

# Relationships of channel power, noncoercive influence strategies, climate, and solidarity: A real case study of the Taiwanese PDA industry

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## Abstract

The management of channel relations has a significant impact on a firm's operational competitiveness; however, there is a lack of published research to better understand the linkages between channel relationships and channel power, noncoercive influence strategies, as well as channel climate and channel solidarity. This paper develops a model showing the linkages among these dimensions of channel relationships. Using linear structural relations (LISREL), a model of the Taiwanese personal digital assistant industry is developed to illustrate these interactions. The corresponding empirical test results indicate that channel climate has a significant impact on channel solidarity; however, this impact may be mitigated by both channel power and the use of noncoercive influence strategies. In addition, both mutual trust among channel members and continuity of the relationship have a positive influence on channel solidarity. Channel members with relatively more power appear able to determine the degree of channel solidarity through the use of effective noncoercive influence strategies.

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## 1. Introduction

As markets have become more complex and changeable, there seems to be increasing recognition that channel relationship management is vital to the enhancement of business operational competitiveness. Similar arguments can be readily found in earlier literature in terms of relationship marketing of distribution channels (Lusch & Brown, 1996; Morgan & Hunt, 1994; Nevin, 1995; Weitz & Jap, 1995), where issues referring to relational exchange of distribution channels and corresponding factors, e.g., trust and commitment between channel members, have been elaborately explored. One inference drawn from these prior tasks seems to be the necessity of building long-term and

solid relationships between members of distribution channels for competition with their business competitors in the present complex market environment. Furthermore, some practical cases can be readily found, particularly in globalized high-technology industries, and a striking one is the head-to-head business competition of Compaq and Dell in the past decades (Dornier, Ernst, Fender, & Kouvelis, 1998a, 1998b).

The issues of power in distribution channels, e.g., channel power formation, and its corresponding effects and applications have drawn considerable attention in the field of marketing since pioneer studies were published in 1960s and 1970s (El-Ansary & Stern, 1972; Emerson, 1962; Etgar, 1978; Hunt & Nevin, 1974; Lusch, 1976; Stern, 1971). In general, it seems agreed that this concept of power originates from the areas relating to human social behavior to explicate the interest-induced interaction between two entities, e.g., organizations or persons (French & Raven, 1959), and was employed in the field of marketing to characterize such interactions between channel members.

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One typical example can be found in Emerson (1962), which attempted to measure the power of distribution channels with the dependence degree of a given channel member “A” on another member “B,” where such a relative dependence degree is proportional to the investment of “B” in “A” and however is inversely proportional to the investment of any given third member “C” in “A.” Subsequently, a variety of definitions and corresponding measurements of power were proposed for in-depth understanding of the concept of channel power. For instance, following Emerson, Gaski (1984) further regarded such dependence of channel members as the major element forming channel power. In addition, other researchers stressed that the aforementioned interaction degree between channel members is predominated by one member in the interchange, as presented in El-Ansary & Stern (1972), where channel power is referred to as the ability of one channel member (e.g., the manufacturer) to control the decision variables of marketing strategies of another member in a different layer of the distribution channel (e.g., the wholesaler). Correspondingly, channel power can be viewed as a strategy-influencing source that is oriented from one channel member to another. As a result, this concept has induced diverse measures to identify the source of intermember influences (Etgar, 1978; Frazier, Gill, & Kale, 1989; Frazier & Summers, 1986; Frazier & Rody, 1991; Hunt & Nevin, 1974) and investigations of the corresponding effects on channel member relationships (Anderson & Narus, 1990; Boyle & Dwyer, 1995; Brown, Lusch, & Nicholson, 1995; Dwyer & Walker, 1981; Frazier et al., 1989; Ganesan, 1993; Kadiyali, Chintagunta, & Vilcassim, 2000; Kim, 2000; Roering, 1977). For instance, in Frazier et al. (1989), several measures, including (1) sales and profit approaches, (2) role performance models, (3) offsetting investments approaches, and (4) transaction cost analysis, are illustrated to investigate the dependence levels of channel member relationships. Furthermore, researchers have also exploring phenomena remaining in the structure of channel power, e.g., the asymmetry and magnitude of channel power in a dyad, which may also help to amplify the spectrum of channel power and its applications in channel relationship management (Gundlach & Cadotte, 1994; Kim, 2000).

In contrast, influence strategies can be regarded as the communication means of channel power to catalyze the aforementioned power-induced interaction process in distribution channels, and these strategies deserve as much conceptual and empirical attention as channel power has received in the marketing literature (Dwyer & Walker, 1981; Frazier & Summers, 1984, 1986; Frazier et al., 1989; Frazier & Rody, 1991; Roering, 1977; Spiro & Perrenult, 1979; Wilkinson & Kipnis, 1978). As pointed out in Mohr and Nevin (1990), communication difficulties are a critical cause of channel problems, and likewise, many problems of distribution channels can be solved by employing appropriate communication strategies. Similarly, Frazier and

Summers (1984, 1986) underline the importance of using influence strategies in distribution channels, and they illustrate several alternatives for influence strategies, e.g., information exchange, recommendations, promises, and threats, depending on whether the perceptions of target firms are involved. According to Frazier and Summers, influence strategies are further classified into two groups: (1) coercive strategies, e.g., promises, threats, and legalistic pleas, and (2) noncoercive strategies, e.g., information exchange, discussion, requests, and recommendations. In addition, there are also a variety of arguments proposed to identify influence strategies and to explicate their corresponding induced effects on channel relationships (Anderson & Narus, 1984; Frazier & Rody, 1991; Frazier & Summers, 1984, 1986; Hunt & Nevin, 1974; Mohr & Nevin, 1990; Raven & Kruglanski, 1970). Frazier and Rody (1991) further remark that there seems to be a positive relationship between a firm’s level of power and the use of noncoercive strategies by the firm’s personnel. Such an argument may imply that effective use of noncoercive influence strategies executed by a firm with relatively more power may readily contribute to long-term and solid relationships with other channel members. Nevertheless, it was also suggested by Frazier and Rody that the relationship between a firm’s power and its use of influence strategies warrants further investigations.

Despite a variety of types of organizational climate that have been discussed in early literature, depending on the perspectives of marketing researchers toward the entity investigated, e.g., an organization or a distribution channel (Anderson & Narus, 1990; Anderson, Lodish, & Weitz, 1987; Churchill, Ford, & Walker, 1976; Falcione & Herden, 1987; Falcione & Kaplan, 1984; Hammond, Brown, & Harmon, 1996; Mohr & Nevin, 1990; Moran & Volkwein, 1992; Verbeke, Volgering, & Hessels, 1998; Williamson, 1981), it is generally agreed that a comprehensive definition of channel climate refers to the channel member’s perceptions of the existing operational conditions of distribution channels, including both intraorganization characteristics and interrelationships with other corresponding members of distribution channels. Numerous previous studies of climate may stem from marketing researchers’ interest in characterizing the organizational culture (Moran & Volkwein, 1992; Smircich & Calas, 1987; Verbeke et al., 1998) using aspects as the corresponding norms, leadership style, psychological environment, attitude toward management, mutual trust, and goal compatibility of channel members (Anderson et al., 1987; Tyagi, 1982, 1985). Furthermore, organizational climate may provide important implications of organizational behavior, e.g., motivations and satisfaction of organizational members (Churchill et al., 1976; Schul, Little, & Pride, 1985; Tyagi, 1982, 1985), resource allocation (Anderson et al., 1987), and evaluation of accomplishment. In contrast with organizational climate, channel climate can be viewed as an extension aiming at the interorganizational scope, i.e., a distribution channel, and

thus may indicate the atmosphere of working partnerships between dyadic channel members in such aspects as the degrees of mutual trust, conflicts, and supportiveness between channel members (Anderson et al., 1987; Schul et al., 1985). Accordingly, channel climate may also provide some implications in terms of the continuity of partnerships of channel members (Hammond et al., 1996). According to Anderson and Narus (1990), such a channel partnership indicator is further investigated in several aspects, including relative dependence of channel members, coordinating effects, and sustaining satisfaction in working partnerships. In addition to reducing mistrust-induced transaction costs (Williamson, 1981) and conflicts (Lusch, 1976), Mohr and Nevin (1990) further point out that given the existing interdependence between two channel members, communication with high frequency in mutually supportive and trusting climates may help improve the performance of distribution channels to a certain extent.

Similar to the literature (Johnson, Sakano, Cote, & Onzo, 1993; Kim, 2000), in this study, channel solidarity is regarded as the sense of unity perceived by channel members binding their partnerships together and as the key element leading to long-term and value-laden relationships of distribution channels. Kauffmann & Stern (1988) stresses that solidarity also represents an exchange norm for assessing the mutual loyalty and commitment between channel members, wherein exchange can be further interpreted in two aspects: (1) marketing exchange and (2) relational exchange. Solidarity in terms of marketing exchange aims at the successful completion of dyadic transactions. In contrast, solidarity of relational exchange indicates the continuity relationship of channel members. Supporting arguments can also be found in Strutton and Pelton (1994), which stresses that solidarity of relational exchange helps to solve communication problems of channel members and for channel conflict management. However, Kim (2000) points out that the magnitude of dyadic solidarity may depend on the alternatives of influence strategies. For instance, the use of coercive influence strategies could exhibit negative effects on channel solidarity in comparison with noncoercive influence strategies and thus may hurt the sense of unity between channel members. Similar remarks can also be found elsewhere (Brown, Lusch, & Muehling, 1983; Frazier & Summers, 1984; Gaski, 1984; Gaski & Nevin, 1985; Johnson et al., 1993). Nevertheless, it seems generally agreed that improvement of channel solidarity appears beneficial for broadening long-term, value-laden channel relationships.

Despite considerable pioneering work that has been made in early literature on channel relationship management, there is still a need to develop a comprehensive conceptual framework coupled with empirical studies developed to characterize interrelationships of the aforementioned critical factors, i.e., channel power, noncoercive influence strategies, channel climate, and solidarity, for channel relationship management. For instance, some

pioneering researchers have underlined the need for further research to investigate the interrelationships between the interfirm power influence process and relational exchange (Morgan & Hunt, 1994; Young & Wilkinson, 1989; Weitz & Jap, 1995). Apparently, it seems agreed that integration of these factors may help to analyze distribution channel relationships and corresponding effects, systematically and comprehensively. Supporting arguments can also be found in the previous literature (Andaleeb, 1995; Boyle & Dwyer, 1995; Kim, 2000). Accordingly, here, a comprehensive conceptual model is proposed to investigate the interrelationships of the aforementioned critical factors of channel relationship management in the following three aspects.

- (1) The effect of channel climate on channel solidarity;
- (2) the effects of both channel power and noncoercive influence strategies on channel climate; and
- (3) the interaction between channel power and noncoercive influence strategies.

Note that this study focuses on the interfirm scope, i.e., member-to-member relationships, although the significance and corresponding effects of intraorganization member relationships in the comprehensive perspective channel relationship management are also noteworthy, as described previously in the aspects of channel climate and solidarity. In addition, the noncoercive influence strategies investigated in this paper refer to those strategies executed potentially by the source member to influence the operational goals or decisions in business operations of the target member. This is the convention in the literature of marketing channel theories (e.g., see Anderson & Narus, 1984; Kim, 2000; Mohr & Nevin, 1990; Frazier & Summers, 1984, 1986; Frazier & Rody, 1991; Raven & Kruglanski, 1970). In contrast, the target member may use other strategies, e.g., information asymmetry, in an effort to allure the source member into an interest-induced interaction process of a marketing channel; however, such effects do not seem to be our study scope and thus are not considered in this paper.

## 2. Conceptual framework and hypotheses

Building on advances in the prior literature (Hu & Sheu, 2003; Hu, Sheu, & Huang, 2002; Hu, Sheu, & Hsieh, 2002), a comprehensive framework is proposed, as presented in Fig. 1, to characterize the interrelationships of the aforementioned four critical factors, i.e., channel power, noncoercive influence strategies, climate, and solidarity, in channel relationship management. The proposed conceptual framework stems from the philosophy that building long-term solid channel relationships will be the norm for survival in the emerging complex and competitive marketing environment. To accomplish

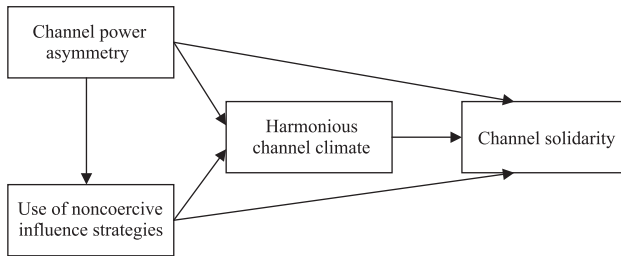


Fig. 1. Conceptual framework of the proposed model.

the final objective, i.e., channel solidarity, the other three determinants must be approximately utilized. Herein, channel power, as described previously, is deemed as the interest-induced interaction between channel members and dominated normally by the member with relatively more power; to form the approximate channel climate leading to solidarity, the alternative of noncoercive influence strategies may be used as the stimulus by the highly powerful channel member in the interest-induced power interaction process, which, therefore, also has certain influence on the formation of channel climate. Note that employing the analytical results of Kim (2000), coercive influence strategies are not considered in the proposed conceptual framework due to their potential negative effect on channel solidarity. Accordingly, these elements are connected with single or multiple links, representing either or both direct and indirect interrelationships of them in the proposed framework. In addition, six corresponding hypotheses coupled with their theoretical backgrounds are postulated below.

### 2.1. Channel power asymmetry and use of noncoercive influence strategies

Noncoercive influence strategies can be regarded as alternatives for communication from the source member to influence the target member's beliefs, attitudes, and behavior in an interest-induced power interaction process. Unlike coercive influence strategies, which concentrate on the implementation of straightforward ultimatums, e.g., threats and legalistic pleas (Frazier & Summers, 1986), noncoercive influence strategies rely mainly on soft measures of the source member, e.g., information exchange, discussion, and recommendations, and thus may lead to less pressure on the target member in such an interest-induced interaction process.

From a strategic viewpoint, noncoercive influence strategies are relatively flexible and less compulsive to channel members. Therefore, the efficiency of noncoercive influence strategies may rely to a certain extent on the degree of dependence of the target member on the source member, i.e., dependence asymmetry between the source and target channel members, as defined in Emerson (1962). Correspondingly, the more significantly the target member is dependent on the source member, the easier it is to

implement noncoercive influence strategies and vice versa. In addition, under the condition of high dependence asymmetry, the target member may be inclined to follow the operational goals of the source member for survival, which mimics the leader–follower relationship. With the aid of such an internalization of business operations in a distribution channel, the source member may readily accomplish its preset goals by implementing noncoercive influence strategies (Frazier et al., 1989; Frazier & Summers, 1986; Lusch & Brown, 1996).

Accordingly, a positive link between channel power and the use of noncoercive influence strategies is postulated in the proposed conceptual framework similar to arguments of some pioneering marketing researchers (Frazier & Rody, 1991; Frazier & Summers, 1986). The corresponding hypothesis is presented as follows.

**Hypothesis 1.** Channel power asymmetry has a positive effect on the use of noncoercive influence strategies in a dyad of channel members.

### 2.2. Channel power asymmetry and solidarity

From an organizational point of view, channel solidarity seems to be an exchange norm rooted in the needs of sharing resources and risks with another channel member (Kaufmann & Stern, 1988). This argument seems highly plausible because there is rarely an enterprise that can have all the resources or afford to pay to cover all the risks in the present competitive business operational environment. Accordingly, to a certain extent, building solid partnerships with other members for either short-term marketing exchanges or for long-term relational exchanges is also needed in a distribution channel.

Despite the need to build solid relationships in a distribution channel, the intension of channel solidarity also seems to be influenced by the degree of channel power asymmetry. It can be inferred that both of the dyadic channel members may mutually assess the relative power effects on each other before reaching to a solid channel relationship. Given that the source member is regarded as being much more productive, relative to the target member, the target member may desire to cooperate with the source member, thus enhancing the channel solidarity of the dyadic members (Anderson & Narus, 1990; Lusch & Brown, 1996). Likewise, the significance of channel power asymmetry may also increase the willingness of the source member to maintain the partnership with the corresponding target member due to the existing benefits and expediency in influencing the decision variables of the target member.

Accordingly, the corresponding hypothesis is postulated as follows.

**Hypothesis 2.** Channel power asymmetry facilitates the maintenance of channel solidarity. Correspondingly, when

there is more significant in channel power asymmetry exhibited by more dependency of the target member on the source member, the maintenance of a long-term solid channel relationship in a dyad is easier.

### 2.3. *Noncoercive influence strategies and solidarity*

From an exchange theory point of view, use of noncoercive influence strategies seems to facilitate mutual understanding and trust in a dyad. As stressed in previous literature, the use of noncoercive influence strategies aims at sharing market information and mutual discussion of corresponding distribution and marketing strategies in a dyad for mutual benefits (Frazier & Rody, 1991; Frazier & Summers, 1984). In addition, the source member tends to employ recommending actions that highlight the mutual advantages under the condition of coexistence in a dyad; likewise, the target member may readily follow the recommendations of the source member with less interest-induced conflicts and pressure. Consequently, the use of noncoercive influence strategies seems to facilitate mutual understanding and trust and thus may further foster channel solidarity in a dyad (Frazier & Rody, 1991; French & Raven, 1959; Kim, 2000). Therefore, the corresponding hypothesis is postulated below.

**Hypothesis 3.** Channel solidarity is positively affected by the source member's use of noncoercive influence strategies.

### 2.4. *Channel power asymmetry and harmonious channel climate*

From an organization theory point of view, dyadic trust seems to be a key element in maintaining harmonious channel climate leading to a long-term and solid channel relationship between dyadic channel members. Herein, dyadic trust refers to the mutual belief held by dyadic channel members in which the corresponding partner is reliable to fulfill its obligations in the interest-induced exchange process. According to previous literature (Anderson et al., 1987; Morgan & Hunt, 1994; Schul et al., 1985), dyadic trust may help to alleviate the fear of opportunistic behavior inherent in both the source member and the target member and also enhance mutual confidence in a distribution channel.

Accordingly, it can be inferred that a harmonious channel climate can be readily maintained under the condition that channel power asymmetry is significant. The source member may tend to believe that the corresponding target member will not behave opportunistically to damage the existing dyadic trust relationship since, otherwise, the target member would have to pay for it with relatively more unexpected impact. Correspondingly, under the condition of high power asymmetry, the target member may pay for greater loss than the source member in the

case that their common consensus of trust is broken. Therefore, the source member would believe that the corresponding target member may not willingly conduct any opportunistic behavior to damage the existing harmonious channel climate. In addition, the source member with more power may expect to maintain the predominance over the target member in the interest-induced interaction process. This will lead to continuity of the harmonious channel climate in the interest-induced interaction process. Likewise, the target member may consider the relative interest loss and corresponding risks if the existing harmonious channel climate with the source member is disrupted. Furthermore, the more significantly the target member depends on the source member, the more the target member will desire to establish a long-term solid partnership with the source member for their common interests. This will also facilitate the harmonious channel climate in a distribution channel.

For the above reasons, the corresponding hypothesis is proposed as follows.

**Hypothesis 4.** Channel power asymmetry has a positive effect on the continuity of a harmonious channel climate.

### 2.5. *Use of noncoercive influence strategies and harmonious channel climate*

Applying noncoercive influence strategies, dyadic channel members seem to readily communicate with each other without pressure, and this may facilitate the positive channel climate. As stressed by Mohr and Nevin (1990), many channel problems can be caused by difficulties in channel communication and, likewise, can be readily solved by employing appropriate communication strategies. In addition, by using noncoercive influence strategies, e.g., sharing information, and recommendations, the dyadic channel members can easily seek coherent goals, operational strategies, and exchange norms (Frazier & Summers, 1984). This consistency and cooperation conditions help to tightly link the dyadic members in an interest-induced interaction process, leading to a harmonious channel climate (Anderson et al., 1987). Accordingly, the following corresponding hypothesis is proposed.

**Hypothesis 5.** Noncoercive influence strategies executed by the source member may facilitate the formation of a harmonious channel climate.

### 2.6. *Harmonious channel climate and solidarity*

A harmonious channel climate may facilitate channel solidarity. According to Kaufmann and Stern (1988), channel solidarity is interpreted as an exchange norm indicating the mutual loyalty and commitment between channel members in the two aspects of (1) marketing exchange and (2) relational exchange. Wherein solidarity in terms of marketing exchange aims at the successful completion of dyadic

transactions, and solidarity of relational exchange implicates the continuity of channel members' relationship. Accordingly, it can be induced that, under conditions of mutual trust, channel members may undertake dyadic transactions with the expectation of less disputation. Furthermore, this pleasant climate may expedite dyadic relational exchange, leading to a long-term and solid channel relationship (Anderson et al., 1987; Dwyer, Schurr, & Oh, 1987). Therefore, the following hypothesis is postulated.

**Hypothesis 6.** A harmonious channel climate appears to have a positive effect on channel solidarity and vice versa.

### 3. Method

To examine the validity of the proposed hypotheses, empirical tests were conducted using the linear structural relations (LISREL) analytical tool. Herein, three major procedures are involved in the tests: (1) specification of operational measures, (2) model formulation, and (3) sampling and data collection. They are detailed below.

#### 3.1. Specification of operational measures

According to the properties of LISREL, two types of variables, including (1) latent variables and (2) manifest variables, should be appropriately identified before system analysis. Latent variables are formulated to characterize the elements of a target system in terms of hypothetical concepts, as represented by channel power, noncoercive influence strategies, channel climate, and solidarity in the proposed conceptual framework; however, they are not directly measurable. Therefore, the measurable manifest variables induced from corresponding latent variables are specified in LISREL for system analysis. In other words, latent variables are represented by one or more corresponding manifest variables. Herein, these manifest variables are quantified according to the perceptions of sampled survey respondents.

Accordingly, four types of latent variables are specified, including (1) channel power, (2) noncoercive influence strategies, (3) channel climate, and (4) channel solidarity. Each one of these is associated with a given set of corresponding manifest variables, as shown in Table 1. The rationales are described below.

##### 3.1.1. Channel power asymmetry

As defined previously, channel power refers to the degree of the interest-induced interaction between dyadic channel members. According to the early literature, the operational performance of the source member can be readily perceived by the target member particularly under the condition of channel power asymmetry (Frazier, 1983; Frazier & Rody, 1991; Frazier & Summers, 1986). Therefore, to quantify such an interaction degree under the condition of channel power

Table 1  
Summary of operational measures

Latent variables	Corresponding manifest variables
$x_1$ : Channel power asymmetry	$x_{11}$ : Product quality (of the source member)
	$x_{12}$ : Sales information (of the source member)
	$x_{13}$ : Technical support (from the source member)
	$x_{14}$ : Product-return policies (of the source member)
$x_2$ : Use of noncoercive influence strategies	$x_{21}$ : Information exchange
	$x_{22}$ : Discussion
	$x_{23}$ : Requests
	$x_{24}$ : Recommendations
$y_1$ : Harmonious channel climate	$y_{11}$ : Dyadic trust
	$y_{12}$ : Relationship continuity
$y_2$ : Channel solidarity	$y_{21}$ : Exchange solidarity
	$y_{22}$ : Relational solidarity

asymmetry, four corresponding operational measures of the source member, including (1) product quality, (2) sales information, (3) technical support, and (4) product-return policies, are specified following previous suggestions made (Frazier et al., 1989).

##### 3.1.2. Noncoercive influence strategies

As mentioned previously, the use of noncoercive influence strategies by the source member aims to share market information with the target member and mutual discussion to coordinate corresponding distribution and marketing strategies in a dyad (Frazier & Rody, 1991; Frazier & Summers, 1986). From a target member's point of view, it may readily perceive the frequencies of such noncoercive influence strategies as information exchange, discussion, requests, and recommendations executed by the source member in the interest-induced power interaction process. Therefore, the aforementioned four measures are used as the corresponding manifest variables characterizing noncoercive influence strategies.

##### 3.1.3. Channel climate

Herein, dyadic trust and relationship continuity are used as two major manifest variables of channel climate for the following reasons. First, according to the related literature (Anderson et al., 1987; Schul et al., 1985), channel climate should readily indicate the atmosphere of working partnerships between dyad channel members in the aspect of mutual trust between channel members and also provide implications in terms of the continuity of partnerships of channel members (Hammond et al., 1996). Second, both items can be readily valued by dyadic members. For instance, if the source member always keeps its promises in the interest-induced power interaction process, the target member may more readily follow all the recommendations due to the sense of mutual trust. Likewise, once the target member faces operational problems, the source member may voluntarily provide support in aspects such as technology, finance, and marketing information in an

attempt to continue their partnership (Ganesan, 1993, 1994). Thus, the desirability of maintaining relationship continuity can be readily perceived by the dyadic members (Heide & John, 1990) and further substantiated by continuing the corresponding exchange contracts (Noordewier, John, & Nevin, 1990) when there is a harmonious channel climate.

3.1.4. Channel solidarity

According to previous definitions of channel solidarity (Forgas & Dobosz, 1980; Stern, 1986), the corresponding manifest variables should appropriately characterize a channel member’s sense of unity that binds it to the other channel member in a dyad. Kaufmann and Stern (1988) suggests that channel solidarity should be measured in two aspects, (1) exchange solidarity (e.g., sense of sharing business interests and marketing information) and (2) relational solidarity (e.g., sense of cooperation), to further assess the mutual loyalty and commitment between channel members.

3.2. Model formulation

The main analytical technique used in this study is linear structural relations (LISREL model), which has been extensively used for the analysis of causal hypotheses on the basis of nonexperimental data (Bagozzi, 1981; Bagozzi & Yi, 1988; Joreskog & Sorbom, 1993; Qiu, 1999). Detailed discussions of LISREL properties can also be found elsewhere (Joreskog & Sorbom, 1993). LISREL for windows, version 8.2 by Scientific Software International, has been used to investigate the potential relationships of the

specified operational variables, including latent and manifest variables. Employing LISREL 8.2, the proposed conceptual framework is reformulated as a hypothetical model, as presented in Fig. 2. Herein, circles represent latent variables, and rectangles represent manifest variables. In addition, variables on the right hand side refer to dependent (output) variables, including channel climate, channel solidarity, and their corresponding manifest variables; in contrast, those on the left hand side represent the independent (input) variables, including channel power, noncoercive influence strategies, and corresponding manifest variables.

It is noteworthy that according to the fundamentals of linear structural equation modeling approaches, the proposed dependent and independent variables refer to the representatives of major causes and effects and are specified to investigate the corresponding significance of their interrelationships in the proposed framework. In numerous real-world cases, such variables, either cause oriented or effect oriented, may not be measurable quantitatively, and therefore, they are further classified into latent and manifest variables, as represented by circles and rectangles in this study. Furthermore, all the aforementioned latent variables, including channel power asymmetry, use of noncoercive influence strategies, harmonious channel climate, and channel solidarity, are measured using their corresponding manifest variables, according to the theories of linear structural equation modeling approaches. Thus, it is not necessary to add extra variables in the proposed framework for their measurements. Accordingly, harmonious channel climate, channel solidarity, and their corresponding manifest variables are defined as dependent variables relative to channel power

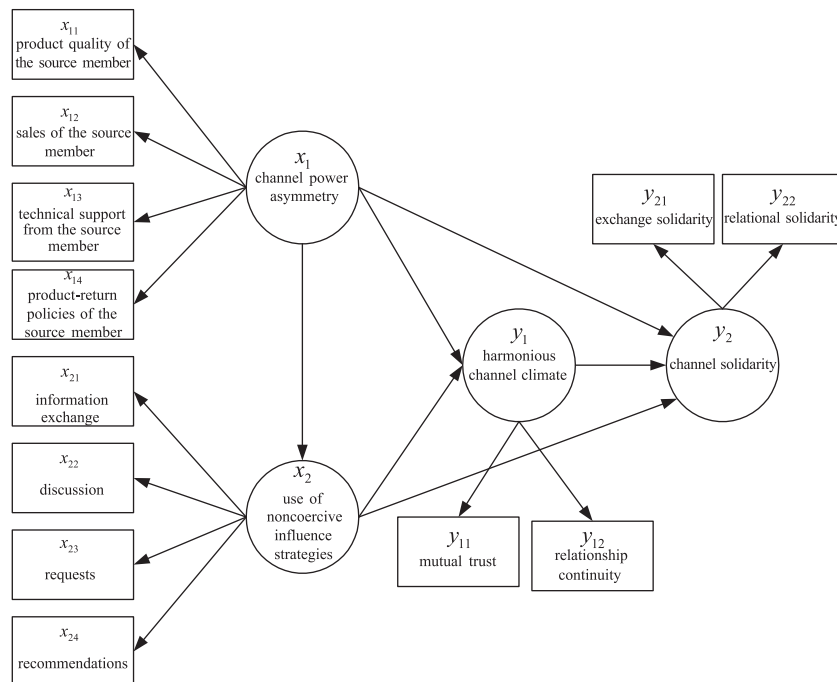


Fig. 2. Proposed LISREL-based hypothetical model.

asymmetry, the use of noncoercive influence strategies, and corresponding manifest variables, which are regarded as independent variables in the proposed method.

Theoretically, the proposed LISREL-based hypothetical model can be further expressed in three linear algebra forms using matrices and vectors to indicate the interrelationships among these variables, as shown below.

### 3.2.1. Independent latent variables vs. corresponding manifest variables

$$\mathbf{M}_x = \mathbf{A}_{xx}\mathbf{L}_x + \mathbf{W}_x \quad (1)$$

Eq. (1) represents the relationships between the independent latent variables (i.e., channel power asymmetry and noncoercive influence strategies) and the corresponding independent manifest variables. Here,  $\mathbf{M}_x$  refers to an  $(8 \times 1)$  independent manifest variable vector associated with the aforementioned two independent latent variables;  $\mathbf{L}_x$  represents the corresponding  $(2 \times 1)$  independent latent variable vector;  $\mathbf{A}_{xx}$  is an  $(8 \times 2)$  coefficient matrix in which each element indicates the relationship between a given independent latent variable and a corresponding independent manifest variable;  $\mathbf{W}_x$  refers to an  $(8 \times 1)$  error vector in which each element represents an aggregate of all other factors that may influence the corresponding independent manifest variable.

Note that, in Eq. (1), only  $\mathbf{M}_x$  is known, and this is measured using survey data. The others, particularly in terms of  $\mathbf{A}_{xx}$ , and  $\mathbf{W}_x$ , are determined using the LISREL analytical tool.

### 3.2.2. Dependent latent variables vs. corresponding manifest variables

$$\mathbf{M}_y = \mathbf{B}_{yy}\mathbf{L}_y + \mathbf{V}_y \quad (2)$$

Similarly, Eq. (2) denotes the relationships between the dependent latent variables (i.e., channel climate asymmetry and channel solidarity) and the corresponding dependent manifest variables. In contrast with  $\mathbf{M}_x$ ,  $\mathbf{M}_y$  represents a  $(4 \times 1)$  dependent manifest variable vector which involves the corresponding manifest variables associated with harmonious channel climate and solidarity.  $\mathbf{L}_y$  represents the corresponding  $(2 \times 1)$  dependent latent variable vector.  $\mathbf{B}_{yy}$  is a  $(4 \times 2)$  coefficient matrix in which each element indicates the relationship between a given dependent latent variable and a corresponding dependent manifest variable.  $\mathbf{V}_y$  refers to an  $(4 \times 1)$  error vector in which each element represents an aggregate of all other factors that may influence the corresponding dependent manifest variable; however, it is not included in Eq. (2). As mentioned previously, in Eq. (2), only  $\mathbf{M}_y$  is measurable using survey data, whereas both  $\mathbf{B}_{yy}$  and  $\mathbf{V}_y$  should be determined employing the LISREL analytical tool.

### 3.2.3. Relationships among latent variables

$$\mathbf{L} = \mathbf{R}\mathbf{L} + \mathbf{\Psi} \quad (3)$$

The relationships among the latent variables, denoted by Eq. (3), determine how the independent latent variables, i.e., channel power asymmetry and use of noncoercive influence strategies, affect the dependent latent variables, i.e., harmonious channel climate and channel solidarity. Herein,  $\mathbf{L}$  represents a  $(4 \times 1)$  latent variable vector which involves the latent variables;  $\mathbf{R}$  is a  $(4 \times 4)$  coefficient matrix in which each element indicates the relationship between dyadic latent variables;  $\mathbf{\Psi}$  refers to an  $(4 \times 1)$  error vector in which each element represents an aggregate of all other factors that may influence the corresponding latent variables.

Note that the elements of  $\mathbf{R}$  estimated by LISREL are used for the hypothesis examination in this study.

### 3.3. Sampling and data collection

Data used for this experiment were collected through interview questionnaire surveys aimed at the PDA industry of Taiwan. A total of 138 Taiwanese PDA franchisees were sampled to fill out the questionnaire. Correspondingly, 138 PDA manufacturer–franchisee distribution channels were investigated in the surveys from the 18 PDA manufacturers. The questionnaire contents were designed to measure the specified manifest variables of the proposed LISREL-based model. All the sampled survey respondents were asked face-to-face to rate these manifest variables on a seven-point Likert-type measurement scale of the questionnaire, according to their perceptions of the performance of the corresponding PDA manufacturers in given distribution channels.

The reasons for choosing the Taiwanese PDA franchisees as the target samples for the questionnaire survey are summarized as follows. First, there are diverse types of PDA manufacturer–franchisee distribution channels, e.g., manufacturer–wholesaler, manufacturer–retailer, and manufacturer–specialized franchisee distribution channels, existing in the current Taiwanese PDA market. Such a variety of PDA channel relationships may help to demonstrate the comprehensiveness of the proposed model in characterizing the interrelationships of the specified latent and manifest variables in diverse distribution channels. Second, it is commonly agreed that, for successful promotion of such high-technology products to end customers, both the pull strategies by PDA manufacturers and the push strategies by franchisees are needed. Therefore, there may be significant interest-induced power interaction in the corresponding manufacturer–franchisee distribution channels, which may help to investigate the interrelationships between channel power and noncoercive influence strategies, as well as the corresponding effects on channel climate and solidarity. Third, due to both the



striking advances in information technologies and the variety of end-customer preferences for such high-technology products, information sharing appears significant between the dyadic members in a given PDA distribution channel. Accordingly, the PDA manufacturers and corresponding franchisees may tend to build long-term and solid relationships in response to the complicated and competitive PDA marketing environments, which may help to interpret the proposed philosophy used to formulate the proposed conceptual framework.

Using the aforementioned interview surveys, the final valid sample size is 126 after elimination of 12 out of the 138 returned questionnaires because of either incomplete information or questions not answered. Following the measures suggested in Cooper and Emory, the 126 samples were then examined with the Cronbach's  $\alpha$  tests to ensure the reliability of these samples to represent the corresponding population for the experiment in this study (Cooper & Emory, 1995; Cronbach, 1951).

Results of the preliminary tests indicated the reliability of the collected survey data. According to the numerical results of the Cronbach's  $\alpha$  tests, all the Cronbach's  $\alpha$  measurements are greater than 0.7 located in the range between 0.7543 and 0.9091, implying high reliability of the collected data. Details on the corresponding preliminary tests, including survey data analyses and discussions, are described elsewhere (Hu, 2001); considering limitations of space, they are omitted in this paper.

#### 4. Analysis and results

This section summarizes the numerical results obtained from the LISREL analytical tool, and corresponding discussions are provided below.

##### 4.1. Goodness-of-fit for conceptual framework

In the LISREL analytical package, the maximum likelihood estimation approach is used to examine the six hypotheses postulated in this study. Therefore, the goodness of fit in terms of the structure of the proposed conceptual framework should be examined in advance, according to the suggestions in previous studies (Bagozzi & Yi, 1988;

Table 2  
Results of goodness-of-fit tests

Assessment measure	Estimate	Critical value	Indication
(1) Goodness-of-fit index (GFI)	0.937	0.090	Good fit
(2) Adjusted goodness-of-fit index (AGFI)	0.907	0.090	Good fit
(3) Root-mean-square residual (RMR)	0.0273	0.050	Good fit
(4) Standard root-mean-square residual (SRMR)	0.0250	0.050	Good fit

Table 3  
The  $R$ -squared values of model credibility tests

Latent variables			
Channel power asymmetry	Use of noncoercive influence strategies	Harmonious channel climate	Solidarity
*	* 0.732	0.896	
Dependent manifest variables			
Dyadic trust	Relationship continuity	Exchange solidarity	Relational solidarity
0.563	0.604	0.648	0.680
Independent manifest variables			
Product quality	Sales information	Technical support	Product-return policies
0.626	0.553	0.504	0.507
Information exchange	Discussion	Requests	Recommendations
0.484	0.545	0.519	0.444

Joreskog & Sorbom, 1993). The LISREL package provides four major corresponding indexes, including (1) the goodness-of-fit index (GFI), (2) the adjusted goodness-of-fit index (AGFI), (3) the root-mean-square residual (RMR), and (4) the standard root-mean-square residual (SRMR), which are the assessment measures in this test scenario.

Using the aforementioned goodness-of-fit tests, corresponding results summarized in Table 2 show that the entire structure of the proposed conceptual framework is appropriate to characterize the interrelationships of these latent variables. According to the assessment criteria suggested by Anderson and Gerbing (1988), the estimates of both GFI (GFI=0.937) and AGFI (AGFI=0.907) are greater than the corresponding critical value 0.90; likewise, both RMR (RMR=0.0273) and SRMR (SRMR=0.025) are less than the corresponding critical value 0.050. Correspondingly, all the assessment measures indicate that the proposed conceptual framework exhibits a very good fit to collected data.

##### 4.2. Credibility of structure equations

This test scenario presents the  $R$ -squared values ( $\gamma^2$ ) associated with these structure equations, as shown in Eqs. (1), (2), and (3) of the proposed LISREL-based hypothetical model. Herein, each given  $R$ -squared value indicates the corresponding percentage of variation in a given structure equation that can be explained by the variations in the corresponding input variables (i.e., variables shown on the right hand side) of the structure equation. The numerical results are summarized in Table 3.

Results of Table 3 imply that the structure of the proposed conceptual framework used to characterize the interrelationships of the specified latent variables under the

goal of maintaining a long-term and solid channel relationship is greatly acceptable. As can be seen in Table 3, almost all the  $\gamma^2$  values are greater than 0.5, particularly in terms of the solidarity variable, which is almost as high as 0.9. In addition, both the  $\gamma^2$  values associated with channel climate and channel solidarity are greater than the critical value of 0.6, as suggested in Bagozzi and Yi (1988). This generalization also implies that channel solidarity stimulated by harmonious channel climate is key to maintaining a solid and long-term channel relationship.

4.3. Influence analysis of manifest variables

This test scenario investigates the capability of a given manifest variable to characterize the corresponding latent variable with the influence index ( $\lambda$ ) provided by LISREL. According to the numerical results summarized in Table 4, it can be inferred that overall, the influences of the manifest variables on the corresponding latent variables are significant. Particularly, the specified manifest variables, including dyadic trust, relational solidarity, production-return policies, and information exchange, seem to be highly suitable to characterize the corresponding latent variables since their  $\lambda$  values are 1.0.

4.4. Interrelationships among latent variables

Numerical results obtained in this scenario are used to examine the proposed hypotheses. The interrelationship between any two given latent variables can be characterized in three aspects, including (1) the direct effect, (2) the indirect effect, and (3) the aggregate effect. The direct effect means the direct relationship between the dyadic latent

variables; whereas the indirect effect denotes the corresponding relationship that is formed through other latent variables as mediators. The aggregate effect is obtained by summing up the corresponding direct and indirect effects.

According to the proposed LISREL-based hypothetical model, the direct effects are quantified directly by the elements of matrix **R**, as shown in Eq. (4). Through the maximum likelihood estimation by LISREL, the estimated matrix **R** is measured, as shown in Eq. (4).

$$\mathbf{R} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ r_{x_1,x_2} & 1 & 0 & 0 \\ r_{x_1,y_1} & r_{x_2,y_1} & 1 & 0 \\ r_{x_1,y_2} & r_{x_2,y_2} & r_{y_1,y_2} & 1 \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0.602 & 1 & 0 & 0 \\ 0.316 & 0.464 & 1 & 0 \\ -0.229 & 0.318 & 0.974 & 1 \end{bmatrix} \tag{4}$$

Correspondingly, the direct relationships among these latent variables can be graphically presented, as shown in Fig. 3.

In addition, Fig. 3 also indicates that the effects of both channel power asymmetry and the use of noncoercive influence strategies on solidarity may exist through the mediation of a harmonious channel climate and thus can be measured respectively by  $r_{x_1,y_1}r_{y_1,y_2}$  and  $r_{x_2,y_1}r_{y_1,y_2}$ . The corresponding three types of effects are summarized in Table 5 for further hypothesis examinations, which are discussed below.

4.5. Channel power asymmetry and use of noncoercive influence strategies

Consistent with the generalizations made by pioneering researchers [4, 16, 23], the proposed first hypothesis, Hypothesis 1, seems agreeable, implying that channel power asymmetry seems to have a significantly positive effect on the use of noncoercive influence strategies. As can be seen in Table 5, the estimated aggregate effect of channel power on noncoercive influence strategies is 0.602, resulting mainly from the direct effect. As pointed out in Hypothesis 1, under the goal of building a long-term and solid channel relationship, channel power asymmetry may help the source member to efficiently implement noncoercive influence strategies and, likewise, may facilitate the cooperation of the target member with the source member. Such a postulation appears reasonable, particularly in high-technology distribution channels such as those for PDA. This is because the PDA manufacturers typically remain as powerful members relative to the corresponding franchisees in Taiwan. Nevertheless, in the existing competitive marketing environment, each given PDA franchisee may maintain multiple distribution channels, i.e., multiple product supply sources from different manufacturers, in response to end customers' demands. More specifically, there is a growing tendency to substitute for manufacturers, so PDA franchisees turn to be the key to influencing the market share for their grasp of the up-to-date end-market information, as well

Table 4  
Summary of the influence indexes ( $\lambda$ ) for influence analysis

Dependent variables		
Manifest variables	Latent variables	
	Harmonious channel climate	Channel solidarity
Dyadic trust	1.000	*****
Relationship continuity	0.913	*****
Exchange solidarity	*****	0.930
Relational solidarity	*****	1.000
Independent variables		
Manifest variables	Latent variables	
	Channel power asymmetry	Use of noncoercive influence strategies
Product quality	0.926	*****
Sales information	0.875	*****
Technical support	0.914	*****
Product-return policies	1.000	*****
Information exchange	*****	1.000
Discussion	*****	0.973
Requests	*****	0.710
Recommendations	*****	0.721

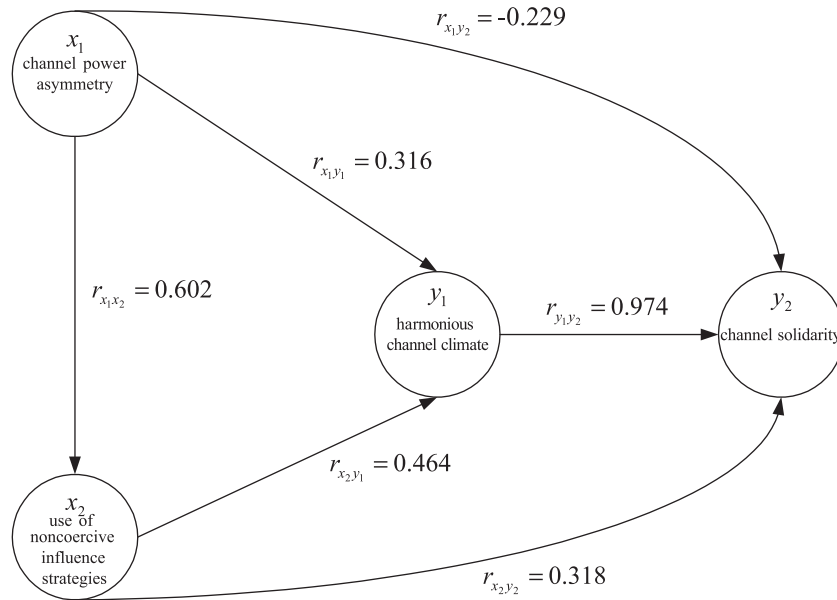


Fig. 3. Illustration of direct relationships among latent variables.

as their ability for quick response to changes of end customer demands via advanced information technologies coupled with time-based logistics control strategies. Therefore, the PDA manufacturers tend to implement noncoercive influence strategies rather than coercive influence strategies to the corresponding franchisees, avoiding unexpected negative effects on the existing channel relationships, as well as the corresponding market share.

4.6. Channel power asymmetry and solidarity

The corresponding results of Table 5 indicate that there is no reason strong enough to accept Hypothesis 2, implying that the effect of channel power asymmetry on channel solidarity is not significant. As can be seen in Table 5, the

estimate of the corresponding aggregate effect of channel power is merely 0.079, which is caused mainly by the corresponding negative direct effect (−0.229). Such numerical results imply that channel power asymmetry does not seem to facilitate channel solidarity. More seriously, in case of no other stimulators, e.g., noncoercive influence strategies and harmonious channel climate, channel power asymmetry may further lessen the willingness of the target member to maintain a long-term and solid partnership with the corresponding source member. This inference may particularly hold true in the existing PDA manufacturer–franchisee channels of Taiwan because of the increasing significance of the PDA franchisees in influencing the end-market share, as mentioned above. Accordingly, the argument of Hypothesis 2 is not supported by the numerical study.

4.7. Use of noncoercive influence strategies and solidarity

According to the corresponding numerical results of Table 5, the corresponding Hypothesis 3 seems to be acceptable, inferring that the use of noncoercive influence strategies may facilitate channel solidarity. Herein, the estimates of corresponding direct and indirect effects on channel solidarity are 0.318 and 0.452, resulting in the high aggregate effect (0.770). In addition, the aforementioned indirect effect via harmonious channel climate is higher than the corresponding direct effect. This means that a harmonious channel climate seems to be an important mediator in the case that noncoercive influence strategies are used by the source member as measures to enhance channel solidarity.

Furthermore, it is noteworthy that, in contrast with the effect of channel power asymmetry, the use of noncoercive influence strategies may relatively facilitate the maintenance of channel solidarity. Such a generalization may also help

Effect–source	Type of effect		
	Direct effect	Indirect effect	Aggregate effect
<i>Target variable: use of noncoercive influence strategies</i>			
Channel power asymmetry	0.602	*****	0.602
<i>Target variable: harmonious channel climate</i>			
Channel power asymmetry	0.316	0.279	0.595
Use of noncoercive influence strategies	0.464	*****	0.464
<i>Target variable: channel solidarity</i>			
Channel power asymmetry	−0.229	0.308	0.079
Use of noncoercive influence strategies	0.318	0.452	0.770
Harmonious channel climate	0.974	*****	0.974

demonstrate the significance of using noncoercive influence strategies not only as a stimulator for channel solidarity but also as a lubricator for channel communication in the existing competitive and complicated marketing environment. Thus, it is no surprise that the corresponding hypothesis, Hypothesis 3, is highly agreeable at this point.

#### 4.8. Channel power asymmetry and harmonious channel climate

As indicated in Table 5, the corresponding aggregate effect (0.595) may contribute to the generalization that channel power asymmetry seems to have a positive effect on continuity of harmonious channel climate, leading to the acceptance of Hypothesis 4. In reality, such a significant effect is caused to a certain extent by the indirect effect resulting from the use of noncoercive influence strategies. Note that according to the numerical results of Table 5, the corresponding indirect effect of channel power asymmetry on harmonious channel climate is 0.279, compared to the direct effect of 0.316. This implies that significant channel power asymmetry coupled with the use of noncoercive influence strategies may contribute remarkably to a harmonious channel climate.

In addition, following the above generalization, it is inferred that given that channel power asymmetry is significant, the source member tends to believe that the corresponding target member may not dare to behave opportunistically to damage the existing harmonious channel climate. Furthermore, the source member may attempt to continue the absolute dominance over the target member, thus endeavoring to maintain a harmonious climate in managing the dyadic channel relationship with the corresponding target member. Likewise, the target member may consider the potential risks and monetary loss if the harmonious channel relationship with the source member were to be disrupted. Accordingly, it is induced that the above generalization made for Hypothesis 4 is reasonable.

#### 4.9. Use of noncoercive influence strategies and harmonious channel climate

Similarly, the numerical results of Table 5 have also indicated the acceptability of Hypothesis 5, stating that the

use of noncoercive influence strategies may help contribute to a harmonious channel climate. As can be seen in Table 5, the corresponding positive effect (0.464) implies that, through appropriate use of noncoercive influence strategies, e.g., information exchange, discussion, requests, and recommendations, these sampled PDA franchisees may readily follow the goals and marketing strategies predetermined by the corresponding PDA manufacturers without channel communication problems, thus leading to harmonious channel climate.

#### 4.10. Harmonious channel climate and solidarity

As can be seen in Table 5, Hypothesis 6 exhibits relatively high acceptability since the corresponding aggregate effect is as high as 0.974. Compared to the other effect sources, harmonious channel climate has the highest effect on channel solidarity and thus can be regarded as a critical factor in forming a solid and long-term channel relationship.

Overall, the analytical results obtained in the above hypothesis tests imply that a harmonious channel climate built on mutual trust and relationship continuity is absolutely needed for channel relationship management in the existing competitive and complex marketing environment. Here, the source member can also achieve the aforementioned goal with the aid of noncoercive influence strategies used as a lubricator. In contrast, the dominance of the source member resulting from channel power asymmetry can be utilized only to stimulate the formation of harmonious channel climate; however, it cannot be used as the major means to maintain a solid and long-term channel relationship.

For convenience, the corresponding analytical results of these hypotheses tests are summarized in Table 6, where the shadowed area represents the rejected hypothesis (i.e., Hypothesis 2).

## 5. Concluding remarks

This paper has presented a comprehensive conceptual framework to investigate the interrelationships among channel power asymmetry, use of noncoercive influence strategies, harmonious channel climate, and channel solid-

Table 6  
Analytical results of hypotheses tests

Hypothesis	Statement	Result
H-1	Under the prerequisite of pursuing long-term and solidarity channel relationships, channel power asymmetry has a positive effect on the use of noncoercive influence strategies in a dyad of channel members.	accepted
H-2	Channel power asymmetry facilitates the maintenance of channel solidarity.	rejected
H-3	Channel solidarity is positively affected by the source member's use of noncoercive influence strategies.	accepted
H-4	Channel power asymmetry has a positive effect on continuity of a harmonious channel climate.	accepted
H-5	Noncoercive influence strategies executed by the source member may facilitate the formation of a harmonious channel climate.	accepted
H-6	A harmonious channel climate appears to have a positive effect on channel solidarity, and vice versa.	accepted

arity, which is regarded as the main goal of channel relationship management. To do so, six corresponding hypotheses are postulated and examined through the LISREL analytical approach. For this, a LISREL-based hypothetical model is established to help in characterizing the aforementioned factors and their relationships in the proposed conceptual framework.

Compared to earlier literature that analyzed distribution channel relationships, this study exhibits two distinctive features. First, establishing a comprehensive conceptual framework links together the aforementioned determinants of channel relationships, e.g., channel power asymmetry, use of noncoercive influence strategies, harmonious channel climate, and solidarity. Thus, their corresponding effects, either direct or indirect, on building long-term and solid channel relationships in distribution channels can be investigated. Such a treatment may help to systematically elaborate the interrelationships of these determinants in a distribution channel without the concerns of limiting the analysis results to fragmentary empirical studies for channel relationship management. Second, in this study, the survey samples aim at the target members (i.e., those channel members with relative less power in distribution channels) rather than at both the dyadic members. In addition to enhancing the efficiency of survey data analyses, this treatment may readily measure the perceptions of those target members in terms of the corresponding influence strategies and channel climate mainly dominated by the source members in the interest-induced power interaction process. To a certain extent, the concern of survey data inconsistency can also be alleviated.

Employing the survey data collected from the PDA franchisees randomly sampled in Taiwan, the corresponding numerical results have indicated that out of the six proposed hypotheses, five are accepted, which may help to explain the applicability of the proposed approach to characterization of distribution channel relationships in the interest-induced power interaction process. Major findings and corresponding implications observed in the numerical results are summarized as follows.

Channel power asymmetry and the use of noncoercive influence strategies have a positive relationship under the prerequisite of building a long-term solid channel relationship in a distribution channel. As stated previously, channel power is considered to be the source of influence strategies, and correspondingly, influence strategies are the means of the source member to influence the corresponding target member in the interest-induced power interaction process. Under the preset goal of channel solidarity, the powerful member (i.e., the source member) tends to execute non-coercive influence strategies rather than coercive measures because of the concerns with potential negative effects, e.g., mutual conflicts and speculations, on maintenance of long-term and solid channel relationships. In addition, through such noncoercive influence strategies as information exchange and frequent communications between dyadic

channel members, a harmonious channel climate can be readily formed, leading to channel solidarity.

Nevertheless, the effects of channel power asymmetry on channel solidarity are worth further discussion. According to the results of corresponding hypotheses tests, the direct effect of channel power asymmetry on channel solidarity is negative; however, the corresponding indirect effect through the mediator of channel climate appears positive. As a consequence, the aggregate effect of channel power asymmetry on solidarity is rather slight, indicating that harmonious channel climate coupled with the use of noncoercive influence strategies may play the key roles in determining the success of channel solidarity under the condition of significant channel power asymmetry.

On the other hand, the aforementioned results may imply that the mutual speculations between the target member and the source member still remain in the interest-induced power interaction process. The goal of building a long-term and solid channel relationship is merely a special condition existing in any distribution channels. That is, in most cases, the channel relationship between two dyadic members may change “dynamic” in response to the variety of maneuvers potentially conducted by each other, mimicking a gamble between two dyadic channel members, where the source member is regarded as the banker. Similar analogies may also apply to cases describing one-to-many channel relationships (i.e., one common source member simultaneously facing multiple target members). Therefore, the source member remains as the key role in determining if the existing channel relationships can successfully be transformed to the status of channel solidarity via appropriate noncoercive influence strategies and harmonious channel climate to continue such an interest-induced power interaction process.

Despite the aforementioned generalizations that may help to characterize correlations among the corresponding factors in distribution channel relationships, some suggestions for further research are provided as follows.

- (1) The effects of channel climate on both short-term and long-term channel relationships warrant more investigations. Here, the factor of channel climate can be regarded as the mediator in channel relationship management, and thus, its corresponding effects on the short-term changes and induced long-term tendency of channel relationships are worth noting.
- (2) Evaluation of the corresponding effects on channel relationships under various conditions of channel power coupled with different influence strategies warrants further investigation. It should also be noted that different combinations of channel power asymmetry conditions and influence strategies may have diverse effects on channel relationships. In addition, different alternatives of influence strategies may be associated with different weights on the corresponding

evaluation process. Accordingly, other analytical techniques, e.g., multicriteria decision-making approaches, may be needed for the aforementioned assessment.

- (3) Further case studies aimed at other industries may be useful. Extensions for managing transnational distribution channel relationships also warrant investigation.

Overall, it is expected that this study can be beneficial not only by systematically characterizing distribution channels but also by demonstrating the applicability of marketing theories to more practical cases for channel relationship management.

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### References

- Andaleeb, Syed S. (1995). Dependence relations and the moderating role of trust: Implications for behavioral intentions in marketing channels. *International Journal of Research in Marketing*, 12(2), 157–172.
- Anderson, Erin, Lodish, Leonard, & Weitz, Barton (1987). Resource allocation behavior in conventional channels. *Journal of Marketing Research*, 24, 85–97.
- Anderson, James C., & Gerbing, David W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103, 411–423.
- Anderson, James C., & Narus, James A. (1984). A model of distributor's perspective of distributor–manufacturer working relationships. *Journal of Marketing*, 48, 62–74.
- Anderson, James C., & Narus, James A. (1990). A model of distributor firm and manufacturer firm working partnerships. *Journal of Marketing*, 54, 62–74.
- Bagozzi, Richard P. (1981). Evaluating structural equation models with unobservable variables and measurement error: A comment. *Journal of Marketing Research*, 18, 275–281.
- Bagozzi, Richard P., & Yi, Y. (1988). On the evaluation of structural equation model. *Academic of Marketing Science*, 16, 76–94.
- Boyle, Brett, & Dwyer, Robert F. (1995). Power, bureaucracy, influence, and performance: Their relationships in industrial distribution channels. *Journal of Business Research*, 32, 189–200.
- Brown, James R., Lusch, Robert F., & Nicholson, Carolyn Y. (1995). Power and relationship commitment: Their impact on marketing channel member performance. *Journal of Retailing*, 71, 363–392.
- Brown, James R., Lusch, Robert F., & Muehling, Darrel D. (1983). Conflict and power-dependence relations in retailer–supplier channels. *Journal of Retailing*, 59, 53–80.
- Churchill Jr., Gilbert A., Ford, Neil M., & Walker, Orville C. (1976). Organizational climate and job satisfaction in the salesforce. *Journal of Marketing Research*, 13, 323–332.
- Cooper, Donald R., & Emory, William C. (1995). In Donald R. Cooper, & William C. Emory (Eds.), *Business research methods* (pp. 138–161). Richard D. Irwin.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297–334.
- Dornier, P. -P., Ernst, Ricardo, Fender, Michel, & Kouvelis, Panos (1998a). Supplier network development. In P. -P. Dornier, Ricardo Ernst, Michel Fender, & Panos Kouvelis (Eds.), *Global operations and logistics: Text and cases* (pp. 146–171). New York: Wiley.
- Dornier, P. -P., Ernst, Ricardo, Fender, Michel, & Kouvelis, Panos (1998b). Logistics network design for global operations. In P. -P. Dornier, Ricardo Ernst, Michel Fender, & Panos Kouvelis (Eds.), *Global operations and logistics: Text and cases* (pp. 251–305). New York: Wiley.
- Dwyer, F. Robert, Schurr, Paul, & Oh, Sejo (1987). Developing buyer–seller relationships. *Journal of Marketing*, 51, 11–27.
- Dwyer, Robert F., & Walker, Orville C. (1981). Bargaining in an asymmetrical power structure. *Journal of Marketing*, 45, 104–115.
- El-Ansary, Adel I., & Stern, Louis W. (1972). Power measurement in the distribution channel. *Journal of Marketing Research*, 9, 47–52.
- Emerson, Richard M. (1962). Power-dependence relations. *American Sociological Review*, 27, 31–41.
- Etgar, M. (1978). Selection of an effective channel control mix. *Journal of Marketing*, 42, 53–78.
- Falcione, Lyle Sussman, & Herden, Richard (1987). Communication climate in organizations. In Fredric M. Jablin, Linda L. Putnam, Karlene Roberts, & Lyman Porter (Eds.), *Handbook of organizational communication: An interdisciplinary perspective* (pp. 195–227). Newbury Park, CA: Sage Publications.
- Falcione, Raymond, & Kaplan, E. (1984). Organizational climate, communication, and culture. In R. Bostrom (Ed.), *Communication yearbook, vol. 8* (pp. 285–309). Newbury Park, CA: Sage Publications.
- Forgas, Joseph P., & Dobosz, Barbara (1980). Dimensions of romantic involvement: Toward a taxonomy of heterosexual relationships. *Social Psychology Quarterly*, 43, 290–300.
- Frazier, Gary L. (1983). On the measurement of interfirm power in channels of distribution. *Journal of Marketing Research*, 20, 158–166.
- Frazier, Gary L., & Summers, John D. (1984). Interfirm influence strategies and their application within distribution channels. *Journal of Marketing*, 48, 43–55.
- Frazier, Gary L., & Summers, John D. (1986). Perceptions of interfirm power and its use within a franchise channel of distribution. *Journal of Marketing Research*, 23, 169–176.
- Frazier, Gary L., & Rody, Raymond (1991). The use of influence strategies in interfirm relationships in industrial product channels. *Journal of Marketing*, 55, 52–69.
- Frazier, Gary L., Gill, James, & Kalez, Sudhir (1989). Dealer dependence levels and reciprocal actions in a channel of distribution in a developing country. *Journal of Marketing*, 53, 50–69.
- French Jr., John R. P., & Raven, Bertram H. (1959). The bases of social power. In Dorwin Cartwright (Ed.), *Studies in social power* (pp. 150–167). Ann Arbor, MI: University of Michigan.
- Ganesan, Shanker (1993). Negotiation strategies and nature of channel relationships. *Journal of Marketing Research*, 30, 183–203.
- Ganesan, Shankar (1994). Determinants of long-term orientation in buyer–seller relationships. *Journal of Marketing*, 58, 1–19.
- Gaski, John F. (1984). The theory of power and conflict in channels of distribution. *Journal of Marketing*, 48, 9–29.
- Gaski, John F., & Nevin, John R. (1985). The differential effects of exercised and unexercised power sources in marketing channel. *Journal of Marketing Research*, 22, 130–142.
- Gundlach, Gregory T., & Cadotte, Ernest R. (1994). Exchange interdependence and interfirm interaction: Research in a simulated channel setting. *Journal of Marketing Research*, 29, 516–532.
- Hammond, Kevin L., Brown, Gene, & Harmon, Harry A. (1996). Interorganizational climate within marketing channels: Analysis of a measure. *Psychological Reports*, 78, 647–652.

- Heide, Jan B., & John, George (1990). Alliances in industrial purchasing: The determinants of joint action in buyer–supplier relationships. *Journal of Marketing Research*, 27, 24–36.
- Hu, Tung-Lai, Sheu, Jih-Biing, & Huang, Kuan-Hsiung (2002). A reverse logistics cost minimization model for the treatment of hazardous wastes. *Transportation Research. Part E, Logistics and Transportation Review*, 38(6), 457–473.
- Hu, Tung-Lai, Sheu, Jih-Biing, & Hsieh, Wen-Chueh (2002). Service delivery systems and operational performance in multi-level marketing industry. *PanPacific Management Review*, 5(1), 1–25.
- Hu, Tung-Lai, & Sheu, Jih-Biing (2003). A fuzzy-based customer classification method for advanced demand-responsive logistical distribution operations. *Fuzzy Sets and Systems*, 139, 431–450.
- Hu, Yi-Hwa (2001). Case Study: Channel Relationships of the PDA Industry in Taiwan, Master thesis, National Kaohsiung First University of Science and Technology, Kaohsiung, Taiwan.
- Hunt, Shelby D., & Nevin, John R. (1974). Power in a channel of distribution: Sources and consequences. *Journal of Marketing Research*, 11, 186–193.
- Johnson, Jean L., Sakano, Tomoaki, Cote, Joseph A., & Onzo, Naoto (1993). The exercise of interfirm power and its repercussions in U.S.–Japan channel relationships. *Journal of Marketing*, 57, 1–10.
- Joreskog, Karl G., & Sorbom, Dag (1993). *LISREL 8 and PRELIS 2 for windows manual* (pp. 33–156). Chicago: SSI.
- Kadiyali, Vrinda, Chintagunta, Pradeep, & Vilcassim, Naufel (2000). Manufacturer–retailer channel interactions and implications for channel power: An empirical investigation of pricing in a local market. *Marketing Science*, 19(2), 127–148.
- Kaufmann, Patrick J., & Stern, Louis W. (1988). Relational exchange norms, perceptions of unfairness, and retained hostility in commercial litigation. *Journal of Conflict Resolution*, 32, 534–552.
- Kim, Keysuk (2000). On interfirm power, channel climate, and solidarity in industrial distributor–supplier dyads. *Journal of the Academy of Marketing Science*, 28(3), 388–405.
- Lusch, Robert F. (1976). Sources of power: Their impact on intrachannel conflict. *Journal of Marketing Research*, 13, 382–390.
- Lusch, Robert F., & Brown, James R. (1996). Interdependency, contracting, and relational behavior in marketing channels. *Journal of Marketing*, 60, 19–38.
- Mohr, Jakkı, & Nevin, John (1990). Communication strategies in marketing channels: A theoretical perspective. *Journal of Marketing*, 54, 36–51.
- Morgan, Robert M., & Hunt, Shelby D. (1994). The commitment–trust theory of relationship marketing. *Journal of Marketing*, 58, 20–38.
- Moran, Tomas E., & Volkwein, Fredericks J. (1992). The culture approach to the formulation of organizational climate. *Human Relations*, 45, 19–29.
- Nevin, John R. (1995). Relationship marketing and distribution channel: Exploring fundamental issues. *Journal of the Academy of Marketing Science*, 23(4), 327–334.
- Noordewier, Thomas, John, George, & Nevin, John R. (1990). Performance outcomes of purchasing arrangements in industrial buyer–vendor relationships. *Journal of Marketing*, 54, 80–93.
- Qiu, Vaughan (1999). The contribution of information to business success: A LISREL model analysis of manufacturers in Shanghai. *Information Processing & Management*, 35, 193–208.
- Raven, Bertram H., & Calas, Marta (1987). Organizational culture: A critical assessment. In Fredric M. Jablin, Linda L. Putnam, Karlene Roberts, & Lyman Porter (Eds.), *Handbook of organizational communication: An interdisciplinary perspective* (pp. 228–263). Newbury Park, CA: Sage Publications.
- Spiro, Rosan, & Perrenult, William (1979). Influence used by industrial salesmen: Influence strategy mixes and situational determinants. *Journal of Business*, 52, 435–455.
- Stern, Louis (1971). Channel control and interorganization management. In William G. Moller, & David L. Wilemoned (Eds.), *Marketing channels: A system viewpoint* (pp. 309–401). Homewood, IL: Richard D. Irwin.
- Stern, P. C. (1986). Toward a social psychology of solidarity. *American Psychologist*, 41, 229–231.
- Strutton, David, & Pelton, Lou E. (1994). The relationship between psychological climate in sales organizations and sales manager–salesperson solidarity. *The Mid-Atlantic Journal of Business*, 30(2), 153–174.
- Tyagi, Pradeep (1982). Perceived organizational climate and process of salesperson motivation. *Journal of Marketing Research*, 19, 240–254.
- Tyagi, Pradeep (1985). Organizational climate, inequities, and attractiveness of sales rewards. *Journal of Personal Selling and Sales Management*, 5, 31–37.
- Verbeke, Willem, Volgering, Marco, & Hessels, Marco (1998). Exploring the conceptual expansion within the field of organizational behavior: Organizational climate and organizational culture. *Journal of Management Studies*, 35, 303–327.
- Weitz, Barton A., & Jap, Sandy (1995). Relationship marketing and distribution channels. *Journal of the Academy of Marketing Science*, 23, 305–320.
- Wilkinson, Ian, & Kipnis, David (1978). Interfirm use of power. *Journal of Applied Psychology*, 63, 315–320.
- Williamson, Oliver E. (1981). The economics of organizing: The transaction costs approach. *American Journal of Sociology*, 87(3), 548–577.
- Young, Louise C., & Wilkinson, Ian F. (1989). The role of trust and cooperation in marketing channels: A preliminary study. *European Journal of Marketing*, 23(2), 109–122.

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