

Exploring the Effect of Quality Relationship between Opportunism and Loyalty

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Abstract- The main purpose of this study is to examine the casual model and explain the relationship of opportunism, conflict, trust, commitment, satisfaction, and loyalty between hospitals and their suppliers. A survey is conducted of local community hospitals, regional hospitals and medical centers in Taiwan. Primary data is gathered using a questionnaire; this study investigates hospitals' procurement staffs that are responsible for selecting medical device suppliers. The sample consists of 481 valid responses for applying structural equation modeling (SEM) in this research. The study confirms almost all hypothesized associations between the constructs examined, indicating that the supplier's opportunistic behavior reduces trust and generates conflict. According to the significant mediation effect, showed that commitment plays a mediated role between trust and satisfaction, and satisfaction is a mediated factor to loyalty. Thereby displaying trust in addition to being an important factor in the success of supply chain management, but also an important factor in the success of alliances.

Index Terms- Opportunism, Relationship quality, Medical device supplier, Supply chain management, Loyalty

I. INTRODUCTION

In recent decades, due to the increasingly intense competition in the health care market, hospitals are facing pressure on operating revenue into profit era. Expected cost savings by hospitals to improve or maintain their competitiveness. While the hospitals are committed to improving the short-term performance or financial interests, which will lead to decision makers tend to increase opportunistic behaviors (Timothy, 2008).

As the companies want to maintain a partnership, extremely reluctant to see it's there, because opportunism can seriously harm the long-term potential of a cooperative relationship (Kirmani and Rao, 2000). Opportunistic behavior often has a strong negative moral connotation. It may put self-interest before other interests when there is an opportunity to do so, however, scant empirical attention has been given to examining the issue of opportunism in health care market relationships. Discussion of this topic is rare, and even ignored by researchers.

In the past researches, most of the management practices indicate that between opportunistic behavior and loyalty are mutually contradictory. If the partners trust each other, willing to strengthen partnership have positive influences for the future interactive relationship (Morgan & Hunt, 1994). People will only be committed to trustworthy partners, because commitment entails vulnerability and remains open to their opportunism (Read, 2009). On the contrary, opportunism among partners has a

significant negative impact (Yi Liu et al., 2010). They will also cause distress and affect each other's loyalty (Timothy, 2008), and may lead to increased transaction costs and decrease satisfaction, trust, future purchase intention and firm performance.

It can be seen above, although opportunistic behavior and loyalty are contradictory, but in the meantime, the two will be associated with certain factors, such as, satisfaction, trust, commitment and so on. Therefore, this study will try to use the relationship quality as the role of a mediator. It will be affected by opportunistic behavior, and will also affect the attitude of loyalty between partners. The aim of this article is twofold: The first one is to construct a theoretical model and to explain the relationship between hospitals and their suppliers, and the second one is to test and predict the empirical model. The model also takes into consideration the moderating effect of four important constructs that are highly valued in quality relationships—namely, trust, commitment, conflict and satisfaction.

II. LITERATURE REVIEW AND RESEARCH

This research develops a framework for investigating associations among the interrelationship between a supplier's opportunistic behavior, relationship quality and loyalty on the part of a hospital.

The specific constructs constituting the model are opportunism, conflict, trust, commitment, satisfaction, and the attitude of loyalty. The model also takes into consideration the moderating effect, that is, quality relationship and conflict. Indeed, measuring the relationship between opportunism and loyalty can be complex. In this part, this paper will describe the conceptual model and also defined hypotheses. The conceptual model formulated 7 research hypotheses (2 referring to associations between the key constructs and the rest focusing on moderating effects), the research hypotheses is shown in Fig. 1.

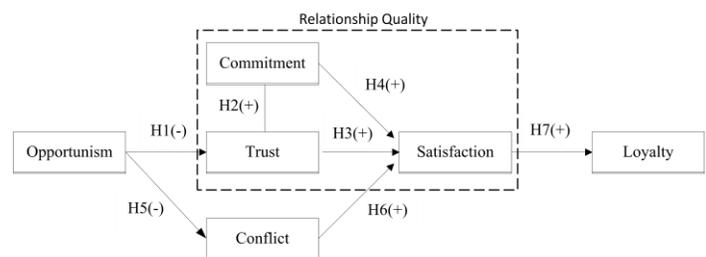


Figure 1: The conceptual model and the hypotheses

A. *Opportunistic behaviors*

Timothy et al. (2008) proposed that the companies committed to increase the financial interests in a competitive society, will lead to decision makers prone to opportunistic behaviors to increase the short-term benefits. Although opportunistic behavior would not happen in every transaction, but once medical suppliers opportunistic behavior occurred, may cause hospitals to face many problems. Rindfleisch et al. (2010) considered that the transaction cost theory is mainly dependent on two main concepts, one of which is opportunism; since in the transaction process, risks and uncertainties arising from opportunistic partners may make the transaction process to pay a considerable cost.

Williamson (1975: 255) famously defined opportunism as self-interest seeking with guile. He argued that: 'Economic man is a much more subtle and devious creature than the usual self-interest seeking assumption reveals'. Williamson (1985: 47) later elaborated the concept of opportunism in terms of 'the incomplete or distorted disclosure of information, especially to calculated efforts to mislead, distort, disguise, obfuscate, or otherwise confuse'. Shown in many studies, opportunism is inevitable between companies (Barnes et al., 2010; Williamson, 1985; Kenneth, 2000). Meanwhile, opportunistic behavior is usually not easy to be aware of; particularly in the management of hospital. Once opportunism occurs, rarely studies to explore how to react and deal with (Wong, 2005; Timothy, 2008).

B. *Opportunistic behaviors toward on the relationship quality*

From the preceding information, relationship quality is a critical indicator for analyzing the strength of the relationship between the firm and customer (Rutherford, 2007). Many investigators believe that the main factors in evaluating relationship quality as three different higher-order concepts, combining satisfaction, trust and commitment (Crosby et al., 1990; Hennig-Thurau, 2000; Smith, 1998). Relationship quality plays the role of a mediator in this study to capture the effect of relationship quality among opportunism and loyalty. To some extent, opportunistic actions may be unavoidable and are considered to generate negative intent on buyer-seller relationships (Armstrong & Yee, 2001). As partners engage in opportunistic behavior will result in reduction of trust (Carter & Kaufmann, 2007; Morgan & Hunt, 1994). In addition, trust creates a desire to continue and strengthen the relationship, which is useful for building relationship commitment (Leonidou, Paliawadana, & Theodosiou, 2006). Commitment represents the effort made to pursue or cultivate a relationship, in which a party may endure short-term sacrifices, costs, or restrictions to obtain long-term benefits (Anderson and David, 1988). Conversely, if a buyer has low levels of trust in a seller, there is a very large possibility that either party will not be committed to the relationship.

Many previous studies (Anderson & Narus 1990; Barnes et al., 2010) have found that trust has also a directly positive effect on satisfaction. This is because gaining trust in another partner enhances a feeling of security, thus facilitating engaging in a behavior that provides positive outcomes and prevents negative results (Leonidou, Paliawadana, & Theodosiou, 2006). Commitment is viewed as a key component in a business relationship because it not only typifies stability and long-term

intent, but also can lead to high levels of satisfaction (Mohr & Spekman 1994). The affective elements tend to play key roles in strengthening satisfactory relationships. Based on the above empirical research, this article proposed the following hypothesis:

- (H 1): Opportunism has positively associated with trust.
- (H 2): Trust has positively associated with commitment.
- (H 3): Trust has positively associated with satisfaction.
- (H 4): Commitment has positively associated with satisfaction.

C. *Opportunistic behaviors, conflict and satisfaction.*

Conflict refers to a state of tension between two exchange parties, which results from an incompatibility of actual or desired responses, such as diverse objectives, unclear expectations, different perceptions, or antithetical views (Raven & Kruglanski, 1970). Most research has categorized conflict as a negative attribute that forms unproductive and unhealthy relationships (Skarmees, 2006). It will help the hospital's managers make a more thorough assessment about the medical suppliers and therefore reduce the potential of opportunistic actions that will damage trust. Therefore, if suppliers act opportunistically by taking any other devious actions, this may instigate tension and frustration by the buyer, whose operations may be jeopardized (Skarmees, 2006). In another aspect, conflict has also documented the direct negative effects of conflict on satisfaction (Anderson & Narus 1990; Lee. 2001). Opportunism reflects a specific form of behavior where some elements of deception are evident. That is, low trust reduces commitment, and conflict impedes communication. Low levels of commitment reduce hospitals' satisfaction, which inhibits their long-term orientation. Therefore, we posit the following:

- (H 5): Opportunism has positively associated with conflict.
- (H 6): Conflict has negatively associated with satisfaction.

D. *Loyalty*

Loyalty or repeat purchasing is critical to the business or medical supplier's survival and success. Trust in sellers is the most important determinant of building loyalty and maintaining continuity in buyer-seller relationships. Singh and Sirdeshmukh (2000) noted that trust is a significant mediating variable both prior to and following consumption and that trust represents the customers' continuous loyalty, which tightly links the trading partners. In the context of medical supply chain management, customer loyalty is usually conceptualized as conative (behavioral intention) loyalty. Satisfaction is regarded as a positive attribute that will enhance buyer-seller relationships. Specifically, the significance of a satisfactory working relationship between exchange parties is the best possible predictor of a customer's likelihood of seeking interaction in the future (Armstrong & Yee 2001). This positive association between satisfaction and the long-term orientation of buyer-seller relationships has been empirically established in the pertinent literature (Armstrong & Yee 2001; Barnes et al., 2010). Thus, we offer the following hypothesis:

- (H 7): Satisfaction has positively associated with loyalty.

III. METHODOLOGY

A. Survey instrument

This study conducted a survey to collect data from medical equipment procurement staff (including executives). The research instrument was a structured questionnaire consisting of two sections. The first section examined respondents' perceptions of opportunism, relationship quality (including trust, commitment, and conflict handling), satisfaction and loyalty, each statement measured on a five-point Likert scale, ranging from (1) strongly disagree to (5) strongly agree. The second section examines respondents' basic information that focused on organizational demographics, including age, gender, and formal education, which uses a nominal scale. The questionnaire measured opportunism scales in this study was adopted from previous study (Das & Rahman, 2001; Timothy et al., 2008). Conflict scales in this study were adopted from Armstrong & Yee (2001), Carter & Kaufmann (2007), and Bradford et al. (2004). Trust scales and commitment scales in this study were adopted from previous study (Dwyer et al., 1987; Anderson & Narus, 1990; Crosby et al., 1990; Morgan & Hunt, 1994). The satisfaction scales in this study based on the recommendations of Cannon & Perrault, Jr. (1999) and Barnes et al. (2010). Finally, for loyalty scales in this study were adopted from several previous studies (Grant & Schlesinger, 1995; Singh & Sirdeshmukh, 2000; Chang & Chang, 2010; Chiu et al., 2010). To reduce potential ceiling (or floor) effects inducing monotonous responses to items designed to measure the same construct.

To ensure that the questionnaire was concise and understandable, we conducted an in-depth interview and a pilot study. The initial questionnaires were administered to five researchers who specialized in or were interested in the medical supply management field. Next, the initial questionnaire was given to 55 subjects who were medical device procurement staff (including manager) working in medical institutions.

B. Sample and descriptive statistics

The empirical data were collected using a cross-sectional survey. Research participants were medical device procurement staff (including executives) from hospitals (including medical centers, regional hospitals, and district hospitals) in Taiwan. As a preliminary step, we contacted each of the managers in hospitals to secure their willingness of cooperation. All participants were volunteers. Our research distributed 800 questionnaires to five target hospitals. In total, 524 questionnaires were returned, and 43 incomplete responses were discarded. This yielded 481 valid responses for the statistical analysis, and a valid response rate of 60.1% for the initial sample. Among the valid responses, 49 responses were gathered from medical center, 169 from regional hospitals, and 263 from local hospitals. The average age of respondents was 40.6 years (standard deviation was 9.2 years). Formal education for the sample population indicated 81.9% were faculty degree/ bachelor degree. And 54.7% of the organizational characteristics were local hospitals (see Table 1).

To assess the possibility of response bias, we examined type of hospital (including: medical center, regional hospitals, and local hospitals) respondents using the chi-square test of significance. Factors examined included: opportunism, conflict, trust,

commitment, satisfaction, and loyalty. We found no significant difference in any of them, indicating that there was no response bias in the data between the type of hospital respondents and that non-response bias was unlikely.

Table 1: Distribution of population by position, education and type of hospital (N=481)

Factor/ Level	Frequency	Column percentages
<i>Gender</i>		
Male	375	78.0
Female	106	22.0
<i>Formal Education</i>		
High School or less	50	10.4
Faculty degree/ bachelor degree	394	81.9
Master degree or above	37	7.7
<i>Type of Hospital</i>		
Medical centers	49	10.2
Regional hospitals	169	35.1
Local hospitals	263	54.7

C. Measurement validity

The measurement model was assessed for reliability, individual item loadings, convergent validity, and discriminant validity. Three criteria were considered in the process: (a) all item loadings (λ), (b) investigation of reliability coefficients (Cronbach's alpha) and composite reliability coefficients (CR), and (c) average variance extracted (AVE) (Bagozzi & Yi, 2012; Fornell & Larcker, 1981; Hair et al, 2010). Table 2 shows the indices of reliability and convergent validities for the scale.

Table 2: Summary of construct validity and reliability results

Constructs	Cronbach's α	AVE	CR
Opp.	0.913	0.718	0.910
Con.	0.720	0.524	0.767
Tru.	0.765	0.553	0.788
Com.	0.814	0.533	0.819
Sat.	0.853	0.611	0.862
Loy.	0.830	0.640	0.842

Opp. : Opportunism; Tru. : Trust; Com. : Commitment
 Sat. : Satisfaction; Con. : Conflict; Loy. : Loyalty

Reliability analysis was conducted to evaluate the multi-item scales of each construct. Internal consistency is assessed using Cronbach's alpha coefficients and composite reliabilities. The Cronbach's α coefficient ranges from 0.720 to 0.913, which suggests a high level of reliability. All constructs displayed a higher Cronbach's α coefficient than the 0.70 benchmark suggested by Hair et al. (2010). Composite reliability (CR) is a set of latent construct indicators that are consistent on their measurement. These CR coefficients ranged from 0.767 to 0.910. The constructs also exhibited a higher CR than the 0.6 benchmark advised by Fornell & Larcker (1981). The test of construct validity is central to stabilizing the measure dimensionality while conducting measurement development (DeVellis, 2003). Convergent and discriminant validity were evaluated by calculating the average variance extracted (AVE) for each factor within each model. An AVE in exceed than the

0.5 also indicated the acceptability of the convergent validity of the construct (Fornell & Larcker, 1981). All constructs demonstrated AVE values between 0.523 and 0.718, which exceeded than the 0.5 and thereby demonstrated adequate convergent validity. In summary, the internal reliability and validity results were acceptable, which enabled us to proceed to an estimation of the structural model.

IV. RESULTS

This research includes eight variables (including four dependent variables and four independent variables) and each of the constructs comprises four to five measurement items. Thus, the sample of 481 participants in this research was higher than the minimum required sample size and large enough for the structural equations modeling (SEM) analysis. To test the conceptual model proposed, adopted SEM for two main reasons: first, it provides a useful framework among constructs simultaneously, and second it can systematically and holistically evaluate the various relationships

A. Structural Model Estimation

The structural model based on a path analysis was estimated after achieving a satisfactory goodness in the measurement model. The goodness of fit statistics for the measurement model is: $\chi^2 = 839.44$, $df = 182$, $\chi^2/df = 4.61$, $RMSEA = 0.087$, $CFI = 0.938$, $AGFI = 0.819$, $GFI = 0.857$. Although AGFI and GFI values were not exceeding 0.90, the more liberal cut-off of 0.80 has been used to indicate good model fit (Hair et al., 2010). In terms of the RMSEA value, 0.08 or below is preferable; however, Raykov (2001) argued that 0.08 to 0.1 represents a moderate value. The results of the current study indicated that the hypothesized measurement model and data fitted well. The fitness measurement indices of the structural model are provided in Table 3.

Table 3: Summary of Fit Indices for Structural Models

Fit Indices	Recommended threshold.	Model value	Model fit
χ^2 (Chi-square)	$P \geq 0.05$	839.44 ($P=0.000$)	Poor
Ratio of χ^2 (Chi-square) to its degrees of freedom	≤ 5	4.61 ($df=182$)	Good
Goodness of Fit Index, GFI)	≥ 0.9	0.857	Moderate
Adjusted Goodness of Fit Index, AGFI	≥ 0.9	0.819	Moderate
Root Mean Square Error of Approximation, RMSEA	≤ 0.08	0.087	Good
Comparative Fit Index, CFI	≥ 0.9	0.938	Good

B. Testing Hypotheses

Standardized beta-coefficients (β) from the estimated structural model are reported in Table 4 along with the associated

t-values (t) for each construct. Six of the seven proposed hypotheses were supported. The model path coefficients for each value are shown in Figure 2, which explains a substantial portion of the variance for all the endogenous variables: 1.1% for conflict, 77.5% for trust, 16.5% for commitment, 77.2% for satisfaction, and 36.1% for loyalty.

Shown as the following Figure, opportunism did not have significant effect on conflict ($\beta = 0.09$, $p > 0.05$), hypotheses 5 was the only one not supported in this model. H1 was confirmed in the study, as opportunism positive effect on trust ($\beta = 0.88$, $t = 9.66$, $p < 0.05$). Trust would be positively related to commitment and satisfaction (H2 and H3) as a mediator. This expectation were supported as we obtained a positive relation of constructs ($\beta = 0.41$ and 0.83 , $t = 6.09$ and 8.61 , $p < 0.05$). As posited in H4, the estimated positive coefficient estimates for the paths from commitment direct to satisfaction was significant ($\beta = 0.11$, $t = 2.54$, $p < 0.05$). In H6, the negative relationship between conflict and satisfaction was significant ($\beta = -0.10$, $t = -2.47$, $p < 0.05$). Therefore, H4 and H6 were supported. Finally, from H7 we expected that satisfaction would positively effect on loyalty. This expectation was supported as we obtained a positive relation of constructs ($\beta = 0.60$, $t = 10.30$, $p < 0.05$).

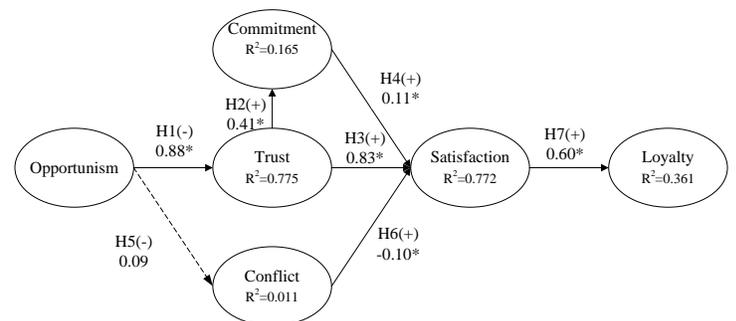


Figure 2: Structural model results.

Value on path: Standardized coefficients ($\hat{\alpha}$), R^2 : Coefficient of determination and $*p < .05$.

Table 4: Path analysis of structural model

	Path (from→to)	Standardized coefficient	t-value	Test results
H1	Opp.→Tru.	0.88	9.66*	Supported
H2	Tru.→Com.	0.41	6.09*	Supported
H3	Tru.→Sat.	0.83	8.61*	Supported
H4	Com.→Sat.	0.11	2.54*	Supported
H5	Opp.→Con.	0.09	1.66	Rejected
H6	Con.→Sati.	-0.10	-2.47*	Supported
H7	Sat.→Loy.	0.60	10.30*	Supported

Opp. : Opportunism; Tru. : Trust; Com. : Commitment
Sat. : Satisfaction; Con. : Conflict; Loy. : Loyalty
* $p < 0.05$

V. CONCLUSION

The primary objective of this article is to construct a casual model to explain the effect of relationship quality on customer loyalty via mediating effect which provided by conflict and satisfaction. The empirical results point out several important

findings that contribute to a better understanding of opportunistic behaviors toward on the relationship quality. There are some managerial implications and suggestions were shown as followings.

The results did not confirm the well-documented effect of opportunism on conflict with the working relationship ($R^2 = 0.011$, $\beta = 0.09$, $t = -1.66$), it differs from the studies of Barnes 's and Carter 's (Barnes et al., 2010; Carter & Kaufmann, 2007) . One possible explanation is that the hospital authorities have pre-established set of measures on supplier management. These measures are usually listed in the assessment of indicators of hospital accreditation. If the hospital found that suppliers have a opportunistic tendency. They will reduce the further willingness to cooperate, even terminate the contract before conflict occurred. Perhaps this is why opportunism has no significant impact on conflict.

Among the main determinants, this paper has found a significant and positive effect of trust on commitment ($\beta = 0.41$, $t = 6.09$, $p < 0.05$) and conflict has a negative effects on satisfaction ($\beta = -0.10$, $t = -2.47$, $p < 0.05$). These results are consistent with some scholars (Chen et al., 2011, Nyaga et al., 2010, Kwon & Suh, 2004; Morgan & Hunt, 1994; Anderson & Narus, 1990; Barnes et al., 2010; Lee. 2001). Specifically, trust is an important antecedent factor in affecting commitment and loyalty. If one party trusts another, such a party is willing to develop a positive behavior toward the other party. In addition, as hospitals and their suppliers have different insights and practices in some critical issues that may also affect the hospitals satisfaction to suppliers.

According to the significant mediation effect, another major finding in this study showed that commitment plays a mediated role between trust and satisfaction ($\beta = 0.41$ and 0.11 , respectively), and satisfaction is a mediated factor to loyalty ($\beta = 0.60$). Mediation effect implies a causal relationship whereby the trust causes a commitment which causes satisfaction and loyalty. Thereby displaying trust in addition to being an important factor in the success of supply chain management, but also an important factor in the success of alliances; Thus, a higher level of trust and commitment leads to a higher level of loyalty.

By the proposed model in this research study, have verified that besides hypotheses 5 was the only one not supported in this model, the remaining hypotheses are not rejected. Hospital authorities can maintain more effective loyalty through satisfaction by using trust and commitment. While avoiding the occurrence of opportunism, this will be the best win-win strategy.

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