g., Black, 1988, Black and Gregersen, 1992; Stahl and Caligiuri, 2005). Although segmenting of a

sample may be performed to identify if the differences within the sample was due to the length of time spent in the UK, such a step is not possible within the sample of this study. This is because any segmenting of the sample into different groups would not provide the study with valid inter-groups comparisons for which sound conclusions can be drawn due to the varied size of the groups (e.g., "One month", $n=3$ versus "Six months", $n=46$).

Nevertheless, it can be inferred from the results that this particular control variable, i.e., "period since arrival", may have dampened the strength of relationships between the conflict variables and international adjustments examined in this study and thus providing the study with some unexpected results for its analysis. However, having controlled for time in examining the relationships between work-family conflict and adjustment has helped prevent this factor from giving alternative explanations to the findings of this study.

6.10 Chapter Conclusion

Based on the results presented in this chapter, seven out of fourteen tested hypotheses were found to show significant relationships to different facets of international adjustment, whilst two hypotheses went untested. Nevertheless, it can be concluded that work-family conflict has been shown to be a factor that affects international adjustment, albeit not all hypotheses were supported in this study. The results also demonstrated a marked influence of strain-based conflict on international adjustment. In addition, the four unsupported hypotheses discussed above may also be inferred to provide support for the need to further test the relationship between work-family conflict and international adjustment. A more detailed discussion of the results and findings reported here in relation to theory is presented in Chapter Seven, which comes next.

CHAPTER SEVEN

DISCUSSION AND CONCLUSIONS

7.1 Introduction

This study set out to examine the influence of work-family conflicts on international adjustment of international students who have come to the UK with their families to pursue various postgraduate degrees. It proposed a total of sixteen hypothesised relationships between the three facets of international adjustment and the three types of conflicts along with their bi-directions. Within this study, international adjustment was defined as the degree of comfort that individuals attain with regard to the work, interaction and general environment encountered in the UK. These adjustments were examined in relation to the work-family conflict that exists following the interface between the personal and work lives of these relocated individuals during their adaptation to the new life in the UK, accompanied by their families.

The following sections present the discussions of the findings of this study and how this study contributes to existing theory and practice. Limitations of the study are described, followed by recommendations for future research and final conclusions.

7.2 Discussion

The study aimed to address the two main Research Questions as follows:

Research question 1:

What is the relationship between the different types of work-family conflicts and the three facets of international adjustment?

Research question 2:

What is the direction of work-family conflict during international adjustment?

The main finding from this study is the evidence of negative relationships found between the different types of work-family conflict and international adjustments; and

the influence of both directions of conflict on the different facets of adjustment. Based on these findings, it is evident that the study has managed to address its Research Questions.

Results of the multiple regression analysis, as presented in Chapter Six, showed support for seven hypothesised relationships between work-family conflict (WFC) or family-work conflict (FWC) and international adjustment of international postgraduate students with families in the UK (see Table 6-13: Summary of Hypotheses and Results). The results revealed a negative influence of strain-based FWC on all three facets of adjustments, whilst time-based FWC had negative relation with general adjustment. In addition, behaviour-based WFC showed negative influence on work and interaction adjustment, whilst time-based WFC was negatively related only to interaction adjustment. The results also demonstrated that during adjustment both directions of conflict, i.e. work-to-family domain and family-to-work domain have influence on different facets of adjustment. These results are depicted in Figure 7-1 below to illustrate the patterns of relationships between the variables. The shaded areas represent hypotheses supported in this study.

	WORK	INTERACTION	GENERAL
WFC Time	<i>H1a</i>	<i>H3a</i>	<i>H5a</i>
WFC Strain	<i>H1b</i>	<i>H3b</i>	<i>H5b</i>
WFC Behaviour	<i>H1c</i>	<i>H3c</i>	
FWC Time	<i>H2a</i>	<i>H4a</i>	<i>H6a</i>
FWC Strain	<i>H2b</i>	<i>H4b</i>	<i>H6b</i>

Figure 7-1: Patterns of Relationships between Conflicts and International Adjustments

The exploratory interviews provided rich insights that helped shape the main data collection through the identification of various factors which had the potential for influence on the conflict and adjustment variables in this study. Along with factors identified through the literature review, additional factors that surfaced through the interviews were treated as control variables in the examination of the relationships between the predictor and criterion variables of the study. As described earlier in Chapter Three (see Section 3.5.4), several factors were set as control variables, such as time in the UK since arrival, the number of children and the age of the youngest child in a household, domestic help in a household before and after the move abroad, and the type of programme enrolled in.

In view of the fact that some of these factors were statistically significant in the regression models of the study (see Table 6-15: p.152), controlling for those variables has helped avoid any possibility of alternative explanations to the findings. The following paragraphs present a discussion on how the results of this study relate to the existing body of knowledge. The discussion is presented according to the two research questions addressed by this study, dealing first with the relationship between the three types of conflict and the three different facets of international adjustment, followed by a discussion on the direction of the conflicts.

7.2.1 Addressing Research Question 1: Relationships between the Types of Work-Family Conflict and the Three Facets of International Adjustment

This section discusses the influence of the different types of conflicts on international adjustment. Each facet of international adjustment is discussed separately, beginning with work adjustment, followed by interaction adjustment and general adjustment.

7.2.1.1 Work Adjustment

Results from this study showed that work adjustment is negatively influenced only by behaviour-based WFC and strain-based FWC. There was no significant relationship found between work adjustment and any of the other types of WFC or FWC. With regard to behaviour-based WFC, conflict between behaviours at work and at home appears to have significant influence on the students' work adjustment. This finding indicates that when adjusting to their new work environment, international postgraduate students in this study reported that behaviours expected of them at work were not compatible to behaviours expected at home causing conflict that affected their adjustment to the new environment.

This conflict may possibly be the result of a need to show nurturing and emotionally supportive behaviours at home, whilst the work domain may have demanded that they be aggressive and objective (Greenhaus and Beutell, 1985). As international students are placed in day-to-day contact with host nationals, they may be exposed to a different set of work attitudes that may contradict the behaviours they were

expected to exhibit at home, which then adversely affect their adjustment to the new environment at work (Florkowski and Fogel, 1999). Hence, the realisation of incongruences between behaviours expected at work with those needed at home, particularly in regards to supporting the family in their adjustment to the new environment in the host country. The need to be supportive and show nurturing behaviours to family members was expressed by a number of interviewees in the exploratory study. As this type of behaviours would not be compatible to the behaviours needed at work, this conflict may have caused higher behaviour-based WFC that reduced the level of work adjustment attained by the individuals.

In addition, the study also found that upon relocation international postgraduate students with families experienced levels of strain from the home domain that lowered the level of work adjustment achieved. This meant that individuals in this study reported a level of stress, tension or anxiety experienced in the home life that had negative effects on their ability to adjust to the new work environment. The strain which originated from their family domain may have weakened their concentration or ability to study, or caused them to be preoccupied with family matters whilst they were at work. Participants in the exploratory interviews had also reported this. Such strain is plausible because trailing spouses have been reported to feel overwhelmed or neglected by the increased domestic responsibilities they have to undertake as a result of their spouses' work demands (Shahnasarian, 1991).

Furthermore, trailing spouses have been found to experience more difficulty in establishing a social network in the new country (Harvey, 1985; Pellico and Stroh, 1997). This may have posed an additional strain on the international postgraduate students as such strains from the family domain may have cropped up as they try to be supportive of their spouses' needs during adjustment. The demands for attention and support from the family domain may have made it difficult for the students to give their attention to work, resulting in stress which subsequently affected their adjustment to the responsibilities in the study programmes, the standards of performance expected of them or their ability to work with their UK professors or supervisors.

Additionally, when trailing spouses face difficulty in adjusting to life in the host country, such as the difficulty in making new friends, quite possibly they will share their frustrations with their spouses. Consequently, the students and their spouses are

likely to transfer the frustrations or any negative emotions they experience to one another (Karasek et al., 1992). According to Wallace (2005), this sharing and transfer of stress may then exacerbate the negative experience of the spouse, in this case the international postgraduate students, resulting in an increased to their family strain-based FWC, and subsequently reducing the students' work adjustment.

7.2.1.2 Interaction Adjustment

For interaction adjustment, there were significantly negative relationships between this adjustment with time- and behaviour-based WFC and with strain-based FWC. The negative relationship between time-based WFC and interaction adjustment may be inferred to indicate that the long hours spent at the new work setting resulted in less time available for individuals to interact or socialise with the host nationals, which subsequently lowered their interaction adjustment. The positive relationship between number of hours worked and conflict has been reported by various studies (e.g., Frone et al., 1997a; Pleck et al., 1980). The amount of time put into work is thus found to deny international postgraduate students in this study the opportunities to interact and socialise with host nationals, particularly outside of their work setting. These findings are reinforced by individuals' responses in the exploratory interviews. The hours spent at work may not have provided a good opportunity for interaction with host nationals or for making new friends, thus explaining the negative influence of time-based WFC on interaction adjustment.

In addition, the strain experienced as a result of meeting the roles in the family domain was found to affect the interaction adjustment of international postgraduate students with families in this study. The negative relationship found between strain-based FWC and interaction adjustment meant that the strains of family responsibilities affected international postgraduate students' ability to socialise with the host nationals. This is in line with the findings in an earlier study which reported that the difficulties in meeting the demands from both work and family domains influence leisure activities and parental roles of individuals involved (Small and Riley, 1990). There is also the possibility that this strain-based FWC resonates the negative experience of the family member or spouse and subsequently exacerbating the conflict (Wallace, 2005)

experienced by internationally relocated individuals in the study whilst they seek support from or provide support to their family members.

Furthermore, in trying to balance the demands of both work and family domains, these individuals may feel reluctant or unable to participate in social activities, such as going out for drinks outside of work hours in order to play the role of support to their family members. Such reluctance or inability has been expressed by participants in the exploratory interviews. Thus, interaction adjustment of international postgraduate students with families in this study may have been lowered by the difficulties experienced in meeting the demands of their family roles upon relocation. This resulted in the high levels of stress and anxiety felt due to the family demands which subsequently affected the students' ability to interact with host nationals on a day-to-day basis or to socialise with them. After all, few life events have as pervasive an effect on individuals as work-related relocation (Shahnasarian, 1991).

7.2.1.3 General Adjustment

The study showed that general adjustment has significantly negative relationships with time- and strain-based FWC. To recapitulate, the general adjustment facet in this study is explained by adjustment to six factors: housing conditions, weather, general living conditions, cost of living, healthcare facilities, and shopping. As time- and strain-based family-work conflicts relates negatively to these factors, it meant that the stress of performing their family responsibilities and the time they had to allocate to the demands originating from the family domain had resulted in time and strain conflicts. These conflicts then negatively affected the international postgraduate students' adjustment to the six factors in the general environment in the UK.

Due to the amount of time spent in the home domain, international postgraduate students in this study had less time available to adjust to the general environment of the UK. As these international postgraduate students had to be supportive of their spouses or families, their time to perform other roles particularly in the work domain would have been taken away by the roles in the family domain. These international postgraduate students cannot be in two places at the same time, hence presenting conflicts for their time (Greenhaus and Beutell, 1985). Had this not happened, they may have been better adjusted to factors in the general environment if they had more time to

spend at work *via* participation in various useful school activities which would facilitate their learning of the way around the different systems and way of life in the UK. Had they had more opportunities to be involved in such activities, it could have been easier for them to learn to adapt to the factors in general adjustment. But, as was also reported by participants in the exploratory interviews, this was not available as their family responsibilities demanded more of their time, resulting in conflict, which subsequently lowered their general adjustment.

Upon relocation, international students may feel the need to maintain their home role of supportive spouse or parent following the upheaval of the families' move to a foreign country. However, the demands from their new work domain may not have allowed this to happen. Findings from the exploratory interview have highlighted the international postgraduate students' concern about their families settling into the new life here. As a result, the students felt it was necessary that they be home for their family members to help buffer the pressures of adjusting in the UK. Assigning more time and energy in the family domain require the sacrifice of the same resources from the other domain because the roles are not compatible, and hence resulting in conflict (Greenhaus and Beutell, 1985). Individuals may have found that whilst their new role require that they devote more time and energy in the work domain, doing so detracted them from the time and energy that they needed to spend in the family domain (Shahnasarian, 1991).

Moreover, work-family conflict has been reported to interfere with an individual's ability to perform family and parental roles (Bohen and Viveros-Long, 1981). The pressures experienced due to the tug-of-war between the work and family domains, particularly the demands of relocating with the families may have resulted in the strain-based FWC that affected the work, interaction and general adjustments of international postgraduate students with families in the UK.

The international postgraduate students in this study also were found to experience high levels of stress as a result of performing their family responsibilities concurrently with their new work duties. This subsequently lowered their adjustment to the general environment. The strains of the family responsibilities caused the students to experience a level of tension and anxiety and being preoccupied with family matters

even when they were at school. These negative effects of their family roles then influenced the students' adjustment to the general environment of the host nation.

On the other hand, there is a possibility that the high level of strain-based FWC experienced by internationally relocated individuals is a result of stress which has been transferred to them whilst performing the supportive role to a member of their families, particularly their spouses (Wallace, 2005). For example, when a wife (or husband) informs the spouse of her (or his) anger or frustrations with the standard of healthcare services available in the host country, this frustrations may be transferred to the husband (or wife) because they may witness or possibly even have to experience the repercussions of the lower than expected healthcare services in the host country. This could subsequently result in the strain-based FWC negatively affecting general adjustment.

7.2.1.4 Concluding the Relationships Found between Work-Family Conflict and International Adjustments

International relocation is known to involve a major disruption to the lives of the relocated individuals and their families. Whilst in the long run it often proves to be a very positive experience for all concerned, the immediate effect of international relocation has time and again been shown to be a very stressful period (Brewster, 1995, p.123). The findings from this study have now provided an explanation that may help explain this 'stressful period'. It can be concluded from the discussion above that the multiple roles played by internationally relocated individuals have resulted in work-family conflict which reduces their ability to adjust to the environment of the host country.

Evidently, the findings of this study have demonstrated that the presence of the family during international relocation has negative consequences on international adjustment of international postgraduate students in this study. This is because, the need to play multiple roles in and balance the demands made on them by both work and family domains resulted in high levels of strains on these individuals. This strain is found to originate from the family domain and permeating into the work domain. Based on the literature and the findings of this study, it can be said that internationally

relocated individuals experience more family-to-work strain-based conflict compared to other types of work-family conflict whilst adjusting to the host country.

Therefore, the findings of this study provide empirical support for the negative effects of the different types of work-family conflict on the different facets of international adjustment, but more consistently the effects of family-into-work strain-based conflict on all facets of adjustment. Nevertheless, it can be concluded that there is a negative relationship between the three types of work-family conflicts and the three facets of international adjustment of international postgraduate students with family in the UK.

7.2.2 Addressing Research Question 2: The Direction of Interference between Work and Family Domains during International Adjustment

Evidence from this study demonstrated that international adjustment is influenced by conflicts that originate from both work and family domains. Different facets of adjustment were negatively affected by different types of conflict. As discussed earlier, work adjustment was influenced by behaviour-based WFC and strain-based FWC, whilst interaction adjustment was influenced by time- and behaviour-based WFC and strain-based FWC. Hence, work and interaction adjustments of international postgraduate students with families in the UK are influenced by conflicts that arose from both directions. However, the study found general adjustment of these individuals to be influenced by time- and strain-based conflicts that spilled over only from the family domain into the work domain. Overall, the findings do provide evidence for the bi-directional influence of work-family conflict on the international adjustment of postgraduate international students with families in the UK.

In addition, the results demonstrated that strain-based FWC was the most consistent influencing factor found to influence international adjustment as it affected all three facets of adjustment. Furthermore, in regard to the general adjustment, evidence showed that this facet of adjustment was negatively affected by time- and strain-based FWC but not by time- or strain-based WFC. Whilst these findings may not allow for a conclusive deduction to be made, the significant influence found for strain-based FWC on all three facets of adjustment together with the significant influence of

time-based FWC on general adjustment did indicate a pattern that was not shown by WFC. Thus, it may be concluded that evidence from the results suggests a clearer pattern of conflict originating from family into work domain to affect international adjustment.

The results from this study indicate that during international relocation, the permeation of domains or the direction of conflict is relatively more persistent from the family domain into the work domain than it is from the work domain into the family domain. This can be further supported by the findings of the exploratory interview as the interviewees had generally voiced a substantial amount of issues relating to their family life, which permeated into their work life.

In explaining such a pattern of spillover, an inference can be made from studies on work-family accommodation. A connection between work-family conflict and work-family accommodation has been suggested in the literature (Lambert, 1990). In specific reference to international relocation, anticipation of extensive conflict between work and family responsibilities may result in the individuals' lesser involvement in one domain than the other. The domain in which involvement is reduced is said to have a less important role to accommodate the role that is viewed, at the time of the reduction of role, as more important or more pressing. The reduction in involvement can be done through behavioural (e.g., curtailing the amount of time devoted to a role) or psychological (e.g., restricting the level of ego attachment to a particular role) means. Such an act of accommodating the demands subsequently caused the strains from the family domain to encroach into the work domain, resulting in a spillover (Caligiuri et al., 1997). For example, during the adjustment stage, international postgraduate students may reduce their involvement at work to accommodate the needs of their children as they deemed the needs of the children to adjust to the new country to be more pressing than the demands at work.

One can understand the choice that was made, as the relocation was an imposition of the work role on the family domain which blurred the boundaries between the two (Harvey, 1997), to begin with. Hence, the lessening of involvement in the work role will in effect 'permit' the family responsibilities to interfere with work. Accommodation of one role over the other may bring to mind the image of a trade-off as individuals 'trade' success in the less favoured role for opportunities to succeed in

the more favoured role (Friedman and Greenhaus, 2000). In this case, the roles in the family domain may be the 'favoured' role for international postgraduates students in the sample because they perceive the move to be an imposition of their work demands that have affected the family, hence making them responsible for supporting and accommodating the additional need of the family in adjusting to the foreign culture.

It has often been argued that during the adjustment period, expatriates have to invest time and energy into the family domain so as to assist their families with adjustment to the foreign environment, as their neglect may result in family maladjustment (Caligiuri et al., 1998b; Shahnasarian, 1991). Such conflicting demands on their time and energy may drain the international postgraduate students of their much needed energy, and hence explaining the negative influence that behaviour-based WFC conflict has on their adjustment at work. If an expatriate experience work-related (family-related) problems, these problems may begin to interfere with his/her ability to successfully complete family-related (work-related) obligations. These unfulfilled family (work) obligations will begin to interfere with his/her daily functioning at work or at home (Frone et al., 1992; Huang et al., 2004), resulting in work-family conflict. The interference would be exacerbated by the presence of children because studies have reported that parental demands have positive relationships with work-family or family-work conflict (Aryee et al., 1999; Greenhaus, et al., 1997; Luk and Shaffer, 2005).

In addition, the opposite direction of permeation found in this study may be a result of the 'temporary' nature of interference due to relocation. Individuals involved may have relinquished more of their roles at work in order to perform the 'added' demands of supporting their families' relocating and settling down. This is in line with a recent longitudinal study by Huang et al. (2004) which found work-family conflict to be based on the short-term demands rather than any enduring family/work characteristics. Hence, in order to accommodate conflicts these relocated individuals may have 'permitted' the interference to take place from the family domain into their work domain (Lambert, 1990). They may have felt the pressure to do so because the conflict they were experiencing was perceived as short-term and a result of their work demands imposing on their family life.

Such inference is plausible because family adjustments during international relocation have been shown to affect relocated individuals performance at work (Shaffer

et al., 1998). Should they fail to accommodate the 'additional' demands from the family domain that is necessary whilst adjusting, the family may simply fail to adjust. The strong negative sanctions for non-compliance with the demands of the family role (Greenhaus and Beutell, 1985), such as family maladjustment has been reported to negatively affect performance or influencing outcome as indicated by failed assignments or premature returns.

As the measures for behaviour-based FWC had to be dropped from the analysis of this study (as discussed in Chapter Six), the two hypotheses proposed for the relationship between behaviour-based FWC on international adjustment were not tested. Should these hypotheses have been tested, the results may have provided this study with a clearer pattern for the direction of domain permeation. Further examination of the responses to the behaviour-based FWC scale found that this scale had respondents that were either indifferent (i.e., no opinion) to the questions asked or were providing responses on one extreme to an item and going to the other on the next item. This resulted in the 'problem' found in the analysis of the scale reliability (as described in Chapter Six).

Nevertheless, the findings of this study indicated there was persistent influence of FWC through strain-based family into work conflict on the three facets of adjustment, plus the significant influence of time-based FWC on general adjustment. On the other hand, WFC had a less clear pattern of influence on the facets of adjustments. These findings signalled a direction of domain permeation that goes in the opposite direction to the direction often reported by research on individuals within domestic boundaries (e.g., Gutek et al., 1991; Netemeyer et al., 1996). Therefore, it may be concluded that based on the findings this study suggests that during the adjustment period, the work domain is more permeable than the family domain.

7.3 Contributions of This Research

The study contributes to knowledge through its contribution to the international adjustment and work-family literatures and also to the practice of international relocation. This section discusses these contributions in more detail.

7.3.1 Contribution to International Adjustment Literature

Following the findings of this study, it is evident that work-family conflict is a factor that must be considered in the existing framework of international adjustment. More specifically, as the present study has been developed based on the framework of international adjustment by Black et al. (1991), this study provides empirical evidence for the incorporation of work-family conflict as a new non-work factor in future examinations of international adjustment. In doing so, the study has contributed to the international adjustment literature and helped take the adjustment theory forward.

The existing international adjustment framework by Black et al. (1991) (as shown in Chapter 2: p.23), which has focused on family adjustment (or maladjustment) as a major non-work factor influencing international adjustment may no longer be a complete framework without the inclusion of work-family conflict as one other non-work factor. The influence of family life on expatriate adjustment should no longer be seen to occur only through family (mal)adjustment because the findings of this study have managed to demonstrate the influence of family life on international adjustment through conflicts which resulted from the interface between work-life and family-life. Future research intending to examine factors affecting international adjustment, particularly the non-work factors should amend the existing international adjustment framework by Black et al. (1991) to include work-family conflict as a non-work variable.

The findings of this study has also demonstrated that when individuals relocate to a foreign country with their families, the dynamics of work-family interface, specifically work-family conflicts, negatively influence the international adjustment of those individuals. More importantly, the findings have demonstrated that unlike other types of conflict, during international adjustment strain-based FWC consistently affects all three facets of international adjustment. Furthermore, the results of the study also showed that whilst some work-family conflict variables (e.g., time-based FWC) initially had significant influence on international adjustment, this influence did not continue to exist when additional work-family conflict variables were included into the analyses.

On the other hand, strain-based FWC was found to remain significant even when time-based FWC was included. Based on these results, it can be concluded that during the adjustment period the strength of strain-based conflict from the family domain into

the work domain is very high compared to other types of work-family conflict. This means, during international adjustment, the level of strains experienced from the family domain into the work domain is not only high but also able to influence work, interaction and general adjustments. The strength and consistent influence of strain-based FWC found in this study suggests that strain-based conflict may influence the relationship between time- and behaviour-based conflicts on international adjustment.

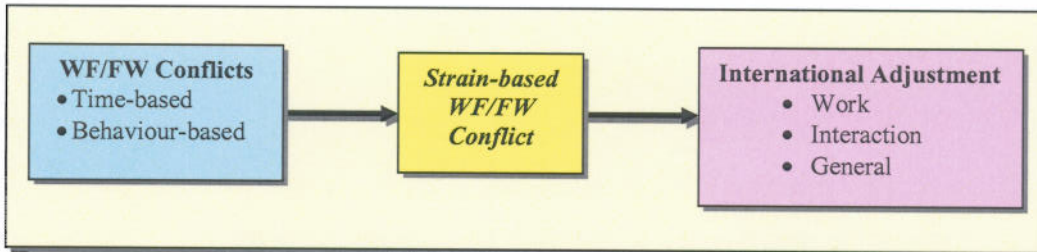


Figure 7-2: Proposed Framework for Work-Family Conflict and International Adjustment Relationship

Therefore, based on the evidence found here, this study suggests that the relationship between work-family conflict and international adjustments may not be one that is direct, as had been initially proposed here based on the literature, but instead it is possibly an indirect relationship. This proposed relationship is depicted in Figure 7-2 above. This means that the work-family time- and behaviour-based conflicts relationships to international adjustments may be mediated by strain-based conflict, subsequently affecting the relationships between the different types of conflict and the different facets of international adjustment. However, a mediated relationship between variables were not hypothesised within this study, hence mediation effects were not tested here.

7.3.2 Contribution to Work-Family Literature

With regard to the work-family literature, the findings of this study have demonstrated that the change to work-family circumstance as a result of international relocations affects the international adjustment of individuals involved. Thus, the study takes the conflict theory forward by providing empirical evidence that work-family conflict is a significant factor which influences the ability of individuals with families to

adjust to the environment of the host country as a result of the conflicting demands made on them by the multiple roles they hold in both work and family domains.

More importantly, contrary to the findings of previous studies which found the family domain to be more permeable than work domain (e.g., Frone et al., 1992; Huang et al., 2004; Netemeyer et al., 1996), evidence from this study shows that during the period of adjustment to the new environment of the host country, the direction of permeation between work domain and family domain is in reverse. This finding suggests that international postgraduate students with families in this study experienced more conflict which originated from the family domain permeating into the work domain than conflict from the work domain into the family domain.

This may be inferred to be a consequence of changes to the work-family circumstances and the need to adapt to a multitude of new factors in the host country following international relocation. After all, international relocation is known to cause tremendous disruption in the lives of all family members (Guzzo et al., 1994). International adjustment to the new and foreign environment encountered in the host country may have affected or changed the way international postgraduate students with families view the interface between their work and family domains, resulting in a higher permeation 'allowed' from the family domain into the work domain (Lambert, 1990). One possibility for this may be that they believe the interference (i.e., the need for them and their families to adapt) to be only a 'temporary' or short-term consequence of internationally relocating instead of an enduring family/work characteristics (Huang et al., 2004).

In addition, it is also possible that the permeation was 'allowed' to take place during the adjustment period in order to compensate for the imposition of the work demands on the family domain (i.e., international relocation in pursuit of a degree) (Harvey, 1997). Quite possibly, the immediate need for international postgraduate students and their families to adapt to life in the host country following the move have caused them to temporarily focus more on their home roles i.e., to assist the family in settling down and building a new life away from home. This change of focus on the roles held by an individual and its implications on work-family conflict can be explained by looking at the importance of a role to a particular person i.e., *role salience* (Greenhaus and Beutell, 1985), also referred to as role centrality (Martire et al., 2000).

Role salience explains the choices a person makes with regard to his/her social roles (Stryker and Serpe, 1994). When higher salience is placed on a role, a person will then show more involvement in that role (Frone et al., 1995). The more salient roles in a domain then become more central than the roles in the other domain, the higher the pressure will be, causing an intensified work-family conflict from that domain into the other (Greenhaus and Beutell, 1985). Following this line of argument, one possible inference can be made with regard to the direction of permeation found in this study. The inference is that, following the move abroad international postgraduate students with families may have placed relatively higher salience to their roles at home as compared to their roles at work. They may do so because they perceive there to be higher needs and demands made by the family domain on them during this adjustment period. With high salience placed on the roles at home, higher role pressures in performing those roles may have ensued, resulting in an increased conflict originating from the family domain into the work domain.

To summarise, the findings of this study has helped extend the current body of knowledge on work-family interface by empirically demonstrating a link between work-family variables and international adjustment. Not only has the study demonstrated the link between the two literatures, it has also challenged the existing view in the work-family literature through its findings. Whilst domestic relocation studies have shown the three types of work-family conflict as predictor variables, this study has forwarded the possibility that within the international relocations context strain-based conflicts may become a factor which mediates the relationships between time- and behaviour-based conflicts to international adjustments. In addition, the study has also contributed to the current debate on the direction of domain permeation by demonstrating that work domain is more permeable than family domain during international adjustment.

7.3.3 Contribution to Practice

Although a single study such as this cannot provide the ultimate basis for the relationship between work-family conflict and international adjustment, this study suggests that work-family conflict is a pertinent issue that affects adjustment of international postgraduate students who have come to the UK with their families. With the evidence that work-family conflict affects international adjustment of this group of

students, administrators of British universities should take this matter into consideration when planning induction programmes. One simple way to address this issue is by providing a structured mechanism within each university to ease and facilitate the relocation of international students with families as they adjust to living in the UK. International students are after all a good source of income not only to the universities hosting them but also the host nation itself (Khafagi, 1990). A good facility or means of support from the moment they arrive provide these students with the help they need for their own adjustment and those of the family. Such service may eventually entice more international postgraduate students with families to the UK.

As described earlier in Chapter Two, international postgraduate students in the UK tend to be older, more likely to be married and accompanied by spouse and family; and they are often members of staff in their home countries (Bride, 1999, p.31). Upon graduation, these students may go back and hold high-ranking positions, either in the public or private sectors in their homelands. British universities should help provide means to facilitate the relocation of this group of students on matters that involve not only their adjustment to the study programmes but also ease the demands of family domain following relocation. In the long run, the benefits of such investments can be reaped not only by the universities but also the UK.

International students who graduate from universities abroad are the best ambassadors to market degree programmes for host universities and host nation upon return to the homelands (Bride, 1999, p.28; Khafagi, 1990). The relationships with the alumni, who had good experiences living and studying at British universities for example, may become a strong promotional tool to attract future students from their homeland to pursue postgraduate degrees in the UK. As reported by Watts (1999, p.43), the future competitive standing of universities in the UK is to a degree influenced by both the quality of education received here and the social component of life in the UK, such as the absorption of British culture by the international students. Failure to incorporate the adjustment issues of the postgraduate students with families would affect their adjustment to the work and social lives in the UK. This may be detrimental to the future success of this international trade.

7.4 Limitations of the Research

Ideally, the findings of this study should have been drawn from a census of its population. However, conducting a census of this population would be impractical and costly, both in terms of time and money (Sekaran, 2000, p.268). Moreover, the legal restrictions posed by the DPA 1998, as described in earlier chapters made identification of the population almost unachievable. Hence, convenient sampling i.e. non-random sampling was employed in this study. As a result of such sampling method, this study has limited generalisability to the population of interest because the sample is not completely representative of the international postgraduate students with families registered at universities in the UK. Such generalisations are only possible when random sampling is employed because inferential statistics require data from a random sample (Neuman, 2003, p.356). However, it must be noted that there rarely are studies able to get a truly random sample (Babbie, 2001, p.453). The sampling form employed here was the only avenue available at the time.

The sample consists of respondents that were not of equal distribution across all universities in the UK. Again, this was due to the obstacles encountered in the identification of and access to the population of study. As a result, larger representations were received from some universities, whilst none at all from some others.

This study has taken various possible precautions against common method bias through random assignment of items in the questionnaire and the use of reverse-order items to reduce any potential for uniformed answers (see Chapter Three: Questionnaire Design). The additional precautionary step taken against this problem using Harmon one-factor test (see Chapter Six) also showed that mono-method bias is not a serious problem in this study. Further, the general criticisms of the self-report methods have recently been found to be exaggerated (Crompton and Wagner, 1994). Nevertheless, a researcher must admit that using a single source for its data collection may result in common method bias. There is still a possibility that some of the effects found in this study are due to other factors such as number of years in marriage or working experience which have not been controlled for in this study. Therefore, it is proposed that future research may overcome this problem through the use of multi-source data collection and collecting more data on demographic variables. Instead of using data provided solely by the individuals, future studies may collect data from the spouse and

the children for family domain, whilst data for work domain is gathered from the supervisors or colleagues. Thus, social desirability biases may be reduced.

The unexpected 'problem' posed by behaviour-based FWC has resulted in two of the sixteen hypotheses of this study to go untested. This limited the ability to conclude a pattern of domain permeation in this study as the relationship between the behaviour-based FWC with work and interaction adjustment is not known. As items for this construct are part of a tested and validated scale, the present research may only speculate that within this study and the sample it was tested in, the scale failed to measure the intended construct. Such an issue can only be addressed by test-retest of the scale in future research.

Although adjustment is known to have a dynamic nature (Black and Mendenhall, 1991; Anderzen and Arnetz, 1999), the present study employed a cross-sectional methodology. Therefore, any causal statements made about the relationships among variables in this study are tenuous. Although this design was deemed appropriate in meeting the research objectives of this study, future research should consider the use of a longitudinal study. The use of longitudinal data collection would provide a richer and more detailed data on the adjustment of international postgraduate students with families over a particular period of time, e.g. the first twelve months since their arrival in a host country. This should enable a show of patterns of adjustment and determine if the conflict and adjustment experienced by individuals are stable over time. However, longitudinal type studies have their own methodological challenges to be addressed (Menard, 1991).

7.5 Recommendations for Future Research

Further research is needed to investigate the relationship between work-family conflict and international adjustment, particularly where there may be a different composition to work-family characteristics of the internationally relocated individuals. The findings of this study have demonstrated the need for future research which intends to examine international adjustment to include work-family conflict as a factor. Work-family conflict influence on the different facets of adjustment as found in this study, must now be included in studies on international adjustment. This is necessary

particularly when the expatriates studied are individuals who have relocated abroad with their families.

More specifically, the findings of this study has demonstrated the possibility of incorporating 'new' factors into the existing framework of international adjustment. The findings challenges the existing international adjustment framework, particularly the framework by Black et al. (1991) which was used as the key reference in this study. This finding highlights the need for future research on international adjustment to not only test or confirm factors proposed in existing international adjustment frameworks, but also to explore the potential for new variables or factors to be added, as has been demonstrated in this study. Studies which test the factors or variables proposed by any existing framework could only reaffirm existing paradigm, but would not be able to take the framework or its underlying theory forward.

In addition, based on its findings the present study propose that future examinations of the influence of time-, strain- and behaviour-based work-family conflict variables on international adjustment should not treat the three work-family conflict variables as distinct predictor variables. Instead, in examining the influence of work-family conflict variables on international adjustment, future studies should treat strain-based work-family conflict as a mediating variable, incorporating the proposed mediating in this study (see Figure 7-2, p. 167) incorporated into the designs of future studies on work-family conflicts of internationally relocated individuals with trailing families.

On a more operational note, future research should examine the relationship between international adjustment and work-family conflict through a longitudinal type of research. In doing so, the research should be able to examine the different stages of adjustment experienced by internationally relocated individuals and the interface between their work and family domains during the different stages of the adjustment period. A longitudinal type study should be able to provide deeper understandings of the dynamics of both work-family conflict and international adjustment, thus allowing more causal type conclusions to be made. It would also be beneficial to the body of knowledge if future studies were to be designed with pre- and post-arrival data collection. This would enable comparisons of work-family conflict and international

adjustment be made through data gathered prior to international relocation and post arrival.

Future research should also consider the use of daily diaries for data collection as it may provide additional new insights into the experience of adjusting to a host country whilst meeting the demands from both the work and family domains. Daily diaries “*can capture events close to when they happen, and certainly within the same day*” (Conway and Briner, 2002). The use of daily dairies should allow a more accurate measurement as analysis are made based on incidents recorded almost as they happen, and thus less retrospective. Moreover, the use of daily diaries combined with a longitudinal type study would provide stronger conclusions about the relationships between work-family conflict and international adjustment, particularly in relations to the function of time and the dynamic nature of both phenomena of international adjustment and work-family conflict.

Finally, future research may employ similar scales used in this study to determine if the behaviour-based FWC scale is only a problem encountered within this study and its sample, or if the problem is actually inherent in the items of the scale itself.

7.6 Personal Learning

The PhD has indeed been quite a unique journey; very different from the journeys I had when undertaking previous degrees. To a large extent, the challenges presented by the programme were very personal and often beyond just a challenge to one's intellectual capabilities. Having gone through the process, several points of learning have to be shared here.

First and foremost, I must admit that my deep interest in the research topic was crucial in providing me with the much needed drive to persevere amidst the turbulent journey throughout the programme. The extended period of time required to complete the various tasks of a PhD would not have been bearable without the continuously strong interest to sustain the steps towards completion. My interest in the subject of this research made those last few miles exciting, particularly after patterns of relationship began to emerge following the analysis. One must be stimulated by the project and have

the yearning for its outcome to be able to push oneself through the programme, particularly as one approaches the *finishing line*.

It is also important to be aware that a PhD research, being a research of an extended nature, requires a clear and well-organised *tactical planning*. The *strategic planning*, i.e. the focus of aims to graduate within a particular time period, must be clearly laid out and constantly visualised. It is also very important to draw up a plan to execute the project on a weekly or daily basis. The enormous amount of literature to review and the various tasks to perform may seem daunting and overwhelming if they were not sectioned into smaller segments. Managing the PhD project in this manner was the advice given, though not fully taken by me until much later in the programme. And for that, I have learned my lesson which I believe would be good advice to future PhD candidates.

Lastly but certainly not the least, one must at all times go back to the questions that were set out to be addressed by the research. The long and winding road of the PhD journey may at times detracts or lead a PhD student into various other areas of research that seem more interesting than the original ones pursued. A PhD student must have a clear focus of the research question and to pursue only avenues that may help provide answers to those questions. Although one may be tempted to produce a research that helps solve various problems of the world, the limited time and resources available to a PhD student demands that the aim must at all times be on addressing the questions of the research.

7.7 Chapter Conclusion

Notwithstanding its limitations, this study has addressed its research questions and demonstrated how its contributions have helped extend existing research. Thus, it is possible to conclude that adjustment of international postgraduate students with families in the UK is negatively influenced by work-family conflicts. In addition, during the international adjustment period, the direction of conflict originates from both work and family domains, with a higher potential for the work domain to be more permeable than the family domain. This is particularly true in relation to the influence of strain-conflict from the family domain which significantly affected all facets of adjustment.

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Appendix 2: Psychological adaptation items

Please indicate how much difficulty you experience in _____ this country in each of these areas. Use the following 1 to 5 scale.

1 = no difficulty, 2 = slight difficulty, 3 = moderate difficulty,

4 = great difficulty, 5 = extreme difficulty

1. Making friends.
2. Finding a job that interests you.
3. Believing rules and regulations.
4. Dealing with complex bureaucracy.
5. Taking a _____ in a country's response to the culture.
6. Learning the local language.
7. Dealing with bureaucracy.
8. Understanding the _____ about family relations.
9. Accessing medical services.
10. Dealing with _____, (great national) _____.
11. Getting shopping.
12. Dealing with _____ who is not friendly.
13. Understanding _____.
14. Accessing _____.
15. Going to school or work.
16. Dealing with _____ at work.
17. Communicating with people in a different _____.
18. Understanding _____.
19. Dealing with _____.
20. Weathering.
21. Relating to members of the opposite sex.
22. Finding your way around.
23. Understanding the _____ about raising a political system.
24. Talking about yourself with others.
25. Dealing with the climate.
26. Understanding the _____ about country's _____.
27. Family relationships.
28. The pace of life.
29. Finding a _____ in a new cultural issue.

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Appendix A: Sociocultural Adaptation Items

Please indicate how much difficulty you experience in _____ (host country) in each of these areas. Use the following 1 to 5 scale.

*1 = no difficulty; 2 = slight difficulty; 3 = moderate; difficulty;
4 = great difficulty; 5 = extreme difficulty*

1. Making friends.
2. Finding food that you enjoy
3. Following rules and regulations.
4. Dealing with people in authority.
5. Taking a _____ (host country) perspective on the culture.
6. Using the transport system.
7. Dealing with bureaucracy
8. Understanding the _____ (host country) value system.
9. Making yourself understood.
10. Seeing things from a _____'s (host national's) point of view.
11. Going shopping.
12. Dealing with someone who is unpleasant.
13. Understanding jokes and humor.
14. Accommodation.
15. Going to social gatherings.
16. Dealing with people staring at you.
17. Communicating with people of a different ethnic group.
18. Understanding ethnic or cultural differences.
19. Dealing with unsatisfactory service.
20. Worshipping.
21. Relating to members of the opposite sex.
22. Finding your way around.
23. Understanding the _____ (host country's) political system.
24. Talking about yourself with others.
25. Dealing with the climate.
26. Understanding the _____ (host country's) world view.
27. Family relationships.
28. The pace of life.
29. Being able to see two sides of an inter-cultural issue.

SOURCE: Ward, C., & Kennedy, A. (1999). The measurement of sociocultural adaptation. *International Journal of Intercultural Relations*, 23, 659-677.

Appendix B: Original International Adjustment Items from Black (1988) and Black and Stephens (1989)

Respondents were asked to indicate on a scale from 1 to 7 (1 = Not Adjusted At All; 7 = Very Well Adjusted) the degree to which they are adjusted or not on the following eleven items.

1. How adjusted are you to your job and responsibilities?
2. How adjusted are you to working with Japanese co-workers?
3. How adjusted are you to the transportation system in Japan?
4. How adjusted are you to working with Japanese outside your company?
5. How adjusted are you to the food in Japan?
6. How adjusted are you to the weather in Japan?
7. How adjusted are you to interacting with Japanese in general?
8. How adjusted are you to shopping in Japan?
9. How adjusted are you to supervising Japanese subordinates?
10. How adjusted are you to generally living in Japan?
11. How adjusted are you to the entertainment available in Japan?

Source: Black, J.S. (1988). *Journal of International Business Studies*, Summer, p.277-294.

How adjusted or unadjusted are you to the followings*:

1. Living conditions
 2. Housing conditions
 3. Food
 4. Shopping
 5. Cost of living
 6. Entertainment/recreation facilities and opportunities
 7. Health care facilities
 8. Socializing with host nationals
 9. Interacting with host nationals on a day to day basis
 10. Interacting with host nationals outside of work
 11. Speaking with host nationals
 12. Specific job responsibilities
 13. Performance standards and expectations
 14. Supervisory responsibilities
-

*7 point Likert scale (1=Not adjusted at all, 7- Very well adjusted)

Source: Black, J.S. and Stephens, G.K. (1989). *Journal of Management*, 15(4), p.529-544.

Appendix C: Questions for Exploratory Interview

- 1) **Demographic Data:**
 - a) Nationality/Home country
 - b) Marital Status
 - c) Children: Number and age
 - d) Source of Financing
 - e) Any previous experience living abroad?
- 2) **Home Life and Support**
 - a) Please describe a typical day for you at home? At work?
 - b) How does this differ from the life you had in your home country?
 - c) How are the two of you managing the move?
- 3) **Work/Study Life**
 - a) What is your work schedule like? How different is it from your previous work schedule?
 - b) Do you find it easier to balance work and family now than it was before? Why?
 - c) What key challenges do you face in coming to the UK to study and what are the benefits in doing it? (especially in relation to your home life)
- 4) **Expectations**
 - a) Did you have any prior expectation/knowledge of life at Cranfield?
 - b) Is Cranfield what you expected it to be? Why or why not?
- 5) **Living conditions**
 - a) Do you think you have been able to get used to living in Cranfield/ or in England?
 - b) Which aspect of the move do you find easiest to adjust to and which is the hardest? Why?
 - c) How are you coping with this/How have you coped with it?
- 6) **Family**
 - a) In deciding to move here, to what extent were your spouse/partner or your child(ren) involved in the process? Please explain.
 - b) In your opinion, have your family members coped well with life here so far?
 - i. Your spouse? Why or why not?
 - ii. Your child(ren)? Why or why not?
 - iii. If not, do you think this has affected your own ability to adapt to your present life? How? Please explain.
 - c) In what way have you assisted/helped them to cope with the move and the new life here?
 - d) Hypothetically, if you were asked to choose now:
 - i. Would you prefer to have your family here with you or would you have preferred to leave them in your home country? Please explain.
 - e) Has the move affected your spouse/partner's career/employment?
 - i. If so, what (if any) arrangements have been made or planned for your spouse/partner in terms of his/her employment for the duration of your time here?
- 7) **Support**
 - a) What type of support have you received since you first came to Cranfield?
 - b) How beneficial are they in helping you adjust to life at Cranfield?
 - c) What would you have liked to receive? E.g. from the following people:

- i. Your school? [Your supervisor?]
- ii. The University?
- iii. Your fellow course mates?
- iv. The local community? (campus or outside)
- v. Your fellow countrymen?

8) Adjusting to the New Life

- a) How do you feel about your present life as a student? i.e. is it what you expected it to be? Why or why not?
- b) Do you think you are coping well with school?
 - i. Do you find yourself having and doing more or doing less workload now than you used to when you were working? Please explain.
- c) Do you think you have been able to fulfil your roles at home and at school, as you would like to? Why or why not?
 - i. How do you divide time between the demands of your school work and home life? Is this working well?
 - ii. How different is your life now compared to how it was when you were working? Please explain.
- d) Has the change in status from an employed person to a student affected you (or your family) life in any way? If so, what is it and how do you deal with it? Please explain.
- e) Since moving here, do you think your spouse/partner is supportive towards you? Towards your school/student life? Why or why not?
 - i. Is this support more/less than or equal to what it was before? If more or less, why?
- f) In general, what in your opinion would have made it easier for you? For your spouse? For your child(ren):
 - i. To cope with the new 'life'?
 - ii. To adapt to the new 'life'?

Appendix D: Original WFC/FWC Scale from Carlson et al. (2000)

Work-family conflict items

Time-based work interference with family

1. My work keeps me from my family activities more than I would like.^a
2. The time I must devote to my job keeps me from participating equally in household responsibilities and activities.^a
3. I have to miss family activities due to the amount of time I must spend on work responsibilities.

Time-based family interference with work

4. The time I spend on family responsibilities often interfere with my work responsibilities.
5. The time I spend with my family often causes me not to spend time in activities at work that could be helpful to my career.
6. I have to miss work activities due to the amount of time I must spend on family responsibilities.

Strain-based work interference with family

7. When I get home from work I am often too frazzled to participate in family activities/responsibilities.
8. I am often so emotionally drained when I get home from work that it prevents me from contributing to my family.
9. Due to all the pressures at work, sometimes when I come home I am too stressed to do the things I enjoy.

Strain-based family interference with work

10. Due to stress at home, I am often preoccupied with family matters at work.
11. Because I am often stressed from family responsibilities, I have a hard time concentrating on my work.
12. Tension and anxiety from my family life often weakens my ability to do my job.

Behavior-based work interference with family

13. The problem-solving behaviors I use in my job are not effective in resolving problems at home.^a
14. Behavior that is effective and necessary for me at work would be counterproductive at home.^a
15. The behaviors I perform that make me effective at work do not help me to be a better parent and spouse.^a

Behavior-based family interference with work

16. The behaviors that work for me at home do not seem to be effective at work.
17. Behavior that is effective and necessary for me at home would be counterproductive at work.
18. The problem-solving behavior that work for me at home does not seem to be as useful at work.

^aItems from Stephens and Sommer (1996).

Appendix E: Main Study Questionnaire

For Section 1, please think about your everyday life since coming to the UK to study, and then provide your responses to the questions based on the scale provided in each section.

Section 1: Please tick the boxes (☐) to indicate **HOW MUCH YOU AGREE/DISAGREE** with the following statements, based on the scale below.

	Fully Disagree ☐ 1	Mainly Disagree ☐ 2	Not Certain ☐ 3	Mainly Agree ☐ 4	Fully Agree ☐ 5
A1. My studies keep me from my family activities more than I would like.	☐	☐	☐	☐	☐
A2. When I get home from studying I am often too exhausted to participate in family activities/ responsibilities.	☐	☐	☐	☐	☐
A3. The problem-solving behaviours I use in my academic role are not effective in resolving problems at home.	☐	☐	☐	☐	☐
A4. The time I spend on family responsibilities seldom interfere with my study responsibilities.	☐	☐	☐	☐	☐
A5. Due to stress at home, I am often preoccupied with family matters when I am studying.	☐	☐	☐	☐	☐
A6. The behaviours that work for me at home do not seem to be effective in my studies.	☐	☐	☐	☐	☐
A7. I am often so emotionally drained when I get home from studying that it prevents me from contributing to my family.	☐	☐	☐	☐	☐
A8. Behaviour that is effective and necessary for me in my studies would be productive at home.	☐	☐	☐	☐	☐
A9. The time I must devote to my studies keeps me from participating equally in household responsibilities and activities.	☐	☐	☐	☐	☐
A10. Because I am often stressed from family responsibilities, I have a hard time concentrating on my studies.	☐	☐	☐	☐	☐
A11. The time I spend with my family often causes me not to spend time in activities at school that could be helpful to my studies	☐	☐	☐	☐	☐
A12. Behaviour that is effective and necessary for me at home would be productive in my studies.	☐	☐	☐	☐	☐
A13. I have to miss family activities due to the amount of time I must spend on study responsibilities.	☐	☐	☐	☐	☐

A14.	The behaviours I perform that make me effective in my studies do not help me to be a better parent and spouse.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
A15.	Due to all the pressures in studying, sometimes when I come home I am too stressed to do the things I enjoy.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
A16.	The problem-solving behaviour that works for me at home does not seem to be as useful in my studies.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
A17.	Tension and anxiety from my family life often weakens my ability to study.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
A18.	I have to miss my study activities due to the amount of time I must spend on family responsibilities.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Section 2: Now, think of your experience here in the UK since you first arrived, and indicate (☒) **HOW ADJUSTED** you are to the following:

	Not Adjusted At All	Somewhat Adjusted	Slightly not Adjusted	Not sure	Slightly adjusted	Somewhat adjusted	Completely Adjusted
	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7
B1.	Your study responsibilities				☐ 1	☐ 2	☐ 3
B2.	Speaking with host nationals				☐ 1	☐ 2	☐ 3
B3.	Local food				☐ 1	☐ 2	☐ 3
B4.	Performance standards and expectations (as required in your study program)				☐ 1	☐ 2	☐ 3
B5.	Weather				☐ 1	☐ 2	☐ 3
B6.	Housing conditions				☐ 1	☐ 2	☐ 3
B7.	Working with host national professors or supervisors				☐ 1	☐ 2	☐ 3
B8.	General living conditions				☐ 1	☐ 2	☐ 3
B9.	Interacting with host nationals outside of your study program/university				☐ 1	☐ 2	☐ 3
B10.	Shopping				☐ 1	☐ 2	☐ 3
B11.	Entertainment/recreation facilities and opportunities				☐ 1	☐ 2	☐ 3
B12.	Interacting with host nationals on a day to day basis				☐ 1	☐ 2	☐ 3

- B13. Cost of living

☐1
☐2
☐3
☐4
☐5
☐6
☐7
- B14. Health care facilities

☐1
☐2
☐3
☐4
☐5
☐6
☐7
- B15. Socialising with host nationals

☐1
☐2
☐3
☐4
☐5
☐6
☐7

Section 3: Next, think about what it was like for you before you came to study in the UK and indicate (✓) HOW MUCH YOU AGREE/DISAGREE with the following statements based on the scale provided:

	Fully Disagree ☐ 1	Mainly Disagree ☐ 2	Not Certain ☐ 3	Mainly Agree ☐ 4	Fully Agree ☐ 5			
C1. My daily schedule was more demanding before I came to the UK.				☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
C2. I spend more time on the following activities now than I did before:								
a) childcare (please leave blank if you had no child at the time)				☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b) cooking				☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c) cleaning				☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Section 4: Finally, to help classify your answers and to allow statistical comparisons, please provide the following information. (Tick the box ☒ where appropriate)

D1. Your age: _____ years old

D2. Your gender: ☐ 1 Male ☐ 2 Female

D3a. Your country of origin: _____

D3b. Your country of citizenship/Nationality (if different than country of origin): _____

D4. Your marital status: ☐ 1 Married or Living with a partner

☐ 2 Separated/Divorced/Other

D5a. Number of children in your household/living with you: _____

D5b. How old is/are the child/children? (Please list all) _____

D6. Please state the score you received for **ANY** of the following language proficiency test (i.e. ONLY the test most recently taken):

IELTS: _____ Band

TOEFL: _____ score

Other test₃ (please state test name & score obtained): _____

D7. Which post-graduate degree are you currently pursuing?

☐ 1 MBA ☐ 2 MSc ☐ 3 MA

☐ 4 MPhil ☐ 5 PhD ☐ 6 DBA

☐ 7 Other degree (please state): _____

D12a. Did your SPOUSE/PARTNER arrive in the UK the same time you did? ☐ 1 Yes ☐ 2 No

D16a. Did your spouse/partner go along with you in any of the previous move(s)? ☐ 1 Yes ☐ 2 No

D8. When is the scheduled date of completion for your degree programme? _____ (month) in the year _____

D9. How is your study here financed?

☐ 1 Yourself or family (e.g. savings/bank loans)

☐ 2 Your present/attending university (e.g. bursary, special grant)

☐ 3 Your employer

☐ 4 Your government (e.g. government agency, scholarships)

☐ 5 Other source (Please explain: _____)

D10. If the source of financing is **other than yourself/ family**:

a. Is financial support provided for the spouse/partner? ☐ 1 Yes ☐ 2 No

b. Is financial support provided for the children? ☐ 1 Yes ☐ 2 No

c. Is the financing provided adequate/sufficient? ☐ 1 Yes ☐ 2 No

D11. How long have you lived in the UK now? _____ years _____ months
(to the nearest approximation)

D12b. If **NO**, when did **your spouse/partner** arrive here, after your arrival?

- ☐1 Within one week to three months
☐2 Within three months to six months
☐3 After six months
☐4 Will not come to live here (e.g. comes only for visits)

D13a. Did your CHILD(REN) arrive in the UK the same time you did?

- ☐1 Yes ☐2 No

D13b. If **NO**, when did **your child(ren)** arrive here, after your arrival?

- ☐1 Within one week to three months
☐2 Within three months to six months
☐3 After six months
☐4 Will not come to live here (e.g. comes only for visits)

D14. Have you lived in another country other than your home country before now?
☐1 Yes ☐2 No

If **YES**, please answer questions D15a-c, if **NO** please go to question D16.

D15a. What was your last move for? ☐1 Work ☐2 Study ☐3 Other

D15b. Which country did you relocate/move to? _____

D15c. In total, how long did you live there? _____

D16b. If **YES**, when was he/she with you?

- ☐1 From the beginning
☐2 Less than 6 months after you moved
☐3 Less than twelve months after you moved
☐4 Over twelve months after you moved

D17. Before coming to the UK, did you have help (e.g., a domestic helper, a relative) with the following home duties?

D17a. childcare (leave blank if you had no children) ☐1 Yes ☐2 No

D17b. cooking ☐1 Yes ☐2 No

D17c. cleaning ☐1 Yes ☐2 No

D18a. Do you still have help with any of those home duties now (e.g., a domestic helper, a relative)? ☐1 Yes ☐2 No

D18b. If **YES**, what is your relationship to this individual: _____

I would appreciate your comments or suggestions on this survey and on any issues raised in this questionnaire.

☐ Please place a tick in this box if you would like to receive a brief report of the findings of this study. Please provide me with either your postal or email address that I will use **ONLY** for this purpose:

a) Your postal address: _____
(for a hard copy) _____

OR

b) Your email address: _____
(for an electronic version)

Thank you for taking the time to answer this questionnaire. Your participation is greatly appreciated.

Now, please return this questionnaire to me: *Rohayu Abdul-Ghani, PhD Researcher, Cranfield School of Management, MK43 0AL Bedfordshire* using the self-addressed stamped envelope provided as soon as possible or at the latest by <date>.

Appendix F: Main Study - Invitation Letter to Universities



Dear <Sir/Madam>

Research on International Post-Graduate Students in the UK: Seeking your assistance

My name is Rohayu Abdul-Ghani and I am a PhD student at Cranfield School of Management, Bedfordshire. I am conducting a doctoral research which looks into **the adjustment experiences of international students who have come to the UK with their families, to pursue postgraduate degrees.** I am writing to seek your assistance in my effort **to distribute my research questionnaire to the 2003/2004 intake of post-graduate students who are with family** at your university. .

Briefly described, my research looks at how studying (i.e. the post-graduate study program) and the family-life influence the transitional process into life as international students in the UK. Relocating is known to be a challenging and demanding exercise, especially for those who do so with their families in tow. My aim is to learn about the experiences the students have had since coming to the UK to study and settling down to life here.

To my knowledge, this is the first academic study that looks at the nature of adjustment for post-graduate international students with family. I anticipate that findings from this research will help inform future decisions and policies on campus planning particularly with regard to facilitating the adaptation of international students and their families to life in the UK. In addition, I plan to share the findings of this study with the *UK Council for Graduate Education* (UKCGE) at the Summer Conference 2004. I believe this will benefit all parties that are involved in post-graduate degree programs in the UK, particularly with regard to international post-graduate students with family.

This research is strictly of an academic nature and will be ***treated with full confidentiality.*** Although I will require some personal information from each respondent in the questionnaire, their names and any other personal information provided will only be known to my supervisors and myself. Participating students should not be concerned about their anonymity as I will make sure that no information is disclosed that may lead back to any individual participating in the research.

Should you prefer to have a copy of the findings from this research, please let me know and I will arrange for a copy (either an electronic or a printed copy) to be sent to you.

I hope to receive a prompt reply from you so that we can arrange the best available avenue for me to deliver the questionnaire to the respective students. You can contact me through my email: rohayu.abdul-ghani.phd.01@cranfield.ac.uk or via the telephone numbers shown below.

I look forward to hearing from you and I thank you for your attention and kind cooperation.

Yours faithfully
Rohayu Abdul-Ghani
<Contact details provided>

Appendix G: Letter to Participants (Online Questionnaire)



Dear Fellow Student

My name is Rohayu Abdul-Ghani and I am a doctoral research student at Cranfield School of Management. I would greatly appreciate your assistance and participation in my research that looks into ***the adjustment experiences of international students who come to the UK with their family, to pursue postgraduate degrees***. This study will be the core of my research and I am sincerely seeking your kind assistance to help me carry it out.

My research looks at your transition into life as an international student in the UK. Relocating is known to be a challenging and demanding exercise, especially for those who do so with their families in tow. Hence, I would like to learn about the experience you and your family have since coming to the UK to study, specifically in meeting the challenges of your study program and the demands of your family life.

To my knowledge, this is the first academic study that looks at the nature of adjustment for postgraduate international students with family. Your participation in this research will contribute to the increased knowledge of the cross-cultural adjustment experience, particularly in relation to postgraduate international students with families. To a degree, the value of this research depends directly on participation of a proportion of international students throughout the United Kingdom. I anticipate that findings from this research will help inform future decisions and policies on campus planning particularly with regard to facilitating the adaptation of international students and their families to life in the UK. For your information, I plan to share the findings of this study with the *UK Council of Graduate Education (UKCGE)* at their Summer Conference 2004. I believe this will benefit all parties, not only the students and their families but also inform individuals who are involved in postgraduate degree programs in the UK, particularly with regard to international postgraduate students with family. With your participation, you will be part of this.

If you are an international student who is currently undertaking a postgraduate degree program at a university in the UK and have your spouse/partner or family with you, then **DO PARTICIPATE** in this research. It should take only **15 - 20 minutes** to complete the questionnaire. All you have to do is click on the link below (or the link in attached to your email), answer the questions in the questionnaire and then submit your answers to me. This invitation is open until **Monday, April 5th, 2004**.

CLICK ON THIS LINK TO GO TO QUESTIONNAIRE:

[<http://www.cranfieldsom.info/questionnaire/?QID=1268&rid=\(ID#\)>](http://www.cranfieldsom.info/questionnaire/?QID=1268&rid=(ID#))

Should there be any concern about participating, let me assure you that this research is strictly of an academic nature and I will treat your participation with **full confidentiality**. Your anonymity will be protected at all times and I will make sure that no information shared may lead back to any individual participating in this research.

I look forward to hearing from you and getting your response included in this study.

Sincerely

<signed and contact details provided>

Appendix H: List of Participating Universities

No.	Universities which agreed to participate	Number of Respondents
1	University of Aberdeen	5
2	University of Abertay Dundee	-
3	University of East Anglia	2
4	Aston University	4
5	University of Bath	2
6	University of Central England in Birmingham	3
7	University of Birmingham	8
8	Brunel University	2
9	University of Buckingham	-
10	University of Cambridge	-
11	University of Central Lancashire	2
12	Coventry University	2
13	Cranfield University at Shrinvenham	2
14	De Montfort University	1
15	University of Derby	-
16	University of Dundee	-
17	Dundee College	-
18	University of Durham	3
19	Duke of Edinburgh	-
20	University of Edinburgh	4
21	University of Essex	3
22	University of Exeter	8
23	University of Glasgow	2
24	University of Gloucestershire	3
25	University of Hertfordshire	-
26	University of Hull	2
27	University of Keele	-
28	University of Kent at Canterbury	1
29	University of Lancaster	3
30	Leeds Metropolitan University	-
31	University of Leeds	2
32	University of Leicester	2
33	Liverpool John Moores University	-
34	University of Liverpool	5
35	University of London	-
36	London School of Economics and Political Science	2
37	London Metropolitan University	2
38	Loughborough University	5
39	University of Luton	2
40	University of Manchester	22
41	Manchester Metropolitan University	3
42	Middlesex University	-
43	Napier University	-
44	University of Newcastle Upon Tyne	4
45	University of Northumbria at Newcastle	2
46	University of Nottingham	3
47	Nottingham Trent University	-
48	University of Oxford	3

49	University of Reading	1
50	University of St Andrews	-
51	University of Salford	4
52	University of Southampton	2
53	Staffordshire University	-
54	University of Stirling	5
55	University of Strathclyde	2
56	University of Surrey	2
57	University of Sussex	3
58	University of Teesside	-
59	Thames Valley University	2
60	University of Wales, Lampeter	-
61	University of Wales	2
62	University of Wales, Aberystwyth	-
63	University of Wales, Bangor	3
64	University of Wales, Swansea	-
65	University of Wales Institute, Cardiff	1
66	University of Warwick	7
67	University of Wolverhampton	-
68	National Post Graduate Committee	28
69	Association of Commonwealth Universities (British Council)	20

Appendix I: Standards for Reliability

Coefficient α (Robinson, Shaver & Wrightman, 1991)

	Exemplary	Extensive	Moderate	Minimal	None
Coefficient α	0.80 or better	0.70 to 0.79	0.60 to 0.69	< 0.60	Not reported

Correlation coefficient descriptors (Cohen & Holiday, 1982)

	Very High	High	Modest	Low	Very Low
Correlation coefficient	0.90 to 1.00	0.70 to 0.89	0.40 to 0.69	0.20 to 0.39	< 0.19

Appendix J(a): Initial Nodes

NVivo revision 2.0.161

Licensee: Cranfield University

Project: PILOT INTERVIEW ANALYSIS User: Administrator

Date: 20/03/2005 - 11:37:37

NODE LISTING

Nodes in Set: All Tree Nodes

Created: 11/12/2003 - 15:52:22

Modified: 11/12/2003 - 15:52:22

Number of Nodes: 26

- 1 (1) /Home Duties
- 2 (1 1) /Home Duties/Domestic Help
- 3 (1 2) /Home Duties/Family Support
- 4 (1 3) /Home Duties/Study Hours
- 5 (1 4) /Home Duties/Tree Node
- 6 (2) /Challenges faced since move to UK
- 7 (2 1) /Challenges faced since move to UK/Effects on Family
- 8 (2 2) /Challenges faced since move to UK/Stress
- 9 (2 3) /Challenges faced since move to UK/Time Conflict
- 10 (2 4) /Challenges faced since move to UK/Study Hours
- 11 (2 5) /Challenges faced since move to UK/Typical daily Life
- 12 (2 5 1) /Challenges faced since move to UK/Typical daily Life/Weekends
- 13 (2 6) /Challenges faced since move to UK/Student status
- 14 (3) /Family Support
- 15 (4) /Coping strategies
- 16 (4 1) /Coping strategies/Family Support
- 17 (4 2) /Coping strategies/Hypothetical question
- 18 (4 3) /Coping strategies/Support in relocation
- 19 (4 4) /Coping strategies/Perception of Life Now
- 20 (4 5) /Coping strategies/Life Before UK
- 21 (5) /Decision to Come to UK
- 22 (5 1) /Decision to Come to UK/Benefits Expected
- 23 (6) /Expectation of life in Cranfield
- 24 (6 1) /Expectation of life in Cranfield/Benefits Expected

Appendix J(b): Final Nodes

NVivo revision 2.0.161

Licensee: Cranfield University

Project: My Exploratory Interviews

User: Administrator

Date: 16/04/2005 - 18:48:03

NODE LISTING

Nodes in Set: All Tree Nodes

Created: 07/04/2005 - 21:40:12

Modified: 07/04/2005 - 21:40:12

Number of Nodes: 35

- 1 (1) /Challenges faced since move to UK
- 2 (1 2) /Challenges faced since move to UK/Student life
- 3 (1 2 1) /Challenges faced since move to UK/Student life/Student status
- 4 (1 2 2) /Challenges faced since move to UK/Student life/Study Hours
- 5 (1 5) /Challenges faced since move to UK/Daily Life Now
- 6 (1 5 1) /Challenges faced since move to UK/Daily Life Now/Domestic Duties
- 7 (1 5 1 2) /Challenges faced since move to UK/Daily Life Now/Domestic Duties/Domestic Help
- 8 (1 5 2) /Challenges faced since move to UK/Daily Life Now/General Adjustment
- 9 (1 5 2 2) /Challenges faced since move to UK/Daily Life Now/General Adjustment/Adjusting to Weather in UK
- 10 (1 5 4) /Challenges faced since move to UK/Daily Life Now/Family Duties
- 11 (2) /Outcomes
- 12 (2 1) /Outcomes/Stress
- 13 (2 2) /Outcomes/Impact on Family
- 14 (2 2 1) /Outcomes/Impact on Family/Finance and Living Standard
- 15 (2 3) /Outcomes/Conflict
- 16 (2 6) /Outcomes/Benefits
- 17 (2 6 1) /Outcomes/Benefits/Learning Experience
- 18 (2 6 3) /Outcomes/Benefits/Support from Family
- 19 (2 6 3 1) /Outcomes/Benefits/Support from Family/Family Support
- 20 (7) /Relocation
- 21 (7 2) /Relocation/Expectations
- 22 (7 2 1) /Relocation/Expectations/Benefits Expected
- 23 (7 2 2) /Relocation/Expectations/Life in the UK
- 24 (7 4) /Relocation/Support in relocation
- 25 (7 4 1) /Relocation/Support in relocation/Family Support
- 26 (7 7) /Relocation/Life Before UK
- 27 (7 8) /Relocation/Decision to Come to UK
- 28 (7 9) /Relocation/Perception of Life Now
- 29 (10) /Strategies
- 30 (10 1) /Strategies/Coping strategies
- 31 (10 1 1) /Strategies/Coping strategies/Study Hours
- 32 (10 1 2) /Strategies/Coping strategies/Rationalisation
- 33 (10 1 2 1) /Strategies/Coping strategies/Rationalisation/Spending Behaviour
- 34 (10 1 2 2) /Strategies/Coping strategies/Rationalisation/Time Left in the UK
- 35 (10 1 3) /Strategies/Coping strategies/Weekend Activities

Appendix K(a): Pilot Study – 1st Invitation Letter



Dear Fellow Student

My name is Rohayu Abdul-Ghani and I am a doctoral research student at Cranfield School of Management. I would greatly appreciate your assistance and participation in my research that looks into the adjustment experiences of International students who come to the UK with their family, to pursue a post-graduate degree. **This study will be the core of my research and I sincerely seek your kind assistance to help me carry it out.**

I am conducting a research that looks at how your work (i.e. post-graduate study program) and your family lives influence your transition process into life as international student in the UK. Relocating is known to be a challenging and demanding exercise, especially for those who do so with their families in tow. Hence, I would like to learn about the experience you and your family have since coming to the UK to study.

I hope you will be willing to take part in this research and complete my questionnaire that should take **no longer than 20 minutes** to complete. Once you have completed the survey, please place it in the envelope provided. I would be very grateful if you then return the survey to me by **<date>**.

Your participation in this research will contribute to the increased knowledge of the cross-cultural adjustment experience, particularly in relation to post-graduate international students with families. To my knowledge, this type of study has never been done before. Hence, you will be a part of and contributing to the extension of present knowledge on cross-cultural adjustment. To a degree, the value of this research depends directly on participation of a large proportion of International students throughout the United Kingdom. The information gathered will not only benefit the general mass but will be of particular benefits to our own University as I will share its findings not only with the Cranfield University International Office but also with the UK Council of Graduate Education (UKCGE). This may provide information that will hopefully influence future decisions and policies in campus planning, particularly with regard to International students and their families, and their adaptation to life in the UK.

This research is strictly of an academic nature and I will treat your participation with **full confidentiality**. Although I will require some personal information from you, rest assured that your name and any personal information you provide will only be known to my supervisors and myself. You should not be concerned about your anonymity for I will at all times make sure that no information disclosed may lead back to any individual participating in the research.

I look forward to receiving the completed questionnaire from you. I thank you for your attention and kind assistance in helping to make this research a success.

Sincerely

[SIGNED AND CONTACT DETAILS PROVIDED]

Appendix K(b) : Pilot Study – 2nd Invitation Letter



PLEASE!

PLEASE!

PLEASE!

Dear Fellow Student

Re: Research on Adjustment of International Students with Families in the UK

I recently sent a copy of my questionnaire to you along with a letter requesting your kind participation by completing the questionnaire and returning it to me. However, I have yet to receive your reply.

Hence, I am sending this questionnaire again to you in the hope that you will help with my research and participate by completing the attached questionnaire and returning it to me by **Monday, 19th January 2004**.

Should you prefer that I collect your completed questionnaire from you, please let me know by either calling or emailing me at the numbers or email address below. I would be more than happy to do so. On the other hand, should you want to have it mailed please place the completed questionnaire in the envelope provided and place it in the internal mail boxes at your school.

I thank you for your cooperation and participation.

Sincerely

[SIGNED AND CONTACT DETAILS PROVIDED]

Appendix L: Correspondence with J. Stewart Black

 [Reply](#)  [Reply to all](#)  [Forward](#)    

[Help](#)

From: SBlackGLI@aol.com [SBlackGLI@aol.com] Sent: Thu 04/12/2003 16:15
To: ABDUL GHANI, MS ROHAYU
Cc:
Subject: Re: FW: Black et. al.'s (1989) Adjustment Scale
Attachments
:

[View As Web Page](#)

As you might imagine, the files from 14 years ago are packed away. All I can say is that we did a factor analysis as well as other analyses and if there were specific items that either didn't load consistently or did not load with any great significance, we would have dropped those specific items. However, my recollection is that there were very few of our original items that were dropped or replaced.

All the best in your research. It is a fascinating topic.

Cheers,

Stewart

Appendix M: Pilot Study Variables Correlations Results

Correlations

	WFTTime01	WFTTime03	WFTTime05
WFTTime01	1	.831**	.699**
Pearson Correlation		.000	.000
Sig. (2-tailed)		25	25
N		25	25
WFTTime03	.831**	1	.746**
Pearson Correlation	.000		.000
Sig. (2-tailed)	25	25	25
N	25	25	25
WFTTime05	.699**	.746**	1
Pearson Correlation	.000	.000	
Sig. (2-tailed)	25	25	25
N	25	25	25

** . Correlation is significant at the 0.01 level (2-tailed).

Correlations

	WFStrain01	WFStrain03	WFStrain05
WFStrain01	1	.462*	.669**
Pearson Correlation		.020	.000
Sig. (2-tailed)	25	25	25
N	25	25	25
WFStrain03	.462*	1	.431*
Pearson Correlation	.020		.031
Sig. (2-tailed)	25	25	25
N	25	25	25
WFStrain05	.669**	.431*	1
Pearson Correlation	.000	.031	
Sig. (2-tailed)	25	25	25
N	25	25	25

* . Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Correlations

	WFBehaviour01	WFBehaviour03	WFBehaviour05
WFBehaviour01			
Pearson Correlation	1	.823**	.568**
Sig. (2-tailed)		.000	.003
N	25	25	25
WFBehaviour03			
Pearson Correlation	.823**	1	.723**
Sig. (2-tailed)	.000		.000
N	25	25	25
WFBehaviour05			
Pearson Correlation	.568**	.723**	1
Sig. (2-tailed)	.003	.000	
N	25	25	25

** . Correlation is significant at the 0.01 level (2-tailed).

Correlations

	FWTime02	FWTime04	FWTime06
FWTime02			
Pearson Correlation	1	.808**	.684**
Sig. (2-tailed)		.000	.000
N	25	25	25
FWTime04			
Pearson Correlation	.808**	1	.694**
Sig. (2-tailed)	.000		.000
N	25	25	25
FWTime06			
Pearson Correlation	.684**	.694**	1
Sig. (2-tailed)	.000	.000	
N	25	25	25

** . Correlation is significant at the 0.01 level (2-tailed).

Correlations

	FWStrain02	FWStrain04	FWStrain06
FWStrain02	1		
Pearson Correlation		.750**	.504*
Sig. (2-tailed)		.000	.010
N	25	25	25
FWStrain04		1	
Pearson Correlation	.750**		.451*
Sig. (2-tailed)	.000		.024
N	25	25	25
FWStrain06			1
Pearson Correlation	.504*	.451*	
Sig. (2-tailed)	.010	.024	
N	25	25	25

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Correlations

	FWBehavi our02	FWBehavi our04	FWBehavi our06
FWBehaviour02	1		
Pearson Correlation		.747**	.661**
Sig. (2-tailed)		.000	.000
N	25	25	25
FWBehaviour04		1	
Pearson Correlation	.747**		.674**
Sig. (2-tailed)	.000		.000
N	25	25	25
FWBehaviour06			1
Pearson Correlation	.661**	.674**	
Sig. (2-tailed)	.000	.000	
N	25	25	25

** . Correlation is significant at the 0.01 level (2-tailed).

	WrkAdj01	WrkAdj02	WrkAdj03
WrkAdj01	1		
Pearson Correlation		.471*	.653**
Sig. (2-tailed)		.018	.000
N	25	25	25
WrkAdj02		1	
Pearson Correlation	.471*		.566**
Sig. (2-tailed)	.018		.003
N	25	25	25
WrkAdj03			1
Pearson Correlation	.653**	.566**	
Sig. (2-tailed)	.000	.003	
N	25	25	25

* . Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Correlations

	IntAdj01	IntAdj02	IntAdj03	IntAdj04
IntAdj01				
Pearson Correlation	1	.243	.530**	.232
Sig. (2-tailed)		.241	.006	.265
N	25	25	25	25
IntAdj02				
Pearson Correlation	.243	1	.247	.400*
Sig. (2-tailed)	.241		.234	.048
N	25	25	25	25
IntAdj03				
Pearson Correlation	.530**	.247	1	.781**
Sig. (2-tailed)	.006	.234		.000
N	25	25	25	25
IntAdj04				
Pearson Correlation	.232	.400*	.781**	1
Sig. (2-tailed)	.265	.048	.000	
N	25	25	25	25

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Correlations

GenAdj01	GenAdj02	GenAdj03	GenAdj04	GenAdj05	GenAdj06	GenAdj07	GenAdj08
Pearson Correlation	.496*	.512**	.506**	.582**	.488*	.430*	.415*
Sig. (2-tailed)	.012	.009	.010	.002	.013	.032	.039
N	25	25	25	25	25	25	25
GenAdj02	Pearson Correlation	.851**	.598**	.254	.551**	.396*	.410*
Sig. (2-tailed)	.012	.000	.002	.220	.004	.050	.042
N	25	25	25	25	25	25	25
GenAdj03	Pearson Correlation	.851**	.765**	.442*	.532**	.326	.323
Sig. (2-tailed)	.009	.000	.000	.027	.006	.111	.116
N	25	25	25	25	25	25	25
GenAdj04	Pearson Correlation	.506**	.765**	.557**	.715**	.448*	.509**
Sig. (2-tailed)	.010	.000	.000	.004	.000	.025	.009
N	25	25	25	25	25	25	25
GenAdj05	Pearson Correlation	.582**	.442*	.557**	.583**	.279	.372
Sig. (2-tailed)	.002	.027	.004	.002	.002	.177	.067
N	25	25	25	25	25	25	25
GenAdj06	Pearson Correlation	.488*	.532**	.715**	.583**	.351	.668**
Sig. (2-tailed)	.013	.006	.000	.002	.085	.085	.000
N	25	25	25	25	25	25	25
GenAdj07	Pearson Correlation	.430*	.326	.448*	.351	.1	.593**
Sig. (2-tailed)	.032	.111	.025	.177	.085	.002	.002
N	25	25	25	25	25	25	25
GenAdj08	Pearson Correlation	.415*	.323	.509**	.668**	.593**	.1
Sig. (2-tailed)	.039	.116	.009	.067	.000	.002	.002
N	25	25	25	25	25	25	25

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Appendix N: Missing Value Analysis (MVA) Output

Univariate Statistics						
	N	Mean	Std. Deviation	Missing		No. of Extremes(a)
				Count	Percent	
a1	201	3.43	1.219	0	.0	0
a2	201	3.25	1.273	0	.0	0
a3	201	2.88	1.151	0	.0	0
a4	201	3.27	1.182	0	.0	0
a5	199	2.74	1.244	2	1.0	0
a6	200	2.94	1.094	1	.5	0
a7	201	2.68	1.212	0	.0	0
a8	199	2.76	1.069	2	1.0	0
a9	200	3.38	1.189	1	.5	0
a10	200	2.71	1.267	1	.5	0
a11	201	3.00	1.321	0	.0	0
a12	201	3.23	1.099	0	.0	0
a13	201	3.21	1.228	0	.0	0
a14	200	2.83	1.284	1	.5	0
a15	201	3.15	1.304	0	.0	0
a16	200	2.96	1.055	1	.5	0
a17	200	2.94	1.275	1	.5	0
a18	201	2.83	1.243	0	.0	0

a Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).

EM Estimated Statistics

EM Means(a)

a1	a2	a3	a4	a5	a6	a7	a8	a9	a10	a11	a12	a13	a14	a15	a16	a17	a18
----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----

3.43	3.25	2.88	3.27	2.74	2.93	2.68	2.75	3.38	2.70	3.00	3.23	3.21	2.82	3.15	2.96	2.95	2.83
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

a Little's MCAR test: Chi-Square = 140.863, DF = 135, Sig. = .347

Univariate Statistics

	N	Mean	Std. Deviation	Missing		No. of Extremes(a)	
				Count	Percent	Low	High
b1	201	5.64	1.241	0	.0	18	0
b2	201	5.26	1.525	0	.0	33	0
b3	201	4.76	1.907	0	.0	0	0
b4	200	5.46	1.248	1	.5	18	0
b5	201	4.86	1.801	0	.0	0	0
b6	201	4.96	1.852	0	.0	0	0
b7	201	5.68	1.140	0	.0	11	0
b8	200	5.11	1.543	1	.5	7	0
b9	201	4.61	1.841	0	.0	0	0
b10	200	5.81	1.290	1	.5	8	0
b11	201	4.87	1.681	0	.0	10	0
b12	200	4.76	1.774	1	.5	13	0
b13	201	4.17	1.859	0	.0	0	0
b14	201	4.69	1.801	0	.0	0	0
b15	200	4.33	1.843	1	.5	0	0

a Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).

EM Estimated Statistics

EM Means(a)														
b1	b2	b3	b4	b5	b6	b7	b8	B9	b10	b11	b12	b13	b14	b15
5.64	5.26	4.76	5.45	4.86	4.96	5.68	5.12	4.61	5.81	4.87	4.76	4.17	4.69	4.32

a Little's MCAR test: Chi-Square = 61.542, DF = 70, Sig. = .755

Appendix O: Sample by Countries of Origin

Country of Origin

Valid	Frequency	Percent
Argentina	2	1.0
Australia	2	1.0
Bahrain	1	.5
Bangladesh	2	1.0
Bolivia	1	.5
Brazil	1	.5
Brunei	6	3.0
Cameroon	1	.5
Canada	5	2.5
Chile	4	2.0
China	9	4.5
Denmark	1	.5
Dominican Republic	1	.5
Egypt	3	1.5
France	1	.5
Germany	1	.5
Ghana	3	1.5
Greece	1	.5
India	11	5.5
Indonesia	1	.5
Iran	3	1.5
Italy	2	1.0
Japan	4	2.0
Jordan	5	2.5
Kenya	1	.5
Kuwait	1	.5

Libya	3	1.5
Malawi	1	.5
Malaysia	49	24.3
Mexico	5	2.5
Mozambique	1	.5
The Netherlands	1	.5
New Zealand	2	1.0
Nigeria	6	3.0
Oman	4	2.0
Pakistan	3	1.5
Peru	1	.5
Portugal	2	1.0
Russia	1	.5
Saudi Arabia	5	2.5
Senegal	1	.5
Seychelles	1	.5
Sierra Leone	2	1.0
Singapore	3	1.5
South Africa	2	1.0
South Korea	3	1.5
Spain	3	1.5
Sri Lanka	6	3.0
Sudan	1	.5
Swaziland	2	1.0
Syria	1	.5
Taiwan	1	.5
Tanzania	2	1.0
Thailand	1	.5
Tonga	1	.5
Turkey	1	.5
UAE	3	1.5

Ukraine	2	1.0
USA	5	2.5
Uzbekistan	1	.5
Venezuela	1	.5
Zambia	1	.5
Total	201	100.0

Appendix P: Correspondence with Professors Geert Hofstede and Gert Jan Hofstede on Cultural Distance Inferences

1) Reply from Dr. Gert Jan Hofstede

Dear Rohayu,

The issue of missing countries in the data is a very sensitive one. I believe you have made some good guesses (although I'd guess Bolivia was more like Peru than Brazil). But it is wise to consult my father's latest book *Culture's consequences* 2nd edition (for instance to get to know how some estimates were derived, and to get data about some countries that are not on the ITIM Web site, at least I gather that from your list) and I'll also forward this to my father who may have had similar requests before.

good luck!

gert Jan Hofstede

-----Original Message-----

From: ABDUL GHANI, MS ROHAYU

[<mailto:Rohayu.Abdul-Ghani.phd.01@Cranfield.ac.uk>]

Sent: dinsdag 26 oktober 2004 11:51

To: Hofstede, Gertjan

Cc: support@itim.org

Subject: Hofstede's Cultural Dimensions

Importance: High

Dear Prof. Hofstede,

Hello! My name is Rohayu Abdul-Ghani and I am a Malaysian student doing my PhD here at the School of Management, Cranfield University, England.

I am writing to you for a little advice on applying your father's Cultural Dimensions in my research. I know you must be swamped with questions from various parties interested to use it. However I hope you wouldn't mind assisting me with my queries. I've looked through the ITIM website (after going through the literature on it) but would like to get you opinion on the inferences that I have for nations in my study.

FYI, my research is on Cross-cultural adjustments of expatriates in the UK for which I am using the four Hofstede's original dimensions as the index to cluster my sample into meaningful groups. I believe these dimensions are most suitable for my research. I am so thankful for the information provided on the ITIM website as it has been very helpful. Rest assured, I will definitely cite this site as my reference.

However, I have a few queries for which I hope you will be able to help me with.

Although dimensions for most of the 62 nations in my study can be found on the site, I will have to make inferences for 20 others that are not there. For this, I would like to get your feedback on the inferences that I made from the available information on your site and from the original work about these countries, i.e. which country is most closely compatible to another, as shown below.

No.	Nation Inferred/Similar Nation
1	Bahrain - Arab World
2	Bangladesh - India?
3	Bolivia - Brazil?
4	Brunei - Malaysia
5	Cameroon - West Africa
6	Dominican Republic - El Salvador?
7	Jordan - Arab World
8	Malawi - East Africa
9	Mozambique - East Africa
10	Oman - Arab World
11	Russia - Czech Republic? Hungary?
12	Senegal - West Africa
13	Seychelles - East Africa
14	Sri Lanka - India
15	Sudan - East Africa?
16	Swaziland - South Africa
17	Syria - Arab World
18	Tonga ?
19	Ukraine - Czech Republic? Hungary?
20	Uzbekistan - Czech Republic? Hungary?

I am ever grateful for your kind assistance in this matter and hope to get feedback from you the soonest possible.

Many thanks.

Sincerely
Mrs. Rohayu Abdul-Ghani
PhD Researcher

Centre for Research into the Management of Expatriation (CReme)
Cranfield School of Management
Bedfordshire MK43 0AL
England
Tel: +44(0)1234-751122 ext.3841 (Office)
+44(0)7834-534556 (Mobile)

2) Reply from Prof. Geert Hofstede



From: Hofstede [hofstede@bart.nl]
To: ABDUL GHANI, MS ROHAYU
Cc:
Subject: Cultural Dimensions
Attachments:

Sent: Wed 27/10/2004 10:39

[View As Web Page](#)

Dear Ms Abdul Ghani,

as Gert Jan already suggested in his mail to you, in your case it is important to get your information from the 2001 edition of "Culture's Consequences" On page 502 it contains data for Russia which you should also use as proxies for Ukraine and Uzbekistan. You will also find there the sources of the new data. For Tonga I have no good proxy (I have been there); I would take Trinidad from my 2001 book.

Appendix Q: Cultural Distance Indices for Nations in the Sample

No.	Country	Power Distance	Uncertainty Avoidance	Individualism	Masculinity	Distance from the UK
1	Arab World*	80	68	38	52	3.070
2	Argentina	49	86	46	56	2.053
3	Australia	36	51	90	61	0.138
4	Brazil	69	76	38	49	2.789
5	Canada	39	48	80	52	0.299
6	Chile	63	86	23	28	4.639
7	China	80	40	20	66	3.193
8	Denmark	18	23	74	16	2.692
9	East Africa**	64	52	27	41	2.706
10	El Salvador	66	94	19	40	4.634
10	France	68	86	71	43	2.553
11	Germany	35	65	67	66	0.573
12	Greece	60	112	35	57	4.204
13	India	77	40	48	56	1.989
14	Indonesia	78	48	14	46	3.814
15	Iran	58	59	41	43	1.963
16	Italy	50	75	76	70	0.948
17	Japan	54	92	46	95	3.153
18	Malaysia	104	36	26	50	5.121
19	Mexico	81	82	30	69	3.774
20	Netherlands	38	53	80	14	2.708
21	New Zealand	22	49	79	58	0.305
22	Pakistan	55	70	14	50	3.096
23	Peru	64	87	16	42	4.264
24	Portugal	63	104	27	31	5.206
25	Singapore	74	8	20	48	3.442
26	South Africa	49	49	65	63	0.445
27	South Korea	60	85	18	39	4.056
28	Spain	57	86	51	42	2.561

29	Taiwan	58	69	17	45	3.174
30	Thailand	64	64	20	34	3.653
31	Turkey	80	68	38	52	3.070
32	United Kingdom	35	35	89	66	0.000
33	USA	40	46	91	62	0.088
34	Venezuela	81	76	12	73	4.458
35	West Africa***	77	54	20	46	3.526
	Dimension Variance	344.74	564.46	694.72	267.32	

*Arab World: Egypt, Iraq, Kuwait, Lebanon, Libya, Saudi Arabia, United Arab Emirates

**East Africa: Ethiopia, Kenya, Tanzania, Zambia

***West Africa: Ghana, Nigeria, Sierra Leone

List of Countries with Inferred Cultural Distance

No.	Nations	Inferred Nations
1	Bahrain	Arab World
2	Bangladesh	India
3	Bolivia	Peru
4	Brunei	Malaysia
5	Cameroon	West Africa
6	Dominican Republic	El Salvador
7	Jordan	Arab World
8	Malawi	East Africa
9	Mozambique	East Africa
10	Oman	Arab World
11	Senegal	West Africa
12	Seychelles	East Africa
13	Sri Lanka	India
14	Sudan	East Africa
15	Swaziland	South Africa
16	Syria	Arab World
17	Tonga	Trinidad
18	Ukraine	Russia
19	Uzbekistan	Russia

Appendix R: Output for T-tests and ANOVA

• T-test by Gender

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Work Adjustment	Male	121	5.67769	.979355	.089032
	Female	80	5.45833	.966929	.108106
Interaction Adjustment	Male	121	4.68959	1.541508	.140137
	Female	80	4.81975	1.332990	.149033
General Adjustment	Male	121	4.93362	1.223403	.111218
	Female	80	4.93150	1.133752	.126757
WF Time	Male	121	3.45559	.987696	.089791
	Female	80	3.17500	1.138725	.127313
WF Strain	Male	121	2.94490	1.044693	.094972
	Female	80	3.15834	.999261	.111721
WF Bhvr	Male	121	2.80165	1.135560	.103233
	Female	80	2.71875	.999505	.111748
FW Time	Male	121	2.92011	.950659	.086424
	Female	80	3.20417	1.169821	.130790
FW Strain	Male	121	2.78512	1.071394	.097399
	Female	80	2.82083	1.102285	.123239

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
										95% Confidence Interval of the Difference	

Work Adjustment	Equal variances assumed	.242	.623	1.562	199	.120	.219353	.140416	-.057541	.496246
	Equal variances not assumed			1.566	170.785	.119	.219353	.140049	-.057097	.495802
Interaction Adjustment	Equal variances assumed	1.511	.220	-.618	199	.537	-.130163	.210715	-.545683	.285357
	Equal variances not assumed			-.636	185.163	.525	-.130163	.204571	-.533752	.273426
General Adjustment	Equal variances assumed	.145	.704	.012	199	.990	.002123	.171279	-.335632	.339877
	Equal variances not assumed			.013	178.005	.990	.002123	.168633	-.330654	.334899
WF Time	Equal variances assumed	5.069	.025	1.854	199	.065	.280592	.151340	-.017845	.579029
	Equal variances not assumed			1.801	152.325	.074	.280592	.155792	-.027199	.588384
WF Strain	Equal variances assumed	.046	.830	-1.442	199	.151	-.213438	.147975	-.505238	.078362
	Equal variances not assumed			-1.456	174.456	.147	-.213438	.146633	-.502841	.075965
WF Bhvr	Equal variances assumed	2.580	.110	.531	199	.596	.082903	.156145	-.225008	.390814
	Equal variances not assumed			.545	183.427	.586	.082903	.152134	-.217254	.383060
FW Time	Equal variances assumed	7.761	.006	-1.890	199	.060	-.284063	.150322	-.580492	.012366
	Equal variances not assumed			-1.812	144.867	.072	-.284063	.156764	-.593904	.025777
FW Strain	Equal variances assumed	.034	.853	-.229	199	.819	-.035704	.156169	-.343662	.272254
	Equal variances not assumed			-.227	165.900	.820	-.035704	.157081	-.345840	.274432

• ANOVA for Study Programme

Descriptives									
		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean			
						Lower Bound	Upper Bound	Minimum	Maximum
WF Time	Masters Programme	57	3.43860	1.082248	.143347	3.15144	3.72576	1.000	5.000
	Doctoral Program	144	3.30644	1.047781	.087315	3.13384	3.47903	1.333	5.000
	Total	201	3.34391	1.056636	.074529	3.19695	3.49088	1.000	5.000
WF Strain	Masters Programme	57	2.91229	1.043743	.138247	2.63534	3.18923	1.000	5.000
	Doctoral Program	144	3.07639	1.023969	.085331	2.90772	3.24506	1.000	5.000
	Total	201	3.02985	1.029668	.072627	2.88664	3.17307	1.000	5.000
WF Bhvr	Masters Programme	57	2.75439	1.165435	.154366	2.44515	3.06362	1.000	5.000
	Doctoral Program	144	2.77431	1.050857	.087571	2.60120	2.94741	1.000	5.000
	Total	201	2.76866	1.081648	.076294	2.61821	2.91910	1.000	5.000
FW Time	Masters Programme	57	3.00000	1.091097	.144519	2.71049	3.28951	1.000	5.000
	Doctoral Program	144	3.04630	1.036709	.086392	2.87553	3.21707	1.000	5.000
	Total	201	3.03317	1.049872	.074052	2.88714	3.17919	1.000	5.000
FW Strain	Masters Programme	57	2.63742	1.033711	.136918	2.36313	2.91170	1.000	5.000
	Doctoral Program	144	2.86342	1.096306	.091359	2.68284	3.04401	1.000	5.000
	Total	201	2.79933	1.081192	.076261	2.64895	2.94971	1.000	5.000
Work Adjustment	Masters Programme	57	5.70175	.973221	.128906	5.44352	5.95998	3.000	7.000
	Doctoral Program	144	5.54630	.979678	.081640	5.38492	5.70767	2.000	7.000
	Total	201	5.59038	.977944	.068979	5.45436	5.72640	2.000	7.000
Interaction Adjustment	Masters Programme	57	4.74018	1.485935	.196817	4.34590	5.13445	2.000	7.000
	Doctoral Program	144	4.74188	1.454891	.121241	4.50222	4.98153	1.000	7.000
	Total	201	4.74139	1.460030	.102983	4.53832	4.94446	1.000	7.000
General Adjustment	Masters Programme	57	4.92962	1.265579	.167630	4.59382	5.26542	2.167	7.000
	Doctoral Program	144	4.93403	1.157090	.096424	4.74343	5.12463	1.000	7.000
	Total	201	4.93278	1.185648	.083629	4.76787	5.09769	1.000	7.000

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
WF Time	Between Groups	.713	1	.713	.638	.425
	Within Groups	222.583	199	1.119		
	Total	223.296	200			
WF Strain	Between Groups	1.100	1	1.100	1.037	.310
	Within Groups	210.944	199	1.060		
	Total	212.043	200			
WF Bhvr	Between Groups	.016	1	.016	.014	.907
	Within Groups	233.976	199	1.176		
	Total	233.993	200			
FW Time	Between Groups	.088	1	.088	.079	.779
	Within Groups	220.359	199	1.107		
	Total	220.446	200			
FW Strain	Between Groups	2.086	1	2.086	1.791	.182
	Within Groups	231.709	199	1.164		
	Total	233.795	200			
Work Adjustment	Between Groups	.987	1	.987	1.032	.311
	Within Groups	190.288	199	.956		
	Total	191.275	200			
Interaction Adjustment	Between Groups	.000	1	.000	.000	.994
	Within Groups	426.337	199	2.142		
	Total	426.338	200			
General Adjustment	Between Groups	.001	1	.001	.001	.981
	Within Groups	281.151	199	1.413		
	Total	281.152	200			

• ANOVA for Youngest child in the household less than 6 years old

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
WF Time	No child younger than 6 years old	126	3.20370	1.072461	.095542	3.01461	3.39279	1.000	5.000
	Has child younger than 6 years old	75	3.57947	.992443	.114597	3.35113	3.80781	1.333	5.000
	Total	201	3.34391	1.056636	.074529	3.19695	3.49088	1.000	5.000
WF Strain	No child younger than 6 years old	126	2.95768	1.026741	.091469	2.77665	3.13871	1.000	5.000
	Has child younger than 6 years old	75	3.15111	1.030020	.118936	2.91413	3.38810	1.000	5.000
	Total	201	3.02985	1.029668	.072627	2.88664	3.17307	1.000	5.000
WF Bhvr	No child younger than 6 years old	126	2.65873	1.100274	.098020	2.46474	2.85272	1.000	5.000
	Has child younger than 6 years old	75	2.95333	1.030525	.118995	2.71623	3.19044	1.000	5.000
	Total	201	2.76866	1.081648	.076294	2.61821	2.91910	1.000	5.000
FW Time	No child younger than 6 years old	126	2.80159	1.023442	.091175	2.62114	2.98204	1.000	5.000
	Has child younger than 6 years old	75	3.42222	.982331	.113430	3.19620	3.64823	1.333	5.000
	Total	201	3.03317	1.049872	.074052	2.88714	3.17919	1.000	5.000
FW Strain	No child younger than 6 years old	126	2.66137	1.118716	.099663	2.46412	2.85862	1.000	5.000
	Has child younger than 6 years old	75	3.03111	.979018	.113047	2.80586	3.25636	1.000	4.667
	Total	201	2.79933	1.081192	.076261	2.64895	2.94971	1.000	5.000

Work Adjustment	No child younger than 6 years old	126	5.64550	.930229	.082871	5.48149	5.80952	3.000	7.000
	Has child younger than 6 years old	75	5.49778	1.053200	.121613	5.25546	5.74010	2.000	7.000
	Total	201	5.59038	.977944	.068979	5.45436	5.72640	2.000	7.000
Interaction Adjustment	No child younger than 6 years old	126	4.77841	1.466041	.130605	4.51993	5.03690	1.000	7.000
	Has child younger than 6 years old	75	4.67920	1.457576	.168306	4.34384	5.01456	1.000	7.000
	Total	201	4.74139	1.460030	.102983	4.53832	4.94446	1.000	7.000
General Adjustment	No child younger than 6 years old	126	5.10317	1.118502	.099644	4.90597	5.30038	1.833	7.000
	Has child younger than 6 years old	75	4.64651	1.246435	.143926	4.35973	4.93329	1.000	7.000
	Total	201	4.93278	1.185648	.083629	4.76787	5.09769	1.000	7.000

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
WF Time	Between Groups	6.638	1	6.638	6.097	.014
	Within Groups	216.657	199	1.089		
	Total	223.296	200			
WF Strain	Between Groups	1.759	1	1.759	1.665	.198
	Within Groups	210.284	199	1.057		
	Total	212.043	200			
WF Bhvr	Between Groups	4.080	1	4.080	3.532	.062
	Within Groups	229.912	199	1.155		
	Total	233.993	200			
FW Time	Between Groups	18.109	1	18.109	17.810	.000
	Within Groups	202.337	199	1.017		

FW Strain	Total	220.446	200	6.427	5.625	.019
	Between Groups	6.427	1	6.427	5.625	.019
	Within Groups	227.368	199	1.143		
	Total	233.795	200			
Work Adjustment	Between Groups	1.026	1	1.026	1.073	.301
	Within Groups	190.249	199	.956		
	Total	191.275	200			
	Between Groups	.463	1	.463	.216	.642
Interaction Adjustment	Within Groups	425.875	199	2.140		
	Total	426.338	200			
General Adjustment	Between Groups	9.805	1	9.805	7.190	.008
	Within Groups	271.347	199	1.364		
	Total	281.152	200			

• t-test for Previous international experience

Group Statistics						
	Overseas experience	N	Mean	Std. Deviation	Std. Error Mean	
Work Adjustment	Yes	74	5.68018	.983021	.114274	
	No	127	5.53806	.975039	.086521	
Interaction Adjustment	Yes	74	4.95189	1.367491	.158968	
	No	127	4.61874	1.503002	.133370	
General Adjustment	Yes	74	4.95748	1.149806	.133662	
	No	127	4.91839	1.210308	.107397	
WF Time	Yes	74	3.21793	1.064863	.123788	
	No	127	3.41732	1.049035	.093087	
WF Strain	Yes	74	2.81982	1.011640	.117601	
	No	127	3.15223	1.024182	.090881	
WF Bhvr	Yes	74	2.64189	.994920	.115657	

FW Time	No	127	2.84252	1.126345	.099947
	Yes	74	2.78829	1.031584	.119919
FW Strain	No	127	3.17585	1.037929	.092101
	Yes	74	2.50450	1.035501	.120375
	No	127	2.97113	1.074004	.095302

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Work Adjustment	Equal variances assumed	.198	.657	.994	199	.322	.142122	.143024	-.139914	.424159
	Equal variances not assumed			.992	151.786	.323	.142122	.143333	-.141063	.425308
Interaction Adjustment	Equal variances assumed	1.380	.242	1.566	199	.119	.333152	.212751	-.086384	.752687
	Equal variances not assumed			1.606	164.667	.110	.333152	.207505	-.076561	.742865
General Adjustment	Equal variances assumed	.003	.959	.225	199	.822	.039092	.173808	-.303650	.381833
	Equal variances not assumed			.228	159.234	.820	.039092	.171464	-.299545	.377728
WF Time	Equal variances assumed	.174	.677	-1.293	199	.198	-.199395	.154269	-.503607	.104817
	Equal variances not assumed			-1.287	150.940	.200	-.199395	.154882	-.505412	.106623
WF Strain	Equal variances assumed	.002	.962	-2.229	199	.027	-.332409	.149111	-.626450	-.038369

WF Bhvr	Equal variances not assumed			-2.237	154.338	.027	-.332409	.148625	-.626011	-.038808
	Equal variances assumed	4.630	.033	-1.270	199	.205	-.200628	.157943	-.512085	.110830
	Equal variances not assumed			-1.313	168.348	.191	-.200628	.152859	-.502396	.101140
FW Time	Equal variances assumed	.009	.925	-2.559	199	.011	-.387565	.151452	-.686221	-.088908
	Equal variances not assumed			-2.563	153.564	.011	-.387565	.151206	-.686277	-.088852
FW Strain	Equal variances assumed	.012	.913	-3.010	199	.003	-.466630	.155026	-.772334	-.160927
	Equal variances not assumed			-3.039	157.373	.003	-.466630	.153534	-.769883	-.163378

• ANOVA for types of study financing

Descriptives									
		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean			
						Lower Bound	Upper Bound	Minimum	Maximum
WF Time	Yourself or family (e.g. savings/bank loans)	23	3.07246	1.096167	.228567	2.59845	3.54648	1.333	4.667
	Your present/attending university (e.g. bursary, special gra	21	3.34921	1.072257	.233986	2.86112	3.83729	1.667	5.000
	Your employer	21	3.82540	1.008955	.220172	3.36613	4.28467	1.000	5.000
	Your government	99	3.32451	1.039359	.104459	3.11722	3.53181	1.333	5.000
	Other source	37	3.28829	1.066210	.175284	2.93280	3.64378	1.000	5.000
	Total	201	3.34391	1.056636	.074529	3.19695	3.49088	1.000	5.000

Work Adjustment	Your government	99	2.90908	1.064601	.106996	2.69675	3.12142	1.000	5.000
	Other source	37	2.69369	1.058121	.173954	2.34090	3.04649	1.000	5.000
	Total	201	2.79933	1.081192	.076261	2.64895	2.94971	1.000	5.000
	Yourself or family (e.g. savings/bank loans)	23	5.88406	.967182	.201671	5.46582	6.30230	3.333	7.000
	Your present/attending university (e.g. bursary, special gra	21	5.71429	.660687	.144174	5.41354	6.01503	4.667	7.000
	Your employer	21	5.50794	.934636	.203954	5.08250	5.93338	3.333	7.000
	Your government	99	5.38384	1.091467	.109697	5.16615	5.60153	2.000	7.000
	Other source	37	5.93694	.679678	.111738	5.71032	6.16355	4.667	7.000
	Total	201	5.59038	.977944	.068979	5.45436	5.72640	2.000	7.000
	Yourself or family (e.g. savings/bank loans)	23	4.56522	1.779328	.371016	3.79578	5.33466	2.000	7.000
Interaction Adjustment	Your present/attending university (e.g. bursary, special gra	21	4.78571	1.356203	.295948	4.16838	5.40305	1.000	7.000
	Your employer	21	4.67857	1.606905	.350655	3.94712	5.41003	2.000	7.000
	Your government	99	4.60374	1.499310	.150686	4.30471	4.90277	1.000	7.000
	Other source	37	5.22973	1.005848	.165360	4.89436	5.56510	3.500	7.000
	Total	201	4.74139	1.460030	.102983	4.53832	4.94446	1.000	7.000
	Yourself or family (e.g. savings/bank loans)	23	4.74638	1.284985	.267938	4.19071	5.30205	2.167	6.667
	Your present/attending university (e.g. bursary, special gra	21	4.91270	1.174520	.256301	4.37806	5.44733	2.667	6.833
	Your employer	21	5.18349	1.200533	.261978	4.63702	5.72997	2.833	7.000
	Your government	99	4.83806	1.175807	.118173	4.60355	5.07257	1.000	7.000
	Other source	37	5.17117	1.152350	.189445	4.78696	5.55538	2.667	7.000
General Adjustment	Total	201	4.93278	1.185648	.083629	4.76787	5.09769	1.000	7.000
	Yourself or family (e.g. savings/bank loans)	23	4.74638	1.284985	.267938	4.19071	5.30205	2.167	6.667
	Your present/attending university (e.g. bursary, special gra	21	4.91270	1.174520	.256301	4.37806	5.44733	2.667	6.833
	Your employer	21	5.18349	1.200533	.261978	4.63702	5.72997	2.833	7.000
	Your government	99	4.83806	1.175807	.118173	4.60355	5.07257	1.000	7.000
	Other source	37	5.17117	1.152350	.189445	4.78696	5.55538	2.667	7.000
	Total	201	4.93278	1.185648	.083629	4.76787	5.09769	1.000	7.000
	Yourself or family (e.g. savings/bank loans)	23	4.74638	1.284985	.267938	4.19071	5.30205	2.167	6.667
	Your present/attending university (e.g. bursary, special gra	21	4.91270	1.174520	.256301	4.37806	5.44733	2.667	6.833
	Your employer	21	5.18349	1.200533	.261978	4.63702	5.72997	2.833	7.000

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
WF Time	Between Groups	6.715	4	1.679	1.519	.198
	Within Groups	216.580	196	1.105		
	Total	223.296	200			
WF Strain	Between Groups	8.366	4	2.091	2.013	.094
	Within Groups	203.678	196	1.039		
	Total	212.043	200			
WF Bhvr	Between Groups	5.004	4	1.251	1.071	.372
	Within Groups	228.989	196	1.168		
	Total	233.993	200			
FW Time	Between Groups	12.497	4	3.124	2.945	.022
	Within Groups	207.949	196	1.061		
	Total	220.446	200			
FW Strain	Between Groups	8.089	4	2.022	1.756	.139
	Within Groups	225.706	196	1.152		
	Total	233.795	200			
Work Adjustment	Between Groups	11.116	4	2.779	3.023	.019
	Within Groups	180.159	196	.919		
	Total	191.275	200			
Interaction Adjustment	Between Groups	11.537	4	2.884	1.363	.248
	Within Groups	414.800	196	2.116		
	Total	426.338	200			
General Adjustment	Between Groups	5.118	4	1.280	.909	.460
	Within Groups	276.034	196	1.408		
	Total	281.152	200			

Appendix S: Harmon One-Factor Test Results

Communalities

	Initial	Extraction
WFTime01	1.000	.658
WFStrain01	1.000	.751
WFBehaviour01	1.000	.587
FWTime02	1.000	.698
FWStrain02	1.000	.779
FWBehaviour02	1.000	.579
WFStrain03	1.000	.635
WFBehaviour03	1.000	.715
WFTime03	1.000	.563
FWStrain04	1.000	.703
FWTime04	1.000	.802
FWBehaviour04	1.000	.633
WFTime05	1.000	.554
WFBehaviour05	1.000	.714
WFStrain05	1.000	.638
FWBehaviour06	1.000	.575
FWStrain06	1.000	.662
FWTime06	1.000	.703
WrkAdj01	1.000	.760
IntAdj01	1.000	.708
GenAdj01	1.000	.523
WrkAdj02	1.000	.713
GenAdj02	1.000	.609
GenAdj03	1.000	.745
WrkAdj03	1.000	.624
GenAdj04	1.000	.736
IntAdj02	1.000	.695
GenAdj05	1.000	.680
GenAdj06	1.000	.562
IntAdj03	1.000	.768
GenAdj07	1.000	.602
GenAdj08	1.000	.512
IntAdj04	1.000	.734

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.700	23.333	23.333	7.700	23.333	23.333
2	4.009	12.149	35.482	4.009	12.149	35.482
3	2.052	6.218	41.700	2.052	6.218	41.700
4	1.900	5.758	47.458	1.900	5.758	47.458
5	1.583	4.796	52.254	1.583	4.796	52.254
6	1.337	4.051	56.305	1.337	4.051	56.305
7	1.223	3.705	60.010	1.223	3.705	60.010
8	1.084	3.285	63.295	1.084	3.285	63.295
9	1.035	3.137	66.432	1.035	3.137	66.432
10	.942	2.854	69.286			
11	.870	2.637	71.923			
12	.782	2.370	74.293			
13	.764	2.316	76.609			
14	.733	2.222	78.831			
15	.672	2.038	80.869			
16	.616	1.866	82.735			
17	.589	1.786	84.520			
18	.531	1.610	86.130			
19	.515	1.562	87.692			
20	.499	1.513	89.205			
21	.450	1.364	90.569			
22	.407	1.234	91.804			
23	.373	1.129	92.933			
24	.320	.969	93.902			
25	.290	.880	94.782			
26	.282	.855	95.637			
27	.257	.777	96.415			
28	.239	.724	97.138			
29	.234	.709	97.847			
30	.196	.593	98.440			
31	.181	.550	98.990			
32	.175	.531	99.521			
33	.158	.479	100.000			

Extraction Method: Principal Component Analysis.

Appendix T: SPSS Reliability Tests Output for Main Study

Reliability

Case Processing Summary

		N	%
Cases	Valid	201	100.0
	Excluded ^a	0	.0
	Total	201	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.788	.788	6

Item Statistics

	Mean	Std. Deviation	N
Weather	4.86	1.801	201
Housing Condition	4.96	1.852	201
General Living Conditions	5.11	1.539	201
Cost of Living	4.17	1.859	201
Health Care Facilities	4.69	1.801	201
Shopping	5.81	1.287	201

Inter-Item Correlation Matrix

	Weather	Housing Condition	General Living Conditions	Cost of Living	Health Care Facilities	Shopping
Weather	1.000	.514	.466	.372	.405	.323
Housing Condition	.514	1.000	.716	.375	.269	.285
General Living Conditions	.466	.716	1.000	.364	.388	.283
Cost of Living	.372	.375	.364	1.000	.391	.285
Health Care Facilities	.405	.269	.388	.391	1.000	.306
Shopping	.323	.285	.283	.285	.306	1.000

The covariance matrix is calculated and used in the analysis.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Weather	24.74	34.730	.595	.367	.741
Housing Condition	24.64	33.929	.614	.570	.735
General Living Conditions	24.49	36.217	.649	.558	.731
Cost of Living	25.42	36.012	.499	.257	.766
Health Care Facilities	24.91	36.751	.486	.289	.769
Shopping	23.79	42.186	.405	.168	.784

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
29.60	50.607	7.114	6

Appendix U: SPSS Factor Analysis Output for Main Study

1) Work Adjustment

KMO and Bartlett's Test			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			.679
Bartlett's Test of Sphericity	Approx. Chi-Square	116.429	
	df	3	
	Sig.	.000	

Communalities

	Initial	Extraction
Study adjustment	1.000	.667
Performance Adjustment	1.000	.622
Work with Host Supervisors	1.000	.637

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		Extraction Sums of Squared Loadings	
	Total	% of Variance	Total	Cumulative %
1	1.926	64.189	1.926	64.189
2	.566	18.868		83.056
3	.508	16.944		100.000

Extraction Method: Principal Component Analysis.

2)Interaction Adjustment

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.818
Bartlett's Test of Sphericity	Approx. Chi-Square df	346.345 6
	Sig.	.000

Communalities

	Initial	Extraction
Speaking with Host Nationals	1.000	.657
Interact with Outsiders	1.000	.731
Interact with Host Daily	1.000	.731
Socialising with Host Ntlls	1.000	.680

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		Extraction Sums of Squared Loadings	
	Total	% of Variance	Total	Cumulative %
1	2.799	69.977	2.799	69.977
2	.487	12.180		82.157
3	.360	9.009		91.166
4	.353	8.834		100.000

Extraction Method: Principal Component Analysis.

3) General Adjustment

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.757
Bartlett's Test of Sphericity	Approx. Chi-Square df	411.152 28
	Sig.	.000

Communalities

	Initial	Extraction
Local Food Adjustment	1.000	.544
Weather	1.000	.559
Housing Condition	1.000	.746
General Living Conditions	1.000	.676
Shopping	1.000	.294
Entertainment	1.000	.656
Cost of Living	1.000	.441
Health Care Facilities	1.000	.402

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		Extraction Sums of Squared Loadings		Rotation Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.163	39.540	39.540	3.163	39.540	39.540
2	1.154	14.429	53.968	1.154	14.429	53.968
3	.924	11.550	65.519			
4	.752	9.402	74.920			

5		.637	7.965	82.885						
6		.592	7.403	90.288						
7		.537	6.712	97.000						
8		.240	3.000	100.000						

Extraction Method: Principal Component Analysis.

Appendix V: SPSS Residuals Statistics Output for Interaction and General Adjustments

Residuals Statistics(a)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.21058	6.17222	4.74139	.610470	201
Std. Predicted Value	-2.508	2.344	.000	1.000	201
Standard Error of Predicted Value	.179	.449	.298	.054	201
Adjusted Predicted Value	3.20947	6.13103	4.74011	.617987	201
Residual	-3.242907	3.472310	.000000	1.326278	201
Std. Residual	-2.389	2.559	.000	.977	201
Stud. Residual	-2.444	2.623	.000	1.002	201
Deleted Residual	-3.392893	3.649475	.001280	1.394885	201
Stud. Deleted Residual	-2.477	2.665	.000	1.006	201
Mahal. Distance	2.478	20.894	8.955	3.608	201
Cook's Distance	.000	.044	.005	.007	201
Centered Leverage Value	.012	.104	.045	.018	201

a. Dependent Variable: Interaction Adjustment

Residuals Statistics(a)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.03972	5.84531	4.93278	.380263	201
Std. Predicted Value	-2.349	2.400	.000	1.000	201
Standard Error of Predicted Value	.151	.380	.252	.046	201
Adjusted Predicted Value	4.03053	5.95279	4.93460	.383149	201
Residual	-3.412375	2.350787	.000000	1.123014	201
Std. Residual	-2.969	2.046	.000	.977	201
Stud. Residual	-3.049	2.094	-.001	1.003	201
Deleted Residual	-3.598543	2.463153	-.001820	1.183092	201

Stud. Deleted Residual	-3.118	2.113	-.002	1.007	201
Mahal. Distance	2.478	20.894	8.955	3.608	201
Cook's Distance	.000	.051	.005	.008	201
Centered Leverage Value	.012	.104	.045	.018	201

a Dependent Variable: General Adjustment

Residuals Statistics(a)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.03972	5.84531	4.93278	.380263	201
Std. Predicted Value	-2.349	2.400	.000	1.000	201
Standard Error of Predicted Value	.151	.380	.252	.046	201
Adjusted Predicted Value	4.03053	5.95279	4.93460	.383149	201
Residual	-3.412375	2.350787	.000000	1.123014	201
Std. Residual	-2.969	2.046	.000	.977	201
Stud. Residual	-3.049	2.094	-.001	1.003	201
Deleted Residual	-3.598543	2.463153	-.001820	1.183092	201
Stud. Deleted Residual	-3.118	2.113	-.002	1.007	201
Mahal. Distance	2.478	20.894	8.955	3.608	201
Cook's Distance	.000	.051	.005	.008	201
Centered Leverage Value	.012	.104	.045	.018	201

a Dependent Variable: General Adjustment

Residuals Statistics(a)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.49911	6.19609	4.74139	.538068	201
Std. Predicted Value	-2.309	2.704	.000	1.000	201
Standard Error of Predicted Value	.154	.462	.289	.051	201
Adjusted Predicted Value	3.50715	6.39987	4.74016	.543803	201

Residual	-3.283466	3.329388	.000000	1.357266	201
Std. Residual	-2.370	2.403	.000	.980	201
Stud. Residual	-2.423	2.462	.000	1.003	201
Deleted Residual	-3.432508	3.492845	.001228	1.421226	201
Stud. Deleted Residual	-2.455	2.495	.000	1.007	201
Mahal. Distance	1.477	21.213	7.960	3.176	201
Cook's Distance	.000	.051	.005	.008	201
Centered Leverage Value	.007	.106	.040	.016	201

a Dependent Variable: Interaction Adjustment

Residuals Statistics(a)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.07015	5.77642	4.93278	.352769	201
Std. Predicted Value	-2.445	2.391	.000	1.000	201
Standard Error of Predicted Value	.128	.385	.241	.043	201
Adjusted Predicted Value	4.10711	5.80260	4.93509	.356061	201
Residual	-3.313824	2.362612	.000000	1.131951	201
Std. Residual	-2.868	2.045	.000	.980	201
Stud. Residual	-2.931	2.085	-.001	1.003	201
Deleted Residual	-3.459105	2.456043	-.002312	1.187309	201
Stud. Deleted Residual	-2.991	2.104	-.002	1.008	201
Mahal. Distance	1.477	21.213	7.960	3.176	201
Cook's Distance	.000	.072	.005	.009	201
Centered Leverage Value	.007	.106	.040	.016	201

a Dependent Variable: General Adjustment