

國立交通大學

管理科學系

碩士論文

性別與風險忍受程度對銷售人員幫助行為意願的影響

The Effects of Gender and Risk Tolerance on Sales

Helping Behavior Intention

研究生：林崇孝

指導教授：張家齊 博士

中華民國九十五年六月

性別與風險忍受程度對銷售人員幫助行為意願的影響

The effects of Gender and Risk Tolerance on Sales Helping

Behavior Intention

研究生：林崇孝

Student：Chung-Hsiao Lin

指導教授：張家齊

Advisor：Chia-Chi Chang

國立交通大學



Submitted to Department of Management Science

College of Management

National Chiao Tung University

in partial Fulfillment of the Requirements

for the Degree of

Master

in

Management Science

June 2006

Hsinchu, Taiwan, Republic of China

中華民國九十五年六月

性別與風險忍受程度對銷售人員幫助行為意願的影響

學生：林崇孝

指導教授：張家齊 博士

國立交通大學管理科學系碩士班

中文摘要

本研究主要探討銷售人員在沒有報酬、沒有額外補償的情況之下，基於何種原因願意付出心力幫助顧客。本研究以性別及銷售人員對於產品風險忍受程度的差異作為自變數，探討對應變數「銷售人員幫助行為意願」的影響；亦即男女銷售人員是否基於相同的動機幫助顧客？能夠忍受風險程度較高的銷售人員是否較願意幫助顧客？此處的風險忍受程度以銷售人員對於新產品促銷的意願為衡量標準，因為過去文獻指出：對於促銷未知新產品意願較高的銷售人員，即擁有較高的風險忍受程度。

本研究以迴歸分析作為主要的測量方法，搭配 ANOVA、LSD 分析人口統計資料對應變數間的影響。結果顯示性別對於銷售人員幫助行為意願的影響極小，而風險忍受程度則有顯著的影響，詳細的原因則列於內文中。本研究分析結果能提供銷售主管作為日後訓練銷售人員的方向；也提供有志成為超級銷售員的讀者一個努力目標。

關鍵字：銷售人員、銷售人員幫助行為、性別、風險忍受程度

The Effects of Gender and Risk Tolerance on Sales Helping Behavior Intention

Student : Chung-Hsiao Lin

Advisors : Dr. Chia-Chi Chang

Department of Management Science
National Chiao Tung University

ABSTRACT

This essay focuses on the importance of a Salesperson Helping Behavior under specific situations, for example no rewards, no extra bonuses. Does GENDER or RISK TOLERANCE influence Sales Helping Behavior Intentions? In other words, will a risk-loving salesperson do more SHB compared to a risk-averting one? Furthermore, what is the connection between gender and risk tolerance? The risk tolerance is defined as willingness to accept new product launching. Prior researches indicate that salespeople who are willing to do more new product promotions have higher risk tolerance.

This study uses regression analysis to discover the relationships among variables. By ANOVA and LSD comparison method, it explores the relations between demographics and variables. The results show that gender has minor influence on Sales Helping Behavior Intention, but risk tolerance has a distinctive influence. The explanations are listed in the content. The result provides sales managers with an orientation to train salespeople. Furthermore, it also provides new ideas for those who want to be super salespeople.

Key Words: Salespeople, Sales Helping Behavior, Gender, Risk Tolerance

誌謝辭

「做學問，需學問；只求答，非學問」，在碩士班就讀的兩年裡，尤其是在撰寫論文的這一年中，深深的體會了大學時代啟蒙老師在我們初為新鮮人時說過的這句話。沒有真正地流汗插秧，怎能感受嘴嚼米飯時的那股喜悅；同樣地真正踏實地做了一篇研究，才能了解學術的浩瀚與無窮。在新竹的第兩千一百個日子，有幸能從交大完成了碩士的訓練，在完成最後階段的同時，憶起六年前乍到風城的青澀模樣以及展翅欲飛的雄心壯志；兩千一百個日子過去後，知識的養成、心態的成長、週遭景色的物換星移，在即將離開陪伴我人生最菁華時光的土地當下，逕自地一一浮現在眼前。

家齊老師無疑是使我全力完成這篇研究的重要推手，除了當初洞悉我的個性而引導我走入了此論文方向，「軟硬兼施」的手段更令我心悅誠服。在我輕蔑學術的殿堂而想要偷懶打混時，老師會即時嚴厲地指正並灌輸我們應有的研究態度；在我因為資料取得不易而喪失動力時，老師會輕拍我的肩膀適時鼓勵、耐心指引相關的搜尋方向，為當時疲軟的鬥志注入了一股源源湧泉。從老師的身上，能夠看到學術最踏實的一面，學習到研究該有的堅持與嚴謹；研究方法或變數也許簡單，但該有的步驟一律按部就班，從細節操作中學習到的研究精神，對我而言遠比研究結果來的重要！也很感謝口試期間王老師一針見血的意見，蕭老師有條不紊地分析了我的研究不足，沈老師更是妙語如珠地緩和了當下緊張的氣氛，並更進一步釐清了此篇研究概念上的盲點，由衷地謝謝四位老師使本篇研究更臻完美！

登泰、佳誼兩位博班學長，更是替我治癒了此篇研究中統計方法的疑難雜症，在我遇到棘手無法處理的問題時，與兩位學長的討論都能從中豁然開朗，兩位學長為學嚴謹的態度、認真看待每一個問題的產生並不厭其煩地指導，更令我佩服與尊敬，誠心地祝福兩位學長都能順利榮獲博士學位，將來在學術圈造福更多的莘莘學子！同門師兄建中也扮演了舉足輕重的角色，透過經驗的分享與鼓勵，讓我克服了許多研究上的恐懼與慌張，這種經驗傳承的風氣，希望在沒有秘密的管科所也能一直延續下去！

在撰寫論文的這一年，每週固定的 meeting 也是讓我成長的關鍵，藉由和老師與同門成員毓貞、昭璇、MAX、青岳不斷地討論，激發了很多的點子與方向，慢慢的才能將天馬行空的想法收斂成一篇學術研究，與大家共同 meeting 的日子，有歡笑有緊張，大家也從討論中成長而順利地畢業，期待我們家齊幫的眾子弟兵們，未來在各個領域都有很好的發展，再聚首時，已是各領域小有成就的核心人物！同在 109 研究室的同學們這一年來的互吐苦水與相互鼓勵，讓我在研究煩悶之虞，也能很快的靜下心來思考解決之道；宗譽、宗霖、士軒三位好室友，讓我在學生生涯的最後一年，再度重溫了愉快的宿舍生活，由衷地謝謝各位曾經幫助過我的好同學們！

一篇論文從無到有，一己之力絕對無法完成，感謝在蒐集問卷期間，鼎力相

助的文凱、伊君、Selena、龔經理、阿嬌，其中更要感謝老媽登高一呼，為兒子奮力蒐集了三分之二的問卷，大大地解決了令我頭疼的樣本問題，此篇研究若有一點學術上的貢獻，誠摯地獻給我的父母親與各位摯友！也感謝南部鄉親的大力支持，你們熱情的填寫問卷且伴隨著超高的回收率，使我的研究更趨完備！

管科所是個有感情的地方，雖然位處博愛校區，平日像安養院寂靜無聲，假日卻如運動場人聲鼎沸，但所辦就像是資訊集結中心，走入所辦可以很輕鬆地與豪氣干雲的王姊交流八卦，也能與溫柔婉約的玉娟姐說說笑笑，兩位小姐對待我們就如朋友般親切關心。撰文至此，王姊喜獲麟兒也個把月了，玉娟姐則將要初嘗為人母的喜悅，即將離開所上之際，誠摯地祝福兩位姐姐的小孩都平安長大，更謝謝他們兩年來課業及生活上的照顧；這裡不會是個過站，而是我永遠都感念的溫馨有感情的地方！

風城的店家樓鋪、草木樹影、人事土地，陪伴了我生命中菁華的六年，從當初懵懂無知的少年蛻變為成熟穩重的男人，這裡有太多踏過的足跡與回憶，大學時代的同學不少繼續攻讀博士，研究所的同學則多半進入職場發揮所學，無論在學界或業界，相信大家一定會有一番不錯的成就，也盼我未來亦不負學校的栽培，能將所學盡情發揮。最後，必須要感謝兩年來攜手共同奮鬥的女友，有她的伴隨在側，生活多了重心與努力的目標，心態也變得更穩重踏實，屬於我們的日誌仍會繼續寫下去。

人生道路上的貴人們，由衷地感謝你們伸手相助，此篇研究若有一絲貢獻與榮耀，將是屬於你們的！



於博愛教學大樓 109 研究室

Contents

Contents	v
List of Tables.....	vii
List of Figures	viii
Chapter 1 Introduction	1
1.1 Research Motivation & Background	1
1.2 Research objectives.....	2
1.3 Thesis structure	2
Chapter 2 Literature Review	4
2.1 Variables description	4
2.1.1 Dependent Variable	4
2.1.1.1 Sales Helping Behavior.....	4
2.1.2 Independent Variable	8
2.1.2.1 Gender.....	8
2.1.2.2 Risk Tolerance.....	14
2.2 Relations between Variables	18
Chapter 3 Research Methodology.....	24
3.1 Sample Selection.....	24
3.1.1 Subjects of Research.....	24
3.1.2 Sampling Method.....	25
3.2 Questionnaire Design.....	25
3.3 The Operational Definition and Measure of Variables	25
3.3.1 Dependent and Independent Variables.....	25
3.3.2 Demographics	26
3.4 Analytic Methods	26
3.4.1 Descriptive Statistics.....	26
3.4.2 Reliability and Validity Analysis	27
3.4.3 ANOVA and LSD of Multiple Comparisons	27
3.4.4 Pearson’s Product-moment Correlation Analysis	27
3.4.5 Regression Analysis	28
3.4.6 Mediation Analysis	28
Chapter 4 Data Analysis.....	29
4.1 Samples and Descriptive Analysis	29
4.2 The Reliability and Validity of Variables	31
4.2.1 Sales Helping Behavior Items.....	31
4.2.2 Risk Tolerance Items.....	33

4.3 The ANOVA and Multiple Comparisons of Independent Variables	34
and Demographic Variables.....	34
4.3.1 Gender.....	34
4.3.2 Demographic variables I :	35
Marriage status, Industry, Educational level, Seniority, Job position, Age .	35
4.3.3 Demographic variables II : Monthly salary, Monthly bonus	
percentage,	40
Past growing experience, Working location, Major customer	40
4.3.4 Demographic variables comparison.....	43
4.4 Correlation Analysis.....	43
4.5 Regression Analysis	44
4.5.1 Y=SHB ; X=Gender.....	44
4.5.2 Y= SHB ; X=Risk Tolerance.....	46
4.5.3 Moderation Analysis	47
4.6 Mediation Analysis	49
4.7 Model-fit Evaluation.....	50
Chapter 5 Conclusions	56
5.1 Discussions	56
5.2 Managerial Implications	57
5.3 Limitations of This Research.....	58
5.4 Further Suggestions	59
Reference	61
Appendix 1 Chinese Questionnaire	66
Appendix 2 English Questionnaire	69
Appendix 3 LISREL Output	72



List of Tables

Table 2.1 Sales Force Gender Studies.....	11
Table 2.2 Literature Summary on Gender Difference on Sales Performances	13
Table 2.3 Descriptions of Types of Perceived Risk	15
Table 3.1 Subjects' Industries & Sample Size	25
Table 4.1 The Distribution of the Demographics.....	31
Table 4.2 SHB Items' Mean, Std. Deviation, Reliability and Factor Loading.....	33
Table 4.3 Risk Tolerance Items' Mean, Std. Deviation, Reliability and Factor Loading	34
Table 4.4 The ANOVA of the Gender Variable.....	35
Table 4.5 The ANOVA of the Marriage Status Variable	35
Table 4.6 The ANOVA of the Industry Variable	36
Table 4.7 The ANOVA of the Educational Level Variable	37
Table 4.8 The ANOVA of the Seniority Variable	37
Table 4.9 The ANOVA of the Job Position Variable	38
Table 4.10 The ANOVA of the Age Variable	39
Table 4.11 The ANOVA of the Monthly Salary Variable.....	40
Table 4.12 The ANOVA of the Monthly Bonus Percentage Variable	41
Table 4.13 The ANOVA of the Past Growing Experience Variable.....	41
Table 4.14 The ANOVA of the Working Location Variable.....	42
Table 4.15 The ANOVA of the Customer Segment Variable	42
Table 4.16 Comparisons of Demographics.....	43
Table 4.17 Correlation Table.....	44
Table 4.18 Regression Analysis of Gender	45
Table 4.19 Coefficients of Gender	45
Table 4.20 Regression Analysis of Risk Tolerance.....	46
Table 4.21 Coefficients of Risk Tolerance	46
Table 4.22 Regression Analysis of Empathy	47
Table 4.23 Change Statistics of Empathy	48
Table 4.24 Regression Analysis of Moral Reasoning	48
Table 4.25 Change Statistics of Moral Reasoning	48
Table 4.26 Coefficients of Full Model	49
Table 4.27 Multi-Sample CFA Analysis	51
Table 4.28 Multi-Sample Individual CFA Analysis	52
Table 4.29 Inter-Item Correlation Matrix	54
Table 5.1 Summary of Results of Hypotheses	56

List of Figures

Fig 1.1 Research Flows.....	3
Fig. 2.1 Classification Scheme Based on Gender Mix	12
Fig. 2.2 Risk Management Cycle.....	17
Fig. 2.3 Research Concept	22
Fig. 2.4 Risk Tolerance as a Mediator Variable	23
Fig. 4.1 Path Analysis Parameters.....	50
Fig. 4.2 Path Diagram of CFA Model	53
Fig. 4.3 Path Diagram of CFA Model (Male/Female)	55



Chapter 1 Introduction

In the beginning of this chapter, I would like to tell how Sales Helping Behavior begin in research motivation and background. In the second part, I will identify the research objectives and lastly I will structure the overview of the essay through the use of figures.

1.1 Research Motivation & Background

First of all, I am going to define the term 「Helping Behavior」. Helping behavior may take many forms, from the trivial (giving directions to a stranger who is lost) to the magnificent (risking your life to save a drowning victim) (Bendapudi, Singh, and Bendapudi, 1996). 「Sales Helping Behavior (SHB)」, which includes the notion of sales, occurs when a salesperson will provide help to customers. The purpose of the helping behavior may differ from one salesperson to another. This study focuses on the importance of salesperson helping behavior under specific situations, such as new product launching. Does *GENDER* or *RISK TOLERANCE* influence Sales Helping Behavior? In other words, will a risk-loving salesperson do more SHB compared to a risk-averting one? Furthermore, what is the connection between gender and risk tolerance?

To increase sales is a constant preoccupation of companies today. Customers want to get help if they need it and may be influenced by salespeople's helping behavior. How to enhance SHB from salesperson is also a major problem. This essay will present some ideas about gender, risk tolerance, and Sales Helping Behavior intentions. The connections between these factors will also be discussed in the following chapters.

1.2 Research objectives

Only few attempts have been made so far to study SHB, as there are many factors involved. I would like to focus on gender and risk tolerance. Take gender for example, male and female salespeople will take different actions to sell the new products. Another factor to consider is that male or female risk-lover may take more care about the new products than a male or female risk-averter. Therefore, the objectives of this thesis are:

- A. Find out the variables (gender and risk tolerance) involving degree to SHB.
- B. Find out the connection between gender and risk tolerance.
- C. Find out whether new products or established ones will lead to dissimilar SHB.

For these objectives, I will express these connections by a figure in the following section.



1.3 Thesis structure

The research is structured in five chapters as illustrated in fig. 1.1. An overview of the research objectives is presented in chapter two.

Chapter 1 introduces background of the research. Next, the literature review includes content, variable descriptions, the logic of the research and hypotheses. The third chapter will be the hypotheses building and research methodology. Following is the fourth chapter with data analysis and discussions. Finally, the last chapter reveals the conclusions and suggestions for further research.

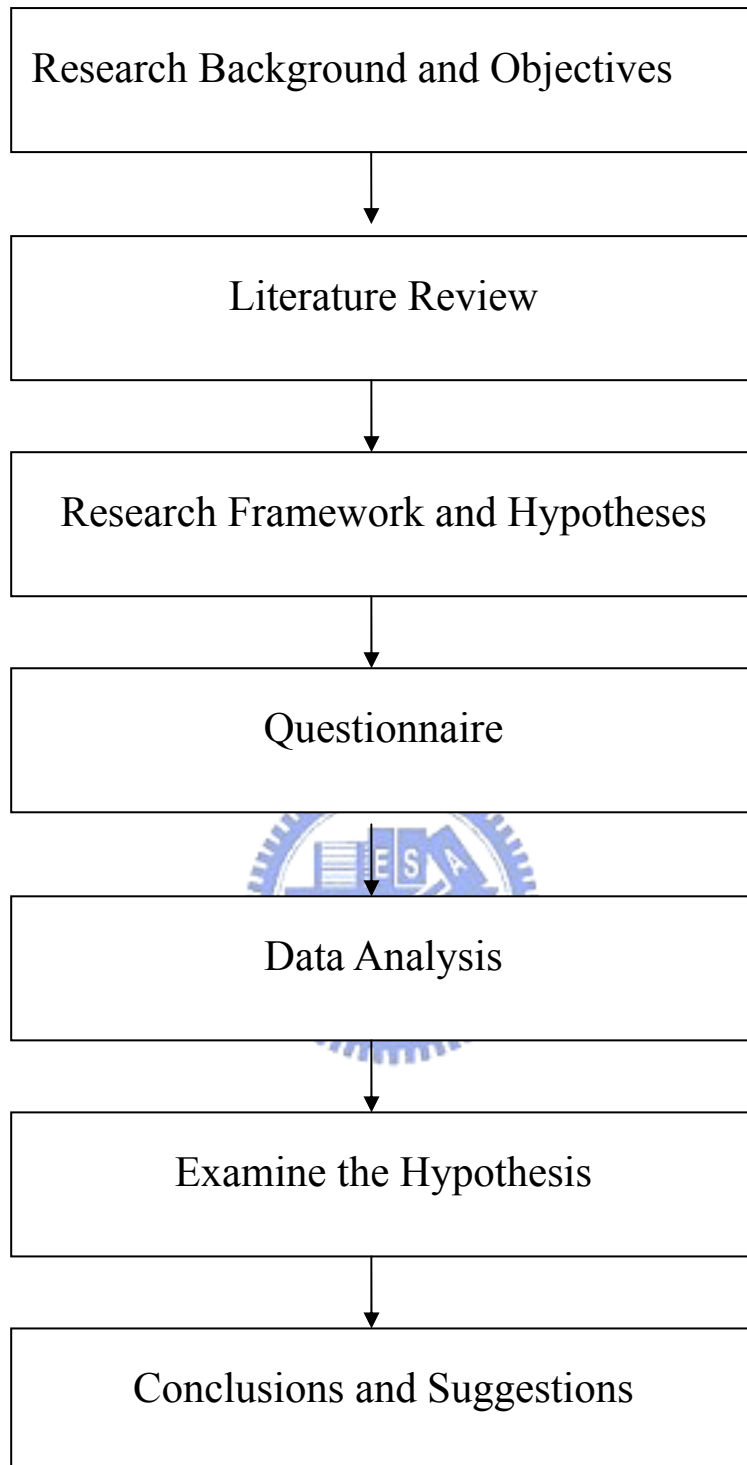


Fig 1.1 Research Flows

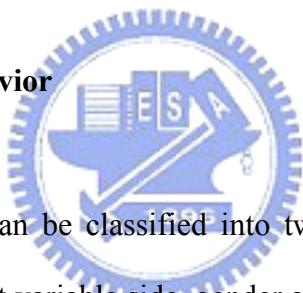
Chapter 2 Literature Review

This chapter may be divided into two groups. The first part is based on variable description and definition, including risk tolerance, gender, and Sales Helping Behavior. The other group is about the correlations between these variables and logic of the paper. Please take notice that I will briefly state the hypotheses in the second part.

2.1 Variables description

2.1.1 Dependent Variable

2.1.1.1 Sales Helping Behavior



Variables in this study can be classified into two categories: independent and dependent. On the independent variable side, gender and risk tolerance are considered. The dependent variable is hereby Sales Helping Behavior (SHB). Brief and Motowidlo (1986), identified 13 specific kinds of prosocial organizational behavior. Two of them are stated as follows: “providing services or products to consumer in organizationally inconsistent ways”; “helping consumers with personal matters unrelated to organizational services or products”. According to the authors, prosocial organizational behavior is a specific behavior that is expected to benefit a person. It is performed by individuals, groups, or organizations. George (1991) also mentioned that prosocial behaviors are helping behaviors; they are performed to benefit or help another individual. Moreover, there were two forms of prosocial behavior investigated (George, 1991):

1. **Extrarole prosocial behavior:** The concept is similar to Altruism and the items of this scale are like “suggest helping a specific other person with work-related problem”, “assists me with my duties” and “helps others when their work load increases.”
2. **Role-prescribed prosocial behavior:** It was defined as customer-service behavior, or prosocial behavior directed at customers. A sample item is “informs a customer of the important features of an item.”

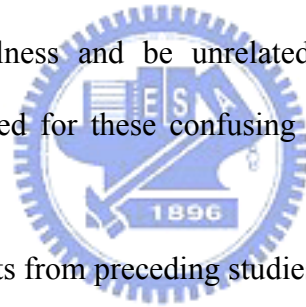
As described above, SHB is one kind of prosocial organizational behavior. It mainly describes how salesmen or saleswomen help customers with product-unrelated problems. However, SHB is also similar to organizational citizen behavior. Wright (1996) mentioned in her dissertation that Organ (1988) expanded the taxonomy of organizational citizen behavior from two to five groups. One of the groups is altruism, which is a similar concept to SHB.

There are many factors influencing prosocial organizational behavior. Moods are usually mentioned among them. George (2000) said, “Moods and emotions play a central role in cognitive processes and behavior.” Piliavin and Charng (1990) also mentioned that a positive mood promotes helpfulness. “People in a good mood may perceive things in a more positive way and may increase positive cognitions” (Piliavin and Charng, 1990). As a result, they become more likely to perform acts associated with positive affect, such as helping behavior (Brief and Motowildo, 1986). Positive mood at work does support prosocial organizational behaviors and they are reciprocally related. Individuals who experienced positive moods at work were more likely to engage in both role-prescribed (customer service) and extrarole (altruism) forms of prosocial behavior (George, 1991).

However, do negative moods always decrease prosocial behavior? Clark and Isen (1982) say no and suggest that negative moods sometimes increase prosocial behavior.

Some scholars argued that helping others is sometimes seen as a way to evaluate one's mood. Mainly unhappy people sometimes try to engage in prosocial behavior because it can make them feel better (Brief and Motowidlo, 1986; Baumann, Cialdini, & Kenrick, 1981).

For example, when people are in positive moods their perceptions and evaluations are more likely to be favorable; they tend to remember more positive information. They are more self-assured, more likely to take credit for successes and avoid blame for failures, and are more helpful to others (George, 2000). Conversely, negative moods may foster derivative reasoning and more critical and comprehensive evaluations (George, 2000). In fact, George (1991) said that analysis of negative moods for prosocial behavior is still unclear and ambiguous. Since it can increase helpfulness, decrease helpfulness and be unrelated to helpfulness. A variety of explanations have been offered for these confusing results, which are reviewed by Carlson and Miller (1987).



There are some main points from preceding studies about SHB, such as:

1. There are several complementary explanations for why positive moods may facilitate salesperson helping behavior (George and Brief, 1992).
2. Being in a positive mood is likely to result in a salesperson perceiving customers, service and sales opportunities more positively than if the salesperson was not in a positive mood (George and Brief, 1992).
3. Positive moods recall positive material from memory (George, 1998). Recalling positive material from memory during a service encounter is likely to result in a salesperson having a more helpful, positive approach toward a customer and the provision of customer service.

Research has found that positive moods lead to people finding others more pleasant or appealing, and when a help giver finds another person pleasant or

attractive, he or she is more likely to provide help (George, 1998). Above the explanation, how can salespeople promote positive moods? It is suggested that positive moods may be fostered by promoting a sense of competence, achievement, and meaning in the work place. This may be accomplished by providing rewards and recognition, keeping work group or team size relatively small, and the leader's having a positive mood.

The general helping decision process involves four sequential steps: perception of need → motivation → behavior → consequence (Bendapudi, Singh, & Bendapudi, 1996). These variables are all concerned about the helping behavior; therefore, they are related to SHB. I will put more effort on discussing motivation, since motivation of helping behavior may be egoistic, altruistic, or both. For egoistic purpose, the first category is to gain rewards for helping or avoid punishment for not helping (Cialdini et al., 1987). Second, the motivation is egoistic when it results in helping because the ultimate goal is to reduce the donor's personal distress. For altruistic motivation, the ultimate goal is enhancing the welfare of the needy (Bendapudi, Singh, & Bendapudi, 1996), even at the expense of a person's own welfare. There is an altruistic motivation behind prosocial behavior when empathy is aroused (Piliavin and Charng, 1990).

The concept of Sales Helping Behavior is the same as altruism. Bar-Tal (1985-1986) notes that altruistic behavior includes following features: (a) must benefit another person, (b) must be performed voluntarily, (c) must be performed intentionally, (d) the benefit must be the goal itself, (e) must be performed without expecting any external reward. Organ (1988) also argues that the dimension of altruism includes "...all discretionary behaviors that have the effect of helping a specific other person with an organizationally relevant task or problem. Altruism is characterized as helping behavior, implying sensitivity, especially to one's social environment" (Organ, 1988). All these features are related to SHB and will apply to

the questionnaire items. However, is there an altruistic personality? Piliavin et al. (1990) summarized a few regularities as: people high in self-esteem, high in competence, high in internal locus of control, low in need for approval, and high on moral development appear to be more likely to engage in prosocial behaviors (Piliavin and Charng, 1990).

Bystander effect is the best known situational effect in helping behavior. It is caused by diffusion of responsibility. In other words, when an individual believes that there is someone who can offer help, pressure to help the needy person is reduced. There is also an interesting phenomenon about helping behavior: a person receives more help when smiling. In other words, people provide more help when a stranger smiles all the times. In my opinion, I think if one gets help, others will think you are worthy to help. However, the one may get more help. Pleasant music and fragrant odor also has a positive effect on helping behavior.

There is one more variable that is important to helping behavior. It is trust (Jones, George, 1998). Customers tend to receive more help from salespeople who are worthy to trust.

2.1.2 Independent Variable

2.1.2.1 Gender

Some studies measure the gender difference in field sales organizations. Table 2.1 shows these studies and primary results as follows:

No.	Study(Year)	Sample (Industry)	Primary Variables	Primary Results
A	Busch & Bush (1978)	Pharmaceuticals 438 male 39 female	Job satisfaction, Values, role clarity, performance, propensity to leave	Women lower in role clarity. Men had higher propensity to leave. Men emphasize promotion more. Women emphasize co-workers. No differences job satisfaction and value.
B	Brief & Oliver (1976)	Retail sales	Organizational and organizational level	No difference
C	Gibson & Swan (1981)	Real estate 59 males and 54 females	Job rewards, aspiration	No differences in gender for expectations of success. Men had higher aspirations.
D	Swan, Futrell, and Todd (1978)	Pharmaceutical 396males and 35 females	Job satisfaction, self-confidence, perceptions of management control,	Men and women differ in their views of the job. Females indicated

			career goals.	greater importance for independence in their work.
E	Schul & Wren (1992)	Pharmaceutical 72 men and 82 women	Job satisfaction, organizational commitment, rewards, role stress, performance, supervisor, turnover intentions	No differences in satisfaction, organizational commitment, role conflict, ambiguity, performance, supervising, significant differences in extrinsic rewards and turnover.
F	Strutton, Pelton, and Lumpkin (1995)	Industrial organization 139 male 92 female	Ingratiation sales tactics	Males more likely to use ingratiation tactics
G	Russ & McNeilly (1995)	Publishing 73 male 77female	Organization commitment, job satisfaction, turnover intentions	Differences for organizational commitment and turnover No differences in job satisfaction
H	Siguaw & Honeycutt	Roster of the association for	Job satisfaction, organizational	Women report lower conflict and

		information and image management 241 male 27 female	commitment, role conflict, role ambiguity, performance	ambiguity Women have higher levels of customer-oriented selling No differences on other variables
N/A	Gable & Swan (1981)	—	—	Women are under represented in sales forces
N/A	McNeilly & Goldsmith (1991)	Travel, products, insurance, real estate 67 males 71 women	Job satisfaction, intent-to leave	Men and women turnover for different reasons
N/A	Fugate, Decker, and Brewer (1988)	—	—	Men and women work differently

Table 2.1 Sales Force Gender Studies

Source: Moncrif, Babakus, Cravens, Johnston (2000)

In order to clarify the overall effect of these studies, four quadrants are drawn below. Quadrant 1 is considered to be the traditional cell with most of the historical studies from the 1970s and the 1980s falling into this area. In this situation, the sales force is dominated by males, as is the customer base. Prior studies to Table 2.1 have indicated that differences exist by gender in the sales force and, therefore, management must employ dissimilar strategies with their male versus female sales

forces (W. C. Moncrief et al., 2000).

Quadrant 3 has a dominant female sales force and a female customer base. The assumption is that these managerial decisions are different based upon an abundance of female sales personnel and customers. The second and fourth quadrants are labeled uncertain because it is unknown how gender might be affected with a male sales force and a female customer base or vice versa (W. C. Moncrief et al., 2000).

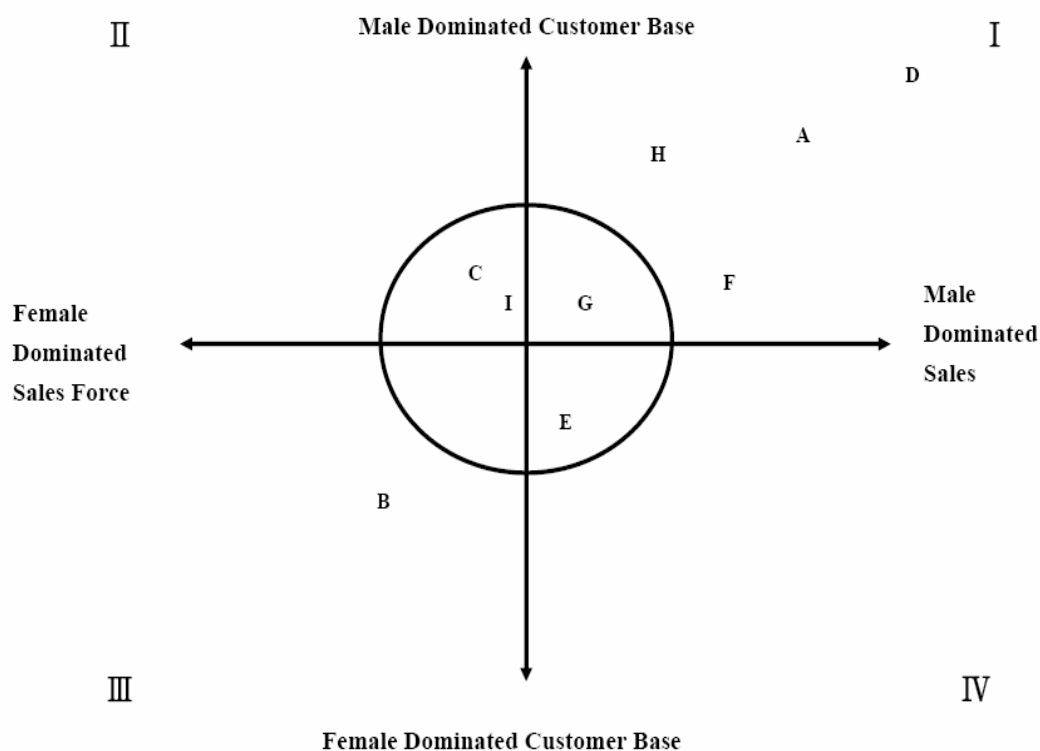


Fig. 2.1 Classification Scheme Based on Gender Mix

A~H is mentioned as Table 2.1, and I=W. C. Moncrief et al. (2000)

Source: W. C. Moncrief et al. (2000)

By R. Y. Darmon et al. (2003), salesmen tend to give significantly more importance to promotion opportunities than saleswomen do; this might suggest that salesmen tend to be more career-oriented than saleswomen. According to this viewpoint, it is implied that males could have more risk tolerance than females when promoting risky products. Another factor to consider is that women prefer to visit

group customers whereas salesmen tend to prefer calling on individual customers, especially at the exploration and establishment stages (R. Y. Darmon et al., 2003).

I have included a summary of gender difference on sales performance below:

Findings by performance dimension	Authors
Overall performance of women perceived as inferior	Jolson & Comer
Women rated higher on performance and selling skills	Schul & Wren
Experience difficulty with industrial sales task	Swan & Futrell
Women evaluated differently	Swan et al.
Women less severely criticized for infractions because less expected of them	Bellizzi & Norvell
Women suffer from negative stereotypes	Cook & Corey; Russ & McNeilly
Women have higher empathy for buyers	Dion et al.
Women excel at communication	Bertrand
Women seen as less professional than men	Dion et al.
Women ranked lower on product knowledge by buyers	Cook & Corey; Swan et al.; Russ & McNeilly
Women not trusted as much as men	Bertrand; Fugate et al.
Women make better prepared sales presentations	Cook & Corey
Women lack confidence and competitive socialization	Bertrand
Women have less access to informal communication network	Schul & Wren

Table 2.2 Literature Summary on Gender Difference on Sales Performances

Source: Dion and Banting (2000)

As mentioned above, gender is a factor in performance evaluation. However, is gender a *significant* factor in performance evaluation? For buyer evaluation, they saw no significant differences in performance. In addition, the gender of the buyer made no difference in their judgment (Dion and Banting, 2000). These findings are contrary to some of the differences reported in the literature review in Table 2.2.

According to sales manager evaluation, when sales managers were subsampled by gender and were paired with salespeople of the same and different gender, the following differences were observed:

- Male managers viewed male salespeople as more adaptive in their selling practices and more satisfied (Dion and Banting, 2000).
- Female managers viewed female salespeople as more satisfied. Two other variables: overall performance and negotiation performance were close to statistical significance. However, the small number of female sales managers limited the acuity of statistical tests on the same (Dion and Banting, 2000).

2.1.2.2 Risk Tolerance

Since this research about SHB is an exploratory study, I explore an interesting variable, Risk Tolerance, to be my independent variable. I would like to know whether salespeople with higher risk tolerance will have more SHB intention. However, there is a well-known theory about risk in finance. It describes that people will invest different portfolios depending on their personality, such as risk lovers or risk averters. A risk lover is an investor who is willing to take on additional risk for an investment that has a low expected return. Conversely, a risk averter is an investor who is willing to maintain a stable investment that provides a stable return. Depending on the attitude to risk, I propose that the phenomena will be similar to the

Sales Helping Behavior. Although a large number of studies have been made on sales performance and helping behavior, little is known about risk tolerance influencing Sales Helping Behavior.

「*Perceived Risk*」 is a form of risk that has a long and varied research tradition. I infer that the more perceived risk salespeople can tolerate, the more Sales Helping Behavior they will engage in. Peter and Ryan (1976) have modified the model about risk as follows:

$$\text{Risk} = \text{「Probability of consequences occurring」} \times \text{「Negative consequences of poor brand choice」}$$

There is also a brief description of types of perceived risk:

Social risk	The risk that the selection of the service provider will affect in a negative way the perception of other individuals about the purchaser.
Financial risk	The risk that the service purchased will not attain the best possible monetary gain for the consumer.
Physical risk	The risk that the performance of the service will result in a health hazard to the consumer.
Performance risk	The risk that the service purchased will not be completed in the manner which will result in customer satisfaction.
Time risk	The risk that the consumer will waste time, lose convenience or waste effort in getting a service redone.
Psychological risk	The risk that the selection of performance of the producer will have a negative effect on the consumer's peace of mind or self-perception.

Table 2.3 Descriptions of Types of Perceived Risk

Source: Mitchell (1992)

Perceived risk also has a part to play in all types of consumer buying behavior. Assael (1981) has suggested four types of perceived risk: the first is complex buying behavior, which is usually characterized by high involvement and there being significant differences between brands. The infrequent purchases and lack of product category knowledge will result in increased uncertainty. The second category is dissonance-reducing buying behavior, which is characterized by high involvement. After the purchase, the consumers attempt to reduce the risk of dissatisfaction by gathering information about the purchase, which is favorable and reinforces soundness of the initial purchase choice. The third is habitual buying behavior. It is characterized by low consumer involvement and low levels of brand difference. The interesting feature of this type of decision is that makers are constantly trying to move this type of product from a low involvement to higher involvement status. They do this by emphasizing the risks involved in the purchase. The last classification is variety seeking behavior. It is characterized by low consumer involvement, but significant brand differences. Typically, consumers will change their brand frequently not through dissatisfaction but through boredom.

Faced with these perceived risks, consumers will follow five stages in decision making. These are: problem recognition, information research, evaluation of alternatives, purchase decision and post purchase behavior. Many project managers, who are faced with making decisions under risk will simply go with their *gut feeling* not wishing to trust their project to a simplified mathematical interpretation of a very complex situation (McKim, 1992). According to the risk, 「Risk management」 is critical to decision making, as is the salesperson engaging in SHB. Risk management is a cyclical process with several distinct phases. Their relations are figured out as figure 2.2:

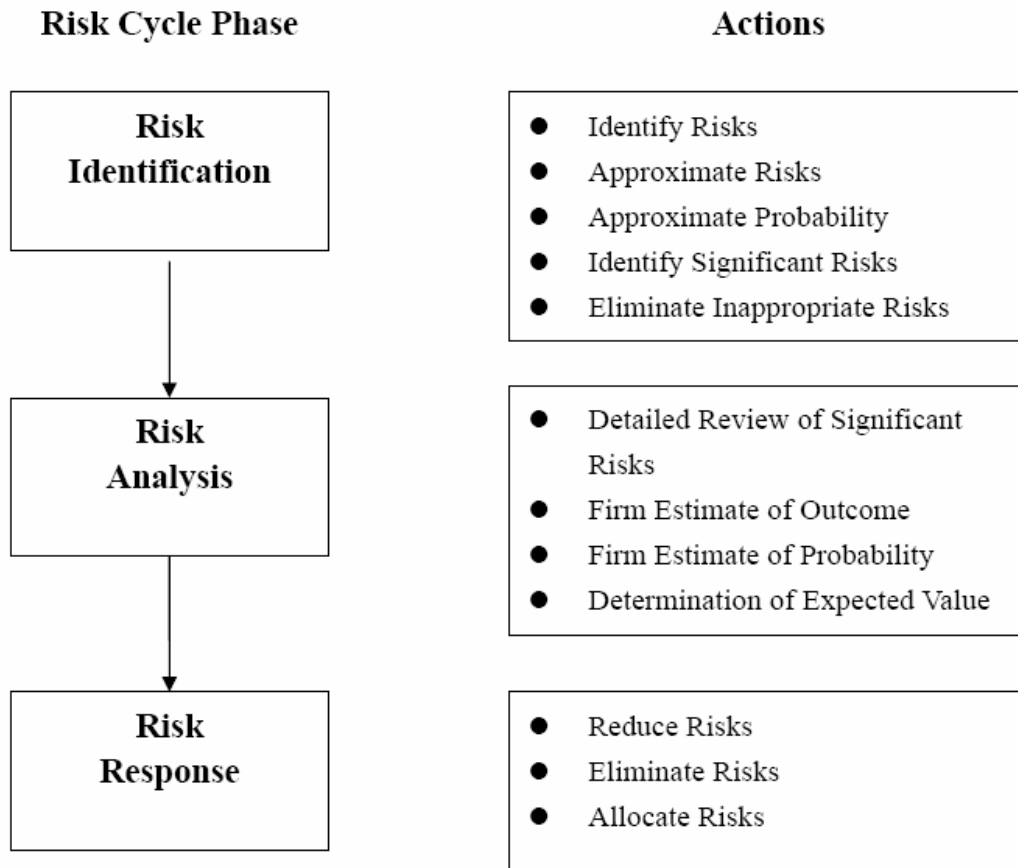


Fig. 2.2 Risk Management Cycle

Source: McKim (1992)

There is no magic solution to the management of risk. Like any other function in a project, the best approach is to have skilled and knowledgeable coworkers (McKim, 1992).

Age is also suggested to influence risk tolerance, however, findings are inconsistent. Grable & Lytton (1998) assume that older individuals have less time to recover losses than younger individuals; hence risk tolerance will decrease with age. On the other hand, according to Sung and Hanna (1996), the general pattern of age is that risk tolerance decreases with age after 45. According to this theory, risk tolerance exhibits a hump-shaped pattern. In other words, it increases with age and then

decreases. The inconsistency exists due to the lack of distinction between subjective and objective risk tolerance when research was conducted (Chang, 2001).

There are other factors reported to play an important role in determining risk tolerance. These include: income, education, demographic characteristics, and marital status. According to Roszkowski, Snelbecker, and Leimberg (1993), people are perceived to be more risk tolerant if they are white, male, older, unmarried, self-employed, professional, or have a higher level of income and education.

Before starting to discuss risk tolerance, we should know four risk concepts: propensity, attitude, capacity, and knowledge (Cordell, 2002). I modify the explanations defined by Cordell (2002) as follows: Risk propensity is the idea that salespeople can infer something about the customers' attitude toward risk by reviewing the customers' real-life decisions in buying situations. Risk attitude refers to the customers' willingness to incur buying risk. Risk capacity refers to the customers' financial ability to incur risk, starting with the customers' age and family responsibilities. Finally, risk knowledge refers to the customers' understanding of risk. Cordell (2002) concludes that if clients understand that their financial situation allows them to take greater risks; they will be more willing to do so. According to the conclusion, I would like to investigate whether the same effect will occur on salespeople.

2.2 Relations between Variables

In this thesis, the two independent variables, gender and risk tolerance, have impact on dependent variable: SHB; and the two independent variables also interact. In other words, both gender and risk have relations with Sales Helping Behavior. In this study, I will investigate the salespeople's attitude towards new product promotion

by questionnaire. Then, I will determine which gender will have more risk tolerance and engage in more Sales Helping Behavior.

Harris and Bays (1973) found that both the gender of the person in need and the gender of the helper effect how much assistance is given. Some studies found that men are generally more helpful (Borofsky et al., 1971), while others indicate that women are more supportive (Wilson, 1975; Switzer et al., 1999). In these studies, men are generally more helpful in spontaneous situations that involve personal risk. Women, on the other hand, tend to assist more in long-term and close relationships.

Eagly and Crowley (1986) point out that there are many ways in which one can help another. These include emotional support, action based help, and giving advice. Many of the previous studies overlooked this fact and chose to focus on one kind of helping behavior, which is not commonly exhibited by both sexes. Eagly and Crowley (1986) also contend that women are generally more empathic and sympathetic than men and are more likely to help others. Eisenberg et al. (1988) found that girls exhibited more facial sympathy and reported more distress than boys. Women report themselves to be more empathic than men do (Piliavan and Charng, 1990). Aries et al. (1983) also hold the same argument: women report providing their friends with more personal favors, emotional supports, and counseling about personal problems than men do (Piliavin and Charng, 1990).

By *The relationship between sex differences and helping behavior of college students* (McCabe), the researchers conclude that men and women are equally helpful when gender-bias is eliminated. While sex alone does not appear to affect how much help a person gives, one may wonder if gender plays *any* role in helping behavior? According to Eagly and Crowley (1986), most previous studies used situations that were biased towards the helping behavior of one of the sexes. The results of each study incorrectly claimed that one sex is more helpful than the other.

Previous studies about gender differences and performances resulted in different concern for customers. That is women have more 「communal goals」 such as affiliation and fostering harmonious relationships, whereas males have 「agentic goals」, which stress goal orientation, self-assertion, and mastery (McColl-Kennedy, Daus, & Sparks, 2003). Furthermore, a related study (Sparks and Callan, 1997) found that women prefer an accommodating communication style more so than men. Part of accommodating involves listening to and understanding the customer, which can be considered as showing concern for the customer.

H1: Female salespeople tend to engage in more Sales Helping Behavior than male salespeople do

In addition to measuring the correlation between risk tolerance and Sales Helping Behavior, I would also like to find out the relation of risk tolerance and gender. In other words, are males more risk tolerant than females or vice versa? The risk here is pointed towards new products promotion. In general, salespeople consider that new products are more risky than established ones; customers are more aware of established products, and good established products are promoted through word-of-mouth. The leverage of a strong brand name can substantially reduce the risk of introducing a product on a new market by providing consumers the familiarity of, and knowledge about, an established brand (Aaker, Keller, 1990). General customers will choose to buy from them. Therefore, salespeople find it more difficult to promote new products to ordinary consumers.

Although salespeople have difficulty promoting new products, they are motivated to do so because new products have some advantages: first, these products are produced to satisfy someone who is in need. Next, these products will have added

more function or value to compete with the ordinary ones. Furthermore, a new product offers several advantages to the salesperson. It could open up new market and customer opportunities, and it offers new selling experiences that could enhance his/her skill base, earnings, and mobility. Furthermore, success at selling new products could enhance the personal value and reputation of the salesperson in the organization (Kwaku, 1997). These advantages will drive the risk-tolerant salespeople to promote new products.

H2: Salespeople with higher risk tolerance engage in more Sales Helping Behavior

Gender is extensively used as a moderator variable in marketing. In this thesis, I will try to find out what is the difference between H2 and H3 with gender being a moderator variable in H3. In financial decision making among gender difference, some previous studies suggest that women are more cautious, less confident, less aggressive, easier to persuade, and have inferior leadership and problem solving abilities when making decisions under risk compared to men. But recent studies argue against this conclusion. According to the paper written by Powell and Ansic (1997), they suggest males and females are found to be equally capable of performing in terms of achieving desired outcomes from decision-making under risk, equally effective in leadership roles, and equally capable of processing and reacting to information.

The strategy differences could be linked to risk preference through motivational theory (Schneider and Lopes, 1986). Females would have a lower risk preference if they have a greater desire for security, and males have a higher risk preference if they have a greater desire for returns. According to this model, males engage in more Sales

Helping Behavior under risk compared to females. The risk here is about launching new product risk, perceived risk and so on.

H3: Males tend to engage in more Sales Helping Behavior under a risky condition than females do

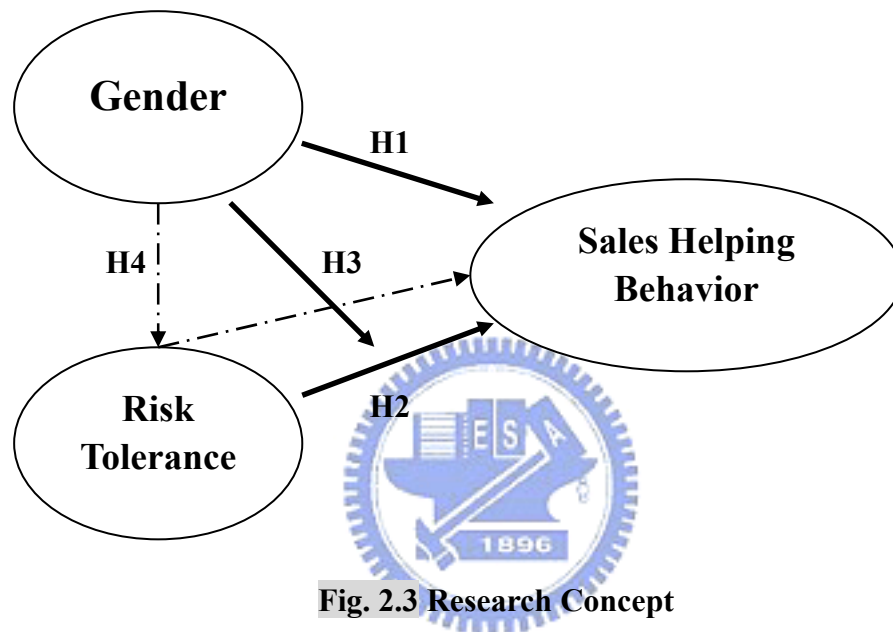


Fig. 2.3 Research Concept

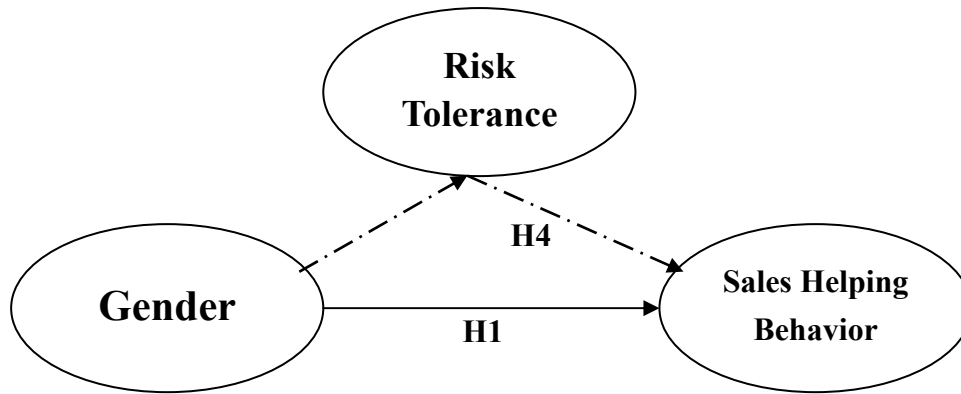


Fig. 2.4 Risk Tolerance as a Mediator Variable

H4: Risk tolerance mediates between Gender and Sales Helping Behavior.

The level of significance between Gender and Sales Helping Behavior should, therefore, be reduced.



Chapter 3 Research Methodology

This chapter demonstrates how research is designed and conducted, including sampling, data collecting, and measurement. The chapter presents the research tools and methods applied in this thesis.

3.1 Sample Selection

3.1.1 Subjects of Research

This study primarily surveys how salespeople engage in SHB in different situations. Therefore, the subjects of research are salespeople. The gender of these salespeople, however, is also an independent variable in this study; I surveyed approximately the same amount male and female salespeople. The sample size is over 200, meeting the standard condition, and the questionnaire is conducted in both paper and online version.

There is no limitation of industries that salespeople engage in. Moreover, all kinds of industries are included. Chung and Ding (2002) mentioned in their SLCS essay: it is possible that different kinds of salespeople may generate a difference. The following table shows industry distribution of salespeople:

Industry	Sample size
Life insurance	10
Finance	80
High-tech	14
Agency	10
Service	118

others	45
Total	277

Table 3.1 Subjects' Industries & Sample Size

3.1.2 Sampling Method

As mentioned, the questionnaire was publicized in both paper and online version. The online vision was sited on <http://www.my3q.com/home2/83/finmat/123456.phtml>. The questionnaire was hosted from 13th March to 31st March, 2006.

3.2 Questionnaire Design

The formal questionnaire was divided into three parts (Appendix 1 & 2). The first and second parts measure Sales Helping Behavior and risk tolerance. The last part concerns demographics and includes 12 items. According to the pretest result, I modified items in the second section to enhance the reliability and tried to make a better content validity. In the formal test, there were 16 items about SHB and 7 items about risk tolerance. Sales Helping Behavior items were mainly rewritten according to Wright's (1996) dissertation. This dissertation had a scale for prosocial personality battery in appendix A. Moreover, risk tolerance items referred to Roszkowski, Davey, and Grable (2005). Some of the items were developed from experienced salespeople.

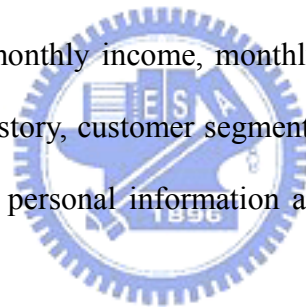
3.3 The Operational Definition and Measure of Variables

3.3.1 Dependent and Independent Variables

16 items are measured for the dependent variable-SHB and all of them are put in part one. 7 items are put in the second part for measuring one of the independent variables: risk tolerance. The other independent variable is gender, which we identified in the third part. All the items are measured by Likert 5 points scale; 1 signifies “Strongly disagree” and 5 denotes “Strongly agree”. The higher score each item receives, the more SHB salespeople are willing to engage in and the higher risk tolerance these salespeople possess.

3.3.2 Demographics

The demographics includes salespeople’s gender, marriage status, industry, educational level, seniority, monthly income, monthly bonus percentage, position in the company, age, growing history, customer segment and working location. There is a total of 12 items regarding personal information about the salespeople in the last part of the questionnaire.



3.4 Analytic Methods

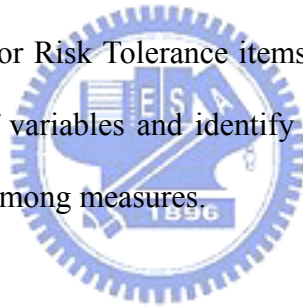
The major analytic tool used in this study is statistic software SPSS 12.0 version. These statistic methods include descriptive statistics, reliability analysis, Pearson correlation and regression. I have also used ANOVA and Fisher’s Least Significant Difference of multiple comparisons to explore the demographics influencing Sales Helping Behavior and risk tolerance.

3.4.1 Descriptive Statistics

In order to understand the structure of salespeople's Sales Helping Behavior, risk tolerance and personal information including gender, age, educational level...etc., I have used descriptive statistics to show the amounts, percentages, means and variances of these variables.

3.4.2 Reliability and Validity Analysis

The reliability analysis mainly used Cronbach's α coefficient to test internal consistence of items. From pre-test to formal test, I deleted some low α items to ensure a reliable and qualified questionnaire. The reliabilities of Sales Helping Behavior are 0.663 for Empathy items and 0.837 for Moral Reasoning items. Besides, 0.766 is the reliability value for Risk Tolerance items. Moreover, factor analysis was used to test prior structure of variables and identify factors that statistically explain the variation and covariation among measures.



3.4.3 ANOVA and LSD of Multiple Comparisons

This study used the analysis of variance (ANOVA) and Fisher's Least Significant Difference (LSD) of multiple comparisons to explore the demographic variables; which includes age, marital status, industry, educational level, seniority, job position, age, monthly salary, monthly bonus percentage, growing history, working location, and customer segment.

3.4.4 Pearson's Product-moment Correlation Analysis

This method mainly recognized relations among variables. According to the

correlation coefficient of correlation matrix, it clearly indicated a positive or negative correlation between category variable (gender) and continuous variable (SHB & risk tolerance).

3.4.5 Regression Analysis

In order to analyze the relationships among gender, risk tolerance and Sales Helping Behavior, regression analysis was broadly used. The full regression model of this study is shown as follows:

$$Y_i = \alpha + \beta_1(G) + \beta_2(R) + \beta_3(G \times R) + \varepsilon_i$$

iid
 $\varepsilon_i \sim N(0, \sigma^2), \quad i=1, \dots, n; n=277$

Y_i = Sales Helping Behavior

G = Gender

R = Risk Tolerance



3.4.6 Mediation Analysis

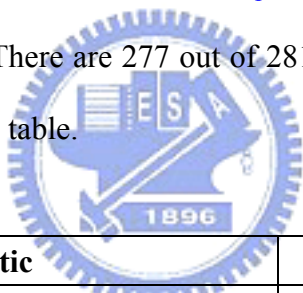
According to the framework, risk tolerance may be a mediation variable between gender and Sales Helping Behavior. I have tested each simple regression standardized coefficient because mediated effect occurs when all path regression coefficients are significant. This will be explained in chapter 4.

Chapter 4 Data Analysis

This chapter mainly explains the research data from the questionnaires. All the methods introduced in chapter three are used here. First of all, the structure of samples can lead to an overall awareness of. The SHB and risk tolerance reliability and validity analysis are in the second part and the ANOVA tables of demographics will be shown later. Last but not least, regression analysis is used to test the hypotheses.

4.1 Samples and Descriptive Analysis

During March 13th to March 31st, 2006, the questionnaire was sited on both the Internet: <http://www.my3q.com/home2/83/finmat/123456.phtml> and paper vision to reach a wider variety of salespeople. There are 277 out of 281. All sample characteristics are listed in detail in the following table.



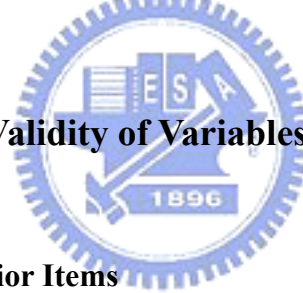
Characteristic		Sample size	Percent (%)	
Gender	Male	101	36.5	
	Female	176	63.5	
	Total	277	100	
Marital status	Single	127	45.8	
	Married	0~2 children	119	43
		Above 3 children	31	11.2
	Total	277	100	
Industry	Life-insurance	10	3.6	
	Financial	80	28.9	
	High-tech	14	5.1	
	Agency	10	3.6	
	Service	118	42.6	
	Others	45	16.2	
	Total	277	100	
Education	Under junior high school	3	1.1	
	Senior high school	101	36.5	

	University/College	145	52.3
	Master	24	8.7
	Ph.D	4	1.4
	Total	277	100
Seniority	Below 1 year	58	20.9
	1~2 years	38	13.7
	2~3 years	47	17.0
	3~4 years	21	7.6
	4~5 years	17	6.1
	Above 5 years	96	34.7
	Total	277	100
Job position	Self-employed	52	18.8
	General employee	162	58.5
	Manager	22	7.9
	Consultant/advisor	4	1.4
	Researcher	3	1.1
	Others	34	12.3
	Total	277	100
Age	Under 20	8	2.9
	21~25	46	16.6
	26~30	63	22.7
	31~35	38	13.7
	36~40	39	14.1
	41~45	36	13.0
	46~50	26	9.4
	Above 51	21	7.6
	Total	277	100
Monthly salary (including bonus)	Less than 30000	85	30.7
	30001~40000	88	31.8
	40001~50000	54	19.5
	50001~60000	24	8.7
	More than 60000	26	9.4
	Total	277	100
Monthly bonus percentage	Below 10%	133	48.0
	10%~20%	52	18.8
	21%~30%	48	17.3
	31%~40%	20	7.2

	41%~50%	9	3.2
	Above 51%	15	5.4
	Total	277	100
Growing history	Always tough	13	4.7
	Moderate	216	78.0
	Always smooth	48	17.3
	Total	277	100
Working location	To the north of Hsinchu	60	21.7
	Miao-li~YunLin	9	3.2
	To the south of Chia-yi	205	74.0
	Yi-lan, Hua-lien, Taitung	3	1.1
	Total	277	100
Customer segment	B2B	32	11.6
	B2C	245	88.4
	Total	277	100

Table 4.1 The Distribution of the Demographics

4.2 The Reliability and Validity of Variables



4.2.1 Sales Helping Behavior Items

In order to examine the internal consistency of each factor and make sure all the items have contributed to each factor, this study proceeds to use reliability analysis and exploratory factor analysis (EFA). Because the variables of Sales Helping Behavior and risk tolerance are new concepts, there are few relevant papers at present. Therefore, EFA applies more accurately to this study. Before doing EFA, KMO value should be checked (Kaiser-Meyer-Olkin measure of sampling adequacy). In this variable, KMO is 0.83, which is large enough to proceed to EFA. According to the rule of factor extraction, eigenvalues of each factor over 1 is extracted by principal component analysis and then proceeds to varimax rotation. After the rotation, factor

loading of each item below 0.5 and cross loading items would be deleted. All the items should be retested following the previous step. Finally, I found two components in Sales Helping Behavior (SHB) and only one component in Risk Tolerance. The two factors of SHB named by Wright's dissertation are Empathy and Moral Reasoning.

Items	Mean	Std. Deviation	Reliability	Factor Loading
I 、 Sales Helping Behavior				
Factor 1- Empathy items				
1.1 When customers are nasty to me, I feel very little responsibility to treat them well ®	3.14	1.120	0.663	0.648
1.2 I sometimes find it difficult to see things from customers' point of view ®	3.25	1.041		0.697
1.3 Other customers' purchase-related misfortunes do not usually disturb me a great deal ®	3.12	0.967		0.573
1.4 If I'm sure I'm right about something, I don't waste much time listening to other customers' arguments ®	3.35	1.019		0.795
1.5 When I see customers being treated unfairly, I sometimes don't feel very much pity for them ®	3.50	1.062		0.674
Factor 2- Moral Reasoning items				
1.8 When dealing with customers, I choose alternatives that are intended to meet customers' needs	4.15	0.624	0.837	0.707
1.9 When dealing with customers, I choose a course of action that maximizes the help other customers receive	4.24	0.666		0.783
1.10 When dealing with customers, I choose a course of action that considers the rights of all customers involved	3.94	0.827		0.809
1.11 My decisions are usually based on concern for the welfare of customers	3.82	0.823		0.767
1.12 When dealing with customers, I choose alternatives that minimize the negative consequences to customers	4.02	0.807		0.828
Other items				
1.6 I would feel obligated to do a favor for customers who needed it, even though they had shown no gratitude for past favors	3.81	0.843		Deleted in the F.A

1.7 When dealing with customers, I would describe myself as a pretty soft-hearted person	4.08	0.673		
1.13 I help a customer who I don't know that well with a product-unrelated problem when my knowledge is greater than his or hers	4.06	0.722		
1.14 I help customers with personal problems	3.10	0.975		
1.15 I show customers where to go to get what they need	3.96	0.644		
1.16 I do more than customer expected to help serve the customer	3.68	0.852		

® Denotes Reverse-Coded Item

Table 4.2 SHB Items' Mean, Std. Deviation, Reliability and Factor Loading

4.2.2 Risk Tolerance Items

Purifying the risk tolerance items by EFA gets the following results: Risk Tolerance is the only major component among these items, there are some theories about financial risk tolerance, and there are fewer references about sales risk tolerance. Therefore, the scale developed by the definition of risk tolerance may provide sufficient ground for further research.

Items	Mean	Std. Deviation	Reliability	Factor Loading
2.2 I like to promote new products because it's challenge.	3.74	0.789	0.766	0.720
2.3 I would spend my effort to study how to promote new products, no matter what the products are hot in the future.	3.88	0.745		0.767
2.4 I will still promote products as usual even though I don't think many people will buy them.	3.87	0.652		0.811
2.5 I will still promote products as usual even though I expect that customers will only buy a small number of products.	3.86	0.706		0.779
2.1 If possible, I will not actively promote new products	3.48	1.048		Deleted in

because I'm afraid that the bad sales performance will influence my bonus. ®			the F.A
2.6 There are two kinds of products following. Which one do you prefer to sell? One can contribute high premiums with unstable sale quantities. The other can contribute low premiums with stable sale quantities.	2.79	1.146	
2.7 Please evaluate your level of risk tolerance?	3.39	0.921	

® Denotes Reverse-Coded Item

Table 4.3 Risk Tolerance Items' Mean, Std. Deviation, Reliability and Factor Loading

4.3 The ANOVA and Multiple Comparisons of Independent Variables and Demographic Variables

This section explores the demographic variables mentioned in 3.4 by analysis of variance (ANOVA) and Fisher's Least Significant Difference (LSD).



4.3.1 Gender

There is no significant difference between male and female SHB and risk tolerance, as table 4.4 shown. The results indicate that gender might be a constant variable to these factors. Since gender is a dummy variable, two categories, it can not be examined by multiple comparison LSD method.

Variables		Gender		F value	P value
		μ_1 Male (n=101)	μ_2 Female (n=176)		
SHB	Empathy	3.309	3.262	0.272	0.603
	Moral reasoning	4.051	4.020	0.180	0.672

Risk Tolerance	3.878	3.817	0.776	0.379
----------------	-------	-------	-------	-------

Table 4.4 The ANOVA of the Gender Variable

4.3.2 Demographic variables I :

Marriage status, Industry, Educational level, Seniority, Job position, Age

As table 4.5 has shown, empathy has significant difference between married and single salespeople. Married salespeople have higher empathy than single adults and may engage in more Sales Helping Behavior. The explanation may be that married salespeople have duty to take care of their families; they can experience more customers' needs through experiencing families' needs. Since marital status has only two categories, it can not be examined by multiple comparison LSD method either.

Variables		Marital status		F value	P value
		μ_1 Single (n=127)	μ_2 Married (n=150)		
SHB	Empathy	3.125	3.409	11.25	0.001***
	Moral reasoning	3.966	4.086	2.875	0.091*
Risk Tolerance		3.862	3.819	0.416	0.519

Note: * P<0.1; **P<0.05; *** P<0.01

Table 4.5 The ANOVA of the Marriage Status Variable

Table 4.6 shows how different industries affect SHB and risk tolerance. In particular, empathy and moral reasoning have significant difference among these various industries. In multiple comparison, the formula $\frac{\mu_2, \mu_4}{\mu_6, \mu_1, \mu_3, \mu_5}$ means μ_2, μ_4 are significantly higher than μ_1, μ_3, μ_5 , but μ_2, μ_4, μ_6 and $\mu_6, \mu_1, \mu_3, \mu_5$ are approximately the same. From this ANOVA table, finance and agency

salespeople have a higher level of empathy and moral reasoning motivation to help serve customers than salespeople in other industries.

Variables		Industry						F value	P value	Multiple comparison LSD
		μ_1 Life Insurance (n=10)	μ_2 Finance (n=80)	μ_3 High Tech (n=14)	μ_4 Agency (n=10)	μ_5 Service (n=118)	μ_6 others (n=45)			
SHB	Empathy	2.966	3.445	2.940	3.657	3.185	3.320	2.965	0.013**	Note 1
	Moral reasoning	4.273	4.182	4.069	4.045	3.934	3.951	2.240	0.05**	Note 2
Risk Tolerance		3.879	3.769	4.031	3.695	3.877	3.824	0.852	0.514	No difference

Note: * P<0.1; **P<0.05; *** P<0.01

Note 1: $\underline{\mu_2, \mu_4} > \underline{\mu_6, \mu_1, \mu_3, \mu_5}$

Note 2: $\underline{\mu_2, \mu_1} > \underline{\mu_3, \mu_4, \mu_5, \mu_6}$

Table 4.6 The ANOVA of the Industry Variable

Educational level also has significant influence on SHB, however each factor has different result. According to the empathy factor, salespeople with a Master degree have less motivation to help serve customers. Salesmen with a Senior High School degree have significantly lower moral reasoning than others; whereas Junior High School graduates have the highest means.

Variables		Educational level					F value	P value	Multiple comparison LSD
		μ_1 under junior high school (n=3)	μ_2 senior high school (n=101)	μ_3 university (n=145)	μ_4 Master (n=24)	μ_5 Ph.D (n=4)			
SHB	Empathy	3.662	3.359	3.297	2.733	3.579	4.449	0.002***	Note 1

	Moral reasoning	4.541	3.929	4.076	4.164	3.799	2.014	0.093*	No difference
	Risk Tolerance	3.743	3.796	3.853	3.970	3.678	0.613	0.654	No difference

Note: * P<0.1; **P<0.05; *** P<0.01

Note 1: $\mu_1, \mu_2, \mu_3, \mu_5 > \mu_4$

Table 4.7 The ANOVA of the Educational Level Variable

Seniority affects the level of empathy. As expected, experienced salespeople engage in more SHB. Therefore, salespeople who have above 5 years seniority have the highest mean, which is significantly larger than those with less experience.

Variables		Seniority						F value	P value	Multiple comparison LSD
		μ_1 Below 1 year (n=58)	μ_2 1~2 years (n=38)	μ_3 2~3 years (n=47)	μ_4 3~4 years (n=21)	μ_5 4~5 years (n=17)	μ_6 Above 5 years (n=96)			
SHB	Empathy	3.177	3.247	3.333	3.206	3.013	3.390	1.285	0.270	Note 1
	Moral reasoning	4.012	4.152	4.074	4.054	4.031	3.969	0.592	0.706	No difference
Risk Tolerance		3.843	3.989	3.786	3.994	3.691	3.794	1.347	0.245	No difference

Note 1: $\mu_6, \mu_1, \mu_2, \mu_3, \mu_4 > \mu_5$

Table 4.8 The ANOVA of the Seniority Variable

Salespeople's job positions have impacts on moral reasoning. Although means of μ_4 (advisor) are significantly higher than others, the accuracy of this result is questionable due to insufficient samples. On the other hand, employee (μ_2) has the lowest mean in risk tolerance.

Variables		Job position						F value	P value	Multiple comparison on LSD
		μ_1 Self-employed (n=52)	μ_2 Employee (n=162)	μ_3 Manager (n=22)	μ_4 Advisor (n=4)	μ_5 Researcher (n=3)	μ_6 Others (n=34)			
SHB	Empathy	3.240	3.258	3.337	3.225	2.986	3.431	0.496	0.779	No difference
	Moral reasoning	3.834	4.076	3.920	4.804	4.071	4.093	3.049	0.011**	Note 1
Risk Tolerance		3.996	3.786	3.804	3.950	4.000	3.843	1.227	0.296	Note 2

Note: * P<0.1; **P<0.05; *** P<0.01

Note 1: $\mu_4 > \mu_2, \mu_3, \mu_6, \mu_5 > \mu_1$

Note 2: $\mu_1, \mu_3, \mu_4, \mu_5, \mu_6 > \mu_2$

Table 4.9 The ANOVA of the Job Position Variable

Different segments of age also have impacts on SHB. Between empathy and moral reasoning factors, means of 41~45 years-old group is significantly higher than others. Those under 20 years old salespeople have the lowest mean on both empathy and moral reasoning factors.

Variables		Age								F value	P value	Multiple comparison LSD
		μ_1 Under 20 (n=8)	μ_2 21~25 (n=46)	μ_3 26~30 (n=63)	μ_4 31~35 (n=38)	μ_5 36~40 (n=39)	μ_6 41~45 (n=36)	μ_7 46~50 (n=26)	μ_8 Above51 (n=21)			
SHB	Empathy	2.854	2.941	3.187	3.413	3.408	3.505	3.454	3.368	3.362	0.002***	$\mu_6, \mu_4, \mu_5, \mu_7, \mu_8 > \mu_3, \mu_1, \mu_2$
	Moral reasoning	3.542	4.076	4.037	3.961	4.133	4.244	4.059	3.640	3.224	0.003***	$\mu_6, \mu_7, \mu_5, \mu_3, \mu_2 > \mu_4 > \mu_1, \mu_8$
Risk Tolerance		3.532	3.960	3.864	3.745	3.803	3.963	3.729	3.775	1.321	0.240	$\mu_2, \mu_6, \mu_3, \mu_4, \mu_5, \mu_7, \mu_8 > \mu_1$

Note: * P<0.1; **P<0.05; *** P<0.01

Table 4.10 The ANOVA of the Age Variable

4.3.3 Demographic variables II : Monthly salary, Monthly bonus percentage, Past growing experience, Working location, Major customer

Monthly salary has significant influence on moral reasoning factor of SHB, note that the group of monthly income 40001~50000 (μ_3) has the lowest impact on this factor.

Variables		Monthly salary					F value	P value	Multiple comparison LSD
		μ_1 Less than 30000 (n=85)	μ_2 30001~40000 (n=88)	μ_3 40001~50000 (n=54)	μ_4 50001~60000 (n=24)	μ_5 More than 60000 (n=26)			
SHB	Empathy	3.159	3.281	3.366	3.360	3.409	1.094	0.360	No difference
	Moral reasoning	4.097	4.068	3.796	4.104	4.113	2.760	0.028**	$\mu_1, \mu_2, \mu_4, \mu_5 > \mu_3$
Risk Tolerance		3.778	3.884	3.767	3.969	3.917	1.092	0.361	No difference

Note: * P<0.1; **P<0.05; *** P<0.01

Table 4.11 The ANOVA of the Monthly Salary Variable

Salespeople who receive above 50% per month bonus (μ_6) get the highest mean on moral reasoning factor. While the group who collect a bonus of 11~20% per month can tolerate more risk tolerance than others as table 4.12 shown.

Variables		Monthly bonus/salary %						F value	P value	Multiple comparison LSD
		μ_1 Below 10% (n=133)	μ_2 11~20% (n=52)	μ_3 21~30% (n=48)	μ_4 31~40% (n=20)	μ_5 41~50% (n=9)	μ_6 Above 50% (n=15)			
SHB	Empathy	3.288	3.252	3.270	3.377	3.136	3.279	0.243	0.943	No difference

	Moral reasoning	4.060	3.977	3.893	4.157	3.972	4.265	1.349	0.244	Note 1
	Risk Tolerance	3.817	3.946	3.779	3.923	3.641	3.854	0.863	0.506	No difference

Note 1: $\mu_6, \mu_1, \mu_2, \mu_4 > \mu_5, \mu_3$

Table 4.12 The ANOVA of the Monthly Bonus Percentage Variable

Growing history may be a consideration of engaging in Sales Helping Behavior. Always smooth going salespeople get the highest mean on moral reasoning factor. This is an interesting phenomenon because the always tough salespeople have more empathy and, in turn, engage in more Sales Helping Behavior. The always tough salespeople have more empathy to help serve customers. As table 4.13 shows, my assumption is relevant to the fact.

Variables		Growing history			F value	P value	Multiple comparison LSD
		μ_1 Always tough (n=13)	μ_2 Moderate (n=216)	μ_3 Always smooth (n=48)			
SHB	Empathy	3.539	3.264	3.277	1.072	0.334	No difference
	Moral reasoning	3.985	3.993	4.214	2.830	0.061*	$\mu_3 > \mu_1, \mu_2$
Risk Tolerance		3.886	3.830	3.867	0.139	0.870	No difference

Note: * P<0.1; **P<0.05; *** P<0.01

Table 4.13 The ANOVA of the Past Growing Experience Variable

Different working locations have significant influence on empathy factor. Salespeople living in the south of Taiwan engage in more Sales Helping Behavior than those living in the north. However, salespeople who work south of ChiaYi are more friendly and provided more help for my research. In Taiwan, there is a saying

that those living to the south of Taiwan are more enthusiastic than those living to the north. After this study, I agree with the saying.

Variables		Working location				F value	P value	Multiple comparison LSD
		μ_1 To the north of Hsinchu (n=60)	μ_2 MioLi To YunLin (n=9)	μ_3 To the south of ChiaYi (n=205)	μ_4 Yi-lan, Hua-lien, Taitung (n=3)			
SHB	Empathy	3.154	2.767	3.349	2.559	3.933	0.009***	Note 1
	Moral reasoning	4.127	3.976	4.004	4.131	0.718	0.542	No difference
Risk Tolerance		3.769	3.891	3.856	3.922	0.428	0.733	No difference

Note: * P<0.1; **P<0.05; *** P<0.01

Note 1: $\mu_3 > \mu_1 > \mu_4 > \mu_2$

Table 4.14 The ANOVA of the Working Location Variable

Different customer segment has a significant difference of empathy. Those in charge of B2C tend to engage in more SHB than B2B salespeople. Because there are only two categories of customer segment, there are no multiple comparison columns in the following table.

Variables		Customer segment		F value	P value
		μ_1 B2B (n=32)	μ_2 B2C (n=245)		
SHB	Empathy	2.929	3.325	8.928	0.003***
	Moral reasoning	4.079	4.025	0.233	0.630
Risk Tolerance		3.838	3.839	0.000	0.995

Note: * P<0.1; **P<0.05; *** P<0.01

Table 4.15 The ANOVA of the Customer Segment Variable

4.3.4 Demographic variables comparison

Depending on above information, table 4.16 shows comparisons of demographics to these three variables.

	Empathy	Moral Reasoning	Risk Tolerance
Gender			
Marital status	***	*	
Industry	**	**	
Educational level	***	*	
Seniority			
Job position		**	
Age	***	***	
Monthly salary		**	
Bonus percentage			
Growing history		*	
Working location	***		
Customer segment	***		

Note: * P<0.1; **P<0.05; *** P<0.01

Table 4.16 Comparisons of Demographics

4.4 Correlation Analysis

According to the previous results of reliability and validity analysis, weighted average based correlation analysis is shown in the following table. As table 4.17 shows, 「Empathy」 has a significant positive relation to 「Moral Reasoning」 (r = 0.196). Furthermore, Moral Reasoning also has a positive relation to Risk Tolerance (r

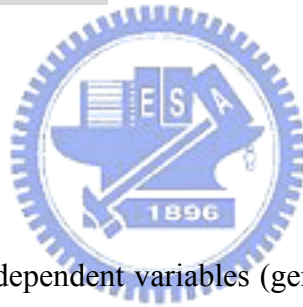
= 0.339). However, 「Risk Tolerance」 only has a slight positive relation to Empathy (r = 0.103).

	Mean	Standard Deviation	1 Empathy	2 Moral Reasoning	3 Risk Tolerance
1	3.2789	0.71491	1		
2	4.0310	0.59140	0.196**	1	
3	3.8387	0.55427	0.103	0.339**	1

** Correlation is significant at the 0.01 level (2-tailed)

Table 4.17 Correlation Table

4.5 Regression Analysis



In order to know how independent variables (gender & risk tolerance) influence the dependent variable, Sales Helping Behavior, I use regression analysis to show the results. Since the study has four hypotheses, I list all of them in detail as follow. The framework is shown in chapter two.

4.5.1 Y=SHB ; X=Gender

Formula A : $Y_i = \alpha + \beta_1(G) + \varepsilon_i$; Y_i = Empathy, G = Gender

(Formula B : $Y_j = \alpha + \beta_1(G) + \varepsilon_j$; Y_j = Moral Reasoning, G = Gender)

Formula A (Formula B)	Sum of Squares	df	Mean square	F	P	

Regression	0.139 (0.063)	1	0.139 (0.063)	0.272 (0.180)	0.603 (0.672)	R ² =0.001 Adj.R ² =-0.003
Residual	140.924 (94.470)	275	0.512 (0.351)			(R ² =0.001 Adj.R ² =-0.003)
Total	141.063 (96.533)	276				

Dependent variable: Empathy (Moral Reasoning)

Table 4.18 Regression Analysis of Gender

Coefficients:

$$Y_i = \alpha + \beta_1(G) + \varepsilon_i \rightarrow Y_i = 3.308 - 0.047(G) + \varepsilon_i$$

$$Y_j = \alpha + \beta_1(G) + \varepsilon_j \rightarrow Y_j = 4.051 - 0.031(G) + \varepsilon_j$$

Formula A (Formula B)	Unstandardized Coefficients		Standardized Coefficients	t value	P value
	B	Std. Error	Beta		
Constant	3.308 (4.051)	0.071 (0.059)		46.448 (68.736)	0.000 (0.000)
Gender	-0.047 (-0.031)	0.089 (0.074)	-0.031 (-0.026)	-0.521 (-0.424)	0.603 (0.672)

Dependent variable: Empathy (Moral Reasoning)

Table 4.19 Coefficients of Gender

Gender is a minor component for Sales Helping Behavior intention because R square is only 0.001. Besides this finding, P value is also insignificant. For further research, gender can be seen as a constant variable.

4.5.2 Y= SHB ; X=Risk Tolerance

Formula C : $Y_i = \alpha + \beta_1(R) + \varepsilon_i$; $Y_i = \text{Empathy, R} = \text{Risk Tolerance}$)

(Formula D: $Y_j = \alpha + \beta_1(R) + \varepsilon_j$; $Y_j = \text{Moral Reasoning, R} = \text{Risk Tolerance}$)

For. C (For. D)	Sum of Squares	df	Mean square	F	P	
Regression	1.499 (11.119)	1	1.499 (11.119)	2.953 (35.797)	0.087* (0.000***)	R ² =0.011 Adj.R ² =0.007 (R ² =0.115 Adj.R ² =0.112)
Residual	139.564 (85.415)	275	0.508 (0.311)			
Total	141.063 (96.533)	276				

Dependent variable: Empathy (Moral Reasoning)

Note: * P<0.1; **P<0.05; *** P<0.01

Table 4.20 Regression Analysis of Risk Tolerance

Coefficients:

$$Y_i = \alpha + \beta_1(R) + \varepsilon_i \rightarrow Y_i = 2.769 + 0.133(R) + \varepsilon_i$$

$$Y_j = \alpha + \beta_1(R) + \varepsilon_j \rightarrow Y_j = 2.641 + 0.362(R) + \varepsilon_j$$

Formula C (Formula D)	Unstandardized Coefficients		Standardized Coefficients	t value	P value
	B	Std. Error	Beta		
Constant	2.769 (2.641)	0.300 (0.235)		9.227 (11.251)	0.000 (0.000)
Risk Tolerance	0.133 (0.362)	0.077 (0.061)	0.103 (0.339)	1.718 (5.983)	0.087* (0.000***)

Dependent variable: Empathy (Moral Reasoning)

Note: * P<0.1; **P<0.05; *** P<0.01

Table 4.21 Coefficients of Risk Tolerance

Risk tolerance has significant influence on moral reasoning, however R square is not large enough ($R^2=0.115$) to further explain variance of SHB. In the same situation as empathy, p value is close to 0.1 but R square is only 0.011. This low value proves that risk tolerance does influence Sales Helping Behavior, but it is a minor effect. Some unknown factors exist in Sales Helping Behavior; if more factors of Sales Helping Behavior intention can be explored, risk tolerance may explain more variance of SHB.

4.5.3 Moderation Analysis

Model 1 : $Y_i = \alpha + \beta_1(G) + \beta_2(R) + \varepsilon_i$

$$(Y_j = \alpha + \beta_1(G) + \beta_2(R) + \varepsilon_i)$$

Model 2: $Y_i = \alpha + \beta_1(G) + \beta_2(R) + \beta_3(G \times R) + \varepsilon_i$

$$(Y_j = \alpha + \beta_1(G) + \beta_2(R) + \beta_3(G \times R) + \varepsilon_i)$$

(Y_i = Empathy, Y_j = Moral Reasoning, G = Gender, R = Risk Tolerance, $G \times R$ = interaction)

Y=Empathy

		Sum of Squares	df	Mean square	F	P
Model 1 (Model 2)	Regression	1.0594 (2.386)	2 (3)	0.797 (0.598)	1.566 (1.072)	0.211 (0.362)
	Residual	139.469 (138.677)	274 (273)	0.509 (0.508)		
	Total	141.063 (141.063)	276			

Dependent variable: Empathy

Note: * P<0.1; **P<0.05; *** P<0.01

Table 4.22 Regression Analysis of Empathy

Y=Empathy

Model	R ²	Adj. R ²	Change Statistics				
			R ²	F	df1	df2	P
1	0.011	0.004	0.011	1.566	2	274	0.211
2	0.017	0.017	0.006	1.560	1	273	0.213

Table 4.23 Change Statistics of Empathy

Y=Moral Reasoning

		Sum of Squares	df	Mean square	F	P
Model 1 (Model 2)	Regression	11.124 (11.136)	2 (3)	5.562 (3.421)	17.843 (10.487)	0.000*** (0.000***)
	Residual	85.409 (85.397)	274 (273)	0.312 (0.313)		
	Total	96.533 (96.533)	276			

Dependent variable: Moral Reasoning

Note: * P<0.1; **P<0.05; *** P<0.01

Table 4.24 Regression Analysis of Moral Reasoning

Y=Moral Reasoning

Model	R ²	Adj. R ²	Change Statistics				
			R ²	F	df1	df2	P
1	0.115	0.109	0.115	17.843	2	274	0.000
2	0.115	0.106	0.000	0.039	1	273	0.843

Table 4.25 Change Statistics of Moral Reasoning

Full Model Coefficients:

$$Y_i = \alpha + \beta_1(G) + \beta_2(R) + \beta_3(G \times R) + \varepsilon_i$$

$$\rightarrow Y_i = 2.371 + 0.714(G) + 0.242(R) - 0.195(G \times R) + \varepsilon_i$$

$$Y_j = \alpha + \beta_1(G) + \beta_2(R) + \beta_3(G \times R) + \varepsilon_j$$

$$\rightarrow Y_j = 2.595 + 0.085(G) + 0.375(R) - 0.024(G \times R) + \varepsilon_j$$

Y _i (Y _j)	Unstandardized Coefficients		Standardized Coefficients	t value	P value
	B	Std. Error	Beta		
Constant	2.371 (2.595)	0.462 (0.362)		5.136 (7.162)	0.000 (0.000)
Gender	0.714 (0.085)	0.609 (0.478)	0.481 (0.069)	1.172 (0.177)	0.242 (0.860)
Risk Tolerance	0.242 (0.375)	0.118 (0.092)	0.187 (0.352)	2.055 (4.067)	0.041** (0.000***)
G×R	-0.195 (-0.024)	0.156 (0.123)	-0.516 (-0.078)	-1.249 (-0.199)	0.213 (0.843)

Dependent variable: Empathy (Moral Reasoning) 1896 Note: * P<0.1; **P<0.05; *** P<0.01

Table 4.26 Coefficients of Full Model

Gender as a moderation variable lies in this regression formula, The information above clearly shows no difference when G×R is involved. On the two factors, empathy and moral reasoning, R square change also vibrates slightly when gender and risk tolerance interaction happened.

4.6 Mediation Analysis

As mentioned of hypothesis 4 in chapter two, risk tolerance is a mediation variable between gender and Sales Helping Behavior. However, the previous regression analysis shows no significant correlation between gender and risk tolerance;

there is no indirect effect. In other words, risk tolerance does not mediate between gender and Sales Helping Behavior. The following figure shows each standardized regression coefficient, but it only exits a direct effect between risk tolerance and Sales Helping Behavior.

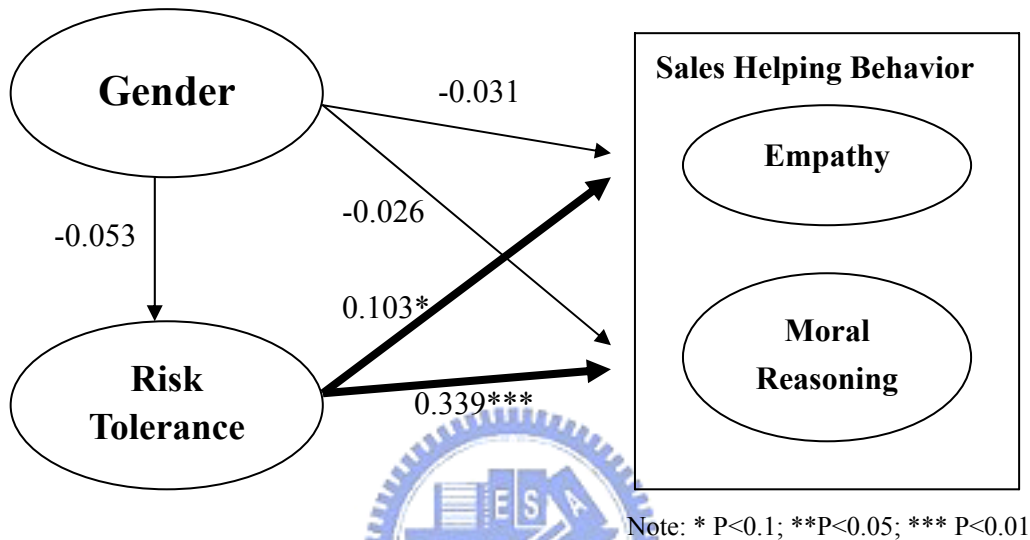


Fig. 4.1 Path Analysis Parameters

4.7 Model-Fit Evaluation

In this section I would like to examine the previous model through LISREL, since there is no significant effect of gender on empathy and moral reasoning. Moreover, gender is a dummy variable. For these reasons, gender is not adopted in the model. The following coefficients of the figure are standardized solution, but these loadings are computed by MLE (Maximum Likelihood Estimation), which are different from those computed by EFA. The item 「 1-1 」 of fig. 4.2 stands for the first item of part 1 in the questionnaire, and so on.

The CFA model-fit analysis data shows some good information of the model:

$\chi^2 = 208.15$ (74, N=277), $\frac{\chi^2}{df} = 2.81 < 3$, GFI (goodness-of-fit index) =0.90 is close to 1, AGFI (Adjusted GFI) =0.86 is close to 0.90 and CFI (Comparative Fit Index) =0.92 > 0.9. Furthermore, NFI (Normed fit index) =0.88 is close to the criterion 0.90, NNFI=0.90 and IFI=0.92 are larger than 0.90, and PNFI is 0.72 larger than 0.5. Finally, RMSEA (Root Mean Square Error of Approximation) is 0.081 between 0.05 and 0.1. The model is acceptable in all of the mentioned indexes. The data is listed at the end of this chapter.

In order to confirm that gender is not a significant factor to both Sales Helping Behavior and risk tolerance, I split total sample into males and females. First of all, factorial invariance should be examined. Table 4.27 shows that chi-square difference is 21.02 and degree of freedom difference is 11, however, the value is significantly larger than $\chi^2_{(11,0.05)} = 19.68$. It appears that there does not exist factorial invariance between base model (model 0) and model 1. Model 0 combines two separated CFA models into one CFA analysis and each path are freely estimated. Model 1 lets factor loadings be consistent.

Model	χ^2	df	χ^2 / df	RMSEA	NNFI	CFI	GFI
Total	208.15	74	2.81	0.081	0.90	0.92	0.90
Males	84.02	74	1.14	0.037	0.97	0.97	0.89
Females	182.27	74	2.46	0.091	0.86	0.88	0.87
Model 0	266.29	148	1.80	0.076	0.91	0.92	0.86
Model 1	287.31	159	1.81	0.077	0.91	0.92	0.86
$\Delta = 21.02$		$\Delta = 11$					

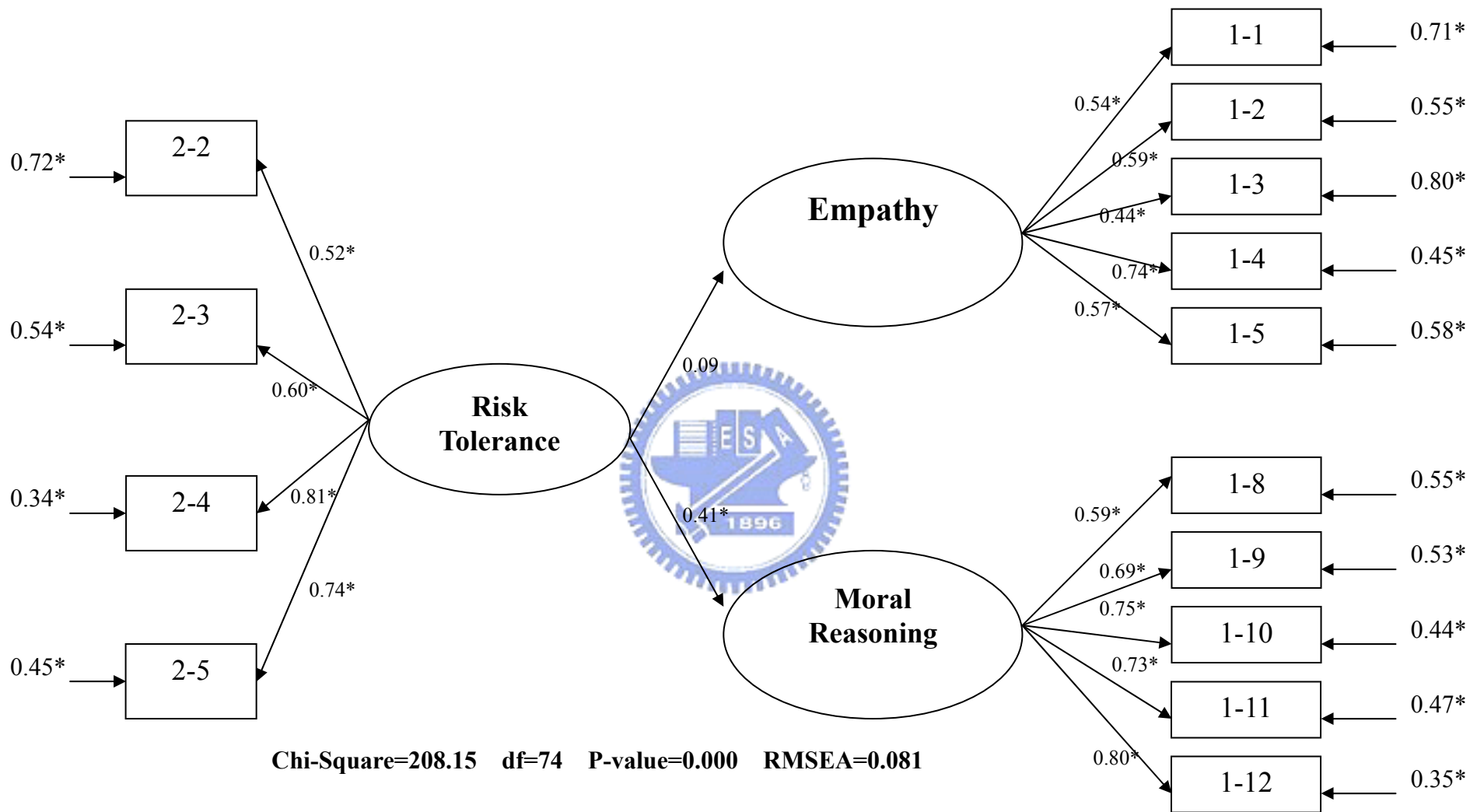
Table 4.27 Multi-Sample CFA Analysis

Although male and female models are different because of factorial variance, the structure of the model does not have significant difference. Since I let path parameters

be consistent to check the chi-square and degree of freedom variance, it appears $\Delta \chi^2 = 2.32$ and $\Delta \text{d.f} = 2$. But $\chi^2_{(2,0.05)} = 5.99 > 2.32$ shows there is no difference between male and female models. In other words, gender is not a significant factor to this model, and this effect is consistent with prior result estimated by regression.

		Males		Females	
Factors	Items	Loading	Residuals	Loading	Residuals
Empathy	1-1	0.59	0.66	0.52	0.73
	1-2	0.67	0.55	0.53	0.72
	1-3	0.47	0.78	0.45	0.80
	1-4	0.68	0.54	0.79	0.37
	1-5	0.72	0.48	0.47	0.78
Moral Reasoning	1-8	0.70	0.51	0.53	0.72
	1-9	0.73	0.47	0.66	0.56
	1-10	0.76	0.43	0.76	0.43
	1-11	0.71	0.49	0.74	0.45
	1-12	0.85	0.28	0.78	0.39
Risk Tolerance	2-2	0.74	0.46	0.36	0.87
	2-3	0.74	0.46	0.50	0.75
	2-4	0.75	0.43	0.87	0.25
	2-5	0.75	0.43	0.73	0.47

Table 4.28 Multi-Sample Individual CFA Analysis



Chi-Square=208.15 df=74 P-value=0.000 RMSEA=0.081

Fig. 4.2 Path Diagram of CFA Model

Note: *P<0.05

	Empathy					Moral Reasoning					Risk Tolerance			
	1-1	1-2	1-3	1-4	1-5	1-8	1-9	1-10	1-11	1-12	2-2	2-3	2-4	2-5
1-1	1													
1-2	0.277	1												
1-3	0.242	0.270	1											
1-4	0.432	0.418	0.341	1										
1-5	0.268	0.376	0.208	0.421	1									
1-8	0.010	0.043	0.049	0.008	-0.044	1								
1-9	0.070	0.145	0.087	0.081	0.066	0.601	1							
1-10	0.112	0.174	0.091	0.014	0.079	0.419	0.548	1						
1-11	0.150	0.187	0.085	0.058	0.162	0.328	0.403	0.589	1					
1-12	0.205	0.183	0.127	0.101	0.237	0.461	0.510	0.572	0.655	1				
2-2	0.084	0.172	0.012	0.064	0.158	0.118	0.203	0.190	0.105	0.174	1			
2-3	0.077	0.113	0.085	-0.031	0.039	0.249	0.269	0.240	0.172	0.282	0.551	1		
2-4	0.100	0.063	-0.034	0.030	0.115	0.235	0.255	0.226	0.213	0.247	0.349	0.461	1	
2-5	0.030	0.047	-0.066	-0.043	0.037	0.188	0.180	0.152	0.181	0.228	0.363	0.361	0.653	1
Mean	2.805	2.610	2.798	2.487	2.260	4.152	4.238	3.935	3.819	4.022	3.736	3.881	3.870	3.860
Std. D	1.112	0.996	0.953	0.946	0.911	0.624	0.666	0.827	0.823	0.807	0.789	0.745	0.652	0.706

Table 4.29 Inter-Item Correlation Matrix

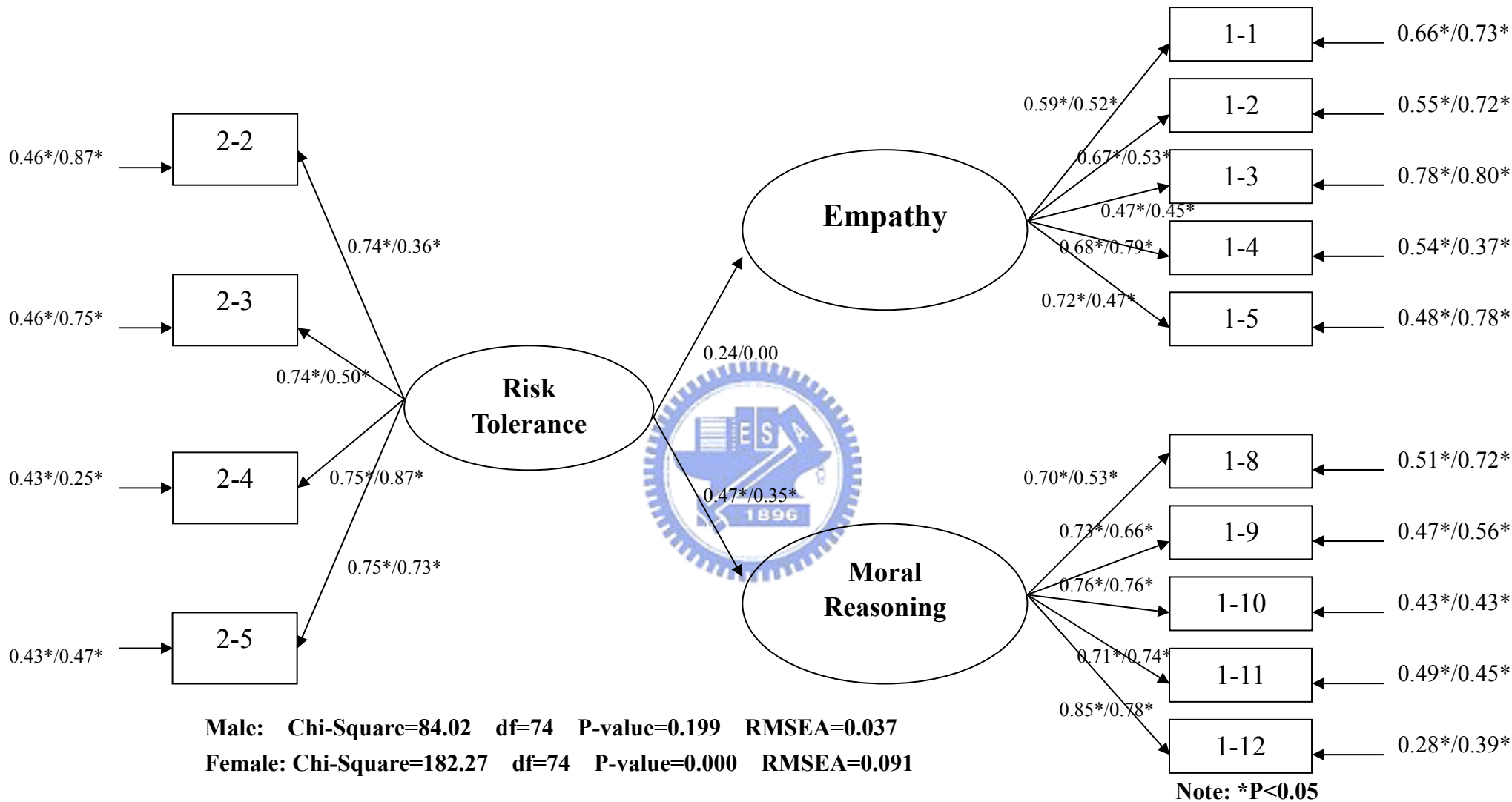


Fig. 4.3 Path Diagram of CFA Model (Male/Female)

Chapter 5 Conclusions

Explanation and clarification of each hypothesis, managerial implication, limitation of research and further suggestions for study are presented in this chapter.

5.1 Discussions

The four hypotheses mentioned in chapter two are examined by regression.

Detailed information is provided in the following table:

Hypotheses	Test Results
H1: Females tend to engage in more Sales Helping Behavior than males do	Rejected (No difference)
H2: Salespeople with higher risk tolerance engage in more Sales Helping Behavior	Supported
H3: Males tend to engage in more Sales Helping Behavior under a risk condition than females do	Rejected (No difference)
H4: Risk tolerance mediates between Gender and Sales Helping Behavior, and the level of significance between Gender and Sales Helping Behavior should be reduced.	Rejected (No difference)

Table 5.1 Summary of Results of Hypotheses

Gender does not significantly influence Sales Helping Behavior. One of the explanations is that salespeople have basic awareness about helping customers because of their professional ethics. Therefore, both male and female salespeople will show willingness when customers need help. According to the reciprocal theory of consumer behavior, people are more likely to give if they receive (Solomon, 2004).

That is why salespeople are willing to help customers; people will buy more if they get help from these salespeople. According to this fact, a successful or unsuccessful salesperson depends on Sales Helping Behavior.

The other independent variable, Risk Tolerance, shows positive correlation with Sales Helping Behavior. As expected, the more risk tolerance salespeople have, the more Sales Helping Behavior they will engage in. However, Gender is still not a significant factor to Risk Tolerance; in other words, both males and females engage in equivalent Sales Helping Behavior under a risky condition because of their professional ethics.

There is one more interesting phenomenon: if there exists an economic factor between SHB and risk tolerance, a spurious relationship may be formed. In other words, further researchers should put “reward” into consideration, because the intention of engaging in Sales Helping Behavior may involve other factors, such as existing relationships between salespeople and customers, length of relationships, and the cost of the benefit.


5.2 Managerial Implications

Salespeople can become closer to customers through engaging in more Sales Helping Behavior. At present, more and more salespeople not only sell products to customers but one also making friends with them. For this reason, salespeople should be more aware of *business is not only business* and always keep customers’ needs in mind. There has been an increase of studies relating to SOCO (Selling Orientation-Customer Orientation; Saxe et al., 1982), which clarify the relationships between salespeople and customers. The concept of Sales Helping Behavior is similar to SOCO. This study provides a new scheme to enhance the profit for salespeople.

Managers in all companies can give more training to salespeople depending on the results of this study. Accepting more risk tolerance may be an orientation for those who want to be a successful salesperson. Knowing the components of Sales Helping Behavior and engaging in them will improve the relationships between sales and customers. Eventually, companies will earn higher revenue owing to these enthusiastic salespeople.

This study also provides useful information to some foreign companies who would like to enter Taiwan market, because they should know what traits Taiwan's salesperson has first. Then, they can do more successful promotion through these well-trained salespeople.

5.3 Limitations of This Research



There is few literature discussing Sales Helping Behavior and therefore, are few scales provided for this study. For this reason, there is approximately to improve this scale and cost benefit analysis. Due to the insufficient studies for Sales Helping Behavior, the major components of SHB create restrictions to the research. There is also a risk tolerance measuring problem because the majority of risk tolerance refers to finance. Another constraint is that most of the participants engage in service industry. Hence the sample does not accurately represent the general population. Last but not least, R square of risk tolerance regressing SHB is not big enough to explain the total variance. Therefore risk tolerance is one of the factor influencing SHB, but not a significant one.

5.4 Further Suggestions

Since there are few studies for Sales Helping Behavior, a great deal of improvement needs to be made on this topic. This study explores two major components of Sales Helping Behavior intention (Empathy & Moral Reasoning), however many unknown factors still remain for researchers to discover. Researchers can develop a scale for SHB first, and then find the exact components of it out.

Along with SHB, risk tolerance is also another interesting subject. Although R square of risk tolerance is not large enough to explain more variance, it still has significant influence on Sales Helping Behavior. Researchers can explore more risk tolerance items to make sure of the effect, and develop sales risk tolerance scale. This study faces many difficulties in measuring because there are few suitable scales for this subject.

For further research, specific groups of Sales Helping Behavior need to be examined, such as service industry. Different industries may show different behavior facing customers, especially for the B2C segment group. Specific study will expand the scale to better explore the differences among various industries. Also, Table 4.16 indicates, some significant influences of demographic variables exist on dependent and independent variables. It provides a way to develop new variables on how to measure SHB. Smith et al. (1983) also explored that Educational level; Job Satisfaction and Urban/Rural background positively correlated with Altruism. In conclusion, developing suitable scales for SHB needs to be a direction for further research; recognizing that service industry have significant differences on empathy and moral reasoning compared to non-service groups (For empathy, $p=0.061^*$; for Moral Reasoning, $p=0.018^{**}$; $*P<0.1$, $**P<0.05$). Moreover, exploring more components of Sales Helping Behavior intention will provide more interesting and

beneficial results. Finally, how to make SHB to be learned benefit is another topic for those interesting in Sales Helping Behavior.



Reference

- Aaker, David A., Keller, Kevin Lane (1990). "Consumer Evaluations of Brand Extensions." Journal of Marketing **54**: 27-41.
- Ansic, M. P. D. (1997). "Gender difference in risk behavior in financial decision-making: An experimental analysis." Journal of economic psychology **18**: 605-628.
- Aries, E. J., Johnson, F. L. (1983). "Close friendship in adulthood: Conversational content between same-sex friends." Sex Roles **9**: 1183-1196.
- Assael, M. (1981). "Consumer behavior and marketing action." Kent Publishing Co., Boston, MA.: 80.
- Bar-Tal, D. (1985-1986). "Altruistic motivation to help: Definition, utility and operationalization." Humboldt J. Soc. Relat(13): 3-14.
- Baumann, D. J., Cialdini, R. B., Kenrick, D. T. (1981). "Altruism as hedonism: Helping and self-gratification as equivalent responses." Journal of personality and social psychology **40**: 1039-1046.
- Bendapudi Neeli; Singh S. N., & Bendapuri Venkat (1996). "Enhancing helping behavior: An integrative framework for promotion planning." Journal of marketing **60**: 33-49.
- Borofsky, G. L., Stollak, G. E., Messe, L. A. (1971). "Sex difference in bystander reactions to physical assault." Journal of experimental social psychology **7**: 313-318.
- Brief, A. P. and S. J. Motowidlo (1986). "Prosocial organizational behaviors." Academy of management journal **11**: 710-725.
- Carlson, Michael and Miller, Norman (1987). "Explanation of the relation between negative mood and helping." Psychological Bulletin **102**: 91-108
- Chang, C.-C. and S. A. Devaney (2001). "Determinants of objective and subjective risk tolerance." Proceedings of the association for financial counseling and planning education.

Cialdini, R. B., M. Schaller, D. Houlihan, K. Arps, F. Fultz, and A. Beaman (1987). "Empathy-based helping: Is it selfishly or selflessly motivated?" Journal of personality and social psychology **52**: 749-758.

Clark, M. S., Isen, A. M. (1982). "Toward understanding the relationship between feeling states and social behavior." Cognitive social psychology(78-108).

Cordell, D. M. (2002). "Risk tolerance in two dimensions." Journal of financial planning.

Darmon, Rene Y., Rigaux, Benny P., Balloffet, Pierre (2003). "Designing sales force satisfying selling positions: a conjoint measurement approach." Industrial marketing management **32**: 501-515

Dion Paul A., Banting P. M. (2000). "Compariosns of alternative perceptions of sales performance." Industrial marketing management **29**: 263-270.

Eagly, A. H., Crowley, M. (1986). "Gender and helping behavior: A meta-analysis review of the social psychological literature." Psychol. Bull **100**: 283-308.

Eisenberg, N., McCreath, H., Ahn, R. (1988). "Vicarious emotional responsiveness and prosocial behavior: Their interrelations in young children." Personality and Social Psychology Bulletin **14**: 298-311.

George, J. M. (1998). "Salesperson mood at work: implications for helping customers." The journal of personal selling & sales management **18**: 23-30.

George, J. M. (2000). "Emotions and leadership: the role of emotional intelligence." Human relations: 1027-1055.

George, J. M.; Brief, A. P. (1992). "Feeling good- doing good: A conceptual analysis of the mood at work-organizational spontaneity relationship." Psychological Bulletin **112**: 310-329.

George, J. M. (1991). "State or trait: Effects of positive mood on prosocial behaviors at work." Journal of applied psychology **76**: 299-307.

Gilbert A. Churchill, J. (1979). "A Paradigm for Developing Better Measures of

Marketing Constructs." Journal of Marketing Research (JMR) **16**.

Grable, J. E.; Lytton, R. H. (1998). "Investor risk tolerance: Testing the efficacy of demographics as differentiating and classifying factors." Financial Counseling and Planning **9**: 61-73.

Harris, M., & Bays, G. (1973). "Altruism and sex roles." Psychological Reports **32**: 1002.

Jones, Gareth R., George J. M. (1998). "The experience and evolution of trust: Implications for cooperation and teamwork." Academy of management review **23**: 531-546.

Kevin E. Voss, E. R. S., Bianca Grohmann (2003). "Measuring the hedonic and utilitarian dimensions of consumer attitude." Journal of Marketing Research (JMR): 310-320.

Kwaku, Atuahene-Gima (1997). "Adoption of new products by the sales force: The construct, Research propositions, and managerial implications." J PROD INNOV MANAG **14**: 498-514

McCabe, M. R. (2002). "The relationship between sex differences and helping behavior of college students."

McColl-Kennedy, J. R., C. S. Daus, et al. (2003). "The role of gender in reactions to service failure and recovery." Journal of service research **6**: 66-82.

Mckim, R. A. (1992). "Risk management-back to basics." Cost engineering **34**.

Mitchell, V.-W. (1992). "Understanding consumers' behavior: Can perceived risk theory help." Management decisions **30**.

Moncrief, W. C., E. Babakus, et al. (2000). "Examining gender differences in field sales organizations." journal of business research(49): 245-257.

Organ, D. W. (1988). "A restatement of the satisfaction-performance hypothesis." Journal of management **14**: 547-557.

Peter, J. P., Ryan, M. J. (1976). "An investigation of perceived risk at the brand level."

Journal of Marketing Research (JMR) 13: 184-188.

Piliavin, Jane Allyn; Charng, H.-w. (1990). "Altruism: A review of recent theory and research." Annual review of sociology 16: 27-65.

Roszkowski, M. J., Snelbecker, G. E., & Leimberg, S. R. (1993). "Risk-tolerance and risk aversion." The tools and techniques of financial planning 4th ed.: 213-225.

Roszkowski, Michael J.; Davey G., Grable John E. (2005). "Insights from psychology and psychometrics on measuring risk tolerance." Journal of financial planning 18.

Saxe, R., Weitz., B. A. (1982). "The SOCO Scale: A Measure of the Customer Orientation of Salespeople." Journal of Marketing Research 19: 343-351

Schneider, S., Lopes, L., (1986). "Reflection in preferences under risk: Who and when may suggest why." Journal of experimental psychology: Human perception and performance 12: 535-548.

Smith, C. Ann, Organ Dennis W., and Near, Janet P., (1983). "Organizational citizenship behavior: Its nature and antecedents." Journal of Applied Psychology 68: 653-663

Solomon, M. R. (2004). "Consumer behavior: Buying, having and being." 254.

Sparks, B. V. C. (1997). "Communication in the service provider-customer relationship: The role of gender and communication strategy." Journal of Hospitality and Leisure Marketing 4: 3-23.

Sung, J.; Hanna, S. (1996). "Factors related to household risk tolerance: An ordered profit analysis." Consumer Interest Annual 42: 227-228.

Switzer, C. L., Switzer, G. E., Stukas, A. A., & Baker, C. E. (1999). "Medical students motivations to volunteer: gender differences and comparisons to other volunteers." Journal of Prevention & Intervention in the community 18: 53-64.

Wilson, D. W., & Kahn, A. (1975). "Rewards, costs, and sex differences in helping behavior." Psychological Reports 36: 31-34.

Wright, C. W. (1996). "An examination of the influence of mood, procedural justice and prosocial personal of organizational citizenship behavior."

Chung Yen Y, Ding, C. G. (2002). "Development of the sales locus of control scale." Journal of occupational and organizational psychology **75**: 233-245.

邱皓政著 (2003)，結構方程模式：LISREL 的理論、技術與應用，雙葉書廊



Appendix 1 Chinese Questionnaire

親愛的先生／女士 您好：

首先感謝您撥冗填寫這份問卷，此為一學術問卷，目的在了解銷售人員對產品的風險忍受程度影響銷售之外的幫助行為。問卷共有三個部份，問項均無對與錯，請您依據對每一問項的感覺強弱填寫。問卷採不記名方式，只會用於學術用途而不另移做他用，並對問卷內容予以保密，請您放心填寫。感謝您的參與並祝您

萬事順心

工作順利

研究單位：國立交通大學管理科學研究所

指導教授：張家齊 博士

研 究 生：林崇孝

敬上

第一部份

請您依據自身經驗或感覺勾選以下問項，數字代表您對該問項感覺的強弱。

	非常不同意	不同意	無意見	同意	非常同意
1. 當顧客對我很惡劣時，我覺得沒有必要對他們好	1	2	3	4	5
2. 我有時覺得從顧客的觀點來看待事情是很困難的	1	2	3	4	5
3. 同事負責的顧客在購買時產生的不便，不會讓我覺得過意不去	1	2	3	4	5
4. 如果我確信某件事我是對的，我不會花很多時間聽其他顧客的見解	1	2	3	4	5
5. 當顧客被不公平的對待，有時我不會同情他們	1	2	3	4	5
6. 我覺得幫助顧客是一種責任，即使他們過去從未表現出感激之情	1	2	3	4	5
7. 面對顧客時，我會表現出自己是一個熱心的人	1	2	3	4	5
8. 面對顧客時，我選擇能符合顧客需求的方案	1	2	3	4	5
9. 我會盡力幫助我的顧客	1	2	3	4	5
10. 我對待顧客時會考量所有顧客的 權利	1	2	3	4	5
11. 我會以顧客的 利益 為考量	1	2	3	4	5
12. 對待顧客時我會盡力使顧客損失降到最低	1	2	3	4	5
13. 當我不熟悉的顧客有非產品相關的問題，而剛好我在此方面懂得比客戶多，我會幫助他們解決	1	2	3	4	5
14. 我會幫助顧客解決他的私人問題	1	2	3	4	5
15. 我告訴顧客那裡可以買到他們需要的東西	1	2	3	4	5
16. 我服務顧客時做的比他們期望的多	1	2	3	4	5

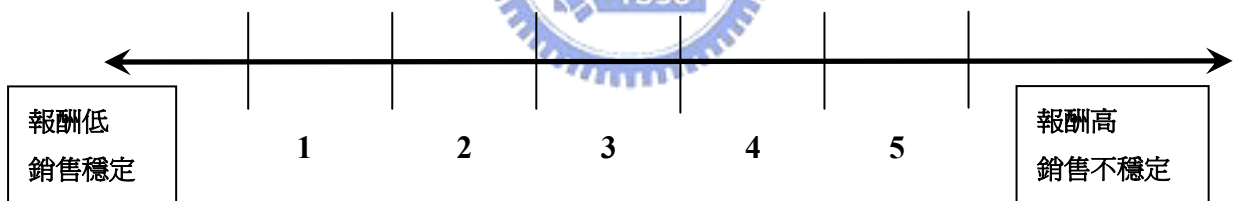
<背面請繼續作答>

第二部份

接下來請您想像一個情況，您將負責銷售一個新產品，但是新產品將可能有銷售上的風險，例如賣不好、市場反應不佳等；但也有可能市場反應大好進而帶給您極大的利潤。請您回答下列的問題：

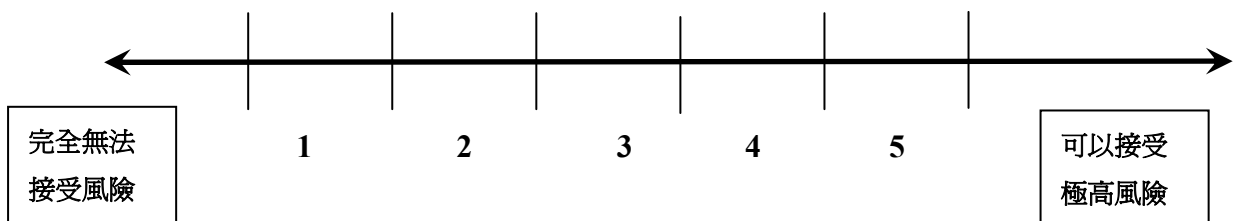
	非常不同意	不同意	無意見	同意	非常同意
1. 如果可以，我不會主動促銷新產品，因為我擔心賣不好會影響到我的績效獎金	1	2	3	4	5
2. 我喜歡促銷新產品因為具有挑戰性	1	2	3	4	5
3. 我願意花心力研究如何推銷新產品，無論將來能否成為熱賣商品	1	2	3	4	5
4. 就算我不覺得買的人會很多，我仍會像平常一樣推銷產品給顧客	1	2	3	4	5
5. 即使預期顧客購買的產品數量會很少，我仍會像平常一樣推銷產品給顧客	1	2	3	4	5

6. 以下有兩個產品，一個是報酬高但是銷售不穩定的產品，另一則是報酬低銷售穩定的產品
您較傾向賣哪項產品？(請您在以下數字打勾，越接近 5 則代表傾向報酬高銷售不穩定)



7. 您如何評量自己接受風險的程度？

(請您在以下數字打勾，越接近 5 則代表可以接受極高風險)



第三部份

以下我們還需要您的基本資料，請您放心填寫，以下的資料僅供本問卷統計之用，我們將完全保密。

1. 您的性別？ 男 女
2. 您的婚姻狀況？ 未婚 已婚（有____個小孩）
3. 您所從事的產業？ 保險業 金融業 科技業 仲介業 服務業
其他行業 _____
4. 您的學歷？ 國中以下 高中職／五專 大學／專科 碩士 博士
5. 您擔任銷售人員多久？ 一年以內 一年～兩年 兩年～三年
三年～四年 四年～五年 五年以上
6. 您目前在任職單位中擔任的職位？ 自行創業 一般職員 主管
顧問／幕僚 研究人員 其他_____
7. 您的年齡？ 20歲以下 21~25歲 26~30歲 31~35歲 36~40歲
41~45歲 46~50歲 51歲以上
8. 您平均一個月的薪水多少(包含分紅獎金)？
三萬以下 三萬～四萬 四萬～五萬 五萬～六萬 六萬以上
9. 您平均一個月拿到的分紅獎金約佔全部薪水的多少？ 0%~10% 10%~20%
21%~30% 31%~40% 41%~50% 51%以上
10. 您過去的成長經驗 非常不順利 有一些小挫折，但還稱得上順利 一直以來都非常順利
11. 您目前的工作地點 新竹以北 苗栗～雲林 嘉義以南 宜花東
12. 您主要負責的客戶為 公司客戶（B to B） 一般客戶（B to C）

本問卷到此結束，請您再次確認每個問項是否均有填寫；非常感謝您的參與，您的寶貴意見將對本研究有莫大助益。

祝您 萬事順心 工作順利

Appendix 2 English Questionnaire

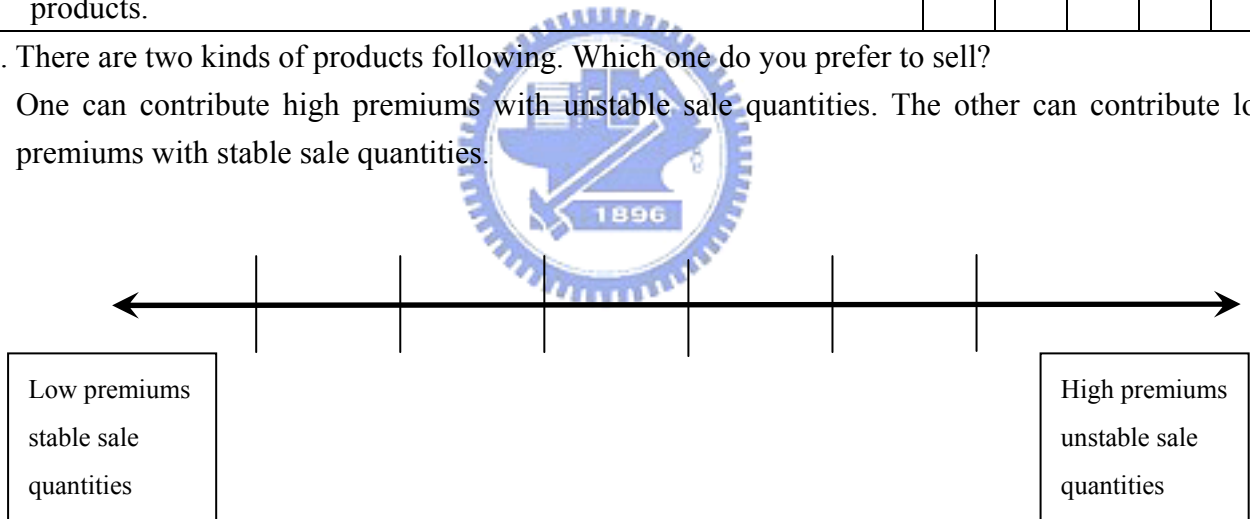
The first part

	Strongly disagree (1)	↔			Strongly agree (5)
1. When customers are nasty to me, I feel very little responsibility to treat them well	1	2	3	4	5
2. I sometimes find it difficult to see things from customers' point of view	1	2	3	4	5
3. Other customers' purchase-related misfortunes do not usually disturb me a great deal	1	2	3	4	5
4. If I'm sure I'm right about something, I don't waste much time listening to other customers' arguments	1	2	3	4	5
5. When I see customers being treated unfairly, I sometimes don't feel very much pity for them	1	2	3	4	5
6. I would feel obligated to do a favor for customers who needed it, even though they had shown no gratitude for past favors	1	2	3	4	5
7. When dealing with customers, I would describe myself as a pretty soft-hearted person	1	2	3	4	5
8. When dealing with customers, I choose alternatives that are intended to meet customers' needs	1	2	3	4	5
9. When dealing with customers, I choose a course of action that maximizes the help other customers receive	1	2	3	4	5
10. When dealing with customers, I choose a course of action that considers the rights of all customers involved	1	2	3	4	5
11. My decisions are usually based on concern for the welfare of customers	1	2	3	4	5
12. When dealing with customers, I choose alternatives that minimize the negative consequences to customers	1	2	3	4	5
13. I help a customer who I don't know that well with a product-unrelated problem when my knowledge is greater than his or hers	1	2	3	4	5
14. I help customers with personal problems	1	2	3	4	5
15. I show customers where to go to get what they need	1	2	3	4	5
16. I do more than customer expected to help serve the customer	1	2	3	4	5

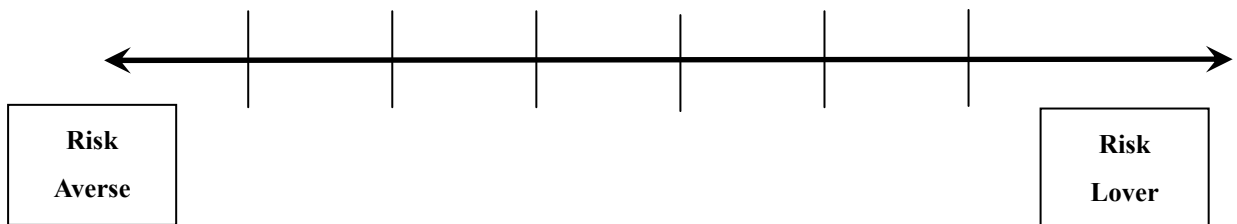
The second part

	Strongly disagree (1) \longleftrightarrow Strongly agree (5)				
1. If possible, I will not actively promote new products because I'm afraid that the bad sales performance will influence my bonus.	1	2	3	4	5
2. I like to promote new products because it's challenge.	1	2	3	4	5
3. I would spend my effort to study how to promote new products, no matter what the products are hot in the future.	1	2	3	4	5
4. I will still promote products as usual even though I don't think many people will buy them.	1	2	3	4	5
5. I will still promote products as usual even though I expect that customers will only buy a small number of products.	1	2	3	4	5

6. There are two kinds of products following. Which one do you prefer to sell?
 One can contribute high premiums with unstable sale quantities. The other can contribute low premiums with stable sale quantities.



7. Please evaluate your level of risk tolerance?



The third part

1. **Gender** Male Female
2. **Marital status** Single Married (____Children)
3. **Industry** Life-insurance Finance High-tech Agency Service Others
4. **Educational level** under junior high school Senior high school University/College
Master Ph.D
5. **Seniority** Below 1 year 1~2 years 2~3 years 3~4years 4~5 years Above 5 years
6. **Job position** Self-employed General employee Manager Consultant/advisor
Researcher Others
7. **Age** Under 20 21~25 26~30 31~35 36~40 41~45 46~50 Above 51
8. **Monthly salary** Below 30000 30001~40000 40001~50000 50001~60000 Above 60000
9. **Monthly bonus percentage** Below 10% 10%~20% 21%~30% 31%~40%
41%~50% Above 51%
10. **Growing history** Always tough Moderate Always smooth
11. **Working location** To the north of Hsinchu Miao-li~YunLin To the south of Chia-yi
Yi-lan, Hua-lien, Taitung
12. **Customer segment** B2B B2C



Appendix 3 LISREL Output

Degrees of Freedom = 74
Minimum Fit Function Chi-Square = 208.00 (P = 0.00)
Normal Theory Weighted Least Squares Chi-Square = 208.15 (P = 0.00)
Estimated Non-centrality Parameter (NCP) = 134.15
90 Percent Confidence Interval for NCP = (94.88 ; 181.07)
Minimum Fit Function Value = 0.75
Population Discrepancy Function Value (F0) = 0.49
90 Percent Confidence Interval for F0 = (0.34 ; 0.66)
Root Mean Square Error of Approximation (RMSEA) = 0.081
90 Percent Confidence Interval for RMSEA = (0.068 ; 0.094)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00
Expected Cross-Validation Index (ECVI) = 0.98
90 Percent Confidence Interval for ECVI = (0.84 ; 1.15)
ECVI for Saturated Model = 0.76
ECVI for Independence Model = 6.61
Chi-Square for Independence Model with 91 Degrees of Freedom = 1796.73
Independence AIC = 1824.73
Model AIC = 270.15
Saturated AIC = 210.00
Independence CAIC = 1889.47
Model CAIC = 413.50
Saturated CAIC = 695.52
Normed Fit Index (NFI) = 0.88
Non-Normed Fit Index (NNFI) = 0.90
Parsimony Normed Fit Index (PNFI) = 0.72
Comparative Fit Index (CFI) = 0.92
Incremental Fit Index (IFI) = 0.92
Relative Fit Index (RFI) = 0.86
Critical N (CN) = 140.60
Root Mean Square Residual (RMR) = 0.043
Standardized RMR = 0.062
Goodness of Fit Index (GFI) = 0.90
Adjusted Goodness of Fit Index (AGFI) = 0.86
Parsimony Goodness of Fit Index (PGFI) = 0.64

