

國立交通大學

高階主管管理學程碩士班

碩士論文

博物館觀眾涉入程度與滿意度、推薦意願的關係研究

A Study of the Relationship of Visitor Involvement, Satisfaction, and
Intention to Recommend in Museum Visit

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論文摘要

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摘 要

本論文的目的是探討在參觀博物館時，觀眾的涉入程度與滿意度、推薦意願之間的關係。研究地點為位於台中的國立自然科學博物館，觀眾調查時間為 2008 年 7 月至 8 月之間，受訪者為已參觀過博物館而正要離開博物館的觀眾。研究期間共收集到 392 份問卷，但只有 352 份有效資料用來進行統計分析。變異數分析顯示觀眾的會員狀態與涉入程度對到館參觀次數、整體滿意度和推薦意願有顯著的影響。其中會員與高涉入程度觀眾有較高的參觀次數、滿意度和推薦意願。以只包含滿意度和推薦意願兩潛在因子的結構方程式模型分析顯示滿意度與推薦意願有正向的關連性，高滿意度的觀眾也有較高推薦意願。當把觀眾涉入程度放進模型分析時，這外在因子對滿意度和推薦意願都有顯著的正向影響，但滿意度對推薦意願這途徑的效應卻顯得很低。這結果顯示涉入程度對滿意度和推薦意願是很強的預測因子。最後論文亦探討這發現在管理上的意涵。

關鍵詞：博物館觀眾研究、觀眾涉入程度、觀眾滿意度、觀眾推薦意願

The Study of the Relationship of Visitor Involvement, Satisfaction and Intention to Recommend in Museum Visit

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ABSTRACT

This study set out to investigate the relationship of visitor involvement, satisfaction and intention to recommend in museum visit. A survey study was conducted at the National Museum of Natural Science from July to August 2008 during normal museum hours and a total of 335 cases were included in the analyses. Means comparison analyses showed that both membership status and level of involvement have significant effects on frequency of visit, scores of overall satisfaction and intention to recommend with member and visitors of high involvement visit more frequently, are more satisfy and more likely to recommend. Structural equation modeling analysis with the two latent variables satisfaction and intention to recommend showed a significant positive link of satisfaction to intention to recommend. However, when involvement was included in the analysis, this exogenous variable showed strong link to satisfaction and intention to recommend, but diminish the link of satisfaction to intention to recommend to minimum. This result indicated that involvement is a strong predictor of both satisfaction and intention to recommend. Managerial implications for developing high involvement museum programs are also discussed.

Keywords: Museum visitor study, visitor involvement, visitor satisfaction, intention to recommend.

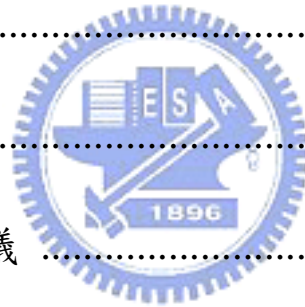
誌 謝

在交通大學進修 EMBA 學程的兩年當中，首先感謝家人的支持，特別是假日少了機會陪小朋友去騎腳踏車；不過也讓兩個還在求學的小朋友看到終身學習的「最佳示範」。另外台中組同學榮邦、進利、文彬和嘉禧上課時共同為作業奮鬥的情景，和共乘上課時路上的各種笑話，都特別懷念。在研究方面，特別張家齊老師帶領進入消費者行為的領域和對論文問卷的建議，研究室聚會時的討論也擴大了研究的視野。也感謝兩位口試委員對改進論文的建議。最後，但絕對不是貢獻最少的是國立台北藝術大學博物館研究所的同學，英豪、挹芬、曉華、捷葳、孟倫、凱蘭和逢甲大學的玉茹，在實習期間協助問卷資料的收集，謝謝你們。



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CHAPTER I Introduction

Traditionally, museums held the trust of the society for the preservation of the invaluable past through their collections. This object-based functional approach has long been one of the core missions of the museums. However, recent development in the museum field has shift to a people-based purposive approach with emphasis placed on the value of collections for enhancing public learning (Falk and Sheppard, 2006; Rentchler, 2007). In other words, new museum practice should “starting with the person rather than starting with the subject matter” (Falk and Sheppard, 2006). Following such development, both academics and general public increasingly see museum collection as public resource and demand more accessibility to them (Keene, 2008).

At the time when museums switched to a market oriented operation and focus more on the need and desires of their customers, the downturn of economic development in the late 90s’ also play a significant role in reinforce this change. For example, The National Museum of Natural Science (abbreviated as NMNS thereafter) , the target institution of the present study, received full financial support from the central government for the last twenty years. But since 2006, following a rather successful implementation of endowment fund system for the public university sector, the Taiwanese central

government attempted to experiment this financial system for public cultural institutions. Three museums were selected for this imitative and NMNS is one of these museums. As such, NMNS had to responsible for approximately fifteen percent of the annual total budget in the first year and the self-funded percentage will subject to future revision. For NMNS and many other museums alike, admission charge is the primary source of revenue. Under this new financial challenge, meeting the needs and expectation of the public became an important issue and new challenges for the museum managements in order to maintain their sustainability. In fact, it's almost a universal recognition that the continuous improvement of customer satisfaction is the ultimate goal for any business which has to deal with the public. This is particularly relevant to the public institutions such as museums. In addition, it has long been shown in the business sector that an organizational success is tightly linked to its customers' satisfaction. For the museum sector, there are certainly many lessons can be learned.

The quest of governmental service excellence is another source of change. Since the early 2000, the Taiwanese government had launched various initiatives to measure how well different government departments serve the public to improve accountability of the government. One of these initiatives is

the award of service excellence of public institutions similar to the Baldrige National Quality Award of the United States (interestingly, the total score of 1000 is very much alike for the two programs). Among the many measurements of service quality in the programs, customer satisfaction score accounts for no less than twenty percent of the total scores. All these effort reflect how the government places the emphasis on meeting or exceeding the public perception of service they received from the government.

The combined influence of functional changes from within the museum sector and various economic as well as regulation changes challenge the traditional management of modern day museums which had long been protected from the harsh competition from the commercial sector. Consequently, today museums no longer afford to neglect the perceived satisfaction from the public they serve and all these will validate the ongoing customer satisfaction research agenda.

The ultimate goals of any systematic research program are to generate generalization and prediction and thus facilitating managerial improvement. Falk and Sheppard (2006) pointed out that over the years, museum visitor studies had provided us with information in the understanding of the motivation of museum visit as well as the experience they get from the visit. However, the

demographic information such as age, gender, income, education levels and the like collected in these early studies shown to be poor predictors for the behavior of museum visitors (Falk and Sheppard, 2006; Lau, 2007). In fact, it has long been demonstrated in consumer behavior research that demographic characteristics are surface descriptors of consumers and they only reveal the “who” of the consumer behavior, but not necessary the motivation or the why of their consumption (Assael, 2004). Other important characteristics in predicating consumer behavior might include lifestyle, personality and involvement. In reviewing recent marketing strategies for cultural institutions, Kolb (2005) pointed out that the rise of cultural consumers in recent years provided an opportunity for cultural institutions to broaden their visitors. In addition, as in other consumer categories, cultural consumers may show different levels of involvement at consumption and it’s reasonable to believe that satisfaction may vary according to different involvement level. Consequently, this study aims to:

1. Measure the scores of overall visitor satisfaction and willing to recommend in a museum visit.
2. Confirm the attributes that are responsible for visitor satisfaction.
3. Examine how levels of satisfaction may affect visitors’ willingness to recommend the museum.

4. Determine how different level of visitor involvement may affect their levels of satisfaction and intention to recommend.

And in particular, this study set out to test the following research hypotheses

(see Figure 1):

H1: There is a positive relationship between visitor satisfaction and intention to recommend.

H2: There is a positive relationship between visitor's involvement levels and satisfaction, and

H3: There is a positive relationship between visitor's involvement levels and their intention to recommend.

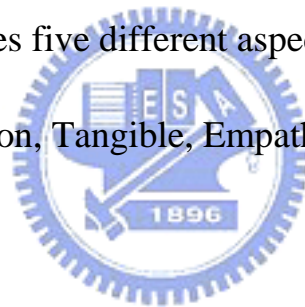


CHAPTER II Review of Literatures

The study of consumer satisfaction has been dominated by the disconfirmation theory which defines satisfaction as an attitude-like judgment following a consumer-product/service interaction. The essence of the theory states that satisfaction is the results from the confirmation and disconfirmation of consumers' pre-formed standard (expectation) of product/service (Lovelock, 2001). In the museum context, this model argues that visitors have certain expectation for a special program such as the seeing of rare collection or myriad interesting interactive exhibits in an exhibition, observe the exhibit performance and compare it to their expectations, and then form satisfaction judgment based on this comparison. If the comparison is better than the expectation, a positive disconfirmation will result, and negative disconfirmation when worse than expected. This practice is often adopted in museum to evaluate the performance of an exhibit (e.g. Lau, unpublished data).

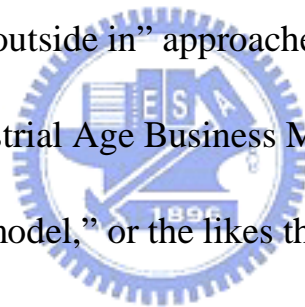
Early studies on satisfaction focused on the identification of drivers that lead to customer delight and the operationalization of customer satisfaction and its antecedents. However, knowing customers' negative and positive disconfirmation in a service encounter doesn't provide enough information

where improvement can be made. It's the work of Parasuraman, Zeithaml, and Berry in the late 80's that provide managers a conceptual model to analyze where discrepancy in quality/satisfaction arise within the organization. Once the sources of discrepancy are identified, remedy plans can then be designed and implemented to improve the service quality accordingly. This conceptual model is now known as the Gap Model of Service Quality (Zeithaml et al., 1990). Later, Parasuraman, Zeithaml, and Berry jointly developed a scale to measure service quality which has been adapted to various industries. The scale is known as SERVQUAL and comprises five different aspects of service quality, including Responsiveness, Affirmation, Tangible, Empathy, and Reliability (Zeithaml et al., 1990).



To museum practitioners, borrowing ideas from the business sector is not new. In the 90s, when museums were faced with declined governmental support and a rise in competition for audiences across the leisure industry, museums turned to the business sector for insight into marketing ideas on how to market museums and find ways to broaden their audiences. Suddenly, marketing terminology such as SWOT analysis, strategic management, and branding infused into museum lexicon, as evidenced in the booming of literatures in museum marketing (e.g. Bernstein, 2007; Kolb, 2005; Kotler and Kotler, 1999;

Rentschler and Hede, 2007; Sandell and Janes, 2007; Wallace, 2006). Under these influences, museums programs became audience centered in order to meet public needs and desires. Renowned museum educator John Falk even used the term “new business model” when he expanded his interactive museum experience model to “Museum Knowledge Age Business Model” in which museums should be operated under three contexts, including social, political and economic contexts. There is a two-way flow of information within each context which interacts intimately with the museum’s operation, i.e. museums will take on both “inside out” and “outside in” approaches. This is in sharp contrast to the mere inward looking Industrial Age Business Model (Falk and Sheppard, 2006). Words such as “business model,” or the likes there of are no longer considered to be dirty words by most museum professions now.

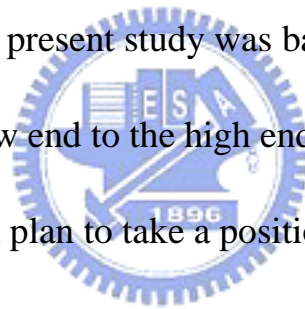


SERVQUAL has been adopted in cultural institutions such as heritage sites, historic houses, and museums to measure service quality (e.g. Adams, 2001; Chen & Lin, 2003; Frochot, 2001b; Kao, 2000). However, experiences such as museum’s interpretive/communication approach to exhibits and learning outcomes are an important component of museum visit and the original SERVQUAL scale doesn’t include this aspect of service quality. Consequently, modification of the original SERVQUAL is needed in order to capture the true

scope of service quality in cultural institutions. Among these adapted scales, the HISTOQUAL scale is the best known example for historic house (Frochot, 2001a, b) and later another modification became MUSEQUAL for museum in general (Black, 2005). These scales retain the five dimensionalities of the original SERVQUAL scale while adapting it to historic house and museum contexts. For example, the two service quality dimensions, communication and consumables, have replaced reliability and assurance in the both HISTOQUAL and MUSEQUAL scales. The communication aspect measures how well the museum communicate information through various way-finding design, usefulness of websites as well as foreign language leaflets, since many of these museums and historic sites are international well-known attraction locations where foreign visitors frequently visit. As for consumables, this includes various in house services such as restaurants and gift shops. So food quality as well as selection and quality of souvenirs will be determinants of service quality. In fact, food and gift shop services contribute a very significant part of the total revenues for these cultural institutions. Consequently, it's understandable that cultural institutions pay a high mark on the performance of these service aspects.

Involvement can be defined as an individual's levels of interest or importance on an object or activities such as visiting museums. Previous studies

revealed that consumer involvement can influence their perception of satisfaction (Rogers, 1998). Further studies indicated that involvement may comprise three dimensions: perceived product importance, symbolic value of the product, and the hedonic value of the product (Rogers, 1998). In discussing culture consumer by using media users and football fans as illustrated examples, Kolb (2005) identify five levels of involvement ranging from Consumer at the lower end, moving progressively to Fan, Cultist, Enthusiast, and Petty Producer at the highest end with increasing level of involvement. The measurement scale of involvement used in the present study was based on this reasoning with occasional visitor at the low end to the high end Petty Producer who starts collecting, researching and plan to take a position in the museum as a career choice.



Chapter III Methodology

This study adopted a survey research approach to collect opinion from many people. In addition to the collection of demographic information of museum visitors, this study will examine the attributes of museum visitor satisfaction construct and determine the relationship of visitor satisfaction and their intention to recommend. Finally, the study will attempt to identify how different levels of visitor involvement might affect their perception of satisfaction and intention to recommend. The theoretical relationship of these variables is shown in Figure 1.

A three-part self-administered questionnaire was used in this study to elicit response from participants. The instrument consisted of three sections and each section was designed to gather information relevant to 1) three dimensions of visitor satisfaction, 2) levels of involvement and intention to recommend, and 3) demographics. Each section begin with an introduction and present instruction of how to response to the questionnaire.

The visitor satisfaction section of the questionnaire was modified from the conceptual model of museum visitor satisfaction advanced by Harrison and Shaw (2004). In Harrison and Shaw's original questionnaire, there are only three questions in measuring the service aspect of visitor satisfaction, including accessible, informative and friendly. In order to be more informative, this study

expanded the number of questions in the service aspect to fourteen to reflect the relevancy to the present museum context. Some of the questions added are 1) ticket pricing information, 2) waiting time, 3) convenient of opening hours etc. Likewise, questions related to word of mouth (intention to recommend) were adopted from Harrison-Walker's work (Harrison-Walker, 2001). For each question of the questionnaire, a seven-point Likert-type scale is anchored with "Lower than my expected satisfaction level" at the low end and "Better than my expected satisfaction level" for the high end. As suggested by Allen and Rao, a seven-point scale is preferred to a 5-point scale since the former provide a wider score dispersion around the mean, thus providing better discrimination power for the analysis. Secondly, the wider dispersion will also facilitate the establishment of covariance between two variables which is essential for multivariate analysis such as the structural equation modeling used in this study (Allen and Rao, 2000).

This study was conducted during the normal museum hours from July 15 to August 31 of 2008. A total of 393 participants were selected by convenience sampling at the exit when they were about to leave the museum. When the participants completed the questionnaire, each participant received a souvenir pencil or eraser as an appreciation for their participation. Since the participants

of the study were sampled by non-probability framework, no sampling error can be estimated from this study (Churchill and Iacobucci, 2005).

SPSS statistical software was used to manage and analyze the data. Prior to data analysis, descriptive statistics was used to reveal the number of incomplete data. 58 cases or fifteen percent of the total data set was identified as incomplete data. Cases with incomplete data were list-wisely deleted and excluded from the analysis. Only 335 cases were used in subsequent analysis. Byrne (2001) compared model fit for full data to incomplete data and showed that no significant effect on model fit was evident even as high as twenty-five percent of the data was removed from the analysis.

In order to adopt SPSS Generalized Linear Modeling procedure for comparing the effect of involvement levels on overall scores of satisfaction and intention to recommend, the original continuous involvement scores (ranged from 17 to 119) were recoded by three percentile cutting points (33%, 67% and 99%) to categorical variable with three levels of involvement: low (<78), medium (79-90), and high (>90). Finally, AMOS 16.0 program for structural equation modeling was used to test for the overall “goodness of fit” and the statistical significance of the hypothesized relationships described in the proposed conceptual model (Figure 1).

CHAPTER V Results

Analysis of demographic data revealed that the sample comprised 55% female and 20% member (combination of individual and family membership). By examining the relationship between membership status and frequency of visit, members visit on average 8.4 times a year compared to 1.4 times for non-members. An independent t-test revealed that there was significant differences between member and non-member in frequency of visit ($t=7.75$, $df=68$, $p<0.000$). In addition, an one-way analysis of variance was conducted to compare the effect of levels of involvement on frequency of visit showed that there was significant difference in frequency of visit among visitors of three different involvement levels ($F_{2,322}=6.87$, $p=0.001$). High involvement visitors on average visit 3.9 times a year as compared to 2.9 times per year and 1.7 times per year for medium and low involvement visitors respectively.

In order to compare the scores of overall satisfaction and intention to recommend scores across gender, membership status and levels of involvement, two three-way univariate analysis of variance were conducted separately for the two dependent variables. Results of the analysis for overall satisfaction scores were summarized in Table 1. As indicated in the table, the three two-way interactions and the one three-way interaction were all found to be

non-significant, so as for gender. The remaining two main effects, membership status and levels of involvement, were found to be highly significant.

Table 1. Summary of ANOVA results for Overall Satisfaction Score

Tests of Between-Subjects Effects

Dependent Variable: Sat_Overall

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	39.136 ^a	11	3.558	4.699	.000	.140
Intercept	6267.881	1	6267.881	8278.808	.000	.963
Gender	.263	1	.263	.348	.556	.001
membership	5.549	1	5.549	7.329	.007	.023
Invol_Levels	11.014	2	5.507	7.274	.001	.044
Gender * membership	.437	1	.437	.577	.448	.002
Gender * Invol_Levels	.185	2	.093	.122	.885	.001
membership * Invol_Levels	1.085	2	.542	.716	.489	.004
Gender * membership * Invol_Levels	.818	2	.409	.540	.583	.003
Error	240.001	317	.757			
Total	11648.000	329				
Corrected Total	279.137	328				

a. R Squared = .140 (Adjusted R Squared = .110)

Table 2 summarized the analysis of variance results for intention to recommend scores. Similar results were found for this analysis with the gender main effect and the three two-way interactions and the one three-way interaction all shown to be non-significant. Again, the membership status and levels of involvement main effects were all found to be highly significant. Both members and visitors with high levels of involvement are more likely to recommend the museum to others. The results of these two analyses revealed that indicators of involvement such as membership status and levels of involvement all have significant effect on scores of overall satisfaction and intention to recommend.

Table 2. Summary of ANOVA results for Intention to Recommend Score

Tests of Between-Subjects Effects

Dependent Variable: WoM_Total

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	8202.417 ^a	11	745.674	23.976	.000	.454
Intercept	155575.871	1	155575.871	5002.211	.000	.940
Gender	19.059	1	19.059	.613	.434	.002
membership	1271.457	1	1271.457	40.881	.000	.114
Invol_Levels	2513.780	2	1256.890	40.413	.000	.203
Gender * membership	3.863	1	3.863	.124	.725	.000
Gender * Invol_Levels	84.832	2	42.416	1.364	.257	.009
membership * Invol_Levels	39.204	2	19.602	.630	.533	.004
Gender * membership * Invol_Levels	8.856	2	4.428	.142	.867	.001
Error	9859.151	317	31.101			
Total	281345.000	329				
Corrected Total	18061.568	328				

a. R Squared = .454 (Adjusted R Squared = .435)

Prior to the use of structural equation modeling to examine the goodness of fit of the proposed conceptual model, individual confirmatory factor analysis was conducted to validate the measurement model of each latent variable. The results of this preliminary analysis were summarized in Table 3 and the first order CFA of the satisfaction dimensions was shown in Figure 2. Overall, these measurement models showed marginal to acceptable fit after modifications of the covariance structures of the error terms by releasing the constraints of the correlation of error terms, which may result from redundant questions with different wording (Byrne, 2001). Consequently, in the process of improving the fit by examining the modification index of the analysis, none of the observable (manifest) variables in the analysis was deleted, since all the questions in the

questionnaire were seems relevant to the present study and removal of items without sound theoretical basis was unjustified. However, since there was one observable variable in the involvement construct showed a negative loading and this variable was subsequently removed from the analysis.

Table 3. Summary of AMOS CFA model fit.

	First Order CFA of the dimensions of Satisfaction	CFA Word of Mouth	CFA Involvement
Criteria			
Chi-Square	798.09, df=314, $p=0.000$	14.71, df=8, $p=0.06$	295.3, df=96, $p=0.00$
CMIN/DF (<3.0)	2.54	1.84	3.08
CFI (Close to 1)	0.927	0.994	0.903
RMSEA (<0.1)	0.068	0.05	0.079

The second stage of the analysis was to examine a second order confirmatory factor analysis on satisfaction to the latent variables Facilities, Services and Experience. Results indicated that the model show an acceptable fit

with the observed data (Chi-square=798.1, $df=314$, $p=0.000$; CMIN/DF=2.542; CFI=0.927; RMSEA=0.068). The corresponding standardized regression weight of Satisfaction to Facilities, Satisfaction to Services, and Satisfaction to Experience are 0.86, 0.90, and 0.71 respectively, indicating that these three latent variables show a positive and strong link to the common factor Satisfaction.

The next step of the analysis was to determine the link between Satisfaction to Intention to Recommend. AMOS output revealed that the fit was acceptable (Chi-square=1093.9, $df=483$, $p=0.000$; CMIN/DF=2.265; CFI=0.922; RMSEA=0.062). In addition, the link between Satisfaction to Intention to Recommend was positive with a standardized regression weight of 0.43 which was statistically significant (Estimate = 0.94, C.R.=6.05, $p<0.001$). Based on these results, H1 of a positive relationship between Satisfaction and Intention to Recommend was supported (Figure 3).

The final analysis was to examine the fit of the complete model with Involvement as an exogenous variable. Results from AMOS revealed that the fit was acceptable (Chi-square=2233.3, $df=1153$, $p=0.000$; CMIN/DF=1.937; CFI=0.896; RMSEA=0.053). It's evident from Figure 4 that there are significant positive and strong link from Involvement to both Satisfaction and Intention to

Recommend, with standardized regression weight 0.51 (Estimate = 0.57, C.R.=4.25, $p < 0.001$) and 0.77 (Estimate = 1.89, C.R.=4.79, $p < 0.001$) respectively. However, it's also interesting to find out that with the complete model, the link between Satisfaction to Intention to Recommend become very weak with a standard regression weight of 0.03 (Estimate = 0.063, C.R.=0.49, NS). In this case, Involvement becomes a stronger predictor for both Intention to Recommend and Satisfaction itself. So both H2 and H3 of a positive relationship between Involvement and Satisfaction and Intention to Recommend are supported. However, H1 was not supported in the full model.



CHAPTER V Discussion and Managerial Implications

This study set out to understand the relationship of involvement, satisfaction and intention to recommend in a museum visit. The results indicate that membership status and levels of involvement both have significant effects on frequency of visit, scores of overall satisfaction and intention to recommend. Members and visitors with high level of involvement visit museum more frequently, are more satisfied, and are more willing to recommend the museum. Since membership status could be an indicator of visitor's involvement, it's reasonable to expect both membership status and levels of involvement may tap similar behavioral dimension and exhibit a significant effect on these measurements.



The study also demonstrated that the common factor Satisfaction comprised three latent variables Facilities, Services, and Experience. As suggested by several museum researchers, experience is a very important component of museum visit (Falk and Dierking, 1992; Weaver, 2007). People visit museums and look for sophisticated, meaningful, and memorable experiences. Pine and Gilmore (1999) had identified four realms of experiences encompassing educational, entertainment, esthetic and escapist. Harrison and Shaw (2004) showed that experience is a major contributing variable to satisfaction and a

strong predictor of recommending to others. Some recent studies carried out to examine service quality and satisfaction of NMNS had adopted the original SERVQUAL scale or developed a unique scale to measure satisfaction and loyalty (Chen & Lin, 2003; Hsiao et al, 2006; Kao, 2000). However, these studies didn't incorporate experience in their measurement. With experience excluded from the studies, these measurements can not capture the true distinctive dimension of satisfaction in museum visit.

This study also examines the relationship of satisfaction and intention to recommend. AMOS analysis showed that there exists a positive relationship as suggested by the proposed conceptual model. Consumer behavior researches have demonstrated that customer satisfaction is not an end in itself but links to numerous benefits including insulating customers from competitors, creating sustainable advantage, reducing failure costs, encouraging repeat patronage and loyalty, enhancing or promoting positive word of mouth, and lowering costs of attracting new customers (Lovelock, 2001). From the museum perspective, visitor loyalty is certainly good for they will come back again and again. But recommendation through positive word of mouth is more important than loyalty because the later focus more on the retention of customers while the present challenges for all cultural institutions is find ways to attract new visitors

(Bernstein, 2007; Kolb, 2005; Kotler and Kotler, 1998). In addition, when museum launches new blockbuster exhibition, substantial amount of resource was invested into the development of these exhibitions, the financial success of the exhibition will largely depend on the number of attendance and recommendation by spreading positive word of mouth will be an important contributing factor in this regards.

The relationship of involvement, satisfaction and intention to recommend was finally examined and the findings showed consistency with past findings from consumer behavior researches. Both satisfaction and intention to recommend were affected positively by visitors' levels of involvement. In this study, involvement is assumed to be positively correlated to satisfaction while sometimes the reverse may be true, since high involvement visitors can be very discriminating and are harder to satisfy. The reason behind this assumption is that high involvement visitors are keener to recognize museum's social values and appreciate the diverse memorable experience received in the past, so they are more likely to forgive when service failure occurs and believe this is a deviation from the norm (Lovelock, 2001). But distinctive from previous studies on museum visitor satisfaction, the results indicated that with involvement included in the analysis, the strength of link between satisfactions to intention to

recommend diminish to a minimal. This result may provide a new insight for museum managements. While it's important to keeping up with good service and thus high satisfaction from facilities, services and experience. It's even more important to develop high involvement programs to engage visitors. For example, museum exhibit developer should take a constructivist rather than didactic approach to develop exhibit with content link to visitors' life experience. These engaging exhibits will facilitate visitors to construct their own meaning or understanding of the world we live in instead of seeing exhibits just as "illustrated lecture" (Black, 2005). Since the late ninety, this meaning-making exhibit approach has caused enthusiast discussion among exhibition professions. Accompanied with this new approach of exhibit development to generate high visitor involvement, exhibit developers also need to take a proactive role to conduct front-end evaluation (though time consuming) to find out more about visitors' perception and knowledge of exhibition project with their views be possible adopted in the exhibition. This is very much like "listen to your customers" in many marketing researches.

In addition to developing high engaging programs to provoke behavioral involvement in these programs, museums also need to pay attention to the development of attitude involvement with the ultimate goal of turning visitors

from ordinary consumers into enthusiast or advocates (Kolb, 2005; Smith and Wheeler, 2002). These are people constantly refer the museum to their friends, relatives, colleagues, and willing to offer their support and business, and even defend for your case. Smith and Wheeler (2202) emphasized that “loyalty must be designed and created” and provided a step-by-step practical approach to achieve this goal.

With declining economic climate, the twenty-first century museums are no longer immune from competition both for scarce resources from government funding and leisure time with the business sector. Museums are also no longer afforded to neglect the need and desires of the visitors. Consequently, museums need to learn more about their visitors, in addition to satisfying them, and engaging them to be more involved so they can spread positive word of mouth about the museum’s programs, and attract more visitors that are increasingly difficult to find.



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Appendix Questionnaire of the study



各位觀眾您好：

國立自然科學博物館為持續提升服務品質與滿意度，期望收集各位對本館各項服務及參觀經驗的意見，以做為科博館未來改善各項設施及服務之參考。您的回答對我們而言具有極高的參考價值，在此感謝各位對本次問卷調查的參與。

國立自然科學博物館展示組 劉德祥博士 敬上

第一部份：服務項目

請在下列 1-7 分的方格勾選其中一個，相較於您的期待，7 分表示此次參觀的最高滿意度，而 1 分表示此次參觀的最低滿意。

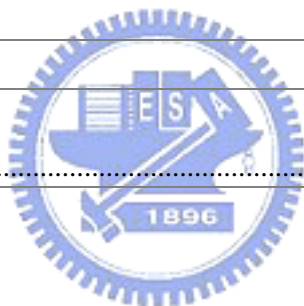
							
	比 期 待 的 不 滿 意						比 期 待 的 滿 意
甲、設施方面	1	2	3	4	5	6	7
1. 館區戶外庭園的整潔.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. 館內溫度的舒適性.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. 館內洗手間的整潔.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. 館內洗手間的位置標示.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. 館內展示場的位置標示.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. 館內的休息設施.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. 館區舒適與安全兼顧的感受.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
乙、服務方面	1	2	3	4	5	6	7
8. 售票亭的票價說明.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. 售票人員的對答態度.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. 購票的等待時間.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. 入場時查票服務人員的接待態度.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. 服務人員的儀容.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. 服務台人員回答問題的速度.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- | | | | | | | | |
|----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 14. 服務台人員回答資訊的正確性..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. 服務台人員解決問題的意願..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. 館內工讀生（穿卡其套裝）的服務態度..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. 館內清潔人員的服務態度..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. 紀念品店提供商品的選擇性..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. 紀念品店服務人員的態度..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. 摺頁（文宣品）所提供的資訊..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. 科博館開館時間的方便性..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

丙、參觀經驗方面

- | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 22. 展示主題的豐富性..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. 展示內容對好奇心的啟發..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. 展示內容提供的知識豐富性..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. 展示設計的美感..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. 學習與娛樂兼顧的感受..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. 票價/卡費有物超所值的感受..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 28. 您對科博館的整體滿意度..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



第二部份：請告訴我關於您自己

請在下列方格勾選您的選擇，7 分為最高分，表示您非常同意；1 分為最低分，表示您非常不同意

	非常不同意							非常同意
	1	2	3	4	5	6	7	
29. 您來博物館，只是爲了打發時間.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. 您來博物館，只爲了與親友聚會.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. 參觀博物館可以讓您感覺跟得上流行.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. 您在安排休閒活動時，會把參觀博物館列入考慮.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. 您因個人學習而到博物館.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. 您因家人學習而到博物館.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. 當您參觀博物館時，會依自己興趣選擇要看的展示.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. 您參觀博物館，只爲了要吸收到新的知識.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. 您會購買展覽相關出版品，來更深入了解展覽內容.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. 您除了展覽之外，還喜歡參加博物館舉辦的活動(例如座談會、親子活動).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. 若有與策展人對話的活動，您會願意參加.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. 只要吸引您的博物館展覽，即使在外縣市您也會前往參觀	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. 只要吸引您的博物館展覽，即使收費偏高您也會前往參觀	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. 即使無法親自看展，您也會追蹤該展的消息 (例如網路消息、新聞報導).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. 您會因爲參觀博物館，想要到博物館擔任志工.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. 您會因爲參觀博物館，而嚮往在博物館工作.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. 您會因喜歡參觀博物館而開始自己的收藏.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. 您會常常向朋友提到科博館的展示.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. 與別的博物館相比，科博館是您最常向人提到的博物館....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. 一旦談到科博館，就會讓您滔滔不絕地說個不停.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. 您只會向人提到科博館的優點.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. 當向別人提到科博館時，您會感到與有榮焉.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. 您會定期參觀科博館.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

性別 男 女

您的年齡是 16-20 21-25 26-30 31-35 36-40 41-45
46-50 51-55 56-60 60 以上

您的職業是 _____

您目前家住 _____ (縣市)

您是科博館的 家庭卡友 恐龍卡友

如是卡友，請問已成爲卡友的時間是 _____ 年

不是卡友 您想成爲科博館的卡友嗎？ 想 不想

含今日在內，您過去 6 個月到科博館的次數約是 _____

您今日到科博館的同伴是 家庭成員 朋友/同學 其他 _____

您今日到科博館是因爲 家庭休閒活動 接待朋友 班遊/旅行團行程
 其他 _____



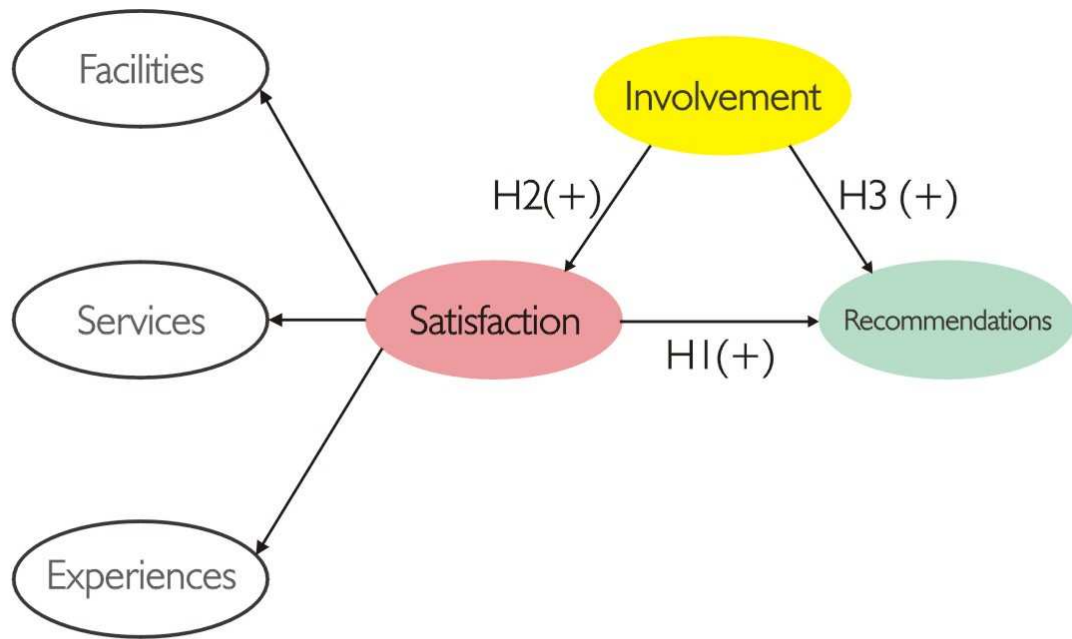


Figure 1. Conceptual Model of the Relationships among Satisfaction Elements, Involvement and Intention to Recommend.



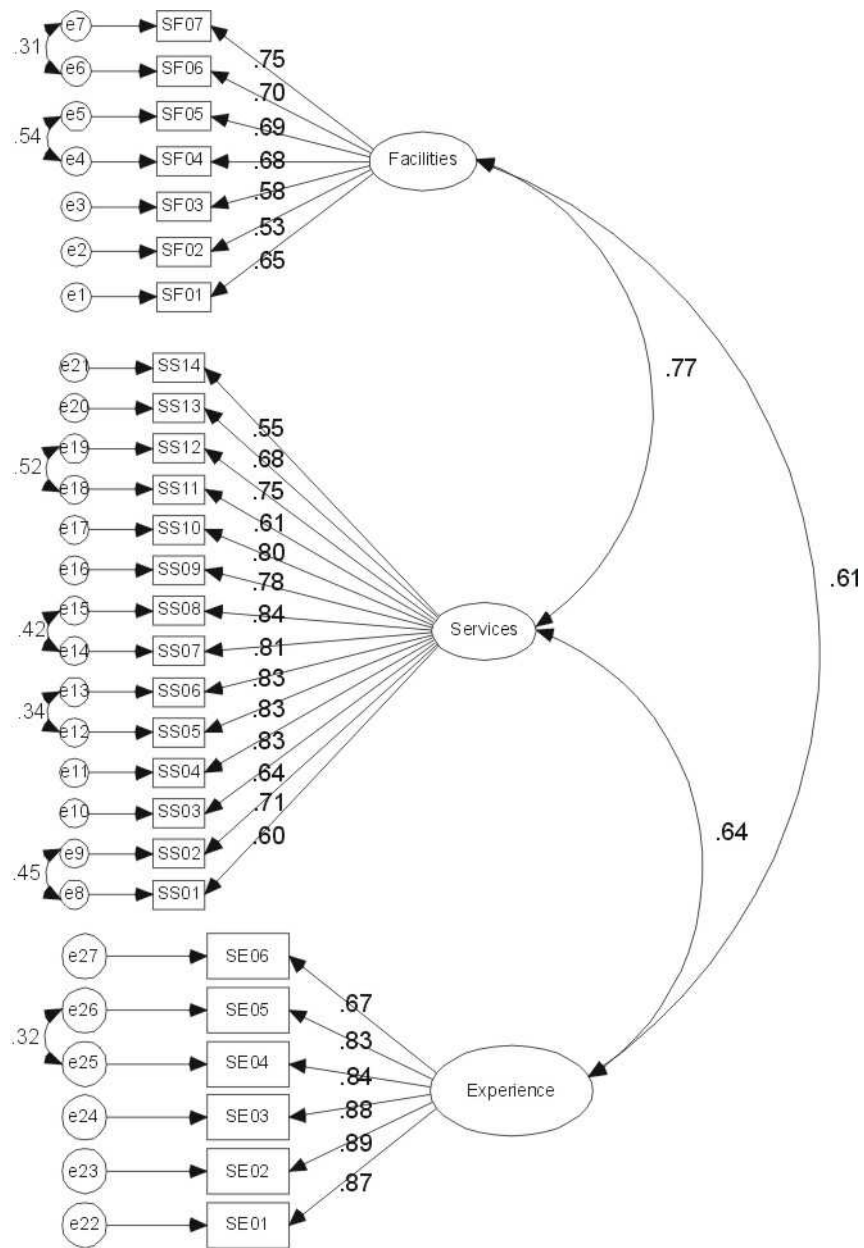


Figure 2. First Order CFA of the Satisfaction Dimensions

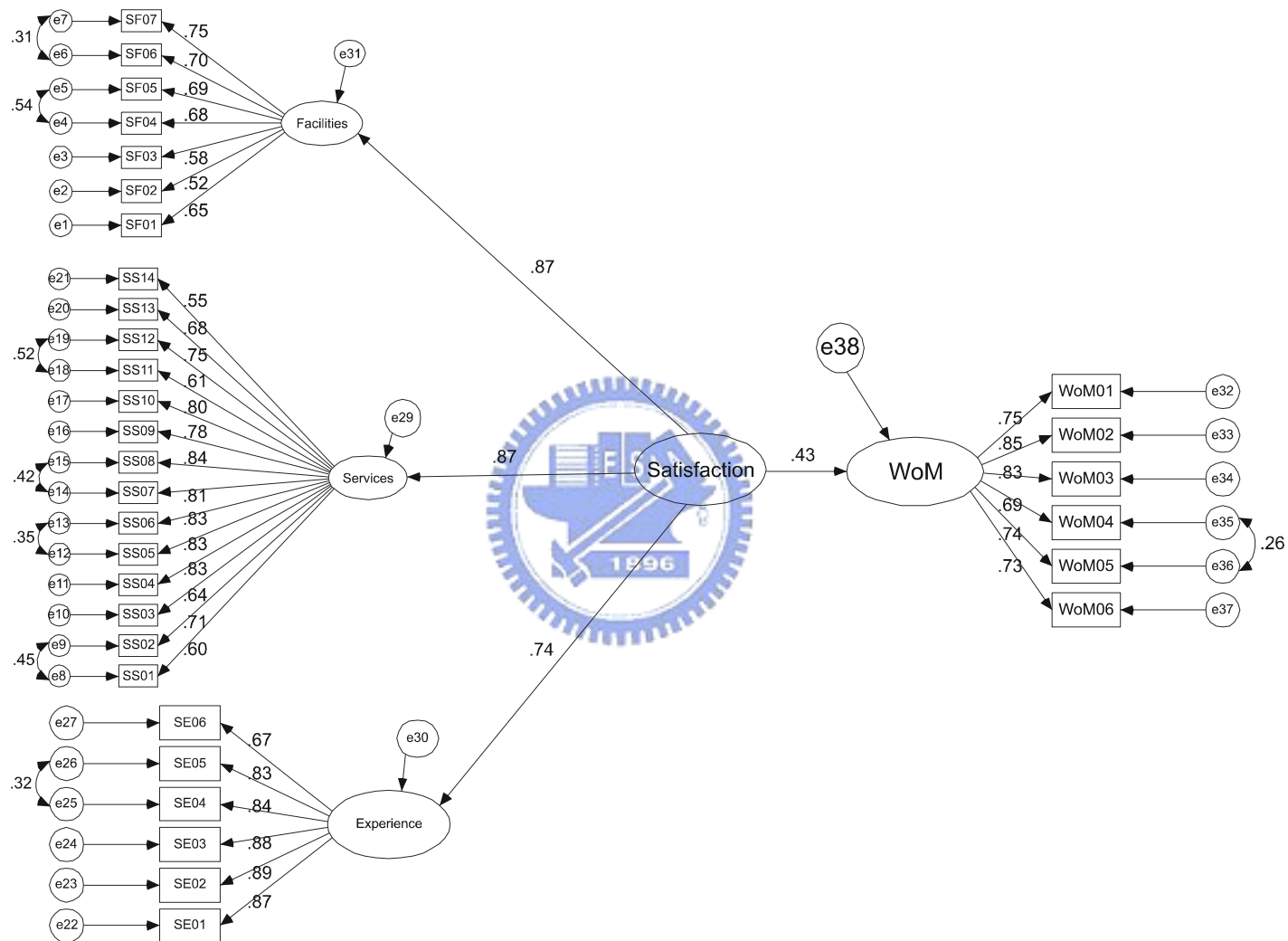


Figure 3. AMOS Model of Satisfaction and Intention to Recommend.

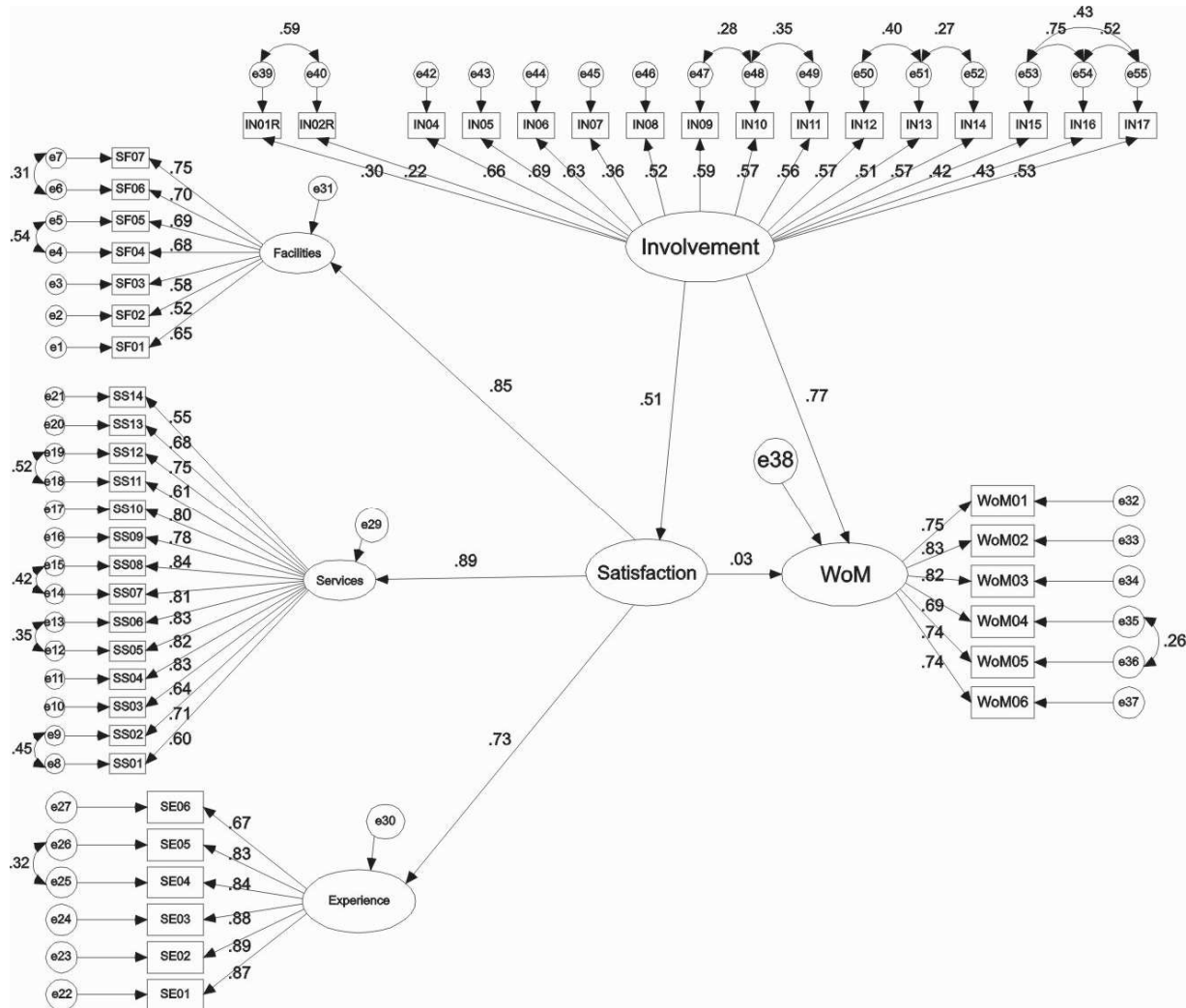


Figure 4. AMOS Model of Involvement, Satisfaction and Intention to Recommend

簡歷

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