

# CHAPTER 1:

## INTRODUCTION

### I. Introduction

With the understanding that experiences are contextual and local—although embedded in larger structures—this exploratory work contributes to the larger literature on the inequality of men and women by focusing on a setting previously overlooked by researchers.

Much of the research on gender inequality in academic settings has been conducted using a human capital perspective or utilizing a Western feminist conceptual framework, in Western countries. Relatively little attention has been given to the possibility of inequality in academia in non-industrialized countries. Furthermore, Black feminists and post-colonial feminists have pointed out the inadequacy of Western feminism for explaining non-white and non-western experience. Consequently, the possibility of gender inequality, as experienced by female faculty members in Thailand, will continue to go unnoticed and inadequately explained if not given attention in the form of appropriately theorized research. In the vein of exploratory research, a case study of the pay raise process at a public university in Thailand would allow the tentative development of a Southeast Asian Feminism, as a lens to better understand the nature of gender inequality in Thai academia.

The first goal of this exploratory research is to determine whether gender inequality exists in pay raises at Khon Kaen University (KKU), a public university in Thailand. Depending on the result, the second goal is to determine either (a) what factors might account for possible differences between male and female faculty in pay raises at

this university or (b) to determine why gender inequality in pay raises does not exist at KKU by looking at the same key factors such as productivity records, family responsibilities and the Southeast Asian concepts of kinship, patronage, turn-taking and seniority systems.

A variety of feminist theories provide the conceptual framework for this study. In addition, a call is made to develop Southeast Asian concepts, some of which are included in this study and may be central to the eventual development of a Southeast Asian Feminist theory.

The next section of this introduction briefly places this project into a larger historical context and illuminates the current problem. Then, the purposes of the research are more fully developed, followed by an overview of the literature, a discussion of exploratory research utilizing a single case study as method, an introduction to my case, the purposes of my study, and an overview of the dissertation.

## **II. Overview of the literature**

Throughout history, the concept of inequality existed in myriad forms but was rarely considered a social problem. From Ancient Greece (Bottomore, 1991) to the eighteenth century, inequality was either ignored or explained in religious terms (Grusky, 2001). Not until the Enlightenment was it commonly believed that the nature of inequality could be altered. Because divine decree had been displaced by scientific inquiry, the will of the gods no longer seemed to be sufficient explanation for inequality (Bottomore, 1991). During the nineteenth century, scholars began to formulate theories about the causes of inequality and how to affect social change (Bottomore, 1991).

In the latter half of the twentieth century, inequality by age, class, disability, gender, nationality, race, and the intersections of these structures have become the focus of much research. The magnitude and severity of gender inequality in particular, in many settings, is now well documented. Among other things, women hold less social, economic, and political power than men in many countries. In the United States, women experience inequality through labor market segmentation with lower wages associated with jobs dominated by women. In some less developed countries so-called “honor killings” are socially acceptable; a husband or other relatives might stone a woman, if she is proven to have had an affair with another man (Kerbo, 2003).

Because of the serious implications of gender inequality, this form of inequality has received attention by scholars, politicians, activists and policy makers at both the global and national levels. International organizations, such as the UN, UNIFEM, UNICEF and the ILO, pay a great deal of attention to promoting gender equality as widely as possible. Governments of many countries have begun to develop policies, legislation, and programs to alleviate gender inequality. For example, the U.S. passed the Equal Pay Act of 1963, and the Thai government began to work toward gender equality when it passed an amendment to its constitution in 1974, recognizing the equality of men and women. Kerbo also points out “In...Japan, it was only during the 1970s that it became illegal to fire a woman from her job when she married or had children...though illegal, it is still common practice today” (2003, p.297).

The Western research base (e.g. Kemp, 1994; Weedon, 1999, and Lorber, 2001) indicates that gender inequality in the work place exists in many other fields, with labor segmentation and lower wages attached to what is considered women’s work.

As with many other work settings, gender inequality in the academic workplace can be found all over the world (Anker, 1997). In the industrialized world, Finland currently has the highest percentage of female faculty members with full professorships (18.4% in 1998) of the fifteen European Union Countries (KOTA-database; Osborne, 1998), but female faculty members in Finland are still under-represented in academic careers. The majority of female faculty members in Finland are still concentrated in lower level positions when compared to their male colleagues (Husu, 1999). In the U.S., the American Association of University Professors (AAUP) reported that for the 2000-2001 school year, thirty-six percent of full time faculty members across the nation were female ([www.aaup.org](http://www.aaup.org)). Moses (1990) revealed that the under-representation of female faculty members existed in African countries as well. Studying nine universities across the continent, he reported a total of 552 female faculty members and 2,841 male faculty members.

In the East, especially Thailand, many previous studies on inequality have focused on Thai industrial/business settings and discovered that there is gender inequality and segmentation of labor by gender (Gender and Development Research Institute, 1991; Raviwongse & Nirathron, 1995; Samakeetham, 1995; & National Statistic Office of Thailand, 1997). A few studies have been conducted looking at gender differences in status, such as high-ranking civil servants, upper management/administrative positions (the presidents and the deans of the public universities) and educational attainment (Gender and Development Research Institute, 1991; Office of Civil Servants & Gender and Development Research Institute, 1994; Office of Civil Servants, 1997). These studies also show that women still lag behind in both upper management/administrative

positions and educational attainment. Moreover, they found that most female workers are concentrated in lower status and lower paying jobs. Few of them achieve positions above the 'glass ceiling'. There are no extant studies of gender inequality in Thai academia.

As noted by Third World Feminists such as Mohanty (1991a), Parry (1995), Narayan (1997) and Bulbeck (1998) existing feminist theories may be inadequate to explain inequality in non-western settings. Western literature consistently fails to consider norms and values unique to Southeast Asian culture. Consideration must be given to these concepts in order to understand gender inequality in this specific cultural setting. Therefore, I propose the beginnings of a Southeast Asian feminist perspective that derives from the Southeast Asian concepts of kinship, patronage, turn taking and seniority systems as crucial for understanding gender inequality in Thailand. These Southeast Asian concepts will be fully explained in chapter two. Concepts from a Southeast Asian perspective are combined with various concepts from Western feminism to form the conceptual framework for this study.

### **III. Exploratory research utilizing single case study as method**

Yin (1994), Cohen et al (2000) and Berg (2001) define a case study as one focusing on a particular individual, group, organization or community, to obtain detailed, in-depth information and a deeper understanding of the unit. Cohen et al (2000) further explain that the use of a case study benefits the researcher through a strong foundation in reality and grants a clear picture of what is actually taking place within the unit. Nisbet and Watt (1984) suggest that case studies yield information useful in the analysis of similar situations.

A case study is categorized into three design types: exploratory, explanatory and descriptive (Yin, 1994; Winston, 1997). Exploratory research “...explores a new topic or issue to learn about it...may be the first stage in a sequence of studies (Neuman, 1994: 18).” Neuman (1994) outlines the goals of exploratory research, including familiarizing the researcher with the basic facts, people and concerns involved, developing an accurate model of the situation, generating the beginnings of a theory, establishing whether future research is viable, formulating questions and providing direction for further studies.

As an exploratory case study, this work focuses on a particular institution, Khon Kaen University, Thailand. While many similar--though culturally bounded--studies have been conducted in the West, Southeast Asia has been overlooked. This study will serve as a first step toward correcting that oversight with the goals of exploring whether gender inequality exists in pay raises at KKU and obtaining rich information on factors that might lead to gender inequality in pay raises or explaining the absence of such inequality. The Southeast Asian concepts applied in this study are newly defined and operationalized. For this reason, I will first test the appropriateness of these concepts using a case study before expanding the scope for further research relevant to Southeast Asia.

#### **IV. Introduction to the case**

There are twenty-one public universities in Thailand, which are governed and accredited by the Ministry of University Affairs. Four of these public universities offer a full array of academic disciplines: Chulalongkorn, Chiangmai, Khon Kaen, and Songkhla universities. I have selected Khon Kaen University (KKU), Thailand as my case study. I

have served for many years as a faculty member of the university, resulting in an understanding of the system of the university and allowing me access to the data and subjects required for this study, such as administrative records, annual reports and self-administered surveys.

According to Khon Kaen University Prospectus 2000, Khon Kaen University was one of three regional universities established in 1964 as part of a decentralized development plan for higher education in Thailand. Khon Kaen University (KKU) is the only public university in the Khon Kaen province: it is the oldest and the most prestigious university in the northeast region. The KKU campus is located in the Northwest sector of the city of Khon Kaen just a few kilometers from the center of town and covers approximately 900 hectares.



Source: [www.CIA.gov/cia/publications/factbooks/geos/th.html](http://www.CIA.gov/cia/publications/factbooks/geos/th.html) (02/25/04)

When it was established in 1964 as the University of the Northeast, Khon Kaen University was comprised of the faculties of Agriculture, Engineering, and Arts and

Sciences. At present, there are sixteen faculties, which include the faculties of Agriculture, Engineering, Technology, Architecture, Veterinary Medicine, Sciences, Humanities and Social Sciences, Education, Management Sciences, Fine and Applied Arts, Medicine, Dentistry, Pharmaceutical Sciences, Nursing, Associated Medicine Sciences, and Public Health. The university also has a graduate school and an extended campus (called College of Nong Khai) in Nong Khai province on the Thai-Laotian border, along the Mae Kong River. According to the Prospectus 2000, the total number of students at Khon Kaen University is approximately 16,850, including 1,700 postgraduates and about 70 students from overseas. The total number of faculty members is 1,806 (Department of Planning, 2002).

#### Pay Structure and System

The pay structure for all Thai public employees, including those at the public universities, is regulated by the Thai government. The Thai government applies a system of position clusters to every governmental agency. A teaching position at a public university is categorized into clusters C3 to C11, depending on each individual's level of educational attainment, academic rank, and work experience. A newly hired faculty member with a Bachelor's degree will be classified 'C3' with the starting salary of 7,960 baht<sup>1</sup> per month. A new faculty member holding a Master's degree or Ph.D. will start at 'C4' with the starting pay of 8,230 baht per month or 'C5' with the starting pay of 11,300 baht per month, respectively. Position clusters are a very important tool for the Thai government and served as a framework for the pay raise system and benefit structure.

This study will focus solely on differences in pay raises by gender rather than differences in salary level for two reasons. The structure of pay for Thai public

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<sup>1</sup> US \$1 = 43 baht

employees is highly regulated by the Thai government and an employee's starting pay is easily predicted with this information. Women's recent entry into the workplace limits their access to the higher position clusters, which is an important key to higher pay. So we expect the differences in pay by gender. Unlike pay, pay raises are a function of productivity and can be influenced by individual behavior, department head decisions and other factors.

In Thailand, the department head plays an important role in assigning tasks including publications, teaching loads, and committee work to faculty members. Requests for journal articles, guest speakers and other relevant assignments are passed through the department head, who is expected to forward the assignments to faculty members. The department head can be subjective in terms of assigning tasks and he or she may make a decision based on a variety of professional and social factors.

Pay raises for faculty are based upon minimum standards of productivity and these, too, must be considered by the department head. Each year, faculty members are required to teach at least one class per semester. No requirements on publication for lecturers. Assistant professors have to publish an article in an academic journal at least once per year. Associate professors are required to publish academic articles at least twice per year. Faculty members who meet these minimum standards or requirements receive a one-step pay raise. Those who do not meet the requirements receive a half-step pay raise, but those who exceed the requirements through committee work, extra classes, or other relevant assignments, may get up to a two-step pay raise.

Pay raises are now evaluated twice a year. The first pay raise period starts from October 1 to March 31 and the second pay raise period is from April 1 to September 30.

Every six months, all faculty members have to fill the evaluation form (see Appendix A) to report their performance and submit it to their department head. The department head submits the form to the dean along with pay raise recommendations. Generally, the dean agrees with the department head's recommendation. However, if the dean has a question concerning a particular person's raise, he or she will discuss it with the department head. The dean writes a report summarizing the pay raise recommendations from department heads and submits it to the president of the university. The president then reports to the Permanent Undersecretary of the Ministry of University Affairs in order to obtain approval. The pay raise becomes effective as soon as the Undersecretary approves it. Pay raises are awarded in increments of one-half step, one step and one and half steps. No one can receive a two-step pay raise for the half year and the total pay raises for the year may not exceed two steps.

## **V. Purposes of Study**

With regulations regarding productivity and pay raises, the expectation is that there is no inequality because of legal protections. However, the possibility arises due to the subjective nature of work assigned by the department head. The question is whether gender inequality exists, because it has never been tested in this type of environment. Therefore, I am going to conduct a study on the possibility of inequality in pay raises between female and male faculty at Khon Kaen University (KKU), with the following major goals.

The first goal of this exploratory research is to determine whether gender inequality exists in pay raises at KKU. Once it is determined whether or not gender

inequality exists, the second goal will be to determine what factors might account for this finding: productivity, family responsibilities and the Southeast Asian concepts of kinship, patronage, turn-taking and seniority systems, controlling for gender, academic rank, educational attainment and position cluster. Many questions may be raised. For example,

- 1) Are Thai male and female faculty members equally productive in researching and teaching?
- 2) What kinds of family responsibilities do male and female faculty have? Do they have any help?
- 3) Do Southeast Asian concepts affect gender equity/inequality in pay raises at KKU?

The data used in this analysis will be obtained from several sources, such as university personnel records, annual faculty performance reports, interviews with department heads on their decision making on pay raises, and responses to a self-administered survey of a sample of KKU faculty. While both the university and the government keep detailed records on wages for male and female faculty, the data has not been analyzed rigorously to determine if gender differences exist.

Regression analysis will be applied to determine factors that might account for the possible gender inequality in pay raise. For ease of discussion, the variables will be organized into four domains; 1) control variables, 2) research and administration, 3) teaching activities, 4) patriarchal control. Each domain will be tested by itself and a fifth domain, Southeast Asian concepts, will be added later. These five domains are complex and multidimensional. As a result, they require multiple indicators to adequately measure

them. Five models representing each domain will be constructed and used to develop a final tentative model that combines the best predictors from the other models and might explain gender differences in pay raises. In this way and consistent with the exploratory nature of this work, a model will be suggested as a starting point for future research. Particular interest will be paid to the contribution of the Southeast Asian variables for understanding possible gender differences in pay raises.

## **VI. Overview of Dissertation**

The remainder of this dissertation is organized into five chapters. Chapter Two introduces feminist theoretical perspectives, including liberal, socialist, Post-colonial/Third world feminisms, and Southeast Asian concepts. This chapter also reviews previous studies, which focused on such things as the segmentation of academic disciplines, productivity measures, cumulative advantage (the Matthew effect), degree of male dominance in promotion/leadership and control of variable resources (decisions), and family responsibilities.

In Chapter Three, I will begin with a description of data sources and the sample selection methodology. Then, I will move on to the operationalization and the analysis of the domains. In Chapter Four, the results will be reported. I will start with the preliminary investigation and will follow with the secondary analysis. In Chapter Five, the results will be analyzed and interpreted. I will discuss and summarize my findings along with the contributions and the importance of this work for future studies.

## **CHAPTER 2:**

### **THEORETICAL PERSPECTIVES AND LITERATURE REVIEW**

Feminist theoretical perspectives provide the conceptual framework for this study. They include liberal, socialist, Black, and post colonial/third world feminisms. I will also propose Southeast Asian concepts, such as the systems of kinship, patronage, turn taking, and seniority, that might facilitate understanding of gender inequality in Southeast Asia. To this end, I examine existing literature pertaining to gender inequality in business, politics, and government in Thailand, given there is little or no extant literature on gender inequality in Thai academia. Finally, a review of previous literatures that highlights what is already known about gender inequality in academia, especially the literature relevant to gender inequality in pay, plays an important role in the development of my case study.

#### **I. Overview of Inequality**

Although providing even a brief overview of the history of inequality is a daunting task, I place my work within this larger history. Some of the feminist theories (for example, Socialist feminism) that guide this work remind us that the experiences of women are historically and culturally situated. The changing nature of the structures of inequality illustrates that these structures are not immutable. And an understanding of historical specificity also guards against essentializing women. Thus, a brief overview of the history of inequality helps provide the groundwork used by some feminist theories, discussed later in this work, to argue for greater diversity in theorizing about gender inequality.

Inequality is not new to the human condition. According to Grusky (2001), throughout history hunter-gather, agrarian, feudal, caste-based, and industrial societies have all had structures that advantaged some and disadvantaged others. Individuals and groups of individuals have had differing access to economic, political, cultural, social, honorific, and civic assets.

In spite of the ubiquity of inequality throughout history, inequality has only recently been viewed as a problem. For example, in ancient Greece, society paid little attention to inequality. The social values of people were influenced by religion. People believed that it was the will of the gods that made things happen. Their destinies were in the hands of gods and it was the gods' will that some people be born and live as slaves, that some were rich, others poor. These people believed it was divine decree that the poor die starving and cold. No one could do anything, because inequality had been "largely accepted as an unalterable fact" (Bottomore, 1991, p.1).

In the early Judeo-Christian belief system, the subordination of women to men was explained through the story of the first man and first woman. Much of the blame for the fall of man was laid at the feet of Eve. As Lengermann and Wallace (1985) stated "within Christianity, much of the sinfulness associated with sexual love is associated with Eve, the first women, and with womankind generally (p.87)." Consequently, women were taught in this time period to accept their submissive role.

Not until the eighteenth century was it commonly believed that the nature of inequality could be altered. The will of gods no longer seemed to be sufficient explanation for inequality, because divine decree had been displaced by scientific inquiry

(Bottomore, 1991). In the nineteenth century, scholars began to formulate theories about the causes of inequality and how to affect social change (Bottomore, 1991).

## **II. Theories of Inequality**

Myriad and diverse theories have attempted to explain the causes and maintenance of inequality. Within the sociological tradition, conflict theories and functionalist explanations anchor the classical studies of inequality. Conflict theory is most notably associated with Karl Marx. Marx posited that every society is composed of two classes: those who own the means of production (the bourgeois) and those who provide the wage labor (the proletariat). Marx (1963) argued, “the history of all hitherto existing society is the history of class struggles” (p.1). In the Marxist’s tradition, inequality is maintained because it advantages the bourgeois, who have the power to secure their class position. Inequality within a Marxist framework is not accidental, genetic, cultural or determined by God. It is a deliberate result of the bourgeois maintaining their class position. Not until the workers become a “class-for-themselves” and engage in an organized conflict with the bourgeois, will capitalism be transformed into a system with less disadvantage for the worker. Although Marx’s work was refined by others, (see for example Darhendorf, 1959), the focus on conflict and class privilege is still the focus of the theorizing.

Theories that originated in the 19<sup>th</sup> century came from a "male-oriented intellectual climate" (Grab, 1997: P.179). As Grabb (1997) states, “The absence of detailed discussions of gender issues in classical theory is itself an accurate reflection of the inequalities women faced at that time” (p.179).

While considerable research was done on understanding inequality and both theoretical and methodological advances were made, one issue became obvious. Gender was missing from theories and research on inequality in the West.

Although seen at the time as gender-blind (Grabb, 1997; Harding as in Malson, et al., 1989), studies of gender inequality were based on males' norms and experience and then used to interpret those for women. "Women often appeared as the source of the problem, and the solution was for them to become more like men (Bensimon and Marshall, 1997, p.138)." For example, from a human capital perspective, women lacked the necessary assets that would allow them to move into highly paid jobs. But researchers such as Coverman (1989) demonstrated that no individual-level characteristics have ever been able to explain even half of the "wage gap" (cited in Farrar, 1996). The earning differences between males and females working in female-dominated jobs and those who work in male-dominated jobs cannot be understood from a human capital perspective. Further, Kemp (1994) argued, "The differences between men and women's productivity characteristics are not sufficient to explain earnings gap (p.74)." What were clearly needed were theories of inequality with gender as their focus.

### **Gender Inequality**

In a general sense, the study of gender inequality has broadly paralleled the advancement of gender as a concept. Early research focused on sex differences between males and females, often focusing on putative biological differences. During this period of time, much research attempted to examine whether the size of the brain and the strength of the muscle lead to the explanation of gender inequality. Women were viewed as having smaller brains and less physical strength than men, which lead to questioning

women's capabilities and intelligence. Those with bigger brains and greater physical strength were believed to be smarter and more capable than those with smaller brains and less muscle.

Later, the study of sex differences shifted to the study of sex as socially constructed, through gender-stereotypes and gendered-social expectations. Occupational sex segregation is an example of the stereotyping within the workplace. According to Anker (1997), women were seen as being caring, nurturing, and having skills and experience in household and childrearing related work; therefore, women were appropriate for jobs such as nursing, social work, teaching, and accounting. Men were seen as having greater ability to engage in science and mathematics, so they were capable of jobs such as engineering, medicine, executive management, and mathematics, all of which are male-dominated.

At present, our understanding of gender inequality is viewed as a social structure. As articulated by Acker (1988, 1990), the experiences of women are structured such that they are disproportionally placed within disadvantaged positions. For example, although the role of full-time housewife is considered women's work, women who perform this work are seen as not employed, not engaged in full time activity, and not worthy of pay (Acker, 1973). Women's labor within the home does not appear as a part of gross national product (Hersch, 1996). Rankings such as the widely used North-Hatt scale do not include full-time housewife and mother as a category (Acker 1973). Acker (1973) suggests that when a new scale of occupational status ranking is created, full-time housewife and mothers will be ranked quite low. Moreover, even when also employed for wages, Blare & Lichter (1991) points out that "...females contribute approximately

twice the amount of total household labor that males do...men work about fourteen hours per week, but spent roughly one third of it on outdoor tasks...(p.392).”

Structures of inequality also are seen within the workplace. Reskin and Padavic (1994) argue that gendered structures manifest themselves in more than just pay. They categorized gender inequality into four forms: sex segregation, sex differences in promotions, sex differences in authority, and sex differences in earnings.

Our understanding of gender inequality is further improved by an explicit recognition of ways that gender intersects with social class, race, ethnicity, age, disability and sexual orientation. We now have greater awareness in studies of gender on how gender manifests itself within specific contexts and historical periods.

### **III. Feminist Theoretical Perspectives**

Feminist theorists challenged the dominant voices within their disciplines by including the missing voices of women. Harding (1989) stated, “Feminist theory began by trying to extend and interpret the categories of various theoretical discourses so that women’s activities and social relations could become analytically visible within the traditions of intellectual discourses (cited in Malson et al, 1989, p.15).” The goal of feminist theory is to enhance the status of women to be equal to men’s (Lorber, 2001). Because of the emphasis on improving the status of women, a blend of several feminist perspectives underpins this work. A brief overview of these strains of feminist theory is given below.

Many scholars who favor feminist paradigms tend to categorize strands of feminism differently. For example, Bensimon and Marshall (1997) categorized feminist

strands into five perspectives: liberal feminism, cultural feminism, power and politics feminisms, postpositivist feminisms and critical theory. Calás and Smircich (1996) divided the feminist paradigm into seven different perspectives: liberal, radical, psychoanalytic, Marxist, socialist, poststructuralist/postmodern and third world/(post) colonial.

A somewhat different categorization is posed by Lorber (2001). Lorber divides feminist theories into three broad categories of gender inequality: gender reform feminism, gender resistance feminism, and gender rebellion feminism. Gender reform feminism refers to the “fight to equalize the status of women and men within the existing structure of the gendered social order...”(Lorber, 2001, p.9), which are composed of liberal, Marxist and socialist, and post-colonial feminisms. Gender resistance feminisms focus on the “struggle against the oppression and exploitation of women in the gendered social order, particularly in sexuality, violence, and cultural representations” (Lorber, 2001, p.9), including radical, lesbian, psychoanalytic and standpoint feminisms. Finally, gender rebellion feminisms, which include multicultural, men, social construction, postmodern, and queer theory, “...challenge the very structure of the gendered social order by questioning its basis—the division of people into two genders” (Lorber, 2001, pp.9-10).

In this study, I use liberal, socialist, Black, and third world/post colonial feminisms, because of their relevance in explaining gender inequality in pay raises, the primary interest of my study. Each approach tends to focus on a different level of gender inequality. As Lorber (2001) suggested, it is better to use multiple feminisms, because each perspective tends to develop its own ideology and concentration in explaining

gender inequality. There are no borders between approaches because their boundaries are blurred (Calás and Smircich, 1996). Therefore, using more than one strand of feminism might help by examining the issue of gender inequality from different angles.

### **Liberal Feminism**

Liberal feminism was developed from the liberal political tradition in the seventeenth and eighteenth centuries (Calas and Smircich, 1996). The goal of liberal political feminists is to promote an individual rights system to provide equal access for each individual to fulfill his or her own desires. Therefore, women should have access to many aspects of public life, such as the rights to vote, to have an education, to work and to own property.

The more recent version of liberal feminism, which rose in the 1960s, had promoting equal access for men and women to have opportunities as its major goal. This school of thought contends that the male and female are only biologically different; women, have similar potential to men (Calás and Smircich, 1996; Kemp, 1994; Lorber, 2001). The socialization process, such as teachers, books and mass media defines the gender stereotypes and sex roles. Thus, the socialization process becomes a major source of gender inequality, especially in the labor market (Lorber, 2001). Gender stereotypes and sex-roles categorize jobs into women's jobs (female-dominated jobs) and men's jobs (male-dominated jobs). Occupational sex segregation is the result (Calás and Smircich, 1996, Kemp, 1994, Lorber, 2001).

Anker (1997) provided an explanation to clarify the relationship between the characteristics of 'female stereotype occupations' and 'females stereotypes' and their abilities. "Positive stereotypes" of women are characterized as having a caring, nurturing

image of women, skills and experiences derived from child rearing and household related work. Thus, women are expected to be more qualified for occupations such as nursing, social work, teaching, and bookkeeping.

"Negative stereotypes" of women include the disinclination to supervise others, less ability in science and mathematics, and less willingness to travel. As a result, women's acceptance into various occupations has been affected. Many occupations, such as manager, supervisor, government executive officer/administrator, legislative official, physical scientist, architect, engineer, mathematician, and statistician are regarded as suitable only for males or male-dominated careers. Liberal feminism explains 'stratification of organizational hierarchies' (Lorber, 2001). Lorber contends that women still have lower representation in glass-ceiling positions. According to Kolodny (1993), within academia the national statistics of positions of presidents, provosts, and chancellors show that approximately 88 percent of these positions are held by males (cited in Bensimon and Marshall, 2000). Calás and Smircich (1996) suggests that the attitudes, customs, and legal constraints rooted in the society impede women to be in the top position. Anker (1997) also points out that the negative stereotypes of women, such as less ability to supervise others, are obstacles to women rising above the 'glass ceiling'.

"Other stereotypes" greatly influence the general characteristics of "female" occupations resulting in lower pay, greater demands for flexibility from female workers, lower status, and less decision-making authority. These stereotypes include a greater willingness to take orders and more docile personalities.

Dunn (1996) revealed that occupational sex segregation leads to earning gaps between men and women, because female-dominated jobs pay less than male-dominated

jobs. Lorber (2001) further explained, "...work most often done by women, such as teaching small children and nursing, is paid less than work most often done by men, such as construction and mining" (p.5).

To rectify these stereotypes and provide opportunities for women, liberal feminists call for changes within three domains. They argue for changes in socialization practices, educational changes, and since these will not always be successful in protecting women's rights, legal protection.

### **Socialist Feminism**

Another frame used in this work is provided by socialist feminists. Socialist feminism was developed in the 1970s and derived from Marxist, radical and psychoanalytic feminism (Calás and Smircich, 1996; Jaggar, 1983; Kemp, 1994; Lorber, 2001). Classical Marxism was criticized by Marxist feminism for ignoring the issue of gender, and giving priority to the issue of exploitation of workers within the public sphere (Tong, 1989 as cited in Calás and Smircich, 1996). As a result of this critique, socialist feminism attempts to build on Marxist feminism by adding the issue of gender oppression under capitalism as another explanation for gender inequality.

Furthermore, socialist feminism develops from its criticism of radical and psychoanalytic feminisms. As Calás and Smircich, (1996) state, "socialist feminism critiques radical and psychoanalytic feminism because they both exhibit universalizing tendencies, assuming (Western) patriarchal conditions as a normative phenomenon, with little regard for culture or historical circumstances" (p.226). Unlike radical feminism, socialist feminism believes that "women's culture" should be considered under patriarchy and capitalism simultaneously. Socialist feminism "...theorizes gender dramatically, in both processual and material ways" ... attempting to lend it more meaning " than a

socially constructed, binary identity” (Calás and Smircich, 1996, p. 226). Consequently, socialist feminism defines gender as being socially constructed in ways that provide men power over women (Calás and Smircich, 1996).

Scholars such as Jaggar (1983), Kemp (1994), Calás and Smircich (1996), and Lorber (2001) state that socialist feminism incorporates the system of patriarchy (women’s being dominated by men at home) and capitalism (leading to women’s being oppressed by men at work). They believe that women’s experience of being oppressed at home is different from that of being dominated in the workplace. An important theoretical concept posed by socialist feminism is the system of ‘*capitalist patriarchy*’, which is defined as “...a system working to dominate and exploit not just women and not just the proletariat, but both” (Kemp, 1994, p.107).

Kemp (1994) further explains that the domestic division of labor not only assigns women ‘less desirable and less valuable tasks’, such as household chores and childcare, but also facilitates men’s oppression over women. Men also benefit by dominating women into performing their domestic chores for free. In other words, “...the cost of reproducing male and female workers” (feeding, clothing, and nurturing them) is not paid by capital (Kemp, 1994, p. 109). Socialist feminism leads to the conclusion that men benefit from oppressing women, because they gain both free labor from women’s unpaid domestic tasks and higher pay from their jobs.

Socialist feminism views women’s subordination in the workplace, occupational sex segregation as accounting for the income gap between women and men in the workplace (Kemp, 1994). “It is the subordinate status of women, originating from the relations of patriarchy, that determines the value of the work women perform” (Kemp,

1994, p. 109). In other words, women's work and ability are devalued by men; thus, women get paid less than men.

### **Black Feminism and Third world/Post-colonial Feminisms**

With their origins in Western theoretical and empirical backgrounds, the variants of feminism, including liberal, radical, Marxist, and socialist feminisms, were criticized and challenged by other feminists who called themselves postmodernist, Black feminist, and post colonial/Third world feminists. A key critique is that “the category ‘women’ in the western world has oftentimes been used to refer to white middle-class women; while those who do not belong to this group are labeled as ‘other’ and are given add-on labels, like ‘women of color’ or ‘Third world women’ (Trinh, 1986, as cited in Arnado, 2002, p.15).” Although groups of African-American women, postcolonial and third world women are recognized by many as being poor, under educated, and oppressed by men, in the postcolonial/third world feminists’ view, these women might experience the phenomenon of gender inequality differently. They have different histories, culture and social structures. With their explanations of the causes of gender inequality, deriving mostly from the western perspectives, postcolonial/third world feminists are suspicious of western feminisms' applicability to gender inequality in the eastern and postcolonial/third world.

Women of color who live in the western world and share the same political values--and some traditional and cultural values--with western feminisms, still feel that their experiences and perceptions are excluded from these western feminisms (Bulbeck, 1998). They believe that their experience of gender inequality is different from that of white-middle class women, because of their own subculture and their long history of

being oppressed. As a result, in order to understand inequality, the issues of race, class and gender oppression must be taken into the consideration simultaneously (Brewer, 1993). Feminists of color attempt to create their own paradigm called 'black feminism', by putting women of color at the center of the analyses (Brewer, 1993). The cultural experiences of women of color reflect their ways of learning and viewing the world (Brewer, 1993).

Women in postcolonial and third world countries also have different historical and cultural contexts and social values from those of the western countries and even those of women of color. As a result, these groups of feminists believe that women's experience of gender inequality varies from one country to another depending on their history, culture, and values.

In developing countries with their experience of being colonized by Europe and America; for instance, the division of labor is an outcome of colonization, with a western model of gender-based division of labor being imposed on the colonies (Lorber, 2001). Women were assigned to take responsibility for 'food production and exportable crops, such as coffee, and the extraction of raw materials, such as minerals' (Lorber 2001). They were also required to "...provide food for themselves and their children; however, good land was often confiscated for plantations, so women also lived at a bare survival level" (Lorber, 2001, pp. 56-57). In contrast, men were assigned to work in 'mining and large-scale agriculture'.

In Middle-eastern countries, Islamic religion is a major influence on cultural and social values. This permits, in a patriarchal system, the influencing of legislation. For example, it is legal for men to have up to four wives in some instances, while women

must be faithful to only one husband. Women are required to wear veils when they are in public in order to protect them from being seen by other men. Another example is that men are allowed to beat their wives both in public and at home, if they are not satisfied with whatever their wives have done.

### **Southeast Asian Concepts**

Because of the compelling case made by third world/postcolonial feminist that a "one-size" theory does not fit all--not even all third world, post-colonial countries--feminist theories are needed that are culturally, historically, and contextually specific. I suggest that in this study of Thailand, concepts not included in the theories discussed thus far might be needed to understand the relative positions of men and women.

In Asian countries, such as Thailand, social gender roles are quite clearly defined. Men are expected to be breadwinners who work outside the home and earn the majority of income for the family. Traditionally, women are expected only to be homemakers who take care of household chores and childcare. At present, the tremendously high cost of living leads to more women working outside the home than in the past, because they cannot rely solely on the husband's income. Moreover, more women have access to higher education and have better opportunities to get jobs outside the home; as a result, there is a larger number of females participating in the labor market. According to the August 1998 Labor Force Survey by the National Statistical Office of Thailand, women are 45% of the labor force ([www.nso.go.th/gender](http://www.nso.go.th/gender)). These Thai women are expected by society to play the dual roles of mother and housewife, even though they work outside their homes. Moreover, their income is considered only as a supplement to their husbands (Muntarbhorn, et al., 1990).

The ancestors of many Southeast Asians, including Indonesians, Laotians, Singaporeans, Thais, Cambodians, Burmese, Malaysians, Filipinos, and Vietnamese share the 'Tai' culture. The word 'Tai' refers to "...a culture and linguistic term used to denote the various Tai peoples in general, people sharing a common linguistic and cultural identity which in historic times has become differentiated into a large number of separate identities" (Wyatt, 1984, P.I). Their ways of living are similar, such as the use of wooden and bamboo tools, fishing, and the export of wood, the cultivation of rice as a staple crop, and having extended families in rural areas (Wyatt, 1984). Many of these Southeast Asian countries were colonized by England, France, and other European nations, which influenced their social values and ways of living.

However, one might wonder how Thailand shares the same social values with other Southeast Asian countries, because Thailand was never forcefully colonized by the European powers. Wyatt (1984) and Anderson (1998) point out that King Rama V adopted the concept of centralization from England in order to prevent Thailand from being colonized, which affected the political and administrative reform from decentralization to 'Centralization or 'Eurocratic Centralization'. In other words, even though Thailand has never been recognized as formally being colonized, Thailand was internally colonized by European countries, particularly Britain. At present, some of evidence, such as the traffic system and the constitutional monarchy, are still apparent.

With similar historical and cultural bases, Southeast Asians tend to have similar cultural and social values. Four different Southeast Asian concepts are widely practiced, especially in Thailand. They include the systems of kinship, patronage, turn taking, and seniority. The kinship system has been adequately described by Kemp (1982) and

Wannasiri (1985). The patronage system is described in the works of Wales (1934), Arenberg (1963), Scott (1972), Rabibhadana (1975) and Anderson (1998). The turn-taking and seniority systems are so ingrained into Thai culture that they have not been the subject of research, but are taken for granted in the day-to-day life of Thais.

### 1. Kinship System

In ancient times, humans had to help each other, to fight with animals, overcome natural disasters, and care for the ill and elderly in order to survive. Because advanced technologies were not available, relying on human power was essential. As a result, a large number of honest people were needed as members of the group. In order to maintain a high level of trust with others in their group, each person chose close kin to be in their group. This history has resulted in a strong kinship system that remains today in Thailand.

The kinship system is defined as a method of establishing relationships between people, starting with family members and expanding to the members of the tribe (Wannasiri, 1985). There are three types of relationships among people in the kinship system including consanguinal, affinal, and fictional relations. Consanguinal relations refer to the relationships among people who are related by blood. An anthropologist calls people with this kind of relationship as genealogical principles or agnatic kin. Affinal relations are defined as the relationship among a group of people who are not biologically related, but are related by marriage to a member of another family, becoming 'in laws' of another family. Finally, fictional relations have a broader line than the two previous types of kinship. They include all who have legal relations, such as adopted daughter/son, and ceremonial kin. This type of kinship later came to be practiced

commonly in Thai society, by expanding it to include whomever we would like as a kin. Kinship systems foster interdependence for economic and political purposes.

Wannasiri (1985) noted that the kinship system in the Western world is not as strong as the kinship system in Eastern world. This is because Westerners have come to rely more on their advanced technologies than Easterners. As a result, Easterners still need help from others in the society. The kinship system becomes one of the best channels for obtaining help easily, because it creates informal relationships among individuals and families.

In Thailand, the extended family supports the existence of the kinship system. In some Thai families, married children make their homes in the same neighborhoods as their parents in order to remain close and to take care of their parents as they get older. The Thai kinship system is applied not only to biologic relations, but is also used with friends, associates, and even complete strangers. For example, the older sister of our mother is called 'Pha'; this is also used to refer to a woman who is not related by blood and is considered older than one's mother. This system also overrides actual relationships. Thus, a Thai might use the term 'Phi', the designation for an older sibling, to refer to a cousin who is only a few years older than the speaker. Kemp (1982) pointed out that the purpose of using kinship words in Thai society is to create personal relationships in order to decrease competition and exploitation.

When the kinship system is applied to the Thai workplace, it creates a collegial network in terms of getting positions and having better opportunity to gain promotions, grants and access to overseas training and conferences. This is because the channel for getting those opportunities goes through the informal relationship among those networks.

For example, a chair or committee member might provide candidates with special advice, such as how to prepare for the test, or even put in a good word with other committee members. In some cases, if a candidate is more qualified than another who knows someone on the committee, the less qualified candidate will get the opportunity. Using the kinship system in the workplace helps to create an informal relationship among co-workers, which brings cooperation among them. When someone asks for help from other co-workers who might be working in the same or a different department, she or he will get help easily from those considered a kin.

The importance of the kinship system within the workplace for understanding gender inequality in academia in Thailand is potentially complex. The kinship system could work to disadvantage women in the workplace or could negate other potential disadvantages for women. The effect will be more noticeable for the women in male dominated disciplines.

Because of the traditional exclusion of women within the work setting, women have not had the same opportunities to build strong and large kinship systems at work. Also, the appropriateness of women being in positions of power is not widely accepted. Between the patriarchal stereotypes that prevent women advancing at the same rate as men and women's new entry into academia, men are more apt to be in positions that can grant advantages. Having kin within one's department is useful but it is particularly useful to have kin in powerful positions. At the same time, the kinship system may override other negative effects of patriarchy. For example, a woman who is less productive at work because of much larger demands on her time with family responsibilities might do as well in pay raises because of having a kin who understands the constraints on her time.

## 2. Patronage System

The patronage system is another common occurrence in Southeast Asia, especially in Thailand. According to Scott (1972), a 'patronage system' refers to the exchange of relationships between people in a society who have different social status and roles. It can also be considered a dynamic relationship between two people with different social statuses or potential. Those with higher social status or potential than others engage in trade for their profit. Most of the time, the one with the higher social status or potential is the giver; whereas the one with the lower social status or lower potential is the receiver and must be faithful to the one with higher social status or the higher potential (Scott, 1972). Arenberg (1963) further explained that the mutual aid in the patronage system is the outcome of a traditional agricultural society where farmers have to work very hard and rely on themselves in all stages of agricultural production. In each year, they save some of their agricultural products for themselves and trade through a patronage system what they cannot save or produce by themselves.

Rabibhadana (1975) referred to the patronage system in Thailand as the clientship system, which is an outcome of the hierarchical system in the early Rattanakosin Era (1782-1872). At that time, the hierarchical system was composed of two levels of relationships: the client (the one with the lower status and situated at the lower level) and the aristocracy (situated at the higher level) or the king. Clients are patronized by the aristocracy; as a result, clients have to obey and respect the aristocracy, who can punish them when they do wrong. The aristocracy is patronized by the king; therefore, the aristocracy must obey, respect and be faithful to the king. Clients or 'Prai' are categorized into three types: 'Prai Som', 'Prai Luang' and 'Prai Suay', each of which

has different status. Those who are 'Prai Som' belong to the aristocracy, who can punish, sell or give 'Prai Som' to someone else. 'Prai Luang' report directly to the king and have to be registered as an employee of a certain department, have to work for the government (called covree) for six months and work for the aristocracy for another six months. Those of this 'Prai' have now become civil servants. Finally, 'Prai Suay' refers to those of lower status who lived in an area that produced one or more important products, such as dynamite; as a result, they were not required to work for anyone, but they have to produce all items required to meet government quotas. The patronage system is widely used in the governmental administration (Wales, 1934). Anderson (1998) also stated that the patronage system in Thailand is considered one of the major elements of the governmental structure.

At present, the patronage system is still widespread in the Thai workplace, especially in opportunities for promotion, overseas training, higher education, and leadership positions. For example, when there is an election for an administrative position, such as department head or dean, the candidate might make a promise to give a person a chance to get a promotion or an opportunity for overseas training or higher education, if that person votes for him or her. If that person wins the election, he or she will keep the promise, because it is an exchange to keep the relationship growing.

As argued above for kinship systems, the patronage system will most likely have a complex relationship to gender. It may decrease inequities, provide males with an advantage or make no difference. However, what is certain is that the concept of patronage should be included in any attempts to develop a Southeast Asian theory.

### 3. Turn Taking System

Turn taking is also widely used in many public organizations in Thailand. The purpose of using turn taking is to assure that the exchange of roles and responsibilities among workers is fair. The application of turn taking in the Thai workplace can normally be found in the areas of promotion and access to higher education, participation in training or overseas seminars. In applying turn taking to promotion assessment, the person whose turn it is must be reasonably productive, as defined by department head. Others will accept this and wait for their turn. The ultimate result of turn taking is to make the workers happy and to improve morale.

Turn taking may have the same complex relationships to gender inequality in pay raises as kinship and patronage discussed above. In addition, turn taking has an element of egalitarianism that the other two concepts do not. Thus, turn taking may have the additional complexity of changing the affects of kinship and patronage. Without the inclusion of turn taking into the Southeast Asian concept, any relationships between gender and kinship and patronage could be spurious.

### 4. Seniority System

The seniority system is also a widely practiced Thai value where the younger person is required to respect his/her elder in almost every aspect of life, because Thai people believe that older people are wiser and have more experience. For example, younger brothers/sisters have to obey and respect older sisters/brothers. Children have to respect their parents and other older kin. This concept is not confined to biological relatives.

When the seniority system is applied to the workplace, it includes the considerations of age and work experience. Those who are younger and have less work experience will respect the older, more experienced worker. As a result, the seniority of candidates will be considered when there is an election for a management position, such as dean, department head or president of the university. If there are two candidates with similar qualifications, the older in terms of age or the one with more work experience will win the election. In some public organizations, the seniority system is also sometimes used as an additional criterion for promotion and pay raises.

Given women's fairly recent entry into academia, women are less likely to hold positions of power such as being a Dean. While women may be department heads in female dominated disciplines, the Dean, who has the ultimate say about pay raises is still most likely male. Again, the importance of this concept for understanding pay raises will no doubt be highly dependent upon the discipline.

#### **IV. Studies of Gender Inequality**

As mentioned in chapter one, many previous studies on inequality have focused on Thai industrial/business settings and discovered that there is gender inequality and segmentation of labor by gender (Gender and Development Research Institute, 1991; Raviwongse & Nirathron, 1995; Samakeetham, 1995; & National Statistic Office of Thailand, 1997). With little extant research into status differences by gender (see chapter one) and none into Thai academia, I will begin with a review of Thai studies concerning gender inequality in many places, such as business, politics, government, and education.

Later, I will move to discuss gender inequality in academia as studied by Western scholars.

## **Gender inequality in Thailand**

### **Business sector**

In the business sector, women tend to be concentrated in low- or unskilled jobs. Most have less than a high school education, and have few opportunities to obtain further training or education (Raviwongse and Nirathron, 1995; Samakeetham, 1995). Men are often paid more than women for the same job (Gender and Development Research Institute, 1995). Large corporations tend to be more equitable with starting salaries, often exceeding nationally mandated minimum wages. However, they are still likely to treat men and women differently when it comes to pay raises (Gender and Development Research Institute, 1995). Women are rarely hired into supervisory positions, though they frequently serve in such positions temporarily, until a more “suitable” replacement can be found (Gender and Development Research Institute, 1991).

### **Political participation**

Women are also underrepresented in political participation. The new constitution of 1932 permitted both men and women to run for office ([www.inet.co.th](http://www.inet.co.th), 09/03/98). In that year, the candidates for the House of Representatives numbered 4005 men and only 110 women (Gender and Development Research Institute, 1994). Fifty-three years later, the percentage of female candidates had risen, but only to five percent (Gender and Development Research Institute, 1994). Though they had been running for nearly two decades, the first woman was not elected to parliament until 1949 ([www.inet.co.th](http://www.inet.co.th), 09/03/98). At present, women constitute less than nine percent of the House of Representatives ([www.parliament.co.th](http://www.parliament.co.th), 09/03/98).

## **Government bureaucracy**

According to the records of the Office of Civil Servants (1997), the majority of civil servants are female, but most are concentrated in the lower ranks. “The imbalances between male and female representation become more and more pronounced as one moves up to higher levels of executive posts (Thomson, 1995: P.13).” Most women are assigned to tasks involving the collection or processing of data “... rather than planning or implementing policies ([www.unifem.easeasia.org](http://www.unifem.easeasia.org), 07/18/00).”

High administrative positions at both national and local levels, where decision-making is needed, have been viewed as traditionally male. “Women held less than five percent of most decision-making positions at the national level (Thomson, 1995: P.10).” Only a few decades ago were women given access to these positions. For example, women did not become judges until 1965 ([www.inet.co.th](http://www.inet.co.th), 09/03/98). There were no women in the six highest pay grades in the Office of the Attorney General, (Office of Civil Servants, 1997). Not until 1969 was first female mayor elected ([www.inet.co.th](http://www.inet.co.th), 09/03/98). In ministerial positions, the first female from outside the parliament was appointed to the Cabinet in 1976 ([www.inet.co.th](http://www.inet.co.th), 09/03/98). In 1988, the first female ministers to be selected from among elected Members of Parliament were appointed Minister attached to the Office of the Prime Minister ([www.inet.co.th](http://www.inet.co.th), 09/03/98).

In 1991, the Thai government initiated sweeping reform, to permit women to hold all but the most sensitive national security positions, removing nearly all restrictions on the advancement of women ([www.inet.co.th](http://www.inet.co.th), 09/03/98). In 1996, the Royal Thai Military, appointed its first female general officers. Only in 1998 was a woman finally

appointed to the highest, non-political, ministry post, that of permanent secretary ([www.unifem.easeasia.org](http://www.unifem.easeasia.org), 07/18/00).

At the local level, "...women constitute about five percent of the elected provincial/municipal council members and there are no female district officers...[and]... one percent of the elected village heads and sub-district heads are women (Thomson, 1995: P.5)." "...Substantial changes occurred after 1982 when the Local Administration Act allowed women to take up the post of village head and sub-district head. The proportion is still very small, 1.9 percent in 1996, but this is still an increase from 0.7 percent 10 years earlier ([www.unifem.easeasia.org](http://www.unifem.easeasia.org), 07/18/00)." In 1993, the door was opened for women to become district officer and governor ([www.inet.co.th](http://www.inet.co.th), 07/18/00). "In 1994, the first female governor was appointed. Ten women were appointed as district officers along with one female governor ([www.inet.co.th](http://www.inet.co.th), 07/18/00)." The Sub-District Council and Sub-District Administrative Organization Act of 1994 permitted women to obtain the position of District Director. The first was appointed in 1996.

In 1996, there was only one female president of a public university. Women made up only twenty percent of vice-presidents and twenty-four percent of deans at public universities (Office of Civil Servant, 1997).

### **Educational attainment**

According to Thomson (1995), the educational attainment of Thais, particularly Thai women, is quite low compared to that of Americans. She further explains that roughly twice as many women as men are illiterate. Only thirty percent of women have a secondary education. One in twenty receive higher education. The Office of Civil Servants (1997) shows that the number of women who work for government and have

completed higher education is nearly equal to the number of men (less than one percent difference). However, men hold three times as many doctorates and fifty percent more Master's degrees.

The segmentation of disciplines is still apparent in Thailand. The majority of women tend to choose to study in the humanities and social sciences. Conversely, men prefer to choose hard sciences, such as engineering, computer and sciences. As the UNIFEM (2000) points out, "In vocational education, women are more likely to select subjects related to their traditional roles, e.g., home economics and commerce, while most men choose industrial and agricultural subject.... In the field of engineering, female students represent only 15.7% compared to 78.8% in humanities, religion, and theology" ([www.unifem-eseasia.org](http://www.unifem-eseasia.org), 07/18/00).

### **Gender Inequality in U.S. academia**

Feminist theories, such as those previously discussed in this chapter, have been used to study gender inequality in the academia. It is to this empirical literature I now turn. I will present previous literatures that are most relevant to gender inequality in pay. The literature is summarized into topics, such as the segmentation of academic disciplines, productivity measures, cumulative advantage (the Mathew effect), degree of male dominance in promotion/leadership and control of valuable resources (decision-making), and family responsibilities.

### **Segmentation of academic disciplines**

In much of the world, women had little or no access to higher education until the nineteenth century. Most spent their time taking care of household chores and their families, because society expected them to be homemakers. Only men, who were

expected by the society to be breadwinners, had the opportunity to get an education. Fortunately, in the nineteenth century, women, especially those from upper class families, gained wider access to education. This education was often still confined to fields perceived as nurturing and caring, such as nursing, social work, teaching, and home economics, which later came to be known as traditionally female disciplines. As Solomon (1985) contended, men and women have different preferences in choosing their majors. Men are more likely to major in mathematics and scientific fields such as engineering; whereas, women tend to study the fields of nursing, teaching, home economics and social work, because they are inspired by the societal expectation of social gender roles.

Since 1970, the number of women at all degrees and levels in higher education has increased dramatically (Roemer, 1983). The U.S. Department of Education (2000) reported that between the years 1999 and 2000, 44,808 people received Ph.Ds from U.S. universities, of whom forty percent were women (<http://nces.ed.gov>, 08/30/03). Even though the number of women obtaining doctoral degrees is approaching their percentage of the population, many of these Ph.D.s are awarded in female-dominated disciplines.

The United States Women's Bureau (1975) and Zuckerman (1981) indicated that male-dominated disciplines refer to those academic fields with the representation of women is less than thirty percent. Women are under-represented in the hard sciences. They make up only sixteen percent of Ph.Ds. in computer and information sciences, fifteen percent of Ph.D.s in engineering, and twenty-five percent in mathematics (Zuckerman, 1981). On the contrary, women represent approximately sixty-five percent of Ph.Ds. in education, sixty-one percent for those in modern languages and literatures,

and fifty-nine percent for Ph.D.s in English language and literature/letters (Zuckerman, 1981). These Ph.D. candidates are expected to pursue teaching careers at the university level.

The under-representation of women in the hard sciences occurs at all stages of the educational pipeline, from enrolling in engineering programs, to completing, to aspiring to pursue graduate degrees in engineering programs (Berryman, 1985). The limited number of women entering male dominated fields leads to a limited number of women obtaining Ph.D.s, and thus, a limited number of women with the qualifications to become professors in male-predominated fields. According to the U.S. Department of Education (NSOPF: 1999) and American Association of University Professors (AAUP), at present women represent approximately thirty-six percent of faculty positions. However, they are concentrated in disciplines that are perceived as female-dominated. For example, ninety-eight percent of nursing faculty, fifty-two percent of English and Foreign language faculty and fifty percent of education faculty are female. Conversely, in male dominated-disciplines, only six percent of engineering faculty, thirteen percent of physical sciences faculty, sixteen percent of occupational programs faculty, twenty-one percent of history and philosophy faculty, twenty-eight of biological science faculty, twenty-seven percent of mathematics and computer sciences faculty, and twenty-six percent of social science faculty are women.

The outcome of the segmentation of academic disciplines by gender is considered one of the most important factors for faculty's career advancement. Many studies indicate that a gender gap exists in structural rewards, such as pay, promotion, academic

rank, and tenure (Barbezat, 1988; Bellas, 1994; Cox and Astin, 1997; Creamer, 1998)<sup>2</sup>.

In other words, gender differences in these structural rewards are caused by being located in different disciplines. For example, the data from the U.S. Department of Education indicate that in 1992 "...66 percent of women earned base salaries of less than \$40,000, compared with 37 percent of men, while 5 percent of women reported salaries of \$60,000 or more, 19 percent of men did so" (as cited in <http://nces.ed.gov>). When the disciplines were taken into account, the faculty members in female-dominated disciplines got paid less than those in male-dominated disciplines. The 2000-2001 faculty salary survey of institutions belonging to National Association of State Universities and Land Grant Colleges indicates that the average starting salary of new assistant professors in male-dominated disciplines, such as engineering, is higher than those in female-dominated disciplines, such as English language. This is further supported by College and University Personnel Association who point out "full professors of engineering earned on average about \$20,000 more than full professors in education at four-year institutions in 1994-1995" (Hearn, 1999: P.394). It can be concluded that gender differences in pay can be found in within and across disciplines.

The segmentation of academic disciplines also leads to gender differences in publishing productivity (Creamer, 1998), which in turn leads to a gender gap in career advancement in terms of academic ranks and tenure status. This is because each discipline tends to have different characteristics, which may affect ways of obtaining funding, conducting research, and getting published (Creamer, 1998) and the assessment of faculty productivity is approximately 80% based on publishing productivity (Laurence

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<sup>2</sup> There are other influences on salary, such as research grants/funds.

et al., 1983). Moreover, “average levels of publication productivity vary widely between academic fields and within subspecialties in the same disciplinary grouping. As a result, female faculty members lag behind in career advancement measures, such as in academic rank and tenure status as indicated by many scholars (Astin and Bayer, 1979; Hirsch and Leppel, 1982; Weiler, 1990; Broder, 1993; Creamer, 1998).

#### Productivity measures

Productivity is considered one of the most important criteria in assessing faculty members’ career advancement or rewards in academia, in terms of pay raises, academic rank, and tenure position. Meyer (1998) defined productivity in terms of workload and time allocation: “Workload...captures how their time is spent, while productivity is a measure of what is produced with that time” (pp.45-46). The study on faculty productivity done by Massy & Wilger (1995) found that their respondents (faculty from all types of institutions) define productivity as refereed publications and research grants. Furthermore, Fairweather (2002) defined productivity as the output of each individual faculty member including both teaching and research outputs.

Meyer (1998) indicated that the average faculty workload from over 15 states, several systems, and three national studies, is over 40-50 hours per week. Meyer (1998) proposed three measurements of faculty’s workload assessment by focusing on the total number of hours worked weekly in the ‘fulfillment of their current jobs, total number of hours spent each week teaching or on instruction related activities, and total number of hours spent weekly on research or other scholarly activities.

Konrad & Pfeffer (1990) and Massy & Wilger (1995) measured faculty productivity by looking at their research funding/grants, the number of the conference

presentations and/or workshops in the past two years. Two years of productivity will allow a sufficient amount of productivity to measure any change. Many scholars, such as Bentley & Blackburn (1990), Blackburn & Lawrence (1995), and Hekelman, Zyzanski, and Flocke (1995) suggested that traditional productivity mainly focuses on the amount of research funding or number of publications produced in a year or lifetime.

Meyer (1998) stated that the studies of faculty workload are different in each state and institution, but they seem to produce the same results. For example, in Texas, the faculty's credit hours taught per semester are used to measure their workload. The measurement of faculty productivity is based on the missions, types and characteristics of each academic institution (cited in Meyer, 1998). Research-oriented universities might emphasize mainly research publishing productivity, and research grants; whereas, teaching-oriented universities might focus primarily on the number of teaching credit hours per semester.

On another strand, Lawrence et al (1983) proposed five criteria for measuring faculty performance, including teaching loads, advising tasks, research and publication, service to college, community and profession as well as research grants. Along this line, Blackburn & Lawrence (1995) created a model to measure faculty productivity by focusing on "...self-knowledge, which included personal interest, commitment, efficacy, psychological characteristics, satisfaction, and morale" (cited in Fairweather, 2002, p.2). In the opinion of Blackburn & Lawrence (1995), "...social knowledge, which included social support, perceived institutional preference, and institutional values (e.g., rewards)...and environmental influences have tertiary role in their model" (cited in Fairweather, 2002: p.2).

It can be concluded that most of the previous studies concerning the measurement of productivity/performance focus on these important criteria: publishing productivity, teaching load, advising/committee work and community services.

### 1. Publishing Productivity

Among productivity measures, publication tends to be the most important factor, because it makes up a large portion of productivity assessment. As Astin & Davis (1985) stated, “in the study of sex differentials in academia rewards structure, publications have been found to account in every important way for the varied distribution of these rewards.” Many leading researchers across disciplines have their own ways to measure publication productivity. Lindley et al (1992), for instance, measured publishing productivity by focusing on number of books, refereed articles, and exhibition performances (those activities that do not involve written output, such as pieces of art, performance in theatre or music, and recitations of work in literatures).

Creamer (1998) reviewed the literature on why women and minorities tend to have fewer publications than white males. She indicated that publishing productivity can be measured in many ways including the quantity of journal articles/publications, abstract articles published by year and author from selected refereed articles, books, and book chapters. Also, there are many national surveys of faculty, such as the Carnegie Foundation for the Advancement of Teaching, the American Council of Education (ACE), the National Center for Research to Improve Postsecondary Teaching and Learning (NCRIPAL) on which it is possible to rely. “These surveys provide a portrait of faculty attitude and behaviors, including levels of publishing productivity, and how these have changed over time” (Creamer, 1998, p.7).

Fairweather (2002) measured publishing productivity by focusing on the past two years' refereed publications, published book reviews, articles or creative works, books, textbooks, monographs, and chapters in edited volumes. "Limiting the time period for the measure of research productivity to the preceding two years was necessary to compare it with teaching workloads and productivity during fall term" (Fairweather, 2002, p.5). Publishing productivity has the advantage of having similar meaning and value across types of institution, at least as reflected in faculty rewards (Fairweather, 1996). It has also been widely used in previous research, ranging from the early study conducted by Ladd in 1979 to the contemporary study conducted by Blackburn and Lawrence (1995).

The results from these studies found that female faculty members tend to be less involved in conducting research and to have less publication productivity than male faculty members. The National Survey of Postsecondary Faculty (NSOPF-93) found that "Nearly two-thirds or approximately sixty-four percent of full-time faculty reported that they engaged in some research, writing, or other creative work" (p.8). In this case, female faculty members were less likely than their male counterparts to engage in research. Approximately thirty-two percent of female faculty members reported that they did not engage in any research; whereas, only twenty-five percent of their male counterparts did not do research. "While twenty-seven percent of women spent more than ten percent of their time on research, forty-three percent of men did so" (p.8).

Long (1992) and Creamer (1998) discovered that the majority of female faculty members tend to be over-represented as non-publishers, but are also under-represented among the prolific authors. According to Creamer (1998), a prolific author refers to one

“...who [has] produced enough journals articles to be in the top three to five percent of all faculty in their field” (p.101). Prolific authors are most often (59% in 1993) white males (Adalberto, 2000). Approximately three times as many women as men at research universities become non-publishing faculty members (Astin, Day, and Korn 1991 as cited in Creamer, 1998).

According to Creamer (1998), male faculty members produce refereed journal articles more than female faculty members. Male faculty members produce up to thirty-two refereed articles; whereas, the maximum number of refereed journal articles produced by female faculty members is nineteen. The National Survey of Postsecondary Faculty (NSOPF-93) also reported that the type of research product might vary by academic discipline; the average research productivity of full-time faculty was standardized by teaching field. However, women are more likely than men to have lower productivity in articles in refereed, non-refereed, textbooks, and monograph. Women produced 0.77 articles in refereed while men made up to 1.12. Women published 0.74 articles in non-refereed; whereas, men had 1.13. Women wrote .72 while men produced 1.15. Finally, women published .71 monographs, but men produced 1.16.

Research grants are considered one of the most important factors for increasing publishing productivity. When this is taken into a consideration, women are disadvantaged in obtaining grant-funded proposals as indicated by Creamer (1998). According to Fox (1989), studies prior to the 1980s indicated that female faculty members published less and obtained fewer external research grants than men (cited in Grant & Ward, 1996). The National Survey of Postsecondary Faculty (NSOPF-93) also reveals that approximately thirty-one percent of full faculty engaged in funded research.

However, only twenty-seven percent of women obtained research funds compared to thirty-three percent of men.

Many leading scholars attempt to explain why there is a gender gap in publishing productivity and in obtaining research-funded grants. Fox (1995) and Sonnert and Holton (1995a, 1995b, as cited in Creamer, 1998) indicated that individual and environmental factors influence career attitudes on rank of individual location of the institution, and criteria and decisions on rewards. Cole and Singer (1991) contended that gender gaps in publication productivity and research grant obtainment are a result of cumulative disadvantages or the Mathew effect. The Mathew effect is defined as an accumulation of experience before becoming faculty and during early years of a teaching career, which benefit males, but impede females' career advancement. The details of the Mathew effect will be discussed later in this chapter.

Creamer (1998) explained that the gender gap in publishing productivity is caused by four factors including resources, recognition, rewards, and reinforcement. She later explores three main factors for explaining the gender gap in publication productivity, which are individual factors, institutional factors, and environmental factors. Individual factors refer to the characteristics of each faculty member including ability, time devoted to conduct research, motivation, attitudes and practices related to productivity and commitment in conducting research (Bean and Kuh, 1988; Blackburn, Wenzel, and Beiber, 1994; as cited in Creamer 1998; Fox and Faver, 1985; Long and Fox, 1995). According to Fox (1995), individual characteristics have little impact on the lack publishing productivity in hard science female faculty members. However, only time spent in conducting research has a strong impact on the gender gap in publication

productivity. Blackburn, Wenzel, and Beiber (1994) discovered the “percentage of time devoted to research is a strong predictor of publishing productivity” (cited in Creamer, 1998, p.48). Female faculty members are more likely than their male counterparts to be involved in teaching at the undergraduate level, causing less time to be spent conducting research (Finkelstein, 1984 as cited in Creamer, 1998).

“Institutional factors refer to the prestige of the institution the where faculty members earned their doctoral degrees or the prestige of institution where they are currently working” (Creamer, 1998, p.47). These impact the gender gap in publishing productivity in the long run. Institutional characteristics affect female faculty in terms of getting fewer institutional rewards including promotions, speed of promotion and salary. This is due to the lesser recognition of female faculty members from the external institutions (Long and Fox 1995; Reskin 1978 as cited in Creamer 1998). Institutional factors also impede female faculty members from accessing institutional resources, because they lack collegial networks developed during their graduate training or in their early years as faculty members.

Furthermore, environmental factors refer to characteristics external to the institution, which create recognition, reinforcement, and cumulative advantage (the Mathew effect) for faculty members. Fox (1985) states “Recognition is manifested in academic rank, citation awards, and appointments to prestigious panels and boards, fellowships, and honorary degrees” (cited in Creamer, 1998, p.53). Most of the board or committee members who are responsible for recognition and approval are male; as a result, women are less likely to get these rewards making them recognizable (Creamer, 1998). In this case, reinforcement or feedback can be obtained both formally and

informally through the exchanges of "...the written comments of editors reviewing a manuscript, or feedback over lunch from a colleague about an idea, or in an electronic exchange of a publication draft" (Creamer, 1998, p.55). Most of the time, women are more likely to be excluded from collegial networks, which lead to lesser publication productivity than their male counterparts (Creswell 1985; Grant & Ward, 1996). The last element of environmental factors is cumulative advantage referring to the accumulation of graduate training experience and the early stage of a teaching career, which disadvantages women in their career path, but benefits male career advancement. The details of cumulative advantage will be discussed later in this chapter.

## 2. Teaching Load/Instructional Productivity:

Fairweather (2002) conducted research to examine faculty productivity in teaching and research. He measured the teaching load of faculty members by examining "the number of hours the faculty member taught in a specific class per week times the number of students enrolled in that class, summed over all the classes taught during Fall term" (p.5), which he called student classroom contact hours per semester, and "the number of thesis or dissertation committees" (p.5). He also measured the quality of teaching by categorizing types of learning into collective and active learning. Collective learning is composed of discussion groups and class presentation, apprenticeships, internships, fieldwork, field trips, role-playing, simulations or other performance, group projects, and/or collaborative learning groups. Active learning refers to those classes using only lectures and/or television. His findings indicate that at all types of universities; approximately fifty percent of faculty members are highly productive professors. However, productive teaching levels vary by type of institutions, disciplines,

and gender. For example, among research and doctoral granting universities, the faculties in business departments tend to produce the highest median student contact hours. In comprehensive universities, the social science faculty produced the highest median student contact hours. In Liberal Arts colleges, faculty members in the natural sciences had the highest student contact hours. “In other 4-year institutions it was the health sciences faculty” (p.7). When gender is brought into the equation, female faculty members tend to have less productive teaching and research and also are more likely to use both collective and active learning.

The National Survey of Postsecondary Faculty (NSOPF-93) measures teaching productivity by examining the percentage of time spent in teaching activities (grading, course preparation, advising students), level of instruction, number of classroom hours per week, and number of contact hours with students per weeks. The survey indicates, “Women spent more time on teaching activities than men, on average...51 percent of women, but 37 percent of men, allocated at least 75 percent of their time to teaching activities” (p.8). Women are more likely than their male counterparts to teach undergraduate level, which is approximately eighty percent.

### 3. Advising/committee works and social and community service

The last element makes up a small portion of the productivity measurement. As a result, women are more likely than their male counterparts to spend more time on undergraduate teaching and advising (Kulis and Miller-Loessi, 1992 as cited in Grant and Ward, 1996). Women spend more time on advising and committee work and this leads to less time in conducting research. The consequence is a negative impact on publication productivity. The National Survey of Postsecondary Faculty (NSOPF-93) found that

women were more likely than men to spend more time on service activity by fifty-nine to fifty-three percent.

### **Cumulative advantage or Matthew effect**

The Matthew effect is defined as “an allusion to Christ’s description of accumulating faith: For whosoever hath, to him shall be given, and he shall have more abundance; but whosoever hath not, from him shall be taken away even that he hath” (King James Version, Matt.25: 29 as cited in Clark & Corcoran, 1986, p.401). Many scholars, such as “Merton, Zuckerman, Cole, Lorber, and others who have used the quotation are referring to social status advantages: a case of the rich getting richer and the poor getting poorer as time (or the career in this case) goes on” (as cited in Clark & Corcoran, 1986, p.401).

The Matthew effect results from the accumulation and interaction of many crucial factors, such as resources and feedback. It has disadvantages for women’s future career advancement, but give an advantage to men (Creamer, 1998; Clark & Corcoran, 1986; Fox, 1985). “Initial advantages are associated with an early start in a faculty and publishing career, such as enrollment in a prestigious doctoral program, mentoring by an eminent scholar, and early publishing success” (Creamer, 1998, p.57

Clark and Corcoran (1986) considered the cumulative advantage as part of a work socialization process before and during an early teaching career. They classify this socialization process into three stages: anticipatory, occupational entry and induction, and role continuance. The anticipatory or career choice stage is the first stage and often happens at an early age, when factors, such as socialization by parents, teachers, and the media influence career choice and academic decision-making. The second stage is

occupational entry and induction, which is a part of the Matthew effect and is very important, because it is a pipeline for the teaching career. It mainly focuses on the faculty members' "...formal training in graduate school, which also provides anticipatory socialization and a site for recruitment as well as facilitation of professional role commitment" (Weiss, 1981 as cited in Clark and Corcoran, 1986, p.400). The last stage is role continuance, which includes "...a set of internalized role specifications, a sense of satisfaction with work, and a high degree of job involvement and commitment" (Clark and Corcoran, 1986, p.401). These feelings will be "...carried along within the structure of the career to later stages, which may involve the maturing, more independent professional in sponsoring, socialization, or other organizational leadership roles and generative activities" (Clark and Corcoran, 1986, p.401). This last stage will happen, if previous stages support a faculty members' career life.

Many scholars indicated that experience in graduate school and during the early stage of faculty members' career life are the most trivial factors for their career advancement (Clark and Corcoran, 1986; Creamer, 1998; Long, 1990). One of the most important reasons why more women are concentrated in the lower academic ranks, in non-tenured or part-time positions, have lower rates of publishing productivity, and get lower salary, is their cumulative disadvantage. These negative experiences impact the opportunities for women to access resources, such as research funds/grants, role models, and collegial networks, which are important for research/publishing productivity. All of these build up over women's professional life.

"From graduate school on, women lack effective mentors who can aid their academic careers, and few have worked with female mentors who might serve as role

model for handling issues specific to women, such as pregnancy, maternity leave, or sexual harassment” (Fort et al. 1993 as cited in Grant & Ward, 1996, p.165). Most of the time, female faculty members are more likely to be assigned to less prestigious activities. As a result, “...[women] may begin with initial disadvantage and find that grows with time” (Clark and Corcoran, 1986, p.401).

Lorber (2001) explained that networking and mentoring systems facilitate faculty career advancement. People learn about the norm of the workplace, job and promotion opportunities from their networks, who can recommend them. “Becoming part of a network and getting a mentor is made much easier if you become a protégé of a senior colleague...where information is traded and deals are cut” (Lorber, 2001, p.31).

However, not everybody can be a member of the protégé system, because most of sponsors are most likely to be male and tend to choose a protégé who is similar in terms of race, ethnicity, religion, and gender. Epstein (1997) provided “the reasons why male sponsors are more likely to hesitate to select female protégé” (cited in Lorber 2001). They believe “...women have less commitment and will easily be deflected from her career by marriage and children” (Lorber, 2001, P.31). Moreover, the relationship between a male sponsor and a female protégé might be questioned by the female’s family (husband and children), the male sponsor’s family (wife and children) and coworkers. As a result, male sponsors tend to choose male protégés in order to avoid misinterpretation by their partners and coworkers.

In the early stage of a faculty member’s career life, getting both national and international recognition, becoming a prolific scholar, and having a collegial network create more opportunity to access resources, such as research funds/grants. Women are

more likely to be excluded from a collegial network, less likely to be a prolific author and to become recognized worldwide, which in turn leads to lesser publication productivity than men.

**Degree of male dominance in promotion/leadership and control of variables resources (decision)**

Many studies show that women are more likely than men to be in a lower status, such as being untenured, being employed in part time or temporary positions, being located in two-year institutions or less prestigious institutions. They also lag behind in salary, academic rank, and appointment to top administrative posts (see for example, Fox 1989 as cited in Grant & Ward, 1996, p.166). The National Survey of Postsecondary Faculty (NSOPF-93) found that “Among full time faculty in fall 1992, women spent less time than men on administration, on average” (p.9). Fifty percent of women spent no time on administration, compared with forty two percent of men. Women were less likely than men to chair departments: thirteen percent of full time faculty members have chaired their departments, but women were less likely to have done so. The same survey indicates that at all ranks, 33.6 percent are women; whereas, men represent 66.4 percent. Full professors are approximately 23.5 percent female and 76.5 percent male. Associate professors consist of 31.8 percent female and 74.2 percent male. Assistant professors are composed of 45.4 percent female and 59.7 of male. Low ranking instructors are fairly evenly distributed between men and women.

Women are more apt than their male counterparts to be employed by undergraduate two and four-year colleges rather than by research universities and to hold part-time or non-tenure-track positions where pay, benefits, job security, and influence

are minimal (Aisenberg and Harrington 1988; Fox 1989 as cited in Grant & Ward, 1996, p.166). Women are also more likely to hold temporary, non-tenure-track positions with heavy teaching loads and fewer resources for research. (Fox, 1989 as cited in Grant & Ward, 1996, p.166)

Luke (2002) conducted a study on the 'breaking through the glass ceiling' by female faculty members in the universities of four countries in Southeast Asia, including Hong Kong, Singapore, Thailand, and Malaysia. Luke found that women shared a smaller proportion of management positions and they are less likely to break through glass ceiling positions. This is beside the fact that they are as qualified as men, having earned their degrees in Western universities and being fluent English speakers, world-class experts in their fields, well versed in equity discourses, and globally connected in international non-government organizations (NGOs) and academic circuits. Women held positions ranging from dean and deputy dean, to head of department and research center director, spread across the faculties of arts and humanities, the social and natural sciences, law and medicine. No women in any of the four countries held the positions of university president or vice president.

Kemp (1994) attempted to explain that women are not employed, because men devalue women's potentials. Women are viewed as "...not too bright, clothes-conscious, and overly emotional" (Lorber, 2001, p.26). Therefore, men expect that women might not be able to perform challenging jobs as well as men. Reskin (1988) also explained that the income differences between men and women are not caused by sex segregation, but caused by the devaluation of women's work. She further contended "...men's desire to

preserve their advantaged position and their ability to do so by establishing rules to distribute valued resources in their favor” (p.281).

Women are also viewed by men as having less potential to make decisions and supervise others (Anker 1997). This devaluation of women’s ability in decision making and supervising impedes women seeking to break through the glass ceiling. Many women have become stuck at the bottom of the heap due to the hierarchical structure of the organization, which is ruled by men and benefits them.

### **Family responsibilities**

Generally, women contribute more time to family and household responsibilities than men. According to a longitudinal survey of 3,594 households concerning the allocation of time spent on household tasks conducted by the National Survey of Families and Households (NFSH), females spent approximately weekly 9.49 hours on meal preparation, 5.66 hours on dishes, 4.11 hours on ironing/washing, 7.56 hours on cleaning house, 1.70 hours on outdoor tasks, 0.14 hour on auto maintenance, 1.55 hours on managing bill, and 2.89 hours on shopping. Women spent 33.10 hours per week on household tasks (Blair, 1991).

Although the previous national survey indicates that women devote more time than men in taking care of family and households, there is a controversy about the impact of marital status and household responsibilities on female faculty members’ publishing productivity. Many studies indicate that the conflict of dual responsibilities—work and family responsibilities—impede female faculty members in attaining career advancement. For example, the American Association of University Professor contended “the conflict between work and family obligations that many faculty members experience is more

acute for women than for men” ([www.aaup.com](http://www.aaup.com)). Astin and Bayer (1979) stated that married female faculty members have a more difficult time publishing articles than do single female faculty members. According to Waldfogel (1997), “87% of women become parents during their working life” (cited in [www.aaup.com](http://www.aaup.com)). Hochschild (1975) termed the motherhood of female faculty members as “the clockwork of male careers,” because while male faculty members are working constantly, many female faculty members often have to take some time off to give birth and take care of their children. These events usually occur during their pretenure time, because many female faculty members get a Ph.D. at a later age. “For women with children, the heaviest, pretenure productivity demands occur when they are more apt to have small children for whom they are primary caretakers...these processes, in combination, might lead to accumulative disadvantages for women scholars overtime” (Hochschild, 1975, pp.166-167).

On the contrary, another group of scholars holds that being married does not impede female faculty members’ career advancement. For example, Reskin (1977) found that “neither marriage nor child-bearing could explain the slightly lower productivity of women chemists” (as cited in Astin & Davis, 1985: P.416). Barbezat (1987) indicated that both marital and parental statuses have little impact on female faculty members’ salaries. Instead, being married tends to facilitate married faculty members having better career advancement options than those of single female faculty members. This is because married female faculty members are more likely than single female faculty members to get into collegial networks, to get information and to have access to research resources, such as research funding/grants. These benefits will be obtained through their husbands. “Married academic women are more likely to be married to other academics and often in

similar disciplines” (Astin, 1969, as cited in Astin & Davis, 1985, P.416). Astin and Davis (1985) contended that single women are excluded from the ‘boys network’, which can provide them with important connections with prolific scholars or persons in positions of power and critical information concerning research funds/grants. These factors will benefit married women, giving them a better chance of producing and publishing productively, a requirement for career advancement.

## **V. Conceptual Framework**

The study and understanding of inequality have changed over time. Many theorists, such as Marx, Durkhiem, and Dahrendorf have attempted to explain this social problem through different perspectives. Marx focuses on class and class struggle. Durkhiem emphasizes structures, status, functions, roles, norms, values and institutions, which influence rewards. Dahrendorf refines Marx’s work and concentrates on class conflict in industrial society. Even though we have had theoretical perspectives on inequality for decades, none of these theories are pertinent to gender inequality. They are considered by many scholars, especially feminists, to be male-oriented or gender-blind. Of the more contemporary theorists, feminists seek to incorporate the missing voices of women into the traditional theories of inequality. Feminists argue that having women as the center of the analysis allows a better understanding of women than could be obtained using lenses derived from male perspectives. Post-colonial and Third world feminists take this a step farther by shifting the focus to non-Western cultures with the belief that gender inequality is contextual and local. I propose a Southeast Asian feminist paradigm to foster understanding of gender inequality in that region. The concepts of kinship,

patronage, turn-taking and seniority systems are vital to the culture of Southeast Asia. They will be crucial in creating such a paradigm.

The conceptual framework used for this study is constructed by combining key elements from a variety of feminist lenses. Using multiple theoretical perspectives to guide this analysis helps to see the issue of gender inequality in pay from different perspectives and also allows for the strength of the theories to be utilized while avoiding the shorting comings of any one particular theory. The sensitizing concepts used in this analysis are as followed:

1. Research and administration:

- Publishing productivity
- Research activities
- Administrative responsibility

2. Teaching activities:

- Teaching loads
- Academic and social services
- Other committee tasks

3. Southeast Asian concepts:

- Kinship system
- Patronage system
- Turn taking system
- Seniority system: age and length of experience

4. Patriarchal systems:

- Gender of dean

- Gender of department head

5. Control variables:

- Academic rank
- Academic discipline
- Educational attainment
- Family responsibilities
- Gender
- Position cluster

This exploratory analysis, which is discussed in greater detail in Chapter Three, will consist of a series of regressions, each containing a different set of concepts, listed above, that are derived from the theories or review of literature. Because of the perceived need for concepts sensitive to the Thai culture within feminist theories, all the models will contain the variables of Kinship, Patronage, Turn taking, and Seniority systems.

## **CHAPTER 3:**

### **RESEARCH METHODOLOGY**

The purpose of this chapter is to explain the procedures used to investigate whether gender inequality exists in pay raises among faculty at KKU and to explore why it exists or why it does not. This chapter begins with a description of the data sources and the sample selection methodology. This chapter concludes with the discussion of the operationalization and the analysis of the domains.

#### **I. Data**

Data used for this study were derived from three sources including university personnel records, a self-administered survey of a sample of KKU faculty, and the annual evaluation report of faculty performance. All of these data sources are necessary for this study, because each provides information lacking in the others.

##### **1. University personnel records**

The university personnel records are an official database containing information on gender, academic rank, position cluster, salary, academic discipline, educational attainment, age, time in position, and seniority transferred from another public institution. The information was obtained from the Department of Personnel and was treated confidentially.

##### **2. Self-administered survey**

A self-administered questionnaire (appendix A) provides general information and the faculty's responses to questions on Southeast Asian concepts, including the systems of kinship, patronage, turn-taking and seniority. The survey was also designed to

measure family responsibilities and Southeast Asian concepts, which will be discussed later in this chapter.

### **3. Annual evaluation reports**

The semi-annual evaluation report of faculty consisted of information on faculty members' productivity in teaching, publication, research, committee works, academic and social service and administrative activities, which are crucial criteria for pay raises.

## **II. Research Process<sup>1</sup>**

### **1. University personnel records**

#### *Target Population*

An official list of faculty members was obtained from the Personnel Division to be used as a sampling frame, and to evaluate the target population. Only full-time and permanent faculty members at the main campus, who have been working with the university for more than five years, were considered a part of the total population. Five years was needed so that productivity, career advancement and other changes in their careers could become evident. Five years should also sufficient time for the faculty member to develop an informal connection with the department head who plays an important role in considering pay raises. As a result, full-time faculty members who have been teaching since 1997 and were active instructors in the 2001-2003 school years were

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<sup>1</sup> In keeping with the guidelines of ethical research, Institutional Review Board (IRB) approval from Virginia Tech was obtained before data collection began. There is no formal process for human subjects review in Thailand. Prior to conducting this research, appropriate procedures and approval for ethical research in Thailand were pursued. The president of KKU gave permission to conduct the research.

included in this study. The 2001 and 2002 records on the number of full time faculty members at the main campus showed that 1,310 faculty members have been working since 1997.

Theoretical perspectives and previous studies in chapter two suggested that differences in discipline are also crucial factors leading to gender differences in pay and pay raises. Both theoretical perspectives and previous studies categorize disciplines into female and male dominated disciplines. Female-dominated disciplines are those disciplines in which the majority of faculty members are female; whereas, male-dominated disciplines are those with a majority of males.

The 2001 and 2002 data on faculty members by gender, across disciplines, allow the disciplines to be divided into three groups: female-dominated (where female faculty members represent more than 60%), male dominated disciplines (where male faculty members represent more than 60%), and balanced disciplines (where neither female nor male faculty represent more than 60%), as shown in table 3.1.

- Female-dominated disciplines: the Faculty of Dentistry, Education, Humanities and Social Sciences, Management Sciences, Nursing, Pharmaceutical Sciences, and Public Health.

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In Thailand, as opposed to the U.S., there is not a unified “School of Medicines” responsible for several medical faculties. For example, the Faculty of Associate Medical Sciences mainly focuses on physical therapy. The faculty of Nursing deals mainly with patient care. The faculty of Pharmaceutical Sciences works with making medicines and filling drug prescriptions. The faculty of Public Health mainly focuses on overall health care of the community or public. The faculty of Veterinary Sciences has responsibility for the health care of animals. The Faculty of Medicines diagnoses patients and cures disease. The dean of each faculty reports directly to the president of the university.

- Male-dominated disciplines: the Faculties of Agriculture, Engineering, Fine and Applied Arts, Technology, and Veterinary Medicine.
- Balanced disciplines: the Faculty of Architecture, Associated Medical Sciences, Medicines, and Sciences.

The sampling frame was stratified by gender and discipline in order to assure that the sample accurately represented the percentage of male and female members from each discipline in the total population.

**Table 3.1: Target population by Gender and Discipline**

| Department                       | Number of Faculty |             |            |             | Total        |
|----------------------------------|-------------------|-------------|------------|-------------|--------------|
|                                  | Male              |             | Female     |             |              |
|                                  | No                | (%)         | No         | (%)         |              |
| <b>Female-Dominated</b>          |                   |             |            |             |              |
| • Education                      | 82                | (36)        | 148        | (64)        | 230          |
| • Dentistry                      | 22                | (37)        | 38         | (63)        | 60           |
| • Humanities and Social Sciences | 26                | (35)        | 49         | (65)        | 75           |
| • Management Sciences            | 5                 | (28)        | 13         | (72)        | 18           |
| • Nursing                        | 2                 | (3)         | 69         | (97)        | 71           |
| • Pharmaceutical Sciences        | 11                | (31)        | 25         | (69)        | 36           |
| • Public Health                  | 12                | (35)        | 22         | (65)        | 34           |
| <b>Total</b>                     | <b>160</b>        | <b>(31)</b> | <b>364</b> | <b>(69)</b> | <b>524</b>   |
| <b>Male-Dominated</b>            |                   |             |            |             |              |
| • Agriculture                    | 67                | (68)        | 32         | (32)        | 99           |
| • Engineering                    | 95                | (90)        | 10         | (10)        | 105          |
| • Fine and Applied Arts          | 13                | (100)       | 0          | (0)         | 13           |
| • Technology                     | 19                | (66)        | 10         | (34)        | 29           |
| • Veterinary Medicine            | 22                | (63)        | 13         | (37)        | 35           |
| <b>Total</b>                     | <b>216</b>        | <b>(77)</b> | <b>65</b>  | <b>(33)</b> | <b>281</b>   |
| <b>Balanced-Disciplines</b>      |                   |             |            |             |              |
| • Architecture                   | 9                 | (56)        | 7          | (44)        | 16           |
| • Associate Medical Sciences     | 18                | (41)        | 26         | (59)        | 44           |
| • Medicines                      | 162               | (52)        | 148        | (48)        | 310          |
| • Sciences                       | 80                | (59)        | 55         | (41)        | 135          |
| <b>Total</b>                     | <b>269</b>        | <b>(53)</b> | <b>236</b> | <b>(47)</b> | <b>505</b>   |
| <b>Total Population</b>          | <b>645</b>        | <b>(49)</b> | <b>665</b> | <b>(51)</b> | <b>1,310</b> |

Table 3.2 indicates that the target population of 1,310 cases included forty-nine percent men (49%) and fifty-one percent women (51%). Forty percent of the target populations are in disciplines classified as female dominated, twelve percent were men and twenty-eight percent were women. Twenty-one percent of the target population represented male-dominated disciplines, sixteen percent were men and five percent were women. Thirty-nine percent of the target population was from balanced disciplines, twenty-one percent men and eighteen percent women.

**Table 3.2: Target population by gender and disciplines**

| Discipline                   | Gender    |           | Total       |
|------------------------------|-----------|-----------|-------------|
|                              | Male      | Female    |             |
| Female-dominated disciplines | 160 (12%) | 364 (28%) | 524 (40%)   |
| Male-dominated disciplines   | 216 (16%) | 65 (5%)   | 281 (21%)   |
| Balanced disciplines         | 269 (21%) | 236 (18%) | 505 (39%)   |
| <b>Total</b>                 | 645 (49%) | 665 (51%) | 1310 (100%) |

### Sample Selection

To examine whether gender differences in pay raise exist at KKV, a preliminary investigation was needed to determine a direction for further analysis. A sample was drawn from the personnel records for 2002 and 2003 to determine whether gender differences in pay raises were evident.

Frankel (1983) introduced the following formula to calculate for sample size.

$$n' = \frac{S^2}{[(te)/t]^2}$$

where  $S^2$  = Standard Deviation

t.e. = Tolerable Confidence

t = Confidence Level

In order to use the above formula, a standard deviation from previous studies on this or a similar topic are needed. Unfortunately, no such studies have been conducted in Thai academia. The tolerable error (te) and t value (t) are based on the researcher's choice. I attempted to calculate the desired sample size for a plausible hypothetical example.

$$\bar{X} = 16 \text{ teaching hours}$$

$$\text{S.D.} = 8 \text{ hours}$$

$$\text{t.e.} = 1.67 \text{ hours (i.e. the desired precision)}$$

$$t = 1.96 \text{ (at 95\% confidence)}$$

$$\begin{aligned} n' &= \frac{8^2}{[(1.67)/1.96]^2} \\ &= \frac{64}{.7259} \\ &= 88 \end{aligned}$$

The result of the calculations suggested a sample size of 88 cases. Since the study focused on the comparison of pay raises of male and female faculty members in different types of disciplines, each gender from each type of discipline should have 88 cases in the

sample (88 females and 88 males from female dominated disciplines, 65 females<sup>2</sup> and 88 males from male-dominated disciplines, and 88 females and 88 males from the balanced disciplines). This results in a sample of 505 cases.

## **2. Survey Development**

A self-administered survey was developed to measure how faculty members responded to questions on Southeast Asian concepts. There are four Southeast Asian concepts, including the systems of kinship, patronage, turn-taking and seniority. The first two Southeast Asian concepts, kinship and patronage systems, have already adequately explored. For example, the kinship system can be found in the work of Kemp (1982) and Wannasiri (1985). The patronage system is described in the work of Wales (1934), Arenberg (1963), Scott (1972), Rabibhadana (1975), and Anderson (1998). As the two remaining concepts have not been adequately explored, a focus group of Thai scholars was formed to help develop the questions on Southeast Asian concepts. These Thai scholars have been serving as faculty at Thai public universities and are currently on sabbatical leave to study at Virginia Tech. They were asked to discuss the concepts, offer suggestions for further questions, and to translate Thai questions to English and back into Thai.

Based on the work of the focus group, in this research, different indicators measured each of the Southeast Asian concepts. Questions relevant to Southeast Asian concepts are discussed as follows:

### **2.1 Kinship System**

The kinship system is a concept reflecting the personal relationship(s) among people applied equally to those related by blood or law and to acquaintances. This

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<sup>2</sup> The 65 females in male dominated disciplines were too few to sample, so all 65 women were used.

creates 'fictional' relatives who are, nonetheless, accorded the same respect as an equivalent blood relation. The kinship system is an important concept in South East Asia because it forms the foundation for how people live and work together everywhere, not just in academic settings. In this study, the kinship system was used as a concept to measure personal relationships that may exist between faculty members and department heads. But, how do we measure kinship? The following factors would seem to be linked to the bonds and interactions between people:

- Whether they are actually related by blood
- How they know one another (job only, or other personal/social connections)
- How long they have known one another
- The extent to which one or the other or both persons have invested in, or developed, this relationship
- The kind of work they do and whether this work causes them to collaborate or interact.

This suggested a series of questions directed at understanding the bond between the department head and the faculty member:

1) How close are you to your department head?

The respondents were asked to rate closeness on a scale from 0 (not at all) to 3 (very close). The closer to the department head, the more likely the respondents are to be regarded as a kin.

2) How long have you known your department head?

The respondents were asked to fill in the length of their relationship with the department head in terms of years and months. The longer the respondents know the

department head, the more likely they are to be regarded as kin. It is possible, even likely, that some of the respondents might have known the department head before joining the department.

3) How much have you interacted with your department head in the past year?

The respondents were asked to indicate the amount of time spent working/interacting with the department head in terms of number of hours per week. The more frequently the respondents work with the department head, the more likely they are to be regarded as kin.

## **2.2 Patronage System**

The second Southeast Asian concept is the patronage system, reflecting the exchange of the relationship among people in a society who have different status and roles. Each seeks to maximize profit through their interaction. For example, one with higher status might ask one with lower status to perform a favor for them with the promise to give something in return, such as a job or promotion. The patronage system is also considered an important concept in South East Asia because it reflects how people interact with one another throughout the region. In this study, the patronage system is measured through personal relationships that may exist between faculty members and department heads. Trading profit between faculty members and department heads might result in favoritism in the assignment of duties, promotions and pay raises. The following factors are applied to measure the interactions between people:

- How often favors are performed, with or without being asked
- Whether or not the favors are work related
- How often favors are repaid

A series of questions were developed based on the previous factors help understanding the interaction between the department heads and the faculty members:

- 1) Other than activities related to academic affairs, how often did your department head ask you to do some favor for him/her?
- 2) How often do you perform favors your department head has asked of you, other than those related to academic affairs?
- 3) Other than activities related to academic affairs, how often did you do some favor for your department head, without being asked you to do so?
- 4) How often did your department head return a favor you had done for him or her?

For each of the four respondents was asked to rank their responses to the above questions on a scale of 0 (never) to 7 (every day).

### **2.3 Turn Taking System**

When the concept of the turn taking system is compared to the two previous concepts, it shows the least personal relationship among society members. It also helps to distinguish kinship from the patronage system. Without including the turn taking system in Southeast Asian concepts, a misunderstanding of the relationship between the kinship and patronage systems might occur. The turn-taking system reflects the exchange of roles and responsibilities among members of society, which seems to have an element of egalitarianism that the other two concepts do not. It helps to ensure fair treatment for all. 'My turn' and 'your turn' tend to be common sentiments. In Southeast Asia, the practice of turn taking can be found everywhere in people's way of living. In this study, the concept is applied to help understand the interaction between department heads and

the faculty members, the distribution of roles and responsibilities, promotions, and pay raises. In applying turn taking to pay raise assessment, the person whose turn it is must be reasonably productive, as defined by the department head. Others will accept this and wait for their turn. In practice, the department head plays an important role in terms of assigning roles and responsibilities for candidates in the upcoming pay-raise cycle. Turn-taking suggests that candidates will be assigned more or fewer tasks than their colleagues related to the criteria for the pay-raise evaluation. Therefore, turn taking is measured by the amount of work assigned by the department head relative to one's colleagues.

Questions related to turn taking are as follows:

- 1) How would you say your workload related to publication compares to the loads assigned to your colleagues?
- 2) How would you say your teaching load compares to the load assigned to your colleagues?
- 3) How would you say your workload related to community work compares to the loads assigned to your colleagues?
- 4) How would you say your workload related to social and community service compares to the loads assigned to your colleagues?

For each of the four respondents was asked to rank their responses to the above questions on a scale of 1 (a lot less) to 5 (a lot more).

## **2.4 Seniority System**

The last Southeast Asian concept examined is the seniority system, reflecting the relationships among people where the young are required pay respect to their elders. Seniority is not confined solely to the biological relatives, but is used with others who are

older. This concept is widely practiced throughout Southeast Asia. When it is applied to the workplace, it includes age and length of experience, which are considered important criteria for management positions, promotions and pay raises. In this study, the seniority system is measured by examining personal relationships that may exist among faculty members as perceived by department heads. This is done using the following factors, which would seem to reflect the interactions between people:

- How old they are
- How long they have been working at this particular workplace.

Although information on age and length of experience will not be obtained from the survey, it is appropriate to discuss them in this section because they are a part of the Southeast Asian concepts.

Data on age and experience of the respondents were obtained from the university personnel records. In Thailand, only government employees who obtain faculty positions retain their seniority. For example, Ms. Sasikul has been working for the Ministry of Agriculture for two years. She gets a teaching position at a public university. Her starting salary is based on her Master's degree plus two years of seniority. Mr. Pong has been teaching at a private university for three years. His starting salary is based solely on his Ph.D. with no seniority. The information on length of experience was obtained from the personnel records.

#### Pretest

A cognitive pretest was conducted in order to increase validity and to be certain that the questionnaire was clear to the respondents. The survey was pre-tested with thirty faculty members selected at random (five males and five females each, from male

dominated, female dominated and balanced disciplines) who were then excluded from the sampling frame. The results of the pretest showed that this set of questionnaires is reliable, because the reliability coefficient is .8536, as regarded by researcher that the score showed a high level of correlation among the measures (Carmines and Zeller, 1979). Faculty members selected for the pretest completed the survey and then were interviewed individually in an effort to assure the clarity of the questions, to identify any potentially confusing questions and to obtain their reactions and comments.

### **3. Survey Administration**

Eighty-eight males and females from each type of discipline (88 females and 88 males from female dominated disciplines, 65 females and 88 males from male-dominated disciplines, and 88 females and 88 males from the balanced disciplines) were chosen at random to respond to the self-administered survey. This results in a sample of 505 cases. To cope with attrition, 50% was added to the target sample size, thus 132 cases was needed from each gender in each category. The 65 females in male dominated disciplines were too few to sample, so all 65 women were contacted in conjunction with the survey. Therefore, the final target sample size was reduced to 725 cases. However, five female respondents from male-dominated disciplines had also participated in the pretest. To avoid any resulting bias, these respondents were excluded. As a result, the revised self-administered survey was distributed to 720 faculty members.

The administration of the survey followed the guidelines suggested by Dillman (1978, 2000). The Dillman method is recognized as one of the most successful methods for administrating surveys. The Dillman method includes several steps. The purpose of the Dillman method is to receive a high response rate. First, an e-mail was sent to all

faculty members in the sample informing them that they would receive a survey within a few weeks<sup>3</sup>. Then, a survey was sent with a well-designed cover letter and a stamped return envelope. A follow up thank you letter, which also encouraged those who had not returned the survey to do so was sent one week later to each potential respondent. Three weeks later a new packet was sent with another cover letter, a new survey and a self-addressed return envelope to those who had not responded.

In order to calculate the response rate, an ID number was prominently displayed on the right corner on the first page of the questionnaire. This ID number was matched to the name of each respondent. When the questionnaire was returned, the ID number was marked off. Only those who were not marked off got the third follow up mailing. Obviously, the response rate was determined by the number of returns divided by number sent.

#### Response Rate

Seven hundred and twenty questionnaires were sent to faculty members chosen randomly from the target population. Four hundred forty-two questionnaires (60%) were returned; fifty-one percent of respondents were men and forty-nine percent were women, as shown in Table 3.3. Thirty-one percent were from female-dominated disciplines, twelve percent men and nineteen percent women. Thirty-three percent were from male-dominated disciplines, twenty-one percent men and twelve percent women. Thirty-six percent were from balanced disciplines, evenly divided between men and women.

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<sup>3</sup> Few professors at KKU have private access to a computer. Therefore, an e-mail or Internet survey might raise privacy issues.

### Comparison between the target population and the respondents

Information on the respondents is discussed and compared to the target population in order to show how well the sample represents the target population in terms of gender, academic rank, position cluster and educational attainment. Information on both respondents and target population is discussed in detail, looking closely at gender and discipline. See table 3.3 to 3.9.

There was some discrepancy (9%) between the respondents and the target population in female-dominated disciplines, with female respondents being under represented. Male respondents in female-dominated disciplines matched the percentage in the target population. Respondents in male-dominated disciplines were over represented by twelve percent, slightly for males (5%) and considerably more so for females (two and a half times the target population). In balanced disciplines, the respondents closely matched the target population (only 3% off), with females matching the target population and male being slightly over represented. Overall, there was a two percent discrepancy between the respondents and the target population, with females being slightly under represented.

**Table 3.3: Target population and respondents by gender and disciplines**

| Disciplines             | Target Population |              | Total          | Respondents  |              | Total         |
|-------------------------|-------------------|--------------|----------------|--------------|--------------|---------------|
|                         | Male              | Female       |                | Male         | Female       |               |
| <b>Female-dominated</b> | 160<br>(12%)      | 364<br>(28%) | 524<br>(40%)   | 54<br>(12%)  | 82<br>(19%)  | 151<br>(31%)  |
| <b>Male-dominated</b>   | 216<br>(16%)      | 65<br>(5%)   | 281<br>(21%)   | 95<br>(21%)  | 52<br>(12%)  | 130<br>(33%)  |
| <b>Balanced</b>         | 269<br>(21%)      | 236<br>(18%) | 505<br>(39%)   | 80<br>(18%)  | 79<br>(18%)  | 161<br>(36%)  |
| <b>Total</b>            | 645<br>(49%)      | 665<br>(51%) | 1310<br>(100%) | 229<br>(51%) | 213<br>(49%) | 442<br>(100%) |

**Academic rank by gender** (table 3.4)

Lecturers were slightly under represented (3%). Male lecturers were over represented by one percent; female lecturers were under represented by four percent. Respondents among assistant professors closely matched the target population, with females being over represented by only one percent and males exactly matching. Among associate professors, female respondents matched the target population and males were over represented by three percent. Full professors were grossly under represented, with only a single male and no female respondents. See table.

**Table 3.4: Academic rank of target population and respondents by gender**

| Academic Rank              | Target Population |              | Total          | Respondents  |              | Total         |
|----------------------------|-------------------|--------------|----------------|--------------|--------------|---------------|
|                            | Male              | Female       |                | Male         | Female       |               |
| <b>Lecturer</b>            | 162<br>(12%)      | 197<br>(15%) | 359<br>(27%)   | 57<br>(13%)  | 49<br>(11%)  | 106<br>(24%)  |
| <b>Assistant Professor</b> | 261<br>(20%)      | 272<br>(21%) | 533<br>(41%)   | 39<br>(20%)  | 96<br>(22%)  | 186<br>(42%)  |
| <b>Associate Professor</b> | 208<br>(16%)      | 192<br>(15%) | 400<br>(31%)   | 35<br>(19%)  | 68<br>(15%)  | 149<br>(34%)  |
| <b>Professor</b>           | 14<br>(1%)        | 4<br>(1%)    | 18<br>(1%)     | 1<br>(<1%)   | 0            | 1<br>(<1%)    |
| <b>Total</b>               | 645<br>(49%)      | 665<br>(51%) | 1310<br>(100%) | 229<br>(51%) | 213<br>(49%) | 442<br>(100%) |

**Academic rank by gender and discipline (table 3.5)**

Within female-dominated disciplines, male lecturers matched the target population. Female lecturers were under represented by thirteen percent. Assistant and associate professors, both males and females were over represented by one to six percent. In male-dominated disciplines, male associate and full professors matched the target population. Female faculty members were over represented, except at the level of full professors where there were no respondents. Male lecturers and assistant professors were under represented. In balanced disciplines, respondents closely matched the target population with no more than a four percent discrepancy in any gender/rank group. Lower ranks of both genders tended to be over represented (female assistant professors matched the target population). Higher ranks were under represented with no female respondents at the level of full professor.

**Table 3.5: Academic rank of target population and respondents by gender and disciplines**

| Disciplines                 | Target Population |              | Total         | Respondents |             | Total         |
|-----------------------------|-------------------|--------------|---------------|-------------|-------------|---------------|
|                             | Male              | Female       |               | Male        | Female      |               |
| <b>Female-dominated</b>     |                   |              |               |             |             |               |
| <b>Lecturer</b>             | 54<br>(10%)       | 140<br>(27%) | 194<br>(37%)  | 14<br>(10%) | 19<br>(14%) | 33<br>(24%)   |
| <b>Assistant Professor</b>  | 71<br>(14%)       | 139<br>(26%) | 219<br>(40%)  | 26<br>(20%) | 40<br>(29%) | 66<br>(49%)   |
| <b>Associate Professor</b>  | 35<br>(7%)        | 85<br>(16%)  | 120<br>(23%)  | 14<br>(10%) | 23<br>(17%) | 37<br>(27%)   |
| <b>Professor</b>            | 0                 | 0            | 0             | 0           | 0           | 0             |
| <b>Total</b>                | 160<br>(31%)      | 364<br>(69%) | 524<br>(100%) | 54<br>(40%) | 82<br>(60%) | 136<br>(100%) |
| <b>Male-Dominated</b>       |                   |              |               |             |             |               |
| <b>Lecturer</b>             | 54<br>(19%)       | 14<br>(5%)   | 68<br>(24%)   | 23<br>(16%) | 10<br>(7%)  | 33<br>(22%)   |
| <b>Assistant Professor</b>  | 72<br>(26%)       | 24<br>(9%)   | 96<br>(34%)   | 25<br>(17%) | 21<br>(14%) | 46<br>(31%)   |
| <b>Associate Professor</b>  | 87<br>(31%)       | 26<br>(9%)   | 113<br>(40%)  | 46<br>(31%) | 21<br>(14%) | 67<br>(46%)   |
| <b>Professor</b>            | 3<br>(1%)         | 1<br>(<1%)   | 4<br>(2%)     | 1<br>(1%)   | 0           | 1<br>(1%)     |
| <b>Total</b>                | 216<br>(77%)      | 65<br>(23%)  | 281<br>(100%) | 95<br>(65%) | 52<br>(35%) | 147<br>(100%) |
| <b>Balanced Disciplines</b> |                   |              |               |             |             |               |
| <b>Lecturer</b>             | 54<br>(11%)       | 43<br>(9%)   | 97<br>(19%)   | 20<br>(12%) | 20<br>(13%) | 40<br>(25%)   |
| <b>Assistant Professor</b>  | 118<br>(23%)      | 109<br>(22%) | 227<br>(45%)  | 39<br>(25%) | 35<br>(22%) | 74<br>(47%)   |
| <b>Associate Professor</b>  | 86<br>(17%)       | 81<br>(16%)  | 167<br>(33%)  | 21<br>(13%) | 24<br>(15%) | 45<br>(28%)   |
| <b>Professor</b>            | 11<br>(2%)        | 3<br>(<1%)   | 14<br>(3%)    | 0           | 0           | 0             |
| <b>Total</b>                | 269<br>(53%)      | 236<br>(47%) | 505<br>(100%) | 80<br>(50%) | 79<br>(50%) | 159<br>(100%) |

## Position Cluster

### Position cluster of target population and respondents by gender (table 3.6)

There was little variation by position cluster. Males in clusters 9-11 were slightly over represented (3%). Females were slightly under represented (1% each) in clusters 4-5 and 6-8. Respondents matched the target population in position cluster 3 for both genders, clusters 4-5 and 6-8 for males, and 9-11 for females. See table.

**Table 3.6: Position cluster of target population and respondents by gender**

| Position Cluster | Target Population |              | Total          | Respondents  |              | Total         |
|------------------|-------------------|--------------|----------------|--------------|--------------|---------------|
|                  | Male              | Female       |                | Male         | Female       |               |
| <b>3</b>         | 0                 | 3<br>(<1%)   | 3<br>(<1%)     | 0            | 1<br>(<1%)   | 1<br>(<1%)    |
| <b>4-5</b>       | 14<br>(1%)        | 34<br>(3%)   | 48<br>(4%)     | 5<br>(1%)    | 8<br>(2%)    | 3<br>(3%)     |
| <b>6-8</b>       | 427<br>(33%)      | 446<br>(34%) | 873<br>(67%)   | 145<br>(33%) | 144<br>(33%) | 289<br>(65%)  |
| <b>9-11</b>      | 204<br>(15%)      | 182<br>(14%) | 386<br>(29%)   | 79<br>(18%)  | 60<br>(14%)  | 138<br>(31%)  |
| <b>Total</b>     | 645<br>(49%)      | 665<br>(51%) | 1310<br>(100%) | 229<br>(51%) | 213<br>(49%) | 442<br>(100%) |

### Position cluster of target population by gender and discipline (table 3.7)

In female-dominated disciplines, respondents closely matched (1% variation or less), except for males in clusters 6-11 (over represented) and females in clusters 6-8 (under represented). In male-dominated disciplines, males were under represented, except in position clusters 9-11. Females were under represented, except in position clusters 6-8. In balanced disciplines, respondents matched the target population within one percent for males in position clusters 3-8 and females in position clusters 3-5.

Females were over represented in clusters 6-8 and under represented in 9-11. Males were under represented only in clusters 9-11. See table.

**Table 3.7: Position cluster of target population and respondents by gender and disciplines**

| Disciplines                 | Target Population |              | Total         | Respondents |             | Total         |
|-----------------------------|-------------------|--------------|---------------|-------------|-------------|---------------|
|                             | Male              | Female       |               | Male        | Female      |               |
| <b>Female-dominated</b>     |                   |              |               |             |             |               |
| <b>3</b>                    | 0                 | 2<br>(1%)    | 2<br>(1%)     | 0           | 1<br>(1%)   | 1<br>(1%)     |
| <b>4-5</b>                  | 9<br>(2%)         | 29<br>(5%)   | 38<br>(7%)    | 3<br>(2%)   | 6<br>(4%)   | 9<br>(6%)     |
| <b>6-8</b>                  | 118<br>(23%)      | 254<br>(48%) | 372<br>(71%)  | 37<br>(27%) | 55<br>(41%) | 92<br>(68%)   |
| <b>9-11</b>                 | 33<br>(6%)        | 79<br>(15%)  | 112<br>(21%)  | 14<br>(10%) | 20<br>(15%) | 34<br>(25%)   |
| <b>Total</b>                | 160<br>(31%)      | 364<br>(69%) | 524<br>(100%) | 54<br>(40%) | 82<br>(60%) | 136<br>(100%) |
| <b>Male-Dominated</b>       |                   |              |               |             |             |               |
| <b>3</b>                    | 0                 | 0            | 0             | 0           | 0           | 0             |
| <b>4-5</b>                  | 3<br>(1%)         | 1<br>(<1%)   | 4<br>(1%)     | 0           | 0           | 0             |
| <b>6-8</b>                  | 133<br>(47%)      | 38<br>(14%)  | 171<br>(61%)  | 50<br>(34%) | 32<br>(22%) | 82<br>(56%)   |
| <b>9-11</b>                 | 80<br>(28%)       | 26<br>(9%)   | 106<br>(38%)  | 45<br>(31%) | 20<br>(13%) | 65<br>(44%)   |
| <b>Total</b>                | 216<br>(77%)      | 65<br>(23%)  | 281<br>(100%) | 95<br>(65%) | 52<br>(35%) | 147<br>(100%) |
| <b>Balanced Disciplines</b> |                   |              |               |             |             |               |
| <b>3</b>                    | 0                 | 1<br>(<1%)   | 1<br>(<1%)    | 0           | 0           | 0             |
| <b>4-5</b>                  | 2<br>(<1%)        | 4<br>(1%)    | 6<br>(1%)     | 2<br>(1%)   | 2<br>(1%)   | 4<br>(2%)     |
| <b>6-8</b>                  | 176<br>(35%)      | 154<br>(30%) | 330<br>(65%)  | 58<br>(36%) | 57<br>(36%) | 115<br>(72%)  |
| <b>9-11</b>                 | 91<br>(18%)       | 77<br>(15%)  | 168<br>(33%)  | 20<br>(13%) | 20<br>(13%) | 40<br>(26%)   |
| <b>Total</b>                | 269<br>(53%)      | 236<br>(47%) | 505<br>(100%) | 80<br>(50%) | 79<br>(50%) | 159<br>(100%) |

## Educational Attainment

### Educational attainment of target population by gender (table 3.8)

Respondents with bachelor's degrees were under represented (1% for males and 4% for females). Male respondents were over represented by seven percent at the master's level and under represented by three percent at the Ph.D. level. Females were slightly under represented at the master's level (1%) and slightly over represented at the doctoral level (2%). See table.

**Table 3.8: Educational attainment of target population and respondents by gender**

| Educational Attainment | Target Population |              | Total          | Respondents  |              | Total         |
|------------------------|-------------------|--------------|----------------|--------------|--------------|---------------|
|                        | Male              | Female       |                | Male         | Female       |               |
| Bachelor's             | 60<br>(4%)        | 77<br>(6%)   | 137<br>(10%)   | 13<br>(3%)   | 8<br>(2%)    | 21<br>(5%)    |
| Master's               | 295<br>(22%)      | 347<br>(27%) | 642<br>(49%)   | 127<br>(29%) | 117<br>(26%) | 244<br>(55%)  |
| Ph.D.                  | 290<br>(23%)      | 240<br>(18%) | 530<br>(41%)   | 89<br>(20%)  | 88<br>(20%)  | 177<br>(40%)  |
| <b>Total</b>           | 645<br>(49%)      | 665<br>(51%) | 1310<br>(100%) | 229<br>(52%) | 213<br>(48%) | 442<br>(100%) |

### Educational Attainment of target population by gender and discipline (table 3.9)

In female-dominated disciplines, respondents at the bachelor's level were under represented regardless of gender. Female holders of advanced degrees closely matched the target population (only 2% over represented at the master's level). Male respondents with advanced degrees were over represented. In male-dominated disciplines, female respondents were over represented at all levels. Male respondents matched the target population at the master's level. They were under represented both at the bachelor's and Ph.D. levels. In balanced disciplines, respondents were within one percent of the target

population at the bachelor's level. Both genders were over represented at the master's level and under represented among Ph.D.s.

**Table 3.9: Educational attainment of target population and respondents by gender and disciplines**

| Disciplines                 | Target Population |              | Total         | Respondents |             | Total         |
|-----------------------------|-------------------|--------------|---------------|-------------|-------------|---------------|
|                             | Male              | Female       |               | Male        | Female      |               |
| <b>Female-dominated</b>     |                   |              |               |             |             |               |
| Bachelor's                  | 26<br>(5%)        | 65<br>(12%)  | 91<br>(17%)   | 2<br>(1%)   | 2<br>(1%)   | 4<br>(2%)     |
| Master's                    | 91<br>(18%)       | 236<br>(45%) | 327<br>(63%)  | 37<br>(27%) | 64<br>(47%) | 101<br>(74%)  |
| Ph.D.                       | 43<br>(8%)        | 63<br>(12%)  | 106<br>(20%)  | 15<br>(12%) | 16<br>(12%) | 31<br>(24%)   |
| <b>Total</b>                | 160<br>(31%)      | 364<br>(69%) | 524<br>(100%) | 54<br>(40%) | 82<br>(60%) | 136<br>(100%) |
| <b>Male-Dominated</b>       |                   |              |               |             |             |               |
| Bachelor's                  | 24<br>(9%)        | 3<br>(1%)    | 27<br>(10%)   | 6<br>(4%)   | 3<br>(2%)   | 9<br>(6%)     |
| Master's                    | 98<br>(35%)       | 23<br>(8%)   | 121<br>(43%)  | 51<br>(35%) | 16<br>(11%) | 67<br>(46%)   |
| Ph.D.                       | 94<br>(33%)       | 39<br>(14%)  | 133<br>(47%)  | 38<br>(26%) | 33<br>(22%) | 71<br>(48%)   |
| <b>Total</b>                | 216<br>(77%)      | 65<br>(23%)  | 281<br>(100%) | 95<br>(65%) | 52<br>(35%) | 147<br>(100%) |
| <b>Balanced Disciplines</b> |                   |              |               |             |             |               |
| Bachelor's                  | 10<br>(2%)        | 10<br>(2%)   | 20<br>(4%)    | 5<br>(3%)   | 3<br>(2%)   | 8<br>(5%)     |
| Master's                    | 106<br>(21%)      | 88<br>(17%)  | 194<br>(38%)  | 39<br>(25%) | 37<br>(23%) | 76<br>(48%)   |
| Ph.D.                       | 153<br>(30%)      | 138<br>(27%) | 291<br>(57%)  | 36<br>(23%) | 39<br>(25%) | 75<br>(48%)   |
| <b>Total</b>                | 269<br>(53%)      | 236<br>(47%) | 505<br>(100%) | 80<br>(50%) | 79<br>(50%) | 159<br>(100%) |

### **Item non-response**

No single method of correcting for non-response items is recognized as more effective than the others. In order to choose the most appropriate method for the non-response items in this survey, the number of missing values must be taken into account. In this survey, only a few respondents did not answer all questions and each of those respondents omitted only one answer. The non-response items were treated as a missing value, which was coded as '9' and was omitted from the analysis of that item.

This study had a quota for each stratum. However, the number of returned surveys created a different number for each gender in each discipline, which was called 'a disproportionate stratification'. Post-stratification weighting was calculated in order to account for differences in the respondents and the target population before the data was analyzed.

### **Post-stratification weight**

Post-stratification weighting deals with the differences in response rate for each gender in different types of disciplines. It adjusts the means of each stratum to equal one in order to cope with bias, which might occur from disproportionate sample, and to make the sample more representative of the total population. "Poststratification, used as a nonresponse adjustment, assumes that non-respondents would have responded the same way as respondents with similar demographic characteristics...this assumption must be empirically justified (p.131)." The following formula is used to calculate weight for each gender in each type of discipline.

$$\text{Weight for cases in a cell} = \frac{\text{Population } N_{ij}}{\text{population } n_{ij}} \times 0.337$$

Where Population  $N_{ij}$  = Total number of male or female faculty in discipline  $j$ , where  
 $i = 1$  refers to males,  $i = 2$  refers to females  
 $j = 1$  refers to female-dominated disciplines  
 $j = 2$  refers to male-dominated disciplines  
 $j = 3$  refers to balanced disciplines

The coefficient .337 is calculated by  $\sum n_{ij} / \sum N_{ij}$ . In this case,  $\sum n_{ij}$  equals 442 and  $\sum N_{ij}$  is 1310 ( $\sum n_{ij} / \sum N_{ij} = 442/1310$ ). This coefficient is used so that the weights sum to the number of cases (i.e. 442).

**Table 3.10: Post-stratification weight for cases**

| Disciplines      | Gender                      |                             |
|------------------|-----------------------------|-----------------------------|
|                  | Male                        | Female                      |
| Female-dominated | $(160/54) * .337$<br>= .99  | $(364/82) * .337$<br>= 1.49 |
| Male-dominated   | $(216/95) * .337$<br>= .77  | $(65/52) * .337$<br>= .42   |
| Balanced         | $(269/80) * .337$<br>= 1.13 | $(236/79) * .337$<br>= 1.00 |

### 3. Annual evaluation report of faculty

After the self-administered survey was returned and the ID number on the survey was matched to faculty members, the ID number was also later matched with the university personnel records and the annual evaluation reports. As a result, the semi-annual evaluation reports of the 442 faculty members who responded to the survey were

obtained from the Department of Personnel. In this study, the four most recent semi-annual evaluations<sup>4</sup> were used.

The semi-annual evaluation report of faculty consisted of information on faculty members' productivity in teaching, publication, research, committee works, academic service, community service, and administrative activities, which are crucial criteria for pay raises. Faculty members are required to provide their semi-annual productivity in terms of both number of hours per week spent performing work-related tasks and number of finished items per year, as shown in Appendix B.

#### Department heads interviews

Six department heads, three from male-dominated disciplines (departments in the Faculties of Engineering, Technology and Agriculture), two from female-dominated disciplines (departments in Faculties of Humanities and Social Sciences, and Nursing) and one from balanced disciplines (departments in Faculty of Sciences), were interviewed.

They were interviewed in order to help understand how they use the evaluation form during decision making on pay raises. These department heads had to have been working at KKU for at least five years and to have overseen at least one round of annual pay raises as the department head. They were asked questions concerning their criteria in relation to the semi-annual evaluation form and associated pay raises.

(See appendix C for the department head interview protocol). The interviews were conducted before the quantitative data was analyzed. Questions included:

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<sup>4</sup> There has been a small change in the pay raise process. Previously, pay raise were evaluated once a year. Recently, the Thai government wanted to improve morale among public servants; pay raises are now evaluated twice a year, in April and October. Faculty members complete the evaluation form every six months. Pay raises are still awarded in increments of one-half step, one step, and one and a half steps. No one can receive a two-step pay raise for the half year and the total pay raise for the year may not exceed two steps.

- How do you use the annual evaluation form?
- What is the most valued task?
- Which is more significant, number of hours (workload) or number of items (productivity)?
- How do you use the total number of hours of productivity?
- How do you decide the size of pay raises?
- Does the dean frequently question or change your department head decision on pay raises?

The department head interviews revealed that the semi-annual evaluation form was crucial to the decision-making process. KKU measures semi-annual productivity of faculty members in terms of workloads or number of hours performing the tasks per week, which does not mean 'hours' as we typically understand them. For evaluation purposes, the number of hours per week is defined by the university's rules and regulations.

For example, number of working hours per week for teaching load includes preparing, teaching and grading. It will be scored differently depending on the level of teaching, and the number of students in the class. One credit hour of undergraduate teaching is equal to three working hours per week, including one working hour for preparation, one working hour for teaching, and one working hour for grading. However, if the number of students is over forty per class, the number of working hours for grading will be increased in proportion the number of students. A lab or fieldwork is valued as 4.5 working hours per week, one working hour for preparation, two working hours for laboratory, and one and a half working hours for grading. If the number of students is more than twenty, the load for grading will be calculated by the proportion of students over twenty students.

One credit hour of teaching at the graduate level is scored as five working hours per week (three working hours for preparation, one working hour for teaching and one working hour for grading) with 7.5 working hours of work for graduate lab and fieldwork (four working hours for preparation, two working hours for laboratory and one and a half working hours for grading). If the number of the students in the class is more than ten students, the load of grading is assumed to be one hour for each ten student. The number of professors teaching in the class is taken in to account for both levels. If any class is taught by more than one person, the number of working hours will be divided among the co-teachers based on the actual amount that person teaches.

Journal articles are scored based on whether they were published locally, nationally or internationally. The number of authors is also considered for number of working hours for publications. Co-authors are scored differently from solo authors, and lead authors get more credit than secondary authors. There are different scores for books and for research.

For academic and social services and other committee tasks, hours performing tasks is divided by twenty-six. Hours spent on administrative work are also set by the university's rules:

- the president of the university receives a score of 30 working hours per week
- vice presidents, assistant vice presidents, deans and directors, 24 working hours,
- associate deans, board committee, department head, and program chairs, 18 working hours,

- assistant deans, associate department head and associate program chair, 12 working hours per week
- the secretary for the department, 9 working hours
- committee for the faculty or graduate school, 3 working hours.

All of the department heads indicated that the most valued task for evaluating pay raises is teaching, because it is considered the main responsibility of faculty members.

University rules and regulations establish a minimum of 15 working hours of teaching per week (50% of a 30-hour work week) for all faculty members.

At the end of each semi-annual evaluation form, there is space for a summary of the number of working hours per week for each of the four crucial tasks (teaching, publishing, community and social service, and administrative positions) as well as the total number of productivity. This information helps department heads see how many hours per week faculty members spent performing each task during each reporting period. Most of the time, this helps the department head to decide how many pay raise steps each person will receive. It also helps the department head plan assignments and workload for the next school year.

According to the department heads, it is not necessarily the case that the highest number of working hours receives the largest pay raise. Turn-taking plays an important role in the department heads' decisions. The department heads reported that it is rare for someone to get a two-step pay raise each year. Faculty take turns getting two steps in order to maintain morale and harmony among colleagues. Each faculty member's pay history is taken into account when pay raises are decided and when tasks are assigned.

Before the final decisions on pay raises are made, faculty members are divided into three groups based on position clusters: C.3, C.4-5, C.6-8, and C.9-11. Faculty within each cluster group compete with one another for pay raises, i.e., faculty in cluster 3 compete with other faculty in cluster 3.

Each year, the Thai government provides Khon Kaen University with funds for pay raises equal to six percent of total salaries. The president of the university takes up to 0.15% of this amount to reward his administrative team; thus each department head has 5.85% of total salaries available for pay raises.

For example, if the salary paid for one faculty is 300,000 baht, total pay raises for that particular faculty will be 17,500 baht. The secretary of the faculty calculates the number of steps available for each cluster group, which cannot exceed 17,500 baht in total. If the total amount of the pay raises is less than 17,500 baht, the rest of the money will be sent back to the central administration to reward the administrative staff or to give pay raises to additional candidates nominated by department heads. Normally, department heads nominate more candidates or more steps than the amount they have available. The dean always respects the department head's decision on pay raises. According to the department heads, their decisions are not often called into question or changed by the deans.

### **III. Analysis**

This study phase depends on the results from the preliminary investigation phase, which will provide two possible outcomes: either not finding or finding gender inequality in pay raises.

If gender inequality in pay raises at KKU is **not found**, a T-test will be used to compare the mean differences between male and female faculty on each activity in order to develop a faculty profile. The study will attempt to answer these questions: Are Thai male and female faculty equally productive in researching and teaching?; How much do Thai female and male faculty academically produce each year?; Do Thai academicians have domestic helpers or nannies who mitigate the demands of family with which many Western women have to deal?; and Do Southeast Asian concepts affect gender equity?; How do Southeast Asian concepts create gender equity in pay raises at KKU?

If gender inequality in pay raises is **found** at KKU, a regression analysis will be used to determine which factors lead to gender inequality in pay raises, controlling for key variables. For ease of discussion, these variables will be organized into four domains; 1) control variables, 2) research and administration, 3) teaching activities, and 4) patriarchal control. Each domain will be tested by itself and in combination with a fifth domain, Southeast Asian concepts, will be added later. These five domains are complex and multidimensional; as a result, they require multiple indicators to adequately measure them. Five models representing each domain will be constructed and used to develop a final tentative model that combines the best predictors from the other models and might explain gender differences in pay raises. In this way, and consistent with the exploratory nature of this work, a model will be suggested as a starting point for future research. Particular interest will be paid to the contribution of the Southeast Asian variables for understanding possible gender differences in pay raises.

## **Operationalization of domains**

In this section, I will provide the operational definition of the variables used in this analysis. The evaluation form is included in Appendix A, the survey in Appendix B and the coding in Appendix D.

There are four domains for this study: control variables, research and administration, teaching activities, and patriarchal concepts. Each domain is composed of multiple dimensions, which are operationalized by different variables, drawn from three separate sources: university personnel records, annual evaluation report (See Appendix B) and a self-administered survey (See Appendix A).

Before the discussion of the operationalization of the domains, a comparison of pay raises between male and female faculty members was examined using Chi-square in order to determine whether gender inequality exists in pay raises. For the analysis, gender was recoded into a dichotomy variable where one represented male and zero represented female.

### **1. Control Variables**

The control variables used in this study are composed of academic rank, academic discipline, educational attainment, family responsibilities, and position cluster, are added later. Each dimension is measured with its own design variable, as follows:

#### **1.1 Academic Rank**

The information on academic rank was obtained from the university personnel records. Academic rank includes lecturer, assistant professor, associate professor, and full professor.

## **1.2 Academic Discipline**

The information on academic discipline was obtained from the university personnel records. The variable was recoded into female dominated; male dominated and balanced disciplines during a later portion of the analysis.

## **1.3 Educational Attainment**

The information on educational attainment was obtained from the personnel records. For the variable educational attainment consisted of Bachelor's Degree, Master's Degree, and Ph.D.

## **1.4 Family Responsibilities**

There are four variables used to tap issues of family responsibilities. All of the information on these four variables derived from the administrative survey.

The first variable of interest is marital status. The variable is operationalized as "What is your marital status?" The attributes for this question are "single," "married and live together," "married and live separately," "widow/widower," "divorced," and "other."

The second variable of interest is the number of dependents. In this study, the number of dependents refers to children under sixteen years old and elderly whom need care from the respondents. As indicated by several studies, especially those from a human capital perspective that spending time to caring for children and elderly causes females to be less productive and lag behind in the development of their skills. The question is operationalized as "How many children do you have?" "How old are your children?" "How many elderly do you care for?" The attribute for this question is open-ended. Number of dependents will equal the sum of children under 16 years a old plus elderly.

The third variable of interest is number of hours devoted to household and family responsibilities. The question is operationalized, as “How long do you to spend each day taking care of your children?” “How many hours do you spend on activities connected to your children each day?” The attribute for this question is open-ended. In Thailand, it is common for middle-class families to have domestic helpers. Most of them come from the rural villages to seek jobs after the harvest. They might stay with the family or work in the morning and return home in the evening. The question is operationalized as “Do you have domestic helpers?” The attributes for this question are “No, and Yes.” “How many hours do you spend time to do household chores each day?” The attribute for this question is open-ended.

### **1.5 Position clusters**

The information on position cluster was obtained from the university personnel records. There are eight control variables. The analysis started with frequency to see the overall picture of how faculty members at KKU respond on each variable. Then, Cross-tabulations and Chi-square were used to see how male and female faculty performed on each variable and to see the association between each variable and gender. Some variables were recoded into dummy variable. For example, family responsibilities, the variable on marital status was recoded into dummy variable: one represents married and zero represents not married. Some variables concerning hours devoted to household and family responsibilities were combined using additive scale.

The final step for analyzing this domain is the use of regression analysis to examine the relationship among the relevant variables. A separate model will be designed for each domain. In this domain, I will regress pay raise on gender and

variables that make up the control variables as shown in the baseline model one. This baseline model will also be used with other models of later domains, which will be discussed in details later in each domain.

**Baseline Model One with Control variables**

|                         | <b>Pay raise</b> |
|-------------------------|------------------|
| Gender                  |                  |
| Academic rank           |                  |
| Academic discipline     |                  |
| Educational attainment  |                  |
| Family responsibilities |                  |
| Position Cluster        |                  |

The variables that measure Southeast Asian concepts will be added later. See model II. Although the table shown below describes the model of research and administration including all variables, some may be eliminated from the model based on preliminary analyses.

**Model II with control variables and Southeast Asian concepts**

|                              | <b>Pay raise</b> |
|------------------------------|------------------|
| Gender                       |                  |
| Kinship system               |                  |
| Patronage system             |                  |
| Turn-taking system           |                  |
| Seniority system: age        |                  |
| Seniority system: experience |                  |
| Academic rank                |                  |
| Academic discipline          |                  |
| Educational attainment       |                  |
| Family responsibilities      |                  |
| Position Cluster             |                  |

## **Productivities**

Most of the variables concerning productivity measures were derived from the evaluation form as shown in Appendix A. There were number of productivity variables on the evaluation form, which was used by the department head to evaluate faculty performance. It would be inappropriate to leave out some of the variables before the preliminary analysis and tests of reliability are taken into account, which will be discussed later in the data analysis section. As a result, this study will attempt to collect as much information as possible from the evaluation form. Looking closely at all variables derived from the evaluation form will provide details on productivity similar to what each department head has and will also provide a thick description consistent with the nature of exploratory research.

In the U.S. and many Western countries, productivity is measured only by the number of articles or research grants each faculty contributes each year. Unlike the U.S. and many counties in the West, Thailand measures the productivity of faculty members in terms of working hours per week, as set by university and explained earlier in this chapter. Therefore, in this study, the number of working hour per week was used in measuring the productivity of faculty members in KKU.

## **2. Research and administration**

The second domain of interest is research and administration, which is composed of the dimensions publishing productivity, research activities, and administrative responsibility. Each dimension is measured with multiple variables.

## **2.1 Publication productivity**

The first dimension of the domain of research and administration is **publication productivity**. In Thailand, publication productivity takes three forms: textbook/documents for class, published academic articles, and other publications (e.g. encyclopedia, book chapters, etc). Also taken into account is in what capacity the author is writing (whether solo, co-author, or lead researcher).

Some professors might prefer to use their own textbooks for the class. Some of them, however, might not have a textbook. They might prepare their own documents for the class. These documents may not be published. They might include a chapter of a forthcoming textbook. In Thailand, this is counted as a part of publication productivity. Academic article publication is categorized into journal articles and papers for conferences. In the U.S., a distinction is made between refereed and non-refereed articles, because the process of publishing a refereed article is more rigorous. Thailand has no refereed process. Authors submit articles at the request of the publisher through department head or, in the case of an open request, articles that meet the requirements provided by the publisher. Most publishers/editors are eager to publish anything. For evaluation purpose, all of the above publication must be related to their classes or suitable for submission for their academic rank promotion.

There are four variables used to measure publication productivity. All of these variables were derived from the semi-annual evaluation report and were coded by relying on the working hours per week. They were measured and coded as follows:

### **Textbooks**

- Working hours per week spent working on solo textbooks.

- Working hours per week spent working on co-authored textbooks.

### **Articles/Papers**

- Working hours per week spent working on solo articles.
- Working hours per week spent working on co-authored articles.

## **2.2 Research Activities**

The third dimension of research and administration is **research activities**, defined as time spent toward research reports, as opposed to time spent distilling such research for publication in another format (i.e. journal article, encyclopedia entries, etc.). In Thailand, research productivity takes into account in what capacity the researcher is conducting (whether as a soloist, co-researcher, or lead researcher). For evaluation purposes, research must be related to their classes and must receive approval from the department.

There are three variables used to measure research productivity. All of these variables were derived from the semi-annual evaluation report and were coded by relying on the actual working hour. They are measured as follows:

- Working hours per week spent working on solo research.
- Working hours per week spent working on co-authored research.
- Working hours per week spent working as lead researcher.

## **2.3 Administrative Activities**

The fourth and final dimension of research and administration is **administrative activity**. Administrative responsibilities in Thailand universities do not parallel the U.S. model. The role of the department secretary is a faculty position at KKU, unlike in the United States. While this role is not a powerful position, it can be part of the patronage

system and thus may predict pay raises. All the data for this variable were derived from the semi-annual evaluation report and were coded by relying on the number of working hours per week spent performing administrative tasks. There is only one variable used to measure administrative activity: average number of hours per week spent on administrative duties.

This domain is composed of fourteen variables. The analysis will proceed in a manner similar to that described above. Namely, the analysis will start with frequency to see the overall picture of how faculty members at KKU performed on each variable. Then, cross-tabulations and Chi-square will be used to see how male and female faculty performed on each variable and to see the association between each variable and gender. Difference of means analysis will be done to examine gender differences between variables. If the results show that there is a statistically significant relationship between a particular variable and gender, that variable will be chosen as a key variable for further analysis. This preliminary analysis is useful to select independent variables to restrict the number of variables to a manageable size. Bivariate correlations will be done to increase understanding of the bivariate relationships between key variables. In some cases, variables in the same dimension may be combined into an additive scale. The attempt to discover scales rather than specify them in advance is within the tradition of exploratory research such as this. The usefulness of applying an additive scale is to facilitate adding all key variables into one index. If significant, gender inequality is found, analyzing this domain will be the use of regression analysis to examine the relationship among the relevant variables. In this domain, I will regress pay raise on gender and variables that

make up the dimension of research and administration and control variables. See model three.

**Model III with Research and Administration Indicators**

|                            | <b>Pay raise</b> |
|----------------------------|------------------|
| Gender                     |                  |
| Publication productivity   |                  |
| Annual research activities |                  |
| Administrative activities  |                  |
| Academic rank              |                  |
| Academic discipline        |                  |
| Educational attainment     |                  |
| Family responsibilities    |                  |
| Position Cluster           |                  |

The variables that measure Southeast Asian concepts will also be included later. (See model IV). Although the table shown below describes the model of research and administration including all variables, some may be eliminated from the model based on preliminary analyses.

**Model IV with Research and Administration Indicators and Southeast Asian Concepts**

|                              | <b>Pay raise</b> |
|------------------------------|------------------|
| Gender                       |                  |
| Publication productivity     |                  |
| Annual research grants       |                  |
| Annual research activities   |                  |
| Administrative activities    |                  |
| Kinship system               |                  |
| Patronage system             |                  |
| Turn-taking system           |                  |
| Seniority system: age        |                  |
| Seniority system: experience |                  |
| Academic rank                |                  |
| Academic discipline          |                  |
| Educational attainment       |                  |
| Family responsibilities      |                  |
| Position Cluster             |                  |

**3. Teaching activities**

The third domain of interest is teaching activities, which is composed of the dimensions teaching loads, academic and social service, and other committee tasks. Each dimension is measured with multiple variables.

**3.1 Teaching Loads**

In Thailand, teaching loads are composed of number of classes at undergraduate and graduate levels, theses/dissertations/independent studies, and number of advisees. Supervisory tasks are counted only if the student is working toward a grade; supervising auditing students is not considered productive. Five advisees equal one working hour per week.

There are four variables used to measure teaching activities. All of these variables were derived from the semi-annual evaluation report and were coded relying on the working hour per week. They were measured and coded as follows:

- Working hours per week taught at the undergraduate level.
- Working hours per week taught at the graduate level
- Working hours per week spent on independent studies, projects, theses and dissertation supervision.
- Number of advisees (five students at all levels equals one working hour per week).

### **3.2 Academic and Social Service**

Academic and social service refers to tasks using their knowledge to help society and the community, often as part of a committee or as faculty advisor to a student group. Faculty members are sometimes involved in university activities for helping the community and social service, such as being an advisor for a non-profit organization, being a guest speaker or visiting professor to educate community, etc. Community and social service activities might vary from one faculty member to another depending on their interests, expertise, and tasks assigned by department head. Other activities of community and social service include being on a committee for establishing curricula for other universities or a committee for scholarship/fellowship provided by an agency outside the university. In the process of obtaining the rank of assistant professor, associate professor, or professor, instructors must be reviewed by experts in their fields; serving as such an expert counts as committee work. Faculty members who specialize in a particular area will be invited to serve in this capacity.

As a result, they include being a guest speaker, visiting professor, committee for writing up examination, committee for faculty recruitment and for examination to enroll students at all levels, committee for academic seminar, project supervisor, committee academic productivities for getting academic rank, and committee for thesis and dissertation defense. There is only one variable.

### **Academic and social service**

- Working hours per week on a committee relating to academic and social service.

### **3.3 Other committee tasks**

These tasks are composed of being on a committee for the arts, traditional and cultural activities, and similar tasks assigned by the department head, dean, other administrative positions and student activities. They are also tasks that do not relate to the tasks of academic and social service.

Thailand has a rich cultural history that many Thai universities wish to promote and preserve. Faculty members are assigned to be on a committee for those activities, on behalf of the university.

Thai students, especially those at the undergraduate level, have social activities and clubs. They are required to be supervised by faculty members. For example, the Thai musical club has students from many disciplines and aims to promote and maintain traditional Thai music. They play Thai music at many significant events. The faculty member's participation is counted as part of their committee work. The irrigation club, mostly composed of engineering students, goes to villages to help the villagers build

irrigation dams. While the students are involved in community service, the professor's role is that of chaperone.

There is only one variable used to measure these activities. It was derived from the semi-annual evaluation report and was coded based on the working hours per week spent to perform those tasks.

- Working hours per week on a committee for those tasks, described above.

The analysis will proceed in a manner similar to that described above. Namely, the analysis will start with frequency to see the overall picture of how faculty members at KKU performed on this variable. Then, cross-tabulations and Chi-square will be used to see how male and female faculty performed on this variable and to see the association between this variable and gender. Difference of means analysis will be done to examine gender differences between variable. If the results show that there is a statistically significant relationship between a variable and gender, that variable will be chosen as a key variable for further analysis. This preliminary analysis is useful to select independent variables to restrict the number of variables to a manageable size. Bivariate correlations will be done to increase understanding of the bivariate relationships between key variables. Then, the additive scale will be used in order to add all key variables into one index. The final step for analyzing this domain is the use of regression analysis to examine the relationship among the relevant variables. A separate model will be designed for each domain. In this domain, I will regress pay raise on gender and variables that make up the dimension of teaching activities and control variables. See model V.

**Model V with Teaching Activities Indicators**

|                              | <b>Pay raise</b> |
|------------------------------|------------------|
| Gender                       |                  |
| Teaching Loads               |                  |
| Academic and Social Services |                  |
| Other committee              |                  |
| Academic rank                |                  |
| Academic discipline          |                  |
| Educational attainment       |                  |
| Family responsibilities      |                  |
| Position Cluster             |                  |

The variables that measure Southeast Asian concepts will be added later as shown in model VI. Although the table shown below describes the model of teaching activities including all variables, some may be eliminated from the model based on preliminary analyses.

**Model VI with Teaching Activity Indicators and Southeast Asian concepts**

|                               | <b>Pay raise</b> |
|-------------------------------|------------------|
| Gender                        |                  |
| Kinship system                |                  |
| Patronage system              |                  |
| Turn-taking system            |                  |
| Seniority system: age         |                  |
| Seniority system: experience  |                  |
| Teaching Loads                |                  |
| Committee Works               |                  |
| Community and Social Services |                  |
| Academic rank                 |                  |
| Academic discipline           |                  |
| Educational attainment        |                  |
| Family responsibilities       |                  |
| Position Cluster              |                  |

#### 4. Patriarchal Concepts

According to recent information on deans by gender, only the faculties of Humanities and Social Sciences, Nursing, Public Health, and Pharmacology have female deans.

The fourth domain of interest is patriarchal concepts. Only two aspects of patriarchy are included in this research: **gender of deans and gender of department heads**. Both are indicators of who is in control of the decision making process for determining pay raises. The variables on gender of dean and department head were derived from the document of the university concerning lists of administrative position.

This domain is composed of two variables. They were coded as female and male assigned the value of 0 and 1 where 0 represented male dean/department head and 1 represented a female dean/department head. The analysis started with frequency to see the overall picture of how faculty members at KKU responded on each variable. Then, cross-tabulations and Chi-square were used to see how male and female faculty responded on each variable and to see the association between each variable and gender. Then, the final step for analyzing this domain is the use of regression analysis to examine the relationship among the relevant variables. In this domain, I will regress pay raise on gender and variables that make up the dimension of patriarchal system and control variables. (See model VII.)

**Model VII with Patriarchal system indicators**

|                           | <b>Pay raise</b> |
|---------------------------|------------------|
| Gender                    |                  |
| Gender of dean            |                  |
| Gender of department head |                  |
| Academic rank             |                  |
| Academic discipline       |                  |
| Educational attainment    |                  |
| Family responsibilities   |                  |
| Position Cluster          |                  |

The variables that measure Southeast Asian concepts will be added later. (See model VIII) Although the table shown below describes the model of the patriarchal system including all variables, some may be eliminated from the model based on preliminary analyses.

**Model VIII with Patriarchal system indicators and Southeast Asian concepts**

|                              | <b>Pay raise</b> |
|------------------------------|------------------|
| Gender                       |                  |
| Kinship system               |                  |
| Patronage system             |                  |
| Turn-taking system           |                  |
| Seniority system: age        |                  |
| Seniority system: experience |                  |
| Gender of dean               |                  |
| Gender of department head    |                  |
| Academic rank                |                  |
| Academic discipline          |                  |
| Educational attainment       |                  |
| Family responsibilities      |                  |
| Position Cluster             |                  |

The analysis centers around nine regression models. In one model, only the control variables, and gender are included. This is a baseline model one. In model two, variables that measure Southeast Asian concepts are added to the base model. In model three variables on research and administration are added to the base model one and

variables of Southeast Asian concepts are added later as shown in model four. Model five builds on the baseline model but includes variables that measure teaching activities. Model six adds Southeast Asian concepts into model five. Model seven focuses on the patriarchal variables and the baseline model. The Southeast Asian concepts are added later as shown in model eight. Finally, model nine will be tested based on the variables that have the highest predictive value from the previous models. Model IX may give future researchers a model to test for a further analysis.

**Model IX with Strongest Variables from Previous Models**

|                              | <b>Pay raise</b> |
|------------------------------|------------------|
| Gender                       |                  |
| Kinship system               |                  |
| Patronage system             |                  |
| Turn-taking system           |                  |
| Seniority system: age        |                  |
| Seniority system: experience |                  |
| Teaching loads               |                  |
| Academic and Social services |                  |
| Other committee tasks        |                  |
| Publication productivity     |                  |
| Annual research activities   |                  |
| Administrative Activities    |                  |
| Gender of Dean               |                  |
| Gender of Department Head    |                  |
| Academic rank                |                  |
| Academic discipline          |                  |
| Educational attainment       |                  |
| Family responsibilities      |                  |
| Position Cluster             |                  |

Results for this study will be fully discussed later in the next chapter. Results including whether gender inequality in pay raises exists at KKU, a profile of faculty members’ semi annual productivities over a period of two fiscal years (2002-2003) or four pay raise cycles, family responsibilities, and scores on Southeast Asian concepts will

be provided. Regression analysis on the two major models (baseline model and Southeast Asian concepts) and unit of non-response rate will also be included in the next chapter.

## **CHAPTER 4:**

### **RESULTS**

This chapter presents the results of the study. The first part of this chapter provides results from the preliminary investigation exploring whether gender inequality in pay raises exists at this particular university. Later, this chapter presents a profile of faculty at this university. The faculty profile consists of faculty members' information on their semi-annual productivity based on teaching, publication, research, administrative activities, academic and social services and other committee tasks over a period of two fiscal years (2002-2003) or four pay raise cycles. The last part of this chapter discusses whether control variables and Southeast Asian concepts have an effect on pay raise between male and female faculty members. The unit of non-response rate will also be provided at the end of this chapter.

#### **I. Preliminary Investigation**

The goal of this section is to examine whether gender inequality exists in pay raises at KKU. This section will first provide the overall picture of pay raises for the two-year pay raise periods of fiscal years 2002 and 2003. The second part of this section will contain an in-depth discussion of the pay raise periods of both fiscal years by gender, discipline, academic rank and position cluster. Detailed tables containing the analysis are available in appendix D.

The results showed that there was no evidence to suggest that pay raises at KKU were systematically influenced by gender. Table 4.1 shows a summary of inequality in

pay raises by gender, discipline, academic rank and position cluster for fiscal years 2002 and 2003. The results further indicated that there was no evidence of inequality in pay raises in either fiscal year 2002 or 2003, taken as a whole.

No evidence of consistent gender inequality in pay raises was found across disciplines. Looking closely at academic rank, there was no evidence of systematic gender inequality in pay raises across academic rank. There was also no evidence of gender inequality in pay raise among different groups of clusters.

A few exceptions can be noted; however, as mentioned previously, these do not carry across multiple evaluations or consecutive fiscal years. Only in the first pay raise period of fiscal year 2002, was gender inequality in pay raises evident. Specifically, gender inequality in pay raises was found within female-dominated disciplines and among assistant professors. Inequality was also found for the whole of fiscal year 2002 within female-dominated disciplines. For all these differences in pay raises, females tended to have larger pay raises than males, especially female assistant professors in female-dominated disciplines.

In the 2<sup>nd</sup> pay period of fiscal year 2003, gender inequality was found among lecturers, associate professors and in position clusters 9 to 11. Males tended to receive larger pay raises than females, especially lecturers and associate professors in position clusters 9 to 11. For fiscal year 2003, as a whole, gender inequality was apparent among both lecturers and assistant professors. Female lecturers tended to get larger pay raises than their male counterparts. The opposite was true of male assistant professors.

**Table 4.1: Pay raise, in steps, by gender discipline, rank and cluster of fiscal year 2002 and 2003 (Chi-square analysis)**

| Pay raise by             | FY2002          |                 |       | FY2003          |                 |       |       |
|--------------------------|-----------------|-----------------|-------|-----------------|-----------------|-------|-------|
|                          | 1 <sup>st</sup> | 2 <sup>nd</sup> | Total | 1 <sup>st</sup> | 2 <sup>nd</sup> | Total |       |
| <b>Gender</b>            | $\chi^2$        | 4.673           | .169  | 4.369           | 2.258           | 6.339 | 3.274 |
|                          | P               | .031            | .919  | .224            | .323            | .096  | .195  |
|                          | Direction       | F>M*            |       |                 |                 |       |       |
| <b>Discipline</b>        |                 |                 |       |                 |                 |       |       |
| <b>Female-Dominated</b>  |                 |                 |       |                 |                 |       |       |
|                          | $\chi^2$        | 3.848           | 3.926 | 7.942           | 1.870           | 3.033 | 1.032 |
|                          | P               | .050            | .140  | .019            | .393            | .219  | .597  |
|                          | Direction       | F>M*            |       | F>M*            |                 |       |       |
| <b>Male-Dominated</b>    |                 |                 |       |                 |                 |       |       |
|                          | $\chi^2$        | .792            | 2.333 | 1.068           | .833            | 3.757 | 3.814 |
|                          | P               | .373            | .311  | .785            | .362            | .053  | .149  |
|                          | Direction       |                 |       |                 |                 |       |       |
| <b>Balanced</b>          |                 |                 |       |                 |                 |       |       |
|                          | $\chi^2$        | .518            | 2.395 | 1.523           | .170            | 1.566 | .109  |
|                          | P               | .472            | .302  | .467            | .680            | .667  | .947  |
|                          | Direction       |                 |       |                 |                 |       |       |
| <b>Academic rank</b>     |                 |                 |       |                 |                 |       |       |
| <b>Lecturer</b>          |                 |                 |       |                 |                 |       |       |
|                          | $\chi^2$        | .001            | 3.001 | 1.624           | 2.060           | 6.336 | 7.250 |
|                          | P               | .979            | .223  | .444            | .357            | .042  | .027  |
|                          | Direction       |                 |       |                 |                 | F<M** | F<M** |
| <b>Assistant Prof.</b>   |                 |                 |       |                 |                 |       |       |
|                          | $\chi^2$        | 4.818           | .662  | 4.922           | 2.399           | 1.964 | 7.011 |
|                          | P               | .028            | .733  | .085            | .121            | .375  | .030  |
|                          | Direction       | F>M*            |       |                 |                 |       | F>M*  |
| <b>Associate Prof.</b>   |                 |                 |       |                 |                 |       |       |
|                          | $\chi^2$        | 1.539           | .170  | 3.339           | 1.313           | 9.519 | 1.873 |
|                          | P               | .215            | .918  | .342            | .252            | .023  | .392  |
|                          | Direction       |                 |       |                 |                 | F<M** |       |
| <b>Professor</b>         |                 |                 |       |                 |                 |       |       |
|                          | $\chi^2$        | 1.200           | 1.200 | 2.000           | 1.200           | .000  | .667  |
|                          | P               | .273            | .273  | .368            | .273            | 1.000 | .414  |
| <b>Position Clusters</b> |                 |                 |       |                 |                 |       |       |
| <b>Clusters 4-5</b>      |                 |                 |       |                 |                 |       |       |
|                          | $\chi^2$        | .024            | .010  | .010            | .938            | .134  | 1.250 |
|                          | P               | .876            | .919  | .919            | .333            | .714  | .535  |
| <b>Clusters 6-8</b>      |                 |                 |       |                 |                 |       |       |
|                          | $\chi^2$        | 3.421           | .990  | .942            | 1.337           | 1.139 | 3.245 |
|                          | P               | .064            | .610  | .624            | .512            | .566  | .197  |
| <b>Clusters 9-11</b>     |                 |                 |       |                 |                 |       |       |
|                          | $\chi^2$        | 1.913           | .382  | 4.967           | 1.913           | 9.767 | 1.754 |
|                          | P               | .167            | .826  | .174            | .167            | .021  | .416  |
|                          | Direction       |                 |       |                 |                 | F<M** |       |

\*F>M indicates that females received more pay raise than males.

\*\*F<M indicates that female received less pay raise than males.

## **II. Secondary Analysis**

This section presents a faculty profile, which is developed from the results of the preliminary investigation. Gender inequality in pay raises was found at KKU in the first pay raise period for fiscal year 2002, but not in any other pay raise cycle for fiscal years 2002 and 2003.

An in depth investigation of factors involved in awarding pay raises and secondary factors that may influence productivity was conducted. The faculty profile was derived from the following questions: Are Thai male and female faculty equally productive in researching, teaching, administrating, and academic and community services?; How much did Thai male and female faculty produce each pay raise period?; Do Thai academicians have domestic helpers or nannies who mitigate the demands of family?; and How do Southeast Asian factor into pay raises at KKU?

As noted in the previous chapter, productivity of KKU faculty members was measured by a number of ‘working hours’ per week. This faculty profile will be reported in terms of ‘working hours’ per week. Average hours productivity for all faculty based on reports for fiscal years 2002 and 2003. Detailed tables containing the analysis are available in appendix E.

### **Productivity measures**

According to the semi-annual productivity evaluation (for fiscal years 2002 and 2003), Thai male and female faculty members were equally productive for overall activities, but they differed in the ways they approached their work. Tables 4.2 to 4.5 provide a summary of productivity during these two years, by pay raise periods.

There was some evidence of productivity differences by gender when each type of activity was closely examined. For the first pay raise evaluation period of 2002, women collaborated on research and frequently assumed the role of lead researcher; men worked alone. Research loads reported were tied to gender only within balanced disciplines.

In the same pay raise period, in female-dominated disciplines, men spent more time on administration than women. Evidence of this was consistently observed in every pay raise evaluation period. More men hold administrative positions and therefore spend more time on these activities. These studies found that women shared a smaller proportion of management positions and they are less likely to break through into “glass ceiling” positions.

For the whole of fiscal year 2002, teaching loads were tied to gender in a statistically significant manner in female-dominated disciplines. The same was true of research loads in balanced disciplines.

In both pay raise periods of FY2003 and for the year as a whole, administrative work was linked to gender in female dominated disciplines only. For FY2003 as a whole, publication loads were tied to gender, regardless of discipline.

Both female and male respondents reported that they were equally productive for overall activities during the two fiscal years examined, leading to equity in pay raises among them. They differed in the ways they approached their work. Women tended to work in teams and often became lead researchers, men preferred to work alone. In publishing it was also quite often reported that women worked on a team, while men were solo authors. Men tended to be more productive than women in researching and publishing. Women quite often taught at the undergraduate level, performed tasks

relating to advising and committee work. Men repeatedly reported teaching at both undergraduate and graduate levels more than women.

**Table 4.2: Productivity by gender of fiscal year 2002 (t-test analysis)**

| Productivity<br>(working hours/wk) | 1 <sup>st</sup> |        |            | 2 <sup>nd</sup> |        |            | Total |        |            |
|------------------------------------|-----------------|--------|------------|-----------------|--------|------------|-------|--------|------------|
|                                    | Male            | Female | P<br>value | Male            | Female | P<br>value | Male  | Female | P<br>value |
| Teaching                           | 40.07           | 38.72  | .367       | 39.36           | 40.42  | .458       | 39.72 | 39.57  | .909       |
| Research                           | 8.70            | 11.66  | .042*      | 9.84            | 11.72  | .177       | 9.28  | 11.70  | .075       |
| Publication                        | 1.75            | 1.83   | .849       | .97             | 1.42   | .209       | 1.36  | 1.63   | .419       |
| Academic & social service          | 2.86            | 2.50   | .239       | 2.40            | 2.54   | .583       | 2.63  | 2.53   | .671       |
| Administrative activities          | 4.60            | 3.74   | .201       | 4.55            | 3.63   | .162       | 4.58  | 3.68   | .179       |
| Other committee work               | 3.25            | 2.64   | .345       | 2.97            | 2.84   | .548       | 3.11  | 2.74   | .313       |

**Table 4.3: Productivity by gender of fiscal year 2003 (t-test analysis)**

| Productivity<br>(working hours/wk)   | 1 <sup>st</sup> |        |            | 2 <sup>nd</sup> |        |            | Total |        |            |
|--------------------------------------|-----------------|--------|------------|-----------------|--------|------------|-------|--------|------------|
|                                      | Male            | Female | P<br>value | Male            | Female | P<br>value | Male  | Female | P<br>value |
| Teaching                             | 42.27           | 40.69  | .312       | 41.02           | 41.80  | .713       | 41.65 | 41.24  | .809       |
| <b>Research</b>                      | 10.43           | 11.41  | .467       | 8.87            | 10.60  | .188       | 9.65  | 11.01  | .286       |
| <b>Publication</b>                   | 1.69            | 2.81   | .061       | .960            | 1.52   | .085       | 1.33  | 2.17   | .025*      |
| <b>Academic &amp; social service</b> | 2.85            | 2.73   | .710       | 2.79            | 3.32   | .108       | 2.82  | 3.03   | .502       |
| <b>Administrative activities</b>     | 4.95            | 3.97   | .155       | 4.91            | 4.09   | .235       | 4.93  | 4.03   | .189       |
| <b>Other committee work</b>          | 2.83            | 2.90   | .793       | 3.04            | 3.08   | .864       | 2.94  | 2.99   | .821       |

**Table 4.4: Productivity by gender and disciplines of fiscal year 2002 (t-test analysis)**

**Female-Dominated Disciplines**

| Productivity<br>(working hours/wk) | 1 <sup>st</sup> |        |         | 2 <sup>nd</sup> |        |         | Total |        |         |
|------------------------------------|-----------------|--------|---------|-----------------|--------|---------|-------|--------|---------|
|                                    | Male            | Female | P value | Male            | Female | P value | Male  | Female | P value |
| Teaching                           | 41.03           | 36.62  | .067    | 46.25           | 41.69  | .074    | 43.50 | 39.16  | .041*   |
| Research                           | 6.62            | 10.86  | .090    | 9.81            | 12.07  | .319    | 8.22  | 11.47  | .142    |
| Publication                        | 2.85            | 2.34   | .587    | .550            | 1.84   | .054    | 1.70  | 2.09   | .539    |
| Academic & social service          | 2.16            | 2.00   | .704    | 2.30            | 2.16   | .763    | 2.28  | 2.61   | .720    |
| Administrative activities          | 6.28            | 3.73   | .034*   | 6.16            | 3.62   | .034*   | 6.22  | 3.68   | .033*   |
| Other committee work               | 2.80            | 2.24   | .260    | 2.81            | 2.49   | .471    | 2.81  | 2.37   | .317    |

**Male-Dominated Disciplines**

|                           |       |       |      |       |       |      |       |       |      |
|---------------------------|-------|-------|------|-------|-------|------|-------|-------|------|
| Teaching                  | 35.49 | 31.28 | .304 | 34.36 | 31.12 | .338 | 34.93 | 31.21 | .213 |
| Research                  | 13.78 | 20.96 | .160 | 13.46 | 18.51 | .304 | 13.62 | 19.74 | .213 |
| Publication               | 1.67  | .830  | .459 | 1.41  | .50   | .355 | 1.54  | .670  | .340 |
| Academic & social service | 2.29  | 1.39  | .303 | 4.32  | 4.00  | .859 | 2.09  | 1.43  | .302 |
| Administrative activities | 4.32  | 3.94  | .834 | 4.32  | 3.94  | .834 | 4.32  | 3.97  | .847 |
| Other committee work      | 3.75  | 1.59  | .529 | 2.34  | 1.97  | .492 | 3.04  | 1.76  | .474 |

**Balanced Disciplines**

|                           |       |       |       |       |       |      |       |       |       |
|---------------------------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| Teaching                  | 43.13 | 44.01 | .710  | 39.29 | 41.03 | .414 | 41.21 | 42.52 | .516  |
| Research                  | 5.91  | 10.33 | .005* | 7.00  | 9.30  | .171 | 6.46  | 9.82  | .030* |
| Publication               | 1.16  | 1.33  | .753  | .88   | .1.03 | .750 | 1.02  | 1.18  | .710  |
| Academic & social service | 3.72  | 3.61  | .823  | 2.87  | 3.44  | .120 | 3.30  | 3.53  | .562  |
| Administrative activities | 3.83  | 3.70  | .895  | 3.80  | 3.53  | .782 | 3.82  | 3.62  | .838  |
| Other committee work      | 3.12  | 3.54  | .137  | 3.56  | 3.61  | .834 | 3.34  | 3.58  | .337  |

**Table 4.5: Productivity by gender and disciplines of fiscal year 2003 (t-test analysis)**

**Female-Dominated Disciplines**

| Productivity<br>(working hours/wk) | 1 <sup>st</sup> |        |         | 2 <sup>nd</sup> |        |         | Total |        |         |
|------------------------------------|-----------------|--------|---------|-----------------|--------|---------|-------|--------|---------|
|                                    | Male            | Female | P value | Male            | Female | P value | Male  | Female | P value |
| Teaching                           | 44.14           | 40.41  | .131    | 44.52           | 39.90  | .102    | 44.33 | 40.16  | .079    |
| Research                           | 10.88           | 13.37  | .274    | 10.93           | 12.41  | .554    | 10.91 | 12.89  | .375    |
| Publication                        | 2.02            | 3.76   | .206    | 1.56            | 1.62   | .938    | 3.58  | 5.37   | .270    |
| Academic & social service          | 2.33            | 2.02   | .495    | 2.44            | 3.11   | .263    | 2.39  | 2.57   | .699    |
| Administrative activities          | 6.50            | 3.70   | .019*   | 6.52            | 3.85   | .026*   | 6.51  | 3.77   | .021*   |
| Other committee work               | 3.05            | 2.56   | .330    | 3.16            | 2.89   | .539    | 3.11  | 2.73   | .404    |

**Male-Dominated Disciplines**

|                           |       |       |      |       |       |      |       |       |      |
|---------------------------|-------|-------|------|-------|-------|------|-------|-------|------|
| Teaching                  | 38.56 | 36.91 | .720 | 37.34 | 37.25 | .984 | 37.96 | 37.09 | .841 |
| Research                  | 14.15 | 9.52  | .315 | 10.45 | 6.78  | .340 | 12.31 | 9.65  | .307 |
| Publication               | 1.97  | 2.60  | .637 | .700  | .190  | .444 | 1.05  | 1.58  | .244 |
| Academic & social service | 2.43  | 3.67  | .677 | 2.55  | 2.34  | .781 | 2.49  | 2.23  | .721 |
| Administrative activities | 5.08  | 5.03  | .979 | 5.08  | 5.03  | .980 | 5.09  | 5.04  | .980 |
| Other committee work      | 2.15  | 2.07  | .882 | 2.39  | 2.10  | .639 | 2.27  | 2.09  | .740 |

**Balanced Disciplines**

|                           |       |       |      |       |       |      |       |       |      |
|---------------------------|-------|-------|------|-------|-------|------|-------|-------|------|
| Teaching                  | 44.12 | 42.15 | .436 | 41.89 | 45.98 | .459 | 43.01 | 44.07 | .730 |
| Research                  | 7.23  | 8.91  | .298 | 6.32  | 8.84  | .275 | 6.83  | 8.88  | .191 |
| Publication               | 1.27  | 1.41  | .805 | .820  | 1.76  | .723 | 1.05  | 1.58  | .244 |
| Academic & social service | 3.48  | 4.00  | .339 | 3.19  | 3.92  | .160 | 3.34  | 3.96  | .233 |
| Administrative activities | 3.94  | 4.09  | .886 | 3.83  | 4.20  | .718 | 3.89  | 4.15  | .800 |
| Other committee work      | 3.25  | 3.63  | .184 | 3.48  | 3.64  | .573 | 3.36  | 3.64  | .321 |

## **Family responsibilities**

Many variables were used to measure family responsibilities, including marital status, number of elderly relatives living with the faculty member, number of children under 16 years of age, having a domestic helper(s), time spent caring for and teaching their own children each day, time spent on activities connected to their children each day, and time spent doing household chores each day. Detailed tables containing the analysis are available in appendix F.

Male and female respondents to the self-administered survey claimed that they had equal amounts of family responsibilities with regard to number of dependents: number of elderly and number of children under 16 years living with them, having domestic helpers, and time spent taking care for children. The evidence applies across disciplines.

However, an exception is that there was evidence of gender difference in terms of their marital status. Regardless of discipline, more females than males were single. Another exception is that women spent more time working on household chores than men. The evidence applies to women in general and across disciplines. Female respondents were more likely than male respondents to have elderly living with them. Further exceptions can be seen when respondents are broken into married with children, married without children and single. Married female respondents who have children claimed that they spent more time doing activities connected to their own children (287 minutes) and doing household chores (77 minutes) than male respondents who have children (106 minutes for doing activities connected to children and 38 minutes for doing

household chores). Similarly, time spent doing household chores applies to married respondents without children and single respondents. Married females without children spent approximately an hour on household chores, while married males spent only 24 minutes on the same tasks. Single female respondents also spent more time doing household chores than single male respondents, 19 minutes for male respondents and 52 minutes for female respondents.

**Table 4.6: Family responsibilities by gender (Chi-square analysis)**

| Family responsibilities                      | Gender    |           |
|--|-----------|-----------|
|  | Male      | Female    |
| <b>Marital status</b>                        |           |           |
| - Single                                     | 36 (16%)  | 84 (39%)  |
| - Married                                    | 193 (84%) | 129 (61%) |
| $\chi^2$                                     | 31.382    |           |
| P  | .000*     |           |
| <b>Number of elderly living with</b>         |           |           |
| - None                                       | 191 (83%) | 160 (75%) |
| - More than one                              | 38 (17%)  | 53 (25%)  |
| $\chi^2$                                     | 4.637     |           |
| P  | .031*     |           |
| <b>Number of children under 16 years old</b> |           |           |
| - None                                       | 98 (51%)  | 64 (50%)  |
| - More than one                              | 95 (49%)  | 65 (50%)  |
| $\chi^2$                                     | .042      |           |
| P  | .838      |           |
| <b>Having domestic helpers</b>               |           |           |
| - Yes  | 54        | 53        |
| - No   | 46        | 47        |
| $\chi^2$                                     | .029      |           |
| P  | .865      |           |

**Table 4.7: Family responsibilities by gender and discipline (Chi-square analysis)**

| Family responsibilities                      | Gender (%) |          |
|--|------------|----------|
|  | Male       | Female   |
| <b>Female-dominated disciplines</b>          |            |          |
| <b>Marital status</b>                        |            |          |
| - Single                                     | 5 (10%)    | 33 (40%) |
| - Married                                    | 49 (90%)   | 49 (60%) |
| $\chi^2$                                     | 15.525     |          |
| P  | .000*      |          |
| <b>Number of elderly living with</b>         |            |          |
| - None                                       | 46 (85%)   | 59 (72%) |
| - More than one                              | 8 (15%)    | 28 (23%) |
| $\chi^2$                                     | 3.24       |          |
| P  | .072       |          |
| <b>Number of children under 16 years old</b> |            |          |
| - None                                       | 27 (55%)   | 25 (51%) |
| - More than one                              | 22 (45%)   | 24 (49%) |
| $\chi^2$                                     | .164       |          |
| P  | .686       |          |
| <b>Having domestic helpers</b>               |            |          |
| - Yes  | 39 (39%)   | 50 (50%) |
| - No   | 61 (61%)   | 50 (50%) |
| $\chi^2$                                     | 1.988      |          |
| P  | .159       |          |
| <b>Male-dominated disciplines</b>            |            |          |
| <b>Marital status</b>                        |            |          |
| - Single                                     | 13 (14%)   | 22 (42%) |
| - Married                                    | 82 (86%)   | 30 (58%) |
| $\chi^2$                                     | 15.178     |          |
| P  | .000*      |          |
| <b>Number of elderly living with</b>         |            |          |
| - None                                       | 76 (80%)   | 39 (75%) |
| - More than one                              | 19 (20%)   | 13 (25%) |
| $\chi^2$                                     | .493       |          |
| P  | .482       |          |
| <b>Number of children under 16 years old</b> |            |          |
| - None                                       | 47 (57%)   | 19 (63%) |
| - More than one                              | 35 (43%)   | 11 (37%) |
| $\chi^2$                                     | .567       |          |
| P  | .328       |          |
| <b>Having domestic helpers</b>               |            |          |
| - Yes  | 42 (42%)   | 42 (42%) |
| - No   | 58 (58%)   | 58 (58%) |
| $\chi^2$                                     | .000       |          |
| P  | .968       |          |

(continued...)

**Table 4.7: Family responsibilities by gender and discipline (Chi-square analysis)**

| Family responsibilities                      | Gender (%) |          |
|--|------------|----------|
|  | Male       | Female   |
| <b>Balanced disciplines</b>                  |            |          |
| <b>Marital status</b>                        |            |          |
| - Single                                     | 18 (23%)   | 29 (37%) |
| - Married                                    | 62 (77%)   | 50 (63%) |
| $\chi^2$                                     | 3.854      |          |
| P  | .050*      |          |
| <b>Number of elderly living with</b>         |            |          |
| - None                                       | 69 (86%)   | 62 (78%) |
| - More than one                              | 11 (14%)   | 17 (12%) |
| $\chi^2$                                     | 1.654      |          |
| P  | .198       |          |
| <b>Number of children under 16 years old</b> |            |          |
| - None                                       | 24 (39%)   | 20 (40%) |
| - More than one                              | 38 (61%)   | 30 (60%) |
| $\chi^2$                                     | .019       |          |
| P  | .889       |          |
| <b>Having domestic helpers</b>               |            |          |
| - Yes  | 45 (54%)   | 36 (75%) |
| - No   | 39 (46%)   | 48 (25%) |
| $\chi^2$                                     | 1.931      |          |
| P  | .165       |          |

**Table 4.8: Average time spent on family responsibilities by gender (t-test analysis)**

| Activities related to family responsibilities                 | Gender (min) |        |
|---|--------------|--------|
|   | Male         | Female |
| Time spent taking care their own children each day            | 48           | 42     |
| P   | .505         |        |
| Time spent on activities connected to their children each day | 86           | 92     |
| P   | .684         |        |
| Time spent doing household chores each day                    | 29           | 58     |
| P   | .000*        |        |

**Table 4.9: Average time spent on family responsibilities by gender and discipline (t-test analysis)**

| Activities related to family responsibilities                 | Gender (min) |        |
|---|--------------|--------|
|   | Male         | Female |
| <b>Female-Dominated Disciplines</b>                           |              |        |
| Time spent taking care their own children each day            | 51           | 36     |
| P   | .296         |        |
| Time spent on activities connected to their children each day | 87           | 79     |
| P   | .739         |        |
| Time spent doing household chores each day                    | 44           | 64     |
| P   | .001*        |        |
| <b>Male-Dominated Disciplines</b>                             |              |        |
| Time spent taking care their own children each day            | 42           | 22     |
| P   | .208         |        |
| Time spent on activities connected to their children each day | 82           | 79     |
| P   | .914         |        |
| Time spent doing household chores each day                    | 27           | 74     |
| P   | .001*        |        |
| <b>Balanced-Disciplines</b>                                   |              |        |
| Time spent taking care their own children each day            | 50           | 56     |
| P   | .669         |        |
| Time spent on activities connected to their children each day | 89           | 114    |
| P   | .267         |        |
| Time spent doing household chores each day                    | 39           | 65     |
| P   | .001*        |        |

### **Southeast Asian concepts**

Four crucial Southeast Asian concepts were measured: the systems of kinship, patronage, turn-taking and seniority. Kinship was measured by considering how close the respondents are to their department heads, how long they have known the department heads and how much they have interacted with the department heads. Each measurement was considered individually due to differences in scale. The patronage system was measured by using four variables, including how often favors are performed (with or without being asked), whether or not favors are work related, and how often favors are repaid. The four were combined using an additive scale to create a patronage system score. The turn-taking system was measured by the amount of each type of work assigned by the department head relative to one's colleagues. To create a turn-taking system score, an additive scale was applied to combine all answers. The last Southeast Asian concept, the seniority system, was composed of age and experience. The average of each was calculated and considered individually.

The results showed that there is no difference between men and women relative to two variables on the kinship system (closeness to department head and interaction to department head) and turn-taking system. The Southeast Asian concepts do not appear to effect gender inequality in pay raises at KKU during fiscal year 2002 and 2003. Detailed tables containing the analysis are available in appendix G.

Both male and female respondents tend to have equal scores on two variables of the kinship (closeness to department head and interaction to department head) and turn-taking systems, regardless of discipline. There were evidences of gender differences in one of the variables measured kinship system (time knowing department head) and

patronage system score. Men tended to know the department head longer than women. Women tend to have higher scores on the patronage system than men. There were gender differences in the seniority system with regard to age and experience. Men tended to be older and to have worked longer at KKU than women. In particular, within male-dominated disciplines, there was a statistically significant correlation between gender and experience.

**Table 4.10: Perspectives on Southeast Asian concepts by gender**

| <b>Southeast Asian concepts</b>                          | <b>Gender</b> |               |
|--|---------------|---------------|
|  | <b>Male</b>   | <b>Female</b> |
| <b>Kinship system</b>                                    |               |               |
| - Closeness to department head                           |               |               |
| Not at all (%)   | 9             | 10            |
| Somewhat close (%)                                       | 21            | 21            |
| Rather close (%)   | 16            | 13            |
| Very close (%)   | 6             | 5             |
| $\chi^2$   | 1.799         |               |
| P  | .615          |               |
| - Average time knowing department head (years)           | 17            | 15            |
| P  | .034*         |               |
| - Average time Interaction with department head (hrs/wk) | 8             | 10            |
| P  | .071          |               |
|  |               |               |
| <b>Patronage system</b>                                  |               |               |
| (score)  | 5.31          | 6.47          |
| P  | .012*         |               |
| <b>Turn-taking</b>                                       |               |               |
| (score)  | 13.27         | 12.98         |
| P  | .657          |               |
| <b>Seniority system</b>                                  |               |               |
| - Age  | 46            | 44            |
| P  | .002*         |               |
| - Experience   | 21            | 19            |
| P  | .014*         |               |

**Table 4.11: Perspectives on Southeast Asian concepts by gender and discipline**

| Southeast Asian concepts                                 | Gender |        |
|--|--------|--------|
|  | Male   | Female |
| <b>Female-Dominated Disciplines</b>                      |        |        |
| <b>Kinship system</b>                                    |        |        |
| - Closeness to department head                           |        |        |
| Not at all (%)   | 5      | 15     |
| Somewhat close (%)                                       | 16     | 24     |
| Rather close (%)   | 12     | 14     |
| Very close (%)   | 7      | 7      |
| $\chi^2$   | 3.547  |        |
| P  | .315   |        |
| - Average time knowing department head (years)           | 16     | 14     |
| P  | .177   |        |
| - Average time Interaction with department head (hrs/wk) | 8      | 10     |
| P  | .302   |        |
|  |        |        |
| <b>Patronage system</b>                                  |        |        |
| (score)  | 6.04   | 6.82   |
| P  | .347   |        |
| <b>Turn-taking</b>                                       |        |        |
| (score)  | 14.04  | 12.13  |
| P  | .069   |        |
| <b>Seniority system</b>                                  |        |        |
| - age  | 46     | 44     |
| P  | .100   |        |
| - experience   | 20     | 19     |
| P  | .358   |        |
|  |        |        |
| <b>Male-Dominated Disciplines</b>                        |        |        |
| <b>Kinship system</b>                                    |        |        |
| - Closeness to department head                           |        |        |
| Not at all (%)   | 12     | 3      |
| Somewhat close (%)                                       | 25     | 16     |
| Rather close (%)   | 22     | 13     |
| Very close (%)   | 6      | 3      |
| $\chi^2$   | 2.159  |        |
| P  | .540   |        |
| - Average time knowing department head (years)           | 17     | 16     |
| P  | .394   |        |
| - Average time Interaction with department head (hrs/wk) | 8      | 9      |
| P  | .807   |        |
| <b>Patronage system</b>                                  |        |        |
| (score)  | 4.88   | 5.02   |
| P  | .877   |        |
| <b>Turn-taking</b>                                       |        |        |
| (score)  | 13.12  | 14.76  |
| P  | .335   |        |
| <b>Seniority system</b>                                  |        |        |
| - age  | 47     | 45     |
| P  | .194   |        |
| - experience   | 23     | 19     |
| P  | .046*  |        |

**Table 4.11: Perspectives on Southeast Asian concepts by gender and discipline**

| Southeast Asian concepts                                 | Gender |        |
|--|--------|--------|
|  | Male   | Female |
| <b>Balanced Disciplines</b>                              |        |        |
| <b>Kinship system</b>                                    |        |        |
| - Closeness to department head                           |        |        |
| Not at all (%)   | 10     | 10     |
| Somewhat close (%)                                       | 21     | 24     |
| Rather close (%)   | 14     | 11     |
| Very close (%)   | 6      | 4      |
| $\chi^2$   | .996   |        |
| P  | .802   |        |
| - Average time knowing department head (years)           | 16     | 15     |
| P  | .417   |        |
| - Average time Interaction with department head (hrs/wk) | 7      | 9      |
| P  | .136   |        |
|  |        |        |
| <b>Patronage system</b>                                  |        |        |
| (score)  | 5.21   | 6.44   |
| P  | .118   |        |
| <b>Turn-taking</b>                                       |        |        |
| (score)  | 12.89  | 13.61  |
| P  | .495   |        |
| <b>Seniority system</b>                                  |        |        |
| - age  | 45     | 43     |
| P  | .123   |        |
| - experience   | 19     | 18     |
| P  | .474   |        |

### **Regression Analysis**

The results of four pay raise evaluations, fiscal years 2002 and 2003 showed that there were no evidence of gender inequality in pay raises, except for the first pay raise of fiscal year 2002. While the Chi-square did not show a significant difference, I decided to perform a regression analysis to determine whether factors such as the Southeast Asian concepts have an affect on pay raises between male and female faculty members.

#### **1. Control Variables**

The control variables used in this study are academic rank, academic discipline, educational attainment, family responsibilities, and position cluster. This section will

discuss whether control variables effect any of the pay raise periods or total pay raise for fiscal 2002 or 2003.

**Pay raises for fiscal year 2002 and control variables**

First pay raise 2002 and control variables

Regression analysis revealed that none of the control variables had a statistically significant effect on the first pay raise period of 2002 between male and female faculty members. See model 4.1.

**Model 4.1: First pay raise 2002 and control variables**

| Model                   | Standardized Coefficients Beta | t      | Sig. |
|-------------------------|--------------------------------|--------|------|
| (Constant)              |                                | 6.456  | .000 |
| Gender                  | .072                           | 1.455  | .146 |
| Rank                    | -.090                          | -1.063 | .288 |
| Male                    | .019                           | .349   | .727 |
| Female                  | -.032                          | -.579  | .563 |
| Education               | -.082                          | -1.615 | .107 |
| Position cluster        | .077                           | .887   | .375 |
| Family responsibilities | -.039                          | -.802  | .423 |

Second pay raise 2002 and control variables

Regression analysis revealed that for the second pay raise cycle of 2002, the control variables had a statistically significant effect on pay raise (p value = .001). Gender and family responsibilities were the only variables to show a statistically significant effect (p values < .05). Family responsibilities tended to have a negative relationship with pay raise. The more family responsibilities the respondents reported, the lower their pay raise. See model 4.2.

**Model 4.2: Second pay raise 2002 and control variables**

| Model                   | Standardized Coefficients Beta | t      | Sig.  |
|-------------------------|--------------------------------|--------|-------|
| (Constant)              |                                | 11.091 | .000  |
| Gender                  | -.118                          | -2.447 | .015* |
| Rank                    | .045                           | .544   | .587  |
| Male                    | .011                           | .198   | .843  |
| Female                  | -.101                          | -1.856 | .064  |
| Education               | -.024                          | -.488  | .624  |
| Position cluster        | .039                           | .463   | .644  |
| Family responsibilities | -.121                          | -2.554 | .011* |

**Total Pay Raise 2002 and control variables**

Regression analysis revealed that for the total pay raise of fiscal 2002, the control variables had a statistically significant effect on pay raise (p value = .025). Again, family responsibilities had a statistically significant effect (p value < .05). Family responsibilities tended to have a negative relationship with pay raise. The more family responsibilities the respondents reported, the lower their pay raise. See model 4.3.

**Model 4.3: Total pay raise 2002 and control variables**

| Model                   | Standardized Coefficients Beta | t      | Sig.  |
|-------------------------|--------------------------------|--------|-------|
| (Constant)              |                                | 12.824 | .000  |
| Gender                  | -.036                          | -.732  | .464  |
| Rank                    | -.012                          | -.148  | .882  |
| Male                    | .020                           | .374   | .708  |
| Female                  | -.107                          | -1.954 | .051  |
| Education               | -.077                          | -1.551 | .122  |
| Position cluster        | .070                           | .814   | .416  |
| Family responsibilities | -.107                          | -2.249 | .025* |

## Pay raises for fiscal year 2003 and control variables

### First Pay Raise 2003 and control variables

Regression analysis revealed that none of the control variables had a statistically significant effect on the first pay raise period of 2003 between male and female faculty members ( $p$  values  $> .05$ ). See model 4.4.

#### **Model 4.4: First pay raise 2003 and control variables**

| Model                   | Standardized Coefficients Beta | t     | Sig. |
|-------------------------|--------------------------------|-------|------|
| (Constant)              |                                | 7.364 | .000 |
| Gender                  | .007                           | .151  | .880 |
| Rank                    | .012                           | .137  | .891 |
| Male                    | .037                           | .662  | .508 |
| Female                  | .006                           | .116  | .908 |
| Education               | -.046                          | -.915 | .361 |
| Position cluster        | -.046                          | -.530 | .596 |
| Family responsibilities | -.011                          | -.218 | .827 |

### **Second Pay Raise 2003 and control variables**

Regression analysis revealed that none of the control variables had a statistically significant effect on the second pay raise period of 2003 between male and female faculty members. See model 4.5.

#### **Model 4.5: Second pay raise 2003 and control variables**

| Model                   | Standardized Coefficients Beta | t      | Sig. |
|-------------------------|--------------------------------|--------|------|
| (Constant)              |                                | 9.409  | .000 |
| Gender                  | -.036                          | -.735  | .463 |
| Rank                    | -.088                          | -1.033 | .302 |
| Male                    | .039                           | .701   | .484 |
| Female                  | -.026                          | -.468  | .640 |
| Education               | .047                           | .934   | .351 |
| Position cluster        | .036                           | .414   | .679 |
| Family responsibilities | .015                           | .317   | .751 |

### **Total Pay Raise 2003 and control variables**

Regression analysis revealed that none of the control variables had a statistically significant effect on the total pay raise period of 2002 between male and female faculty members. See model 4.6.

#### **Model 4.6: Total pay raise 2003 and control variables**

| Model                   | Standardized Coefficients Beta | t      | Sig. |
|-------------------------|--------------------------------|--------|------|
| (Constant)              |                                | 12.727 | .000 |
| Gender                  | -.022                          | -.443  | .658 |
| Rank                    | -.058                          | -.679  | .498 |
| Male                    | .057                           | 1.035  | .301 |
| Female                  | -.015                          | -.267  | .790 |
| Education               | .001                           | .011   | .991 |
| Position cluster        | -.008                          | -.089  | .929 |
| Family responsibilities | .004                           | .074   | .941 |

## **2. Southeast Asian concepts**

Four crucial variables on Southeast Asian concepts including systems of kinship, patronage, turn-taking and seniority, were added into the regression model to see whether the Southeast Asian concepts have an effect on pay raises between male and female faculty members. This section will discuss whether Southeast Asian concepts have an effect on any of the pay raise periods or the total pay raises for fiscal 2002 or 2003.

### **First Pay Raise 2002 and Southeast Asian concepts**

Regression analysis revealed that for the first pay raise cycle of 2002, when the Southeast Asian concepts were added to the control variables, position cluster had a statistically significant effect on pay raise (p value = .015). Position cluster had a positive relationship with pay raise. The higher the position cluster the respondents had, the

larger the pay raise. None of the Southeast Asian concepts by themselves had a statistically significant effect. See model 4.7.

**Model 4.7: First pay raise 2002 and Southeast Asian concepts**

| Model                         | Standardized Coefficients Beta | t      | Sig.  |
|-------------------------------|--------------------------------|--------|-------|
| (Constant)                    |                                | 5.521  | .000  |
| Gender                        | .056                           | 1.136  | .257  |
| Rank                          | -.144                          | -1.657 | .098  |
| Male                          | .039                           | .698   | .486  |
| Female                        | -.017                          | -.298  | .766  |
| Education                     | -.085                          | -1.686 | .092  |
| Position cluster              | .262                           | 2.468  | .013* |
| Family responsibilities       | .076                           | -1.508 | .132  |
| Kinship system                |                                |        |       |
| - Closeness to dept. head     | .001                           | .013   | .990  |
| - Time to know dept. head     | -.042                          | -.690  | .491  |
| - Interaction with dept. head | .001                           | .026   | .979  |
| Patronage system              | .040                           | .683   | .495  |
| Turn-taking                   | -.018                          | -.365  | .715  |
| Age                           | -.184                          | -1.618 | .106  |
| Experience                    | -.002                          | -.016  | .987  |

**Second pay raise 2002 and Southeast Asian concepts**

Regression analysis revealed that for the second pay raise cycle of 2002, when the Southeast Asian concepts were added to the control variables, the Southeast Asian concepts mitigated the effects of the control variables as a whole (p value = .009). Gender and family responsibilities were the only variables to show a statistically significant effect (p values < .05) and showed a slightly greater degree of significance when the Southeast Asian concepts were included. See model 4.8.

**Model 4.8: Second pay raise 2002 and Southeast Asian concepts**

| Model                         | Standardized Coefficients Beta | t      | Sig.  |
|-------------------------------|--------------------------------|--------|-------|
| (Constant)                    |                                | 9.089  | .000  |
| Gender                        | -.111                          | -2.280 | .023* |
| Rank                          | .054                           | .637   | .524  |
| Male                          | .012                           | .227   | .820  |
| Female                        | -.093                          | -1.673 | .095  |
| Education                     | -.019                          | -.378  | .706  |
| Position cluster              | .050                           | .479   | .632  |
| Family responsibilities       | -.124                          | -2.498 | .013* |
| Kinship system                |                                |        |       |
| - Closeness to dept. head     | .081                           | 1.439  | .151  |
| - Time to know dept. head     | .067                           | 1.111  | .267  |
| - Interaction with dept. head | -.072                          | -1.329 | .184  |
| Patronage system              | .018                           | .323   | .747  |
| Turn-taking                   | .035                           | .724   | .469  |
| Age                           | -.020                          | -.181  | .857  |
| Experience                    | -.058                          | -.567  | .571  |

**Total Pay Raise 2002 and Southeast Asian concepts**

Regression analysis revealed that for the total pay raise cycle of 2002, when the Southeast Asian concepts were added to the control variables, the Southeast Asian concepts magnified the effects of the control variables as a whole (p value = .016). Position cluster and family responsibilities were the only variables to show a statistically significant effect (p values < .05). Position cluster was not statistically significant when Southeast Asian concepts were excluded. Family responsibilities were much less significant in the absence of the Southeast Asian concepts. See model 4.9.

**Model 4.9: Total pay raise 2002 and Southeast Asian concepts**

| Model                         | Standardized Coefficients Beta | t      | Sig.  |
|-------------------------------|--------------------------------|--------|-------|
| (Constant)                    |                                | 10.652 | .000  |
| Gender                        | -.042                          | -.853  | .394  |
| Rank                          | -.043                          | -.503  | .615  |
| Male                          | .036                           | .651   | .515  |
| Female                        | -.089                          | -1.602 | .110  |
| Education                     | -.076                          | -1.518 | .130  |
| Position cluster              | .209                           | 2.003  | .046* |
| Family responsibilities       | -.136                          | -2.715 | .007* |
| Kinship system                |                                |        |       |
| - Closeness to dept. head     | .059                           | 1.038  | .300  |
| - Time to know dept. head     | .028                           | .467   | .641  |
| - Interaction with dept. head | -.046                          | -.842  | .400  |
| Patronage system              | .038                           | .657   | .512  |
| Turn-taking                   | .014                           | .293   | .770  |
| Age                           | -.138                          | -1.229 | .220  |
| Experience                    | -.058                          | -.567  | .571  |

**First Pay Raise 2003 and Southeast Asian concepts**

Regression analysis revealed that turn-taking had a statically significant effect on the first pay raise cycle. Turn-taking has a positive relationship with pay raise. The higher the score on turn-taking the respondents reported, the larger the pay raise. The control variables still did not have a statically significant effect on this pay raise cycle. See model 4.10.

**Model 4.10: First pay raise 2003 and Southeast Asian concepts**

| Model                         | Standardized Coefficients Beta | t      | Sig.  |
|-------------------------------|--------------------------------|--------|-------|
| (Constant)                    |                                | 5.849  | .000  |
| Gender                        | .006                           | .114   | .909  |
| Rank                          | -.022                          | -.256  | .798  |
| Male                          | .019                           | .347   | .729  |
| Female                        | -.025                          | -.495  | .621  |
| Education                     | -.038                          | -.747  | .455  |
| Position cluster              | .036                           | .347   | .733  |
| Family responsibilities       | -.025                          | -.495  | .621  |
| Kinship system                |                                |        |       |
| - Closeness to dept. head     | .100                           | 1.752  | .081  |
| - Time to know dept. head     | -.101                          | -1.669 | .096  |
| - Interaction with dept. head | .072                           | 1.309  | .191  |
| Patronage system              | -.092                          | -1.587 | .113  |
| Turn-taking                   | .138                           | 2.838  | .005* |
| Age                           | -.111                          | -.983  | .326  |
| Experience                    | .095                           | .925   | .355  |

**Second Pay Raise 2003 and Southeast Asian concepts**

Regression analysis revealed that there was no statistical significance in pay raise between male and female faculty members when all control variables and Southeast Asian concepts were included. However, time to know the department heads had a statistically significant effect on second pay raise cycle. Time to know the department head had a positive relationship with pay raise. The longer the respondents knew the department heads, the larger their pay raise. See model 4.11.

**Model 4.11: Second pay raise 2003 and Southeast Asian concepts**

| Model                         | Standardized Coefficients Beta | t      | Sig.  |
|-------------------------------|--------------------------------|--------|-------|
| (Constant)                    |                                | 8.554  | .000  |
| Gender                        | -.027                          | -.557  | .578  |
| Rank                          | -.020                          | -.232  | .817  |
| Male                          | .046                           | .839   | .402  |
| Female                        | -.035                          | -.630  | .529  |
| Education                     | .047                           | .933   | .351  |
| Position cluster              | -.157                          | -1.503 | .133  |
| Family responsibilities       | .041                           | .812   | .418  |
| Kinship system                |                                |        |       |
| - Closeness to dept. head     | -.079                          | -1.391 | .165  |
| - Time to know dept. head     | .163                           | 2.708  | .007* |
| - Interaction with dept. head | -.064                          | -1.179 | .239  |
| Patronage system              | .099                           | 1.736  | .083  |
| Turn-taking                   | -.093                          | -1.927 | .055  |
| Age                           | .164                           | 1.454  | .147  |
| Experience                    | -.060                          | -.588  | .557  |

**Total pay raise 2003 and Southeast Asian concepts**

Regression analysis revealed that there was no statistical significance in the total pay raise 2003 between male and female faculty members when all control variables and Southeast Asian concepts were included. See model 4.12.

**Model 4.12: Total pay raise 2003 and Southeast Asian concepts**

| Model                         | Standardized Coefficients Beta | t      | Sig. |
|-------------------------------|--------------------------------|--------|------|
| (Constant)                    |                                | 10.717 | .000 |
| Gender                        | -.016                          | -.328  | .743 |
| Rank                          | -.032                          | -.363  | .717 |
| Male                          | .050                           | .882   | .378 |
| Female                        | -.020                          | -.351  | .726 |
| Education                     | .007                           | .133   | .894 |
| Position cluster              | -.092                          | -.860  | .390 |
| Family responsibilities       | .012                           | .232   | .817 |
| Kinship system                |                                |        |      |
| - Closeness to dept. head     | .016                           | .277   | .782 |
| - Time to know dept. head     | .047                           | .761   | .447 |
| - Interaction with dept. head | .006                           | .104   | .917 |
| Patronage system              | .006                           | .101   | .920 |
| Turn-taking                   | .034                           | .692   | .490 |
| Age                           | .040                           | .344   | .731 |
| Experience                    | .027                           | .255   | .799 |

**Comparison between the non respondents and the respondents**

Information on the non-respondents is discussed in order to create a profile of non-respondents and to compare the respondents in terms of academic rank, position cluster, educational attainment, experience and pay raises using administrative database. The profile helped by providing an indication of bias (if any), its size and direction. It also helps to decide whether additional weighting is necessary.

**Non-respondents and respondents by gender and disciplines (table 4.12)**

Approximately two hundred and eighty-three members (40%) of the sample did not respond to the surveys: fifty-nine percent were men and forty-one percent were women. Of non-respondents, forty-five percent were from female-dominated disciplines: twenty-seven percent of men and eighteen percent of women. Seventeen percent were from male-dominated disciplines: thirteen percent of men and four percent of women.

Thirty-eight percent were from balanced disciplines: nineteen percent of both men and women

Male are over represented (by 8%) among non-respondents, principally in female-dominated disciplines. Males in male-dominated disciplines are somewhat underrepresented (by 8%) among non-respondents. In balanced disciplines, respondents closely matched non-respondents. See table

**Table 4.12: Non-respondents and respondents by gender and disciplines**

| Disciplines             | Non-respondents |              | Total         | Respondents  |              | Total         |
|-------------------------|-----------------|--------------|---------------|--------------|--------------|---------------|
|                         | Male            | Female       |               | Male         | Female       |               |
| <b>Female-dominated</b> | 78<br>(27%)     | 50<br>(18%)  | 128<br>(45%)  | 54<br>(12%)  | 82<br>(19%)  | 151<br>(31%)  |
| <b>Male-dominated</b>   | 37<br>(13%)     | 13<br>(4%)   | 50<br>(17%)   | 95<br>(21%)  | 52<br>(12%)  | 130<br>(33%)  |
| <b>Balanced</b>         | 52<br>(19%)     | 53<br>(19%)  | 105<br>(38%)  | 80<br>(18%)  | 79<br>(18%)  | 161<br>(36%)  |
| <b>Total</b>            | 167<br>(59%)    | 116<br>(41%) | 283<br>(100%) | 229<br>(51%) | 213<br>(49%) | 442<br>(100%) |

**Non-respondents and respondents and by academic rank (table 4.13)**

When broken down by academic rank, discrepancies occur primarily at the level of assistant professors where males are over represented by 5% and females are under represented by 8%. At all other levels, respondents differed from non-respondents by 3% or less.

**Table 4.13: Academic rank of non-respondents and respondents by gender**

| Academic Rank               | Non-respondents |              | Total         | Respondents  |              | Total         |
|-----------------------------|-----------------|--------------|---------------|--------------|--------------|---------------|
|                             | Male            | Female       |               | Male         | Female       |               |
| <b>Lecturer</b>             | 46<br>(16%)     | 34<br>(12%)  | 80<br>(28%)   | 57<br>(13%)  | 49<br>(11%)  | 106<br>(24%)  |
| <b>Assistant Professor.</b> | 71<br>(25%)     | 40<br>(14%)  | 111<br>(39%)  | 39<br>(20%)  | 96<br>(22%)  | 186<br>(42%)  |
| <b>Associate Professor</b>  | 47<br>(17%)     | 39<br>(14%)  | 86<br>(31%)   | 35<br>(19%)  | 68<br>(15%)  | 149<br>(34%)  |
| <b>Professor</b>            | 3<br>(1%)       | 3<br>(1%)    | 6<br>(2%)     | 1<br>(<1%)   | 0            | 1<br>(<1%)    |
| <b>Total</b>                | 167<br>(59%)    | 116<br>(41%) | 283<br>(100%) | 229<br>(51%) | 213<br>(49%) | 442<br>(100%) |

**Non-respondents and respondents by position cluster (table 4.14)**

Position clusters 6 to 8 are over represented by 8% among male non-respondents and under represented by 9% among female non-respondents. All other position cluster groups matched to within plus or minus 3%. See table.

**Table 4.14: Position cluster of non-respondents and respondents by gender**

| Position Cluster | Non-respondents |              | Total         | Respondents  |              | Total         |
|------------------|-----------------|--------------|---------------|--------------|--------------|---------------|
|                  | Male            | Female       |               | Male         | Female       |               |
| <b>3</b>         | 0               | 0            | 0             | 0            | 1<br>(<1%)   | 1<br>(<1%)    |
| <b>4-5</b>       | 8<br>(3%)       | 7<br>(2%)    | 15<br>(5%)    | 5<br>(1%)    | 8<br>(2%)    | 3<br>(3%)     |
| <b>6-8</b>       | 116<br>(41%)    | 67<br>(24%)  | 183<br>(65%)  | 145<br>(33%) | 144<br>(33%) | 289<br>(65%)  |
| <b>9-11</b>      | 43<br>(15%)     | 42<br>(15%)  | 85<br>(30%)   | 79<br>(18%)  | 60<br>(14%)  | 138<br>(31%)  |
| <b>Total</b>     | 167<br>(59%)    | 116<br>(41%) | 283<br>(100%) | 229<br>(51%) | 213<br>(49%) | 442<br>(100%) |

**Non-respondents and respondents by educational attainment (table 4.15)**

There is a great deal of discrepancy when broken down by educational attainment. Holders of Bachelor’s degrees of both genders are represented among non-respondents at three times the rate for respondents. Holders of Master’s degrees are over represented among respondents, males by 4% and females by 8%. Male Ph.D.s are somewhat under represented among respondents (by 5%), while females are slightly (3%) over represented. See table.

**Table 4.15: Educational attainment of non-respondents and respondents by gender**

| Educational Attainment | Non-respondents |              | Total         | Respondents  |              | Total         |
|------------------------|-----------------|--------------|---------------|--------------|--------------|---------------|
|                        | Male            | Female       |               | Male         | Female       |               |
| Bachelor’s             | 25<br>(9%)      | 17<br>(6%)   | 42<br>(15%)   | 13<br>(3%)   | 8<br>(2%)    | 21<br>(5%)    |
| Master’s               | 70<br>(25%)     | 51<br>(18%)  | 121<br>(43%)  | 127<br>(29%) | 117<br>(26%) | 244<br>(55%)  |
| Ph.D.                  | 72<br>(25%)     | 48<br>(17%)  | 120<br>(42%)  | 89<br>(20%)  | 88<br>(20%)  | 177<br>(40%)  |
| <b>Total</b>           | 167<br>(59%)    | 116<br>(41%) | 283<br>(100%) | 229<br>(51%) | 213<br>(49%) | 442<br>(100%) |

**Respondents and non-respondents by experience (table 4.16)**

The average work experience of non-respondents was 20.88 years. Men had less experience than women. The average experience of men was 20.83 years; whereas, the average experience of women was 20.96. On the contrary, the average work experience of the respondents was approximately twenty years. Men had more experience than women. The average experience of men was 20.71 years, while the average experience of women was 18.87.

**Pay raises of non-respondents and respondents**

**First-pay raise for fiscal year 2002 of respondents and non-respondents by gender** (table 4.16)

Recipients of one-half step pay raises are slightly over represented (males matched, female are were represented by 4%). Male recipients of one step pay raises are under represented among respondents by 7%. Females who received a one step pay raise are over represented by 3%. See table.

**Table 4.16: First pay raise for fiscal year 2002 of respondents and non-respondents by gender**

| Pay raise step   | Non-respondents |              | Total         | Respondents  |              | Total         |
|------------------|-----------------|--------------|---------------|--------------|--------------|---------------|
|                  | Male            | Female       |               | Male         | Female       |               |
| One-half step    | 118<br>(42%)    | 93<br>(33%)  | 211<br>(75%)  | 186<br>(42%) | 164<br>(37%) | 350<br>(79%)  |
| One-step         | 49<br>(17%)     | 23<br>(8%)   | 72<br>(25%)   | 43<br>(10%)  | 48<br>(11%)  | 91<br>(20%)   |
| One and one-half | 0               | 0            | 0             | 0            | 1<br>(<1%)   | 1<br>(<1%)    |
| <b>Total</b>     | 167<br>(59%)    | 116<br>(41%) | 283<br>(100%) | 229<br>(51%) | 213<br>(49%) | 442<br>(100%) |

**Second pay raise for fiscal year 2002 of respondents and non-respondents by gender** (table 4.17)

Males who received one-half step pay raises were two and a half times more likely to be non-respondents rather than respondents. Females who received one-step pay raises are over represented among respondents by 8%. See table.

**Table 4.17: Second-pay raise for fiscal year 2002 of respondents and non-respondents by gender**

| Pay raise step   | Non-respondents |              | Total         | Respondents  |              | Total         |
|------------------|-----------------|--------------|---------------|--------------|--------------|---------------|
|                  | Male            | Female       |               | Male         | Female       |               |
| One-half step    | 37<br>(13%)     | 28<br>(10%)  | 65<br>(23%)   | 24<br>(5%)   | 43<br>(10%)  | 67<br>(15%)   |
| One-step         | 127<br>(45%)    | 85<br>(30%)  | 212<br>(75%)  | 202<br>(46%) | 170<br>(38%) | 372<br>(84%)  |
| One and one-half | 3<br>(2%)       | 3<br>(3%)    | 6<br>(2%)     | 3<br>(1%)    | 0            | 3<br>(1%)     |
| <b>Total</b>     | 167<br>(59%)    | 116<br>(41%) | 283<br>(100%) | 229<br>(51%) | 213<br>(49%) | 442<br>(100%) |

**Total pay raise for fiscal year 2002 of respondents and non-respondents by gender** (table 4.18)

Males are under represented among respondents at the one step level and the two-step level. Females are over represented among respondents who received one and one half step pay raises. See table.

**Table 4.18: Total pay raise for fiscal year 2002 of respondents and non-respondents by gender**

| Pay raise step   | Non-respondents |              | Total         | Respondents  |              | Total         |
|------------------|-----------------|--------------|---------------|--------------|--------------|---------------|
|                  | Male            | Female       |               | Male         | Female       |               |
| One step         | 24<br>(8%)      | 20<br>(7%)   | 44<br>(15%)   | 17<br>(4%)   | 33<br>(7%)   | 50<br>(11%)   |
| One and one-half | 104<br>(37%)    | 78<br>(28%)  | 182<br>(64%)  | 173<br>(39%) | 143<br>(32%) | 316<br>(71%)  |
| Two-step         | 39<br>(14%)     | 18<br>(6%)   | 57<br>(21%)   | 39<br>(9%)   | 37<br>(8%)   | 76<br>(17%)   |
| <b>Total</b>     | 167<br>(59%)    | 116<br>(41%) | 283<br>(100%) | 229<br>(51%) | 213<br>(49%) | 442<br>(100%) |

**First pay raise for fiscal year 2003 of respondents and non-respondents by gender** (table 4.19)

Males are under represented among respondents who received one-half step pay raises by 7%; whereas, females are over represented by 6%. At the one step and one and one-half step, response rate matched closely. See table.

**Table 4.19: First-pay raise for fiscal year 2003 of respondents and non-respondents by gender**

| Pay raise step   | Non-respondents |              | Total         | Respondents  |              | Total         |
|------------------|-----------------|--------------|---------------|--------------|--------------|---------------|
|                  | Male            | Female       |               | Male         | Female       |               |
| One-half step    | 134<br>(48%)    | 90<br>(32%)  | 224<br>(79%)  | 181<br>(41%) | 168<br>(38%) | 349<br>(79%)  |
| One step         | 32<br>(11%)     | 26<br>(9%)   | 58<br>(20%)   | 48<br>(11%)  | 44<br>(10%)  | 92<br>(21%)   |
| One and one-half | 1<br>(<1%)      | 0            | 1<br>(1%)     | 0            | 1<br>(<1%)   | 1<br>(<1%)    |
| <b>Total</b>     | 167<br>(59%)    | 116<br>(41%) | 283<br>(100%) | 229<br>(51%) | 213<br>(49%) | 442<br>(100%) |

**Second-pay raise for fiscal year 2003 of non-respondents by gender** (table 4.20)

Females are over represented (by 7%) among respondents who received one step pay raises. Males are under represented among respondents who received one and one-half step raises. All other groups matched within plus or minus 3%. See table.

**Table 4.20: Second pay raise for fiscal year 2003 of respondents and non-respondents by gender**

| Pay raise step   | Non-respondents |              | Total         | Respondents  |              | Total         |
|------------------|-----------------|--------------|---------------|--------------|--------------|---------------|
|                  | Male            | Female       |               | Male         | Female       |               |
| One-half step    | 32<br>(11%)     | 28<br>(10%)  | 60<br>(21%)   | 34<br>(8%)   | 39<br>(9%)   | 73<br>(17%)   |
| One step         | 122<br>(43%)    | 88<br>(31%)  | 210<br>(74%)  | 189<br>(43%) | 169<br>(38%) | 358<br>(81%)  |
| One and one-half | 13<br>(5%)      | 0            | 13<br>(5%)    | 6<br>(1%)    | 5<br>(1%)    | 11<br>(2%)    |
| <b>Total</b>     | 167<br>(59%)    | 116<br>(41%) | 283<br>(100%) | 229<br>(51%) | 213<br>(49%) | 442<br>(100%) |

**Total pay raise for fiscal year 2003 of respondents and non-respondents by gender** (table 4.21)

Males are under represented (by 4-5%) among respondents who received one step or two-step pay raises. Females are over represented among respondents who received more than a one step pay raise by 3-4%. See table.

**Table 4.21: Total pay raise for fiscal year 2002 of respondents and non-respondents by gender**

| Pay raise step   | Non-respondents |              | Total         | Respondents  |              | Total         |
|------------------|-----------------|--------------|---------------|--------------|--------------|---------------|
|                  | Male            | Female       |               | Male         | Female       |               |
| One step         | 26<br>(9%)      | 16<br>(6%)   | 42<br>(15%)   | 22<br>(5%)   | 29<br>(7%)   | 51<br>(12%)   |
| One and one-half | 102<br>(36%)    | 86<br>(30%)  | 188<br>(66%)  | 165<br>(37%) | 144<br>(33%) | 309<br>(70%)  |
| Two-step         | 39<br>(14%)     | 14<br>(5%)   | 53<br>(19%)   | 42<br>(10%)  | 40<br>(9%)   | 82<br>(19%)   |
| <b>Total</b>     | 167<br>(59%)    | 116<br>(41%) | 283<br>(100%) | 229<br>(51%) | 213<br>(49%) | 442<br>(100%) |

Examination of the respondents and non-respondents revealed some discrepancy between them. To mitigate the resulting bias, post-stratification weighting was introduced before the final analysis.

The discussion on the meaning of the results will be fully discussed in the next chapter. My contributions from this study and recommendation for future research will also be provided at the end of the next chapter.

## **CHAPTER 5:**

### **ANALYSIS AND RECOMMENDATIONS**

The purpose of this chapter is to evaluate the findings from the previous chapter. The chapter begins with a discussion of whether gender inequality exists in pay raises at KKU during fiscal years 2002 and 2003 and its reasons. Later, the bearing of this study on previous literature on gender inequality in academia and the contribution of this study will be discussed. This chapter concludes with a discussion of recommendations for future research.

#### **I. Gender Inequality in Pay Raises**

This dissertation set out to answer the question, is there gender inequality in pay raises at Khon Kaen University?

Based on the findings of this research, the answer to that question is: NO. Pay raises and productive are equal, regardless of gender, discipline, rank, or position cluster. When statistically significances were identified in this study, female faculty sometimes received higher pay raises than male faculty. This was true for

- female-dominated disciplines in the first pay raise period of 2002 and for 2002 as a whole,
- assistant professors in the first pay raise period of 2002 and 2003 as a whole,
- associate professors in the second pay raise period of 2003, and for
- position clusters 9-11 in the second pay raise period of 2003,

but male lecturers received higher pay raises than female lecturers in the second pay raise period of 2003 and for 2003 as a whole. In other words, there is no evidence of

systematic bias in pay raises, and no evidence of gender bias in the pay raises during these two years.

Even though the basic evidence indicates there is no gender inequality in pay raises at KKU, we may not have a complete answer to this question about bias in pay raises, for a variety of reasons.

Primary among these is the system for assigning and evaluating workload. The rigidity of regulations in this system may be preventing variation – or hiding differences – in productivity among faculty, even of the same gender. Much of the system is controlled by the department head, who not only makes teaching and publication assignments, but who is also responsible for evaluating faculty relative to these assignments. The department head understands that a minimum level of performance is expected for each faculty member at each rank, and that the department head's decisions about teaching loads, for example, translate into the hours worked as reported on the evaluation form, which ultimately determines steps awarded in the pay raise system. A good department head would make assignments that afford an opportunity to meet or even exceed the minimum requirements, without giving advantage for greater pay raises to one faculty member over another. Of course, other factors may enter into these decisions, among them, the Southeast Asian concepts, which were a part of the study and will be discussed in greater detail below.

As mentioned previously, the system for documenting productivity designates a specific number of hours worked that faculty must use for each type of activity, regardless of the actual number of hours he or she dedicates to teaching, researching, publication, etc., each week. This approach prevents inflated or exaggerated estimates of

performance but it also means that two faculty members can spend very different amounts of time on an activity, yet report the same number of hours worked, or the same amount of productivity, on their evaluation forms, simply because the system requires it. What appears to be equal pay for equal work, may not really be equal pay for equal work.

Related to this issue, more female faculty members are single, and female faculty report they spend more time doing household chores and taking care of family than their male counterparts. Female faculty may be equally productive at work, but the pay raise system does not take into account differing contributions or responsibilities at home. Women therefore assume a greater proportion of work in their lives, even if they do the same amount of work on the job as men.

Asian norms suggest that women are supposed to take care of their family, especially their parents. Female faculty members are therefore seen as nurturers. Their responsibilities at home leave them little time to handle administrative responsibilities. This may be one reason why female faculty are more likely to collaborate on research, or why they report spending more time in advising and on projects and theses (though this difference is not statistically significant).

It should be noted that pay raises are limited, both in terms of the number of steps that may be gained in each pay raise period or in each year, and in terms of the total amount of funding available for pay raises. The department head understands that a maximum of 1½ step is allowed in any pay raise period, with a maximum of 2 steps total for the entire year. The department head is also aware of how much money is budgeted for raises and must make decisions within those parameters. This could explain why statistically significant differences during one pay raise period disappear during another

pay raise period or over an academic year (e.g., in the second pay raise period of 2003 female associate professors received higher pay raises than male associate professors, but this difference did not continue for 2003 as a whole).

These various aspects of performance and pay create a system where it would have been surprising if significant differences in pay raises had been revealed, and therefore the results of this study simply demonstrate that the system is working. Faculty members are meeting minimum standards with regard to productivity, department heads are consistent in their assignment and evaluation of work, and all of the decisions fit within the prescribed parameters. Faculty members appear to be satisfied with the system, but this may simply be because they have no license to change it. Alternatively, they may accept the process because it conforms to cultural norms.

One of the other goals of this research was to test the Southeast Asian concepts of kinship, patronage, turn taking and seniority, and the extent to which each may be a factor in performance and pay raises. The research indicates these four may play a role, but their actual influence is not entirely clear and will require additional study.

For example, male faculty members are older and have more work experience. Their seniority places them in a preferred position with regard to their selection as department heads or administrators and, in fact, male faculty members report more hours spent on administration than do female faculty members. This suggests the existence of a “glass ceiling,” but the question is whether this is the result of respect for seniority, or whether female faculty experience discrimination in promotion decisions. Though statistically significant<sup>1</sup>, the real difference is only 2 years in age and 2 years in experience (age 46 for males vs. 44 for females, and 21 years experience of males vs. 19

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<sup>1</sup> The statistical significance shows up in the analysis by gender, but not by discipline.

for females). This means that seniority may not be a factor, but the result does not necessarily support a claim for the glass ceiling. It may mean that age and years of experience are inadequate measures for the Southeast Asian concept of seniority, and this suggests the need for additional study.

Another example is kinship. Kinship was measured in terms of time: years the respondent has known the department head, and hours per week spent interacting with the department head. Faculty members indicate they have known their department heads for a very long time (more than 15 years, on average), and they spend at least 8 hours each week interacting with the department head. Both measures showed statistically significant differences between male and female faculty members. Even so, it is not clear how this statistical difference – of 2 years (15 vs. 17 years), and of 2 hours per week (8 vs. 10 hours) – might, in reality, influence decisions about workload or pay raises. And these differences were not significant when examined by discipline. So the Southeast Asian concept of kinship may be a factor in decisions regarding work assignments and pay raises, but the concept will have to be examined in greater detail in order to determine whether this is true.

Turn-taking scores were not significantly different, but deserve some additional attention. Faculty reported they work more than 60 hours a week on average, and the survey results show that both male and female faculty members believe the work is about evenly distributed (i.e., their workload is about the same as that of other faculty). If turn-taking is truly a culturally accepted practice, then it is possible that faculty who have actually been assigned extra work might still regard their workload as “equal.” It is

simply their turn to take on an overload, and someone else will be assigned the additional work next year.

Patronage considers whether faculty members are asked to do favors for the department head, and whether they ask for favors in return. The additive score for patronage shows statistically significant differences between male and female faculty. An examination of scores for individual questions reveals that respondents seldom ask for or are asked to do favors, which begs the significance of patronage as reflected in the total scores.

In each case, then, changes to measures, additional analysis, or different information, may be necessary in order to understand the role that the Southeast Asian concepts play in pay and performance. Age and years of experience are used to measure seniority in many contexts, but are not good proxies for the Southeast Asian concept of seniority and what it implies in terms of decision-making, leadership development, and administration. The survey questions on turn-taking ask only about relative workload in the present year but do not ask about the prior years or about expectations for the future. And, even with the additional questions, it is not necessarily the case that the respondents would report an uneven distribution of work because turn-taking is a culturally accepted practice.

I would also like to add a personal note regarding the importance of pay and pay raises in Thai culture based on my own knowledge as a faculty member in this system. What is not revealed for the data here is that faculty members in Thailand are almost always employed at several jobs. They teach at more than one university, or they receive stipends as guest lecturers/speakers, or consultants. Pay at any one job is only a portion

of total income, and therefore I believe that pay raises are merely considered a part of the process, and not a critical aspect of wealth.

## **II. Bearing of this study on previous work on gender inequality in academia**

This section will discuss how consistent the results of this study are with those of previous studies on gender inequality in academia detailed in chapter two.

The overall finding of equality in pay raises contradicts those of previous studies in the U.S., which found that female faculty were more likely to receive smaller pay raises than their male counterparts, both within and across disciplines. (Barbezat, 1988; Bellas, 1994; Kemp, 1994; Cox and Austin, 1997; Creamer, 1998).

Emphasis on teaching stated during the department head interviews is evidenced in the nearly equal participation (not statistically significant differences) by gender and also by discipline. This was not found in other studies, which show dramatic variations in teaching, research and publication. For example, in the U.S., as noted by Lawrence et al (1983), the assessment of faculty productivity is based approximately 80% on publishing productivity. Massy & Wilger (1995) indicate that faculty productivity is quite often measured by refereed publications, and research grants. Fairweather (2002) used teaching and research outputs as productivity measures. Many scholars such as Bentley & Blackburn (1990), Blackburn & Lawrence (1995), and Hekelman, Zyzanski and Flocke (1995) suggested that traditional productivity mainly focused on the amount of research funding or number of publications produced in a year or lifetime.

However, variations in productivity measurements are based on the type of institution and occur by discipline as well as by gender (Myer, 1998 and NSOPF, -93).

Of course, this could also be a function of the way that teaching is measured, which is also different at KKU from that of other studies.

For example, research-oriented universities emphasize research publishing productivity and research grants; whereas, teaching oriented universities (such as community colleges) focus on the number of teaching credit hours per semester (Myer, 1998). The amount of research produced also varies by discipline (The National Survey of Postsecondary Faculty, NSOPF-93). Some fields, such as the social sciences, have more topics on which to conduct research, and require less time to conduct research, when compared to “hard sciences”, such as physics and mathematics (Creamer, 1998). It is therefore likely that faculty in the social sciences will be more productive in research.

The distribution of female faculty at KKU is consistent with previous studies. Female-dominated disciplines include education, public health and nursing; whereas, male-dominated disciplines are engineering and technology (The United States Women’s Bureau, 1975, and Zuckerman, 1981). However, this study categorizes sciences into balanced disciplines, which is inconsistent with previous studies.

This study indicates that more men than women hold administrative positions, which is consistent with previous studies (The National Survey of Postsecondary Faculty (NSOPF-93), Luke (2002) and Anker (1997). These studies found that women shared a smaller proportion of management positions and they are less likely to break through into “glass ceiling” positions.

This study found that women spend more time than men doing household chores and taking care of children. This is very much the same as studies elsewhere (Acker, 1973, 1988, 1990; Blare & Lichter, 1996). Previous studies also indicate that family

responsibilities can negatively impact productivity and career advancement (The American Association of University Professors, Astin and Bayer, 1979; Hochschild, 1975; and Waldfogel, 1997). However, this may not be the case for some married women. This is because married women tend to be married to male faculty members and become a part of the network/system in ways that single women do not (Astin & Davise, 1985). Being married tends to facilitate married faculty having better career advancement options than their single female colleagues, because they are more likely to get into collegial networks, to get information and to have access to research resources (such as research grants). Whether this is true at KKU is not entirely clear from the information on single faculty women, but could be a significant factor given the number of female faculty who are single.

This study confirmed findings by Rabibhandana (1975), Wales (1934), and Anderson (1998) that the patronage system is widely used in government administration and Thai public workplaces and is considered one of the major elements of the governmental structure as well.

### **III. Contributions**

As stated in Chapter One, this study fills gaps in the literature of gender inequality in academia in non-industrialized countries and also explores Southeast Asian feminism and develops scales to measure Southeast Asian concepts.

This study explores KKU, a public university in Thailand, helping to understand the situation in Thai public academia, which has been overlooked by researchers. This

study provides information on the regulations, performance and behavior of the faculty members at this particular university and helps to understand the situation and the system.

As mentioned earlier, much of the research on gender inequality in academic settings has been conducted using a human capital perspective or utilizing a Western feminist conceptual framework, in Western countries. The inadequacy of Western feminism for explaining non-white and non-western experience has been criticized by Black feminists and post-colonial feminists. Developing a new lens to help explain a culturally bounded situation should be useful for the situation.

My other contribution is the testing of measures for the Southeast Asian concepts. Scales for measuring four Southeast Asian concepts were developed using a focus group of Thai faculty who study at Virginia Tech.

Developing a new conceptual framework, Southeast Asian concepts, is suitable for a specific culturally bounded place and helps understand the situation there. Scales to measure the four concepts of kinship, patronage, turn-taking and seniority help to understand the role these Southeast Asian concepts play in pay raises and performance. However, as indicated by the results, their actual influence is not entirely clear. Understanding and application of these scales may be enhanced by conducting additional research that would change measurements, utilize additional analysis or use different information, which will be discussed in greater detail in the next section.

#### **IV. Recommendations for future research**

Future research might be focused on the following issues:

One limitation of this study is that it focused on a particular point in time (four pay raise periods of October 2001, April 2002, October 2002 and April 2003); this is inherent in the nature of case studies. The results of this study might not be able to be generalized to other pay raise periods before or after those studied. Therefore, expanding the research to include additional periods of pay raises and a longer time frame might provide different results, perhaps revealing patterns of turn-taking not evident in a two-year study. A longitudinal study might be appropriate for future study.

Another limitation of the study suggests that the performance measures available do not necessarily reflect the hours worked or actual productivity. Utilizing the workload allowances established by the university (one hour of preparation, one hour of teaching and one hour of grading) may not be the most accurate method of measuring productivity. As a result, a better measure for this is needed in order to reflect actual workloads. Incorporating a survey question regarding the actual amount of time spent preparing and grading might be informative in order to obtain a more accurate reporting of actual workload, hours worked, productivity rather than imposed measures. Interviewing both male and female faculty members in terms of their actual workloads and their experience is recommended.

One goal of this research is to test the measures of the Southeast Asian concepts of kinship, patronage, turn taking and seniority, which might influence pay raises and performance. The results indicate that these four concepts might play a role, but their actual influence is not entirely clear and will require additional study. Focusing on the

reworking of the measures for Southeast Asian concepts is recommended. Introducing qualitative methods, such as interviewing both male and female faculty members concerning their assigned tasks and their perceptions of the impact of age on promotion to administrative positions, is recommended. Asking their perceptions on who would be appropriate to hold administrative positions by providing measures other than age and experience to measure seniority. Faculty members might be asked about the work assigned to them when compared to other years in order to measure turn-taking.

Interviewing women in different disciplines (female-dominated, male-dominated and balanced disciplines) concerning their experiences related to inequality and how they deal with their dual roles and how their family responsibilities affect their productivity is also recommended. Although women reported that they were as productive as men, women still contended with family responsibilities at a higher rate than men. It might be interesting to include family responsibility issues, such as how women deal with their dual roles and how their family responsibilities effect their productivity. Using qualitative methods helps providing in-depth information, which is concealed by quantitative approaches.

Continuing research at KKU will afford a better understanding of the situation of gender inequality in pay raises at this particular university and also to refine Southeast Asian concepts. Once it is understood what is really going on at this university in regard to inequality in pay raises, conducting comparative studies is recommended.

This is a case study of Khon Kaen University, which is one of twenty-one public universities in Thailand sharing the same government regulations on starting salary, pay raises, promotion and retirement. Further research on this topic should focus

on other public universities in Thailand with similar rules and regulations on pay raises so that comparisons may be drawn.

Focusing on private universities in Thailand might be another alternative for future research. No study on similar issues has been conducted on private universities in Thailand, and faculties at private universities tend to compete for pay raises. Faculty teaching loads are assigned by department heads, but research and publication loads are not. There are no limits on pay raises. Faculty members are also required to report their actual number of hours worked. Focusing on private universities might be a good place for testing the Southeast Asian concepts due to the competition among faculties, and the subjectivity of the department head.

Replicating the research at other public universities in Southeast Asia with less structured and less restrictive sets of rules and regulations on minimum requirements for annual productivity and pay raise quotas might be useful for future research in order to further test these Southeast Asian concepts.

In conclusion, this study explores issues concerning the inequality of men and women by focusing on a setting previously overlooked by researchers - - KKU, a public university in Thailand. It benefits one to understand KKU in terms of gender inequality in pay raises, faculty performance and behavior as well as the system. This study is also a new lens to help better understand the nature of gender inequality in a culturally bounded situation and setting by refining and testing scales to measure the Southeast Asian concepts of kinship, patronage, turn-taking and seniority. This study also lays a foundation for further comparative research with other universities in Southeast Asia to develop of Southeast Asian feminism.