



EFFECTS OF ORGANIZATIONAL CONTROL, TRUST, RELATIONSHIP COMMITMENT, AND PARTNERSHIPS ON RELATIONSHIP PERFORMANCE IN THE BUSINESS WASTE INDUSTRY



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ABSTRACT

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This study aimed to explore the effects of organizational control, relationship commitment, trust, and partnerships on industrial relationship performance. The participants in the survey were legitimate civil private companies that deal with waste disposal and treatment (both domestic and foreign companies) and are located in the six special municipalities of Taiwan. A questionnaire survey was conducted. A total of 1,000 questionnaires were distributed, and 550 questionnaires were returned. An effective sample of 539 questionnaires was collected, for an effective recovery rate of 98%. Analyses were performed using structural equation modeling (SEM). The results indicated significant positive effects of relationship control on formal control, relationship control on relationship commitment, relational trust on institutional trust, institutional trust on partnerships, and partnerships on relationship performance. These results can provide business waste organizations with a reference for the coordination of organizational control and decisions related to relationship performance management.

Contribution/ Originality: This study aimed to explore the effects of organizational control, relationship commitment, trust, and partnerships on industrial relationship performance. These results can provide business waste organizations with a reference for the coordination of organizational control and decisions related to relationship performance management.

1. INTRODUCTION

With the advent of the globalization era, most companies have recognized the limits of their resources and have invested effort in the establishment of long-term partnerships in order to break away from the traditional competition model, in which companies competed independently. Close partnerships constitute important relationship capital of companies (Dyer and Singh, 1998) as well as the means of acquiring important resources and achieving organizational growth. With the gradual disintegration of spatial limitations, cross-enterprise organizational networks have changed inter-company communication channels and relational tensions, increasing

companies' willingness to establish partnerships (Hong, 2002). Relationship management involves dynamic interactions between transaction parties, in which partners cooperate to introduce changes and adjustments (Li and Nicholls, 2000) and thus, strengthen their internal organizational management and mutual long-term relationships. These interactions are now necessary for a company to survive (Wolf, 2014).

Business waste companies organize and reuse domestic and foreign waste products, and management models and methods are the core elements for achieving the effective linking of domestic and foreign resources. Formal control and relational governance mechanisms are necessary to fulfil companies' common objectives and promote relationship commitment and trust in order to maintain stable long-term partnership relations (Goo *et al.*, 2009). Formal control is the internal core of organizational management. Internal organizational management based on planned control and monitoring is clearer, and operations based on preset goals allow for the effective achievement of target management performance (Ye and Huang, 2017). The diversification of the types of business waste organizations has resulted in the growing complexity of internal organizational management. The improvement of relationship commitment and management efficacy through the effective integration of formal and relationship control mechanisms is an important issue (Goo *et al.*, 2009). However, while many studies have continued to focus on the choice of the control and management mechanism (Choudhury and Sabherwal, 2003) and its influence on effectiveness (Tiwana and Keil, 2009) there is a lack of research on the implementation of formal control and relationship control in organizations (Chang *et al.*, 2012).

Past studies on inter-organization relationships have indicated that such relationship variables as trust and commitment affect people's relationship behaviors with regard to partnership members (Anderson and Weitz, 1992; Mohr *et al.*, 1996; Chen *et al.*, 2011). Trust is a key factor for effective person-company and company-company bonds (Searle *et al.*, 2011). In addition to being a type of economic behavior, trust has an economic incentive effect in complex social relationships (Lawrence and Kaufmann, 2011). The establishment of commitment relationships between companies allows for the exchange of resources and increases companies' willingness to invest time and effort to maintain future cooperation (Mignonac *et al.*, 2015). High mutual trust and commitment between partners reduces uncertainties in future cooperation, increases mutual adaptability, and provides mutually beneficial interactions (Frank and Richard, 2000).

In the process of partnership development, relationship control can promote partners' willingness to communicate and exchange by strengthening contract formulation via relationship norms, conflict management, and mutual dependence (Gulati, 1995). In partnership relations, formal control, relationship control, trust, and commitment are expected to improve relationship performance under the influence of the links and interactions between them.

This study aimed to review literature related to partnership relations management and explore the effects of formal control, relationship control, and relational trust on relationship commitment. With regard to literature on the internal structure of organizations, business waste industry organizations are more informationally opaque in comparison to other industries and, therefore, few scholars conduct related research. This study examined the influence of relationship commitment on relationship performance by considering partnerships in the overall business waste industry. The objectives of this study were to: (1) explore the influence of formal control and relationship control on relationship commitment, (2) explore the influence of relational trust and institutional trust on partnerships, and (3) explore the influence of relationship commitment and partnerships on relationship performance.

2. LITERATURE REVIEW AND HYPOTHESES

2.1. Relations between Formal Control and Relationship Commitment

From the transaction cost perspective of trust, some studies have suggested that partnership parties can draw from mutually satisfactory cooperation behaviors to build committed relationships (Williamson, 1985). Under

mutual commitment, formal control is applied to achieve common goals according to the parties' expectations and abilities reflected in contract terms. Moreover, partners can cooperate more effectively and gain benefits from exchanges by learning about each other's operations (Goo and Nam, 2007). Marcus and Schaffler (2014) used structural equation modeling (SEM) to estimate 197 providers of logistic services in Germany that were conducting horizontal integration, and found that formal control and commitment in organizational operations can strengthen the internal governance of organizations and help achieve mutual complementation among suppliers.

With regard to the control of results in the business waste industry, the tasks that need to be completed by each party are first determined and an assessment standard is established in order to evaluate each party's output, including the terms of delivery for waste goods sources, guarantees and estimations of content purity for different waste goods sources, etc. Thus, contract terms related to result control clearly specify companies' goals, formulate their responsibilities and duties, and determine outcomes and final outputs that must be delivered at each stage (Tiwana, 2010). Behavior control must be implemented through specific mechanisms, such as the formulation of proper procedures and the evaluation of behaviors through regular meetings and progress reports. The norms for these measures can be established in contract terms (Goo, 2010) which can help achieve common goals and commitment in partnerships (Choudhury and Sabherwal, 2003). Thus, hypothesis H1 was proposed:

H1: Formal control has a significant positive effect on relationship commitment.

2.2. Relationship between Relationship Control and Relationship Commitment

In organizational operations and management, it may be difficult to clearly express mutual needs and expectations when a contract is concluded. With the rapid change of market needs, it becomes more difficult to make quick adjustments (Gulati, 1998). Contracts may sometimes hinder the development of mutual trust and, thus, reduce the level of faith between parties (Klein, 1996). Therefore, relationship control is an important factor for effective adjustments and flexible formal control.

Relationship commitment is an important factor for partners' willingness to maintain current relationships, which can affect the establishment of valuable relationships (Morgan and Hunt, 1994). Relationship control concentrates the mutual benefits and responsibilities of partnership parties and transforms self-centered behaviors into team cooperation. The establishment of consensus regarding the relationship value promotes mutual exchanges and reduces conflicts, forming mutual dependence, team cooperation, and the maintenance of the current partnership (Jap and Ganesan, 2000). One study conducted research among virtual community members with different degrees of participation and found that relationship control and relational trust were positively correlated (Huang and Yen, 2009). Thus, hypotheses H2 and H3 were established as follows:

H2: Relationship control has a significant positive effect on formal control.

H3: Relationship control has a significant positive effect on relationship commitment.

2.3. Relationship between Trust (Institutional Trust and Relational Trust), Relationship Commitment, and Partnerships

With regard to relational trust, the information accumulated during previous interactions, such as the dependability of the trusted party, leads to the formation of expectations regarding the trusted party's future intentions. The parties' mutual concern regarding frequent long-term interactions integrates emotional factors into the relationship, generating emotional dependence and forming relational trust (Rousseau *et al.*, 1998). As the interactions between two parties become closer, their mutual values are affected by the other party and they switch from a short-term transaction relationship to a mature long-term relationship, which brings benefits to both parties. MacDonald and Korb (2008) suggested that the degree of relational trust in a partnership is the key factor for the decision to sign a contract. Furthermore, Doney and Cannon (1997) suggested that salespeople play an important

role in buyer-seller relationships and that their relational trust can affect institutional trust and inter-organization dependence.

Apart from interpersonal goodwill and trust, modern social order is also based on the social construction of trust beyond the individual level (Zucker, 1986). Institutional trust is strengthened via laws and regulations and systemic norms (Cheng, 2004). The business waste industry's operations involve many laws and norms that restrain industrial institutions in their operation units and procedures and reduce mutual support and assistance in interpersonal relations. Fukuyama (1995) maintained that institutional trust overemphasizes individual power, which can reduce interpersonal trust. Therefore, the establishment of trust and sense of duty in interpersonal relations has a greater effect on mutual exchange relations than institutional design (Zucker, 1986). Resources are also more resilient than institutional trust. Hypothesis H4 was thus established in this study as follows:

H4: Relational trust has a significant positive effect on institutional trust.

Past studies have indicated that trust can result in higher relationship commitment. Improvement of institutional trust through laws and regulations and establishment of a contract can increase relationship commitment between cooperation partners. Strong mutual trust can increase an organization's commitment to the relationship (Jonsson and Zineldin, 2003). Thus, hypothesis H5 was established in this study as follows:

H5: Institutional trust has a significant positive effect on relationship commitment.

Trust begins with interpersonal relationships and extends to the legal provisions of the entire organization (Vieira *et al.*, 2012). Trust-based partnerships suppress speculation behaviors and increase mutual commitment, thus, promoting mutual investment of effort into the development of stable long-term relationships. Thus, trust between partners can be increased through the establishment of legal norms, which promotes exchange of knowledge and confidential information between cooperation members (Dyer, 1997; Frank and Richard, 2000). Thus, hypothesis H6 was established in this study as follows:

H6: Institutional trust has a significant positive effect on partnerships.

2.4. Relations between Relationship Commitment and Partnerships

Relationship commitment involves a long-term perspective on a mutual relationship and the promotion of the establishment of long-term partnerships, which provides partners with the advantages of further cooperation (Wilson, 1995). High commitment in relationships positively affects the behaviors of cooperating members. Members' willingness to comply and continue cooperation is determined by intrinsic factors and cannot be forced. They remain willing to rely on their cooperation partners even under high-risk conditions (McCutcheon and Stuart, 2000). Higher relationship commitment increases the positive effects of mutual cooperation and reduces partners' intention to terminate the relationship (Morgan and Hunt, 1994). Thus, hypothesis H7 was established in this study as follows:

H7: Relationship commitment has a significant positive effect on partnerships.

2.5. Relationship between Relationship Commitment and Relationship Performance in Partnerships

Selnes and Sallis (2003) indicated that both partners' satisfaction with the relationship efficacy and efficiency allows for the formation of good relationships and relationship performance. If a company receives more benefits (e.g. increased profits from the product, reduced costs, and improved customer trust and dependence) from the partner than other companies, it pays more attention to this cooperation and invests more effort into the establishment, development, and maintenance of mutual commitment, which greatly improves relationship performance (Yen and Chen, 2005).

Relationship commitment plays an important role in any industrial field (Morgan and Hunt, 1994) because the establishment and maintenance of long-term relationships must be based on commitment (Dwyer *et al.*, 1987). Relationship commitment increases continuous mutual development and reduces deviations due to external stimuli

(Alexandra *et al.*, 2015). Chiang and Lee (2011) examined the influence of relationship commitment on relationship performance in the manufacturing industry and found that the two factors were positively related. Thus, hypotheses H8-H9 were established in this study as follows:

H8: Relationship commitment has a significant positive effect on relationship performance.

H9: Partnerships have a significant positive effect on relationship performance.

3. RESEARCH METHODS

3.1. Research Framework

The research framework of this study is shown in Figure-1.

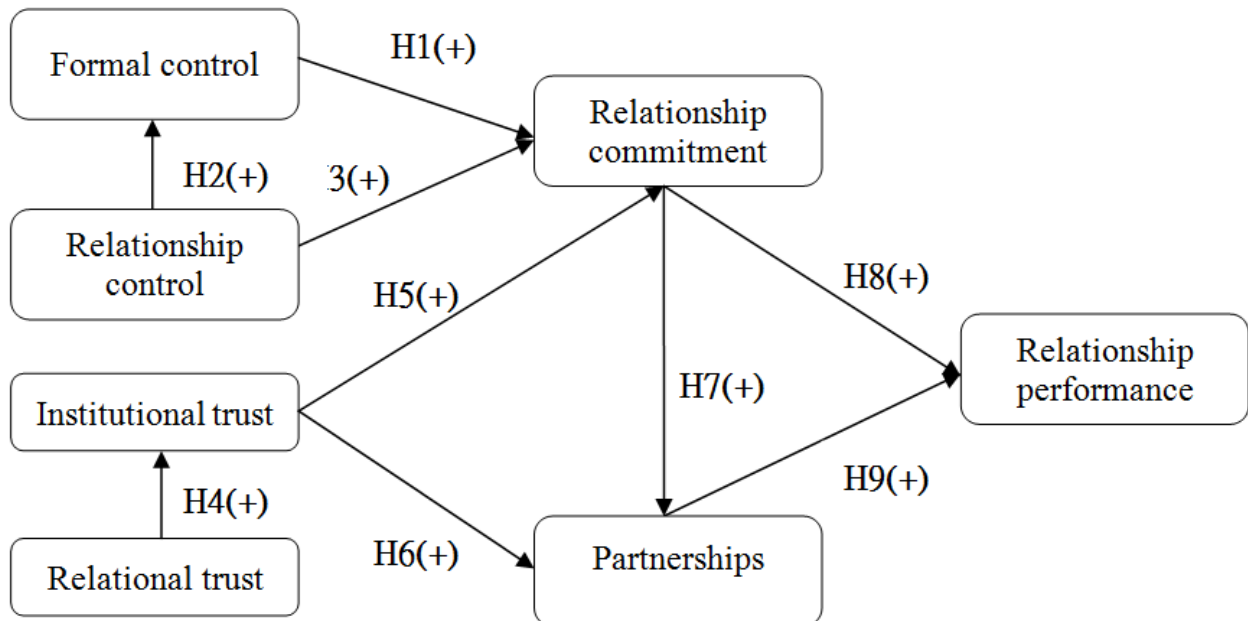


Figure-1. Research Framework

3.2. Questionnaire Design

The survey in this study was conducted using the questionnaire method. The designed questionnaire included three parts. The first part measured the following latent variables: formal control, relationship control, institutional trust, relational trust, relationship commitment, partnerships, and relationship performance. The second part collected organizations' basic data, including the type of disposed waste, maintenance of the organization's partnership, duration of the organization's partnership, age of the organization, and number of employees in the organization. The third part focused on participants' basic data, including gender, age, years in position, position, educational background, and average monthly income. The questionnaire in this study included 23 items spanning seven constructs and was revised according to previous studies and the features and demands of the investigated industry. Four items related to formal control were based on studies by Govindarajan and Fisher (1990); Goo *et al.* (2009) and Goo (2010). Six items related to relationship control were based on studies by Dore (1983); Dant and Schul (1992); Goo *et al.* (2009); Yusoon and Thomas (2015); Kim and Mauborgne (1998); Lambe *et al.* (2000); Gulati and Sytch (2007). Two items related to trust were based on studies by Morgan and Hunt (1994); Doney and Cannon (1997); Rousseau *et al.* (1998) and Cheng (2004). Three items related to relationship commitment were based on studies by Mohr and Spekman (1994) and Morris and Cadogan (2001). Six items related to partnerships were based on studies by Ganesan (1994); Gulati and Singh (1998); Capon (2001); Hitt and Dacin (2000); Mohr and Spekman (1994); Pérez and Sánchez (2001) and Fang *et al.* (2003). Two items related to relationship performance were based on studies by Smith and Barclay (1997); Selnes and Sallis (2003); Fang *et al.* (2003) and Gadde and

Snehota (2000). The questionnaire items were measured using a five-point Likert scale with scores from 1 to 5 corresponding to the level of agreement: “strongly disagree,” “disagree,” “neutral,” “agree,” and “strongly agree.” Explanations of the variables in each construct are provided in Appendix-1.

3.3. Data Collection

The participants in the questionnaire came from industrial waste disposal and treatment organizations in the six special municipalities in Taiwan. According to the Environmental Protection Administration’s monthly statistics on registered public and private waste treatment and disposal organizations (November 2015),¹ there are 3,892 waste disposal organizations (levels A, B, and C) and 180 waste treatment organizations (levels A and B) in Taiwan. Statistics regarding waste disposal organizations in the six special municipalities of Taiwan are as follows: there are 391 organizations in Taipei City, 671 organizations in New Taipei City, 466 organizations in Taoyuan City, 473 organizations in Taichung City, 304 organizations in Tainan City, and 567 organizations in Kaohsiung City. The statistics regarding waste treatment organizations in the six special municipalities of Taiwan are as follows: there is one organization in Taipei City, eight organizations in New Taipei City, 40 organizations in Taoyuan City, 14 organizations in Taichung City, 13 organizations in Tainan City, and 54 organizations in Kaohsiung City.

A total of 1,000 questionnaires were distributed, and 550 questionnaires were returned. An effective sample of 539 questionnaires was collected, for an effective recovery rate of 98%. Questionnaires were administered to 956 waste disposal organizations and 44 waste treatment organizations. The distribution of the participating waste disposal organizations (including exporting organizations) in the six municipalities of Taiwan was as follows: 130 in Taipei City; 224 in New Taipei City; 155 in Taoyuan City; 157 in Taichung City; 101 in Tainan City; 189 in Kaohsiung City. Distribution of participating waste treatment organizations (including exporting organizations) in the six municipalities of Taiwan was as follows: one in Taipei City; two in New Taipei City; 14 in Taoyuan City; five in Taichung City; four in Tainan City; 18 in Kaohsiung City.

Due to the fact that the participants were working in the investigated industry, questionnaires were administered via four methods, including on-site visits to companies, mail, phone, and a meeting of the related association. Questionnaires were to be filled in by companies’ personnel in managerial positions (including licensed waste disposal and treatment personnel). Each organization filled in one questionnaire.

4. SAMPLE DESCRIPTIVE STATISTICS

Male and female participants constituted 98.3% and 1.7% of the effective sample, respectively; the business model in the investigated industry is male-based. With regard to age, the largest portion of participants consisted of those between the ages of 41 and 50 (46.6%), followed by those between 31 and 40 (29.1%). With regard to the number of years in their positions, the largest portion of participants consisted of those who were in their positions for 16-20 years, followed by those who were in position for 11-15 years. With regard to position, 78.1% of the participants were high-level managers and 13.4% were directors. With regard to average monthly income, most participants earned NT\$40-50 thousand per month (44.3%), followed by those who earned NT\$60-70 thousand per month (38.8%).

The sample structure in this study is characterized by its inclusion of more male participants than female participants. The questionnaire time coincided with the related association’s meeting, and the researchers administered the questionnaires directly on site. This is the reason why most participants were directors or high-

¹Environmental Protection Administration. Monthly Statistics of Permit Management in Public or Private Waste Clearance and Disposal Organizations (November 2015). [URL:https://waste1.epa.gov.tw/Grant/GS-UC60/QryGrantData.aspx](https://waste1.epa.gov.tw/Grant/GS-UC60/QryGrantData.aspx), accessed on 2016.4.8.

level managers and were between 41 and 50 years old. Unlike the high-tech manufacturing industry, most participants in the business waste industry have professional high school education.

5. ANALYSIS OF EMPIRICAL RESULTS

5.1. Measurement Model

With regard to reliability, as shown in Appendix-4, all indicators of the six latent constructs had significant factor loadings. The measurement error variance did not include negative values. As suggested by Bagozzi and Yi (1988) the following three indicators can be used for evaluation: (1) Testing of variables' individual item reliability: Individual item reliability evaluates the construct reliability of a measurement variable with respect to the corresponding latent variable and measures the statistical significance of each factor loading. In this study, all factor loadings were significant (see Appendix-2). (2) Composite reliability (CR): CR of latent variables comprises the reliability of all measurement factors and represents the internal consistency of construct indicators. High reliability indicates high consistency between indicators. Fornell and Larcker (1981) suggested that the optimal CR value is 0.60 and higher. In this study, the CR value for relationship control was lower than 0.60. Moreover, the CR value ranged between 0.612-0.912 for other variables and, thus, was within the acceptable range. (3) Average variance extracted (AVE) of latent variables: calculates the amount of variance in a latent variable that can be explained by the associated measurement variable. Thus, a high AVE value indicates the higher reliability and convergent validity of latent variables. According to Fornell and Larcker (1981) the optimal value of AVE is 0.50 and higher. As seen from Appendix-2, the AVE value was lower than 0.50 for the relationship between relationship commitment and partnerships and other variables, which indicates the good fit of the internal structure of the model used in this study.

With regard to content validity, the questionnaire content was mainly designed in accordance with the objective of this study and was revised according to past studies and related questionnaires. The questionnaire items and wording were also revised. Thus, the questionnaire in this study possessed a certain degree of content validity. With regard to convergent validity, the factors loadings of each item in each construct serve as a basis, and the significance of standardized factor loadings in all constructs indicates the convergent validity of the constructs (Chen, 2005). All standardized factor loadings in this study were significant, indicating convergent validity (Appendix-2). With regard to discriminant validity, Fornell and Larcker (1981) suggested that the square root of construct AVE must be greater than the correlation coefficients of paired variables in other constructs in order to indicate good discriminant validity between all constructs (Appendix-3). In most cases, this standard was met, meaning that the scale in this study had discriminant validity.

5.2. SEM Empirical Analysis

First, the goodness-of-fit of the overall model is explained. In this study, maximum likelihood estimation (MLE) was conducted for the parameters. The goodness-of-fit of the overall model framework was evaluated based on the goodness-of-fit of the overall model. This study applied the classification proposed by Hair *et al.* (1998) that included three types: absolute fit measures, incremental fit measures, and parsimonious fit measures. These measures can be described as follows: (1) Absolute fit measures: determine the extent to which the overall model can predict covariance and correlation matrix. Table 1 shows that the chi-square value in this study was 312.461 ($p = 0.001$), indicating inconsistency in the data structure of the hypothetical model and observed values. However, chi-square values are highly sensitive to sample size. When a sample is too large, the chi-square value increases, which makes it easy to reject the null hypothesis. Therefore, different goodness-of-fit indicators must be considered (Chiu, 2006). χ^2 / df , *GFI*, *RMR*, and *RMSEA* in this study were within the acceptable range. (2) Incremental fit measures: compare the developed theoretical model and null model. Table 1 shows the incremental

fit measures of the theoretical model developed in this study. *AGFI*, *NFI*, and *CFI* were greater than 0.90. (3) Parsimonious fit measures: measure adjusted goodness-of-fit to determine the fit of each estimation parameter.

Table-1. Model goodness-of-fit indicators

Test statistic		Fit standard	Results
Absolute fit measures	χ^2 (<i>P</i> -value)	Smaller value optimal	257.530 (<i>p</i> =0.001)
	χ^2 / df	Smaller than 5	2.259
	<i>GFI</i>	Greater than 0.90	0.946
	<i>RMR</i>	Smaller value optimal	0.01
	<i>RMSEA</i>	Smaller value optimal; best if \square smaller than 0.05	0.048
Incremental fit measures	<i>AGFI</i>	Greater than 0.90	0.928
	<i>NFI</i>	Greater than 0.90	0.574
	<i>CFI</i>	Greater than 0.90	0.694
Parsimonious fit measures	<i>PNFI</i>	Greater than 0.50	0.481
	<i>PGFI</i>	Greater than 0.50	0.705

Table 1 shows the parsimonious fit measures for the overall theoretical model in this study. *PNFI* equal to 0.614 and *PGFI* equal to 0.812 were larger than 0.50, which was higher than the goodness-of-fit requirement. Based on the summary of all the indicators, the goodness-of-fit of the theoretical model in this study was found to be good.

The SEM empirical results are shown in Table 2 and Figure 2. In the following section, the standardized coefficient values of the structural model are explained. The estimated coefficient of formal control in relation to relationship commitment was 0.007, not reaching the significance level. Hence, hypothesis H1 was not supported. Formal control can be divided into result control and behavior control. Contract terms related to result control clearly specify companies' goals, formulate their responsibilities and duties, and determine outcomes and final outputs that must be delivered at each stage (Tiwana, 2010). Behavior control must be implemented through specific mechanisms, such as the formulation of proper procedures and the evaluation of behaviors through the implementation of regular meetings and progress reports. The norms for these measures can be established in contract terms (Goo, 2010) which can help achieve common goals and commitment in partnerships (Choudhury and Sabherwal, 2003). These arguments were not supported by the empirical results in this study.

The estimated coefficient for relationship control in relation to formal control was 0.696, reaching the significance level of 5% and indicating a significant positive effect of relationship control on formal control. Relationship control increases an organization's transaction relations via three aspects, including relationship norms, conflict resolution, and mutual dependence (Yusoon and Thomas, 2015). Relationship control can effectively adjust formal control and increase its effectiveness in terms of improving both parties' problem-solving skills and formulating standardized operational procedures (Morgan and Hunt, 1994). Thus, hypothesis H2 in this study was supported.

The estimated coefficient of relationship control in relation to relationship commitment was 1.112, reaching the significance level of 5% and indicating a significant positive effect of relationship control on relationship commitment. Thus, hypothesis H3 was supported. Relationship control concentrates mutual benefits and responsibilities of partnership parties and transforms self-centered behaviors into team cooperation. The establishment of consensus regarding relationship value promotes mutual exchange and reduces conflicts, forming mutual dependence, team cooperation, and maintenance of the current partnership, which, in turn, increases relationship commitment (Jap and Ganesan, 2000).

The estimated coefficient of relational trust in relation to institutional trust was 0.107, reaching the significance level of 5% and indicating a significant positive effect of relational trust on institutional trust. Thus, hypothesis H4 was supported. Formerly, waste disposal and treatment organizations in Taiwan were mostly home-based

businesses. Relationships between these companies were based on personal connections (Yeh *et al.*, 2016a). In the industrial waste industry, relational trust is a factor that unites front-end developers. Institutional trust overemphasizes legal institutional norms and can reduce the level of interpersonal relational trust (Fukuyama, 1995).

The estimated coefficient of institutional trust in relation to relationship commitment was 0.586, not reaching the significance level of 5% and indicating a significant positive effect of institutional trust on relationship commitment. Thus, hypothesis H5 was not supported. The establishment of formal legal norms and contracts between companies can increase mutual trust between cooperation partners and strengthen their relationship commitment. Deep mutual trust can increase an organization's commitment to the relationship (Jonsson and Zineldin, 2003). These arguments were not supported by the empirical results in this study.

The estimated coefficient of institutional trust in relation to partnerships was 1.323, reaching the significance level of 5% and indicating the significant positive effect of institutional trust on partnerships. Thus, hypothesis H6 was supported. Clear legal norms related to institutional trust provide partners with a mutual guarantee through a normalized contract, which increases their trust and willingness to exchange resources and creates closer partnerships (Huang and Fang, 2003).

The estimated coefficient of relationship commitment in relation to partnerships was -0.127, not reaching the significance level. Thus, hypothesis H7 was not supported and relationship commitment was found to have no significant negative effect on partnerships. These results can be explained by the fact that previously, marketing channels in the business waste industry were patent-based oligopoly activities and the important channels in the industry could be controlled only by those who were licensed to use the sources of waste products and recycled products (Yeh *et al.*, 2016b). Thus, there are class-based relations in partnerships and license holders have the right of voice, which is likely to pose a challenge to mutual commitment. The estimated coefficient of relationship commitment in relation to relationship performance was 0.398, not reaching the significance level. Thus, hypothesis H8 was not supported. The oligopoly of marketing channels in the business waste industry (Yeh *et al.*, 2016b) can easily destabilize mutual relationship commitment and lead to a poorer relationship performance than predicted. The estimated coefficient of partnerships in relation to relationship performance was 1.811, reaching the significance level. Hence, hypothesis H9 was supported. Selnes and Sallis (2003) indicated that both partners' satisfaction with the relationship efficacy and efficiency allows for the formation of good relationships and relationship performance.

Table-2. Estimations of the structural coefficients of the theoretical model

Corresponding hypothesis	Relationship between variables	Estimated coefficient	Standard error	Supported/ Not supported
Hypothesis 1	Formal control → Relationship commitment	0.007	0.071	Not supported
Hypothesis 2	Relationship control → Formal control	0.696**	0.319	Supported
Hypothesis 3	Relationship control → Relationship commitment	1.112**	0.511	Supported
Hypothesis 4	Relational trust → Institutional trust	0.107**	0.054	Supported
Hypothesis 5	Institutional trust → Relationship commitment	0.586	0.382	Not supported
Hypothesis 6	Institutional trust → Partnerships	1.323**	0.414	Supported
Hypothesis 7	Relationship commitment → Partnerships	-0.127	0.45	Not supported
Hypothesis 8	Relationship commitment → Relationship performance	0.398	0.262	Not supported
Hypothesis 9	Partnerships → Relationship performance	1.811**	0.303	Supported

Note: * indicates $p < 0.1$; ** indicates $p < 0.05$

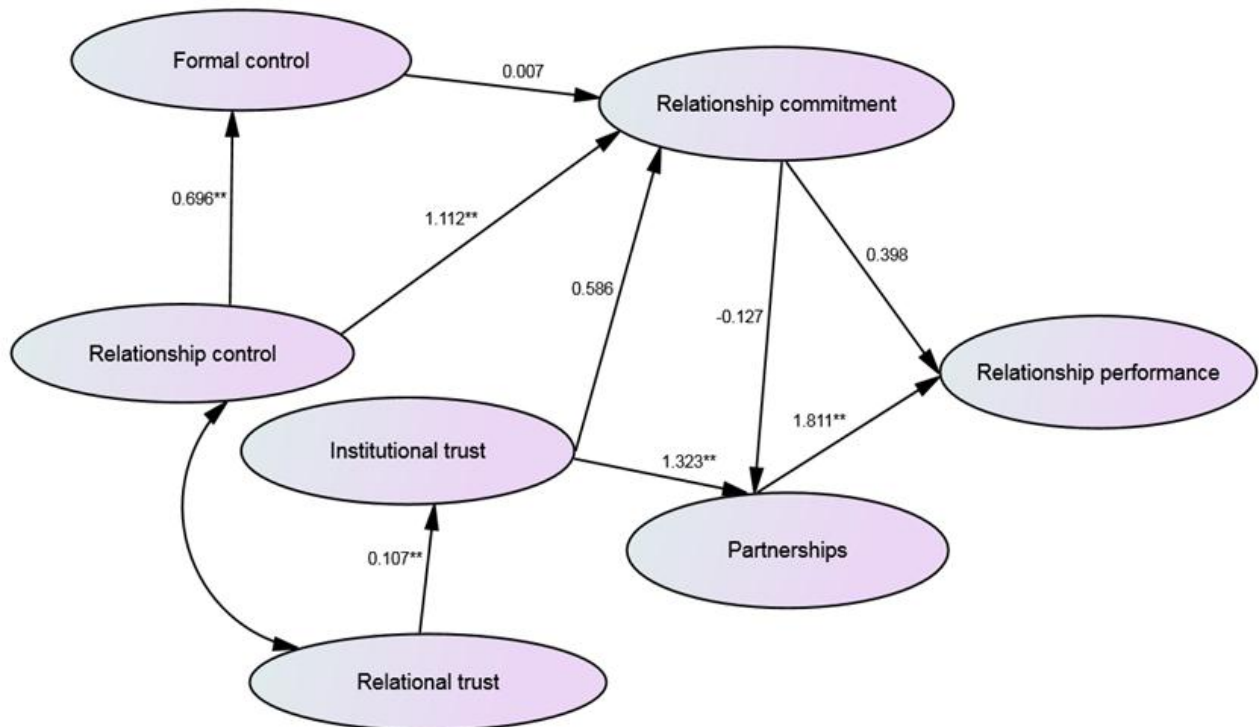


Figure-2. SEM estimation results for the theoretical model (standardized coefficients)

6. CONCLUSION AND SUGGESTIONS

6.1. Theoretical Implications

This study examined the structural relations between formal control, relationship control, institutional trust, relational trust, relationship commitment, partnerships, and relationship performance. A conceptual framework model was constructed based on a literature review. The participants in this study were industrial waste disposal and treatment organizations (including domestic waste treatment and disposal organizations) in the six special municipalities of Taiwan. The goodness-of-fit test of the linear structural model indicated that the theoretical model in this study had an acceptable goodness-of-fit and, thus, the conceptual framework model could be supported. The empirical results indicated that successful partnerships can increase the competitive advantage of companies. Institutional trust is a key factor to the success of industrial chains and establishment of long-term relationships (Vijayasathy, 2010). Non-formal control can increase the flexibility of formal control and facilitate the achievement of goals (Kristof *et al.*, 2017). Relationship control is an important factor that can effectively adjust and promote the flexibility of formal control (Cheng and Lan, 2015). Relational trust was found to have a significant effect on institutional trust, confirming the influence of relational trust (among personnel) on institutional trust during operations in the business waste industry (Yeh *et al.*, 2016a). Partnerships can increase the relationship performance.

6.2. Empirical Implications

This study investigated the different aspects of organizational relations. Trust and commitment were introduced into the conceptual framework model and considered as important factors that influence partnerships in organizations. This study indicated the effects of relationship control on formal control, relationship control on relationship commitment, relational trust on institutional trust, institutional trust on partnerships, institutional trust on partnerships, and partnerships on relationship performance. These findings corresponded to those reported in other studies on the business waste industry and other industries. The results demonstrated that institutional trust is the basis of company operations. Institutional trust is important bridges between companies. Intra-

organizational relationship control can help partners achieve common goals through relationship norms, conflict resolution, and mutual dependence.

The hypotheses related to the effects of relationship commitment on partnerships and relationship commitment on relationship performance were not supported. The business waste industry, as a closed-type industry, is characterized by an oligopoly market of waste product sources and sales licenses and unequal class-based relationships in partnerships, in which relationship commitment can be easily destabilized and relationship performance can be poorer than predicted. However, with adjustments to environmental regulations and the emergence of a new generation of managers in traditional business waste companies, new business concepts are now being integrated, which provides the industry with new perspectives and possibilities.

6.3. Study Limitations and Suggestions for Future Research

The participants in this study were recruited from the six special municipalities in Taiwan. For the sake of objective conclusions, it is suggested that future studies extend the scope to include the rest of Taiwan. Furthermore, over the course of the study, it was found that another issue that could be investigated is the agency problem. There are many companies specializing in import or export in the industrial waste industry. An examination of the agency problem can greatly contribute to the research on practical corporate governance. Partnerships in industrial waste organizations are characterized by dynamic development. It is suggested that scholars conduct case analysis and longitudinal studies in order to investigate partnership operations between organizations with different characteristics.

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Contributors/Acknowledgement: All authors contributed equally to the conception and design of the study.

REFERENCES

- Alexandra, D., P. Sharma, P.G. Irving, J. Marcus and F. Chirico, 2015. Predictors of later-generation family members' commitment to family enterprises. *Entrepreneurship Theory and Practice*, 39(3): 545-569. Available at: <https://doi.org/10.1111/etap.12052>.
- Anderson, E. and B.A. Weitz, 1992. The use of pledges to build and sustain commitment in distribution channels. *Journal of Marketing Research*, 29(1): 18-34. Available at: <https://doi.org/10.2307/3172490>.
- Anderson, J.C. and J.A. Narus, 1999. Business market management, understanding, antecedent factors on trust and commitment in supply chain relationships. *Computer Standards and Interfaces*, 33(3): 262-270.
- Bagozzi, R.P. and Y. Yi, 1988. On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1): 74-79.
- Capon, N., 2001. Key account management and planning. Australia. New York: Simon and Schuster.
- Chang, Y.C., C.H. Chien and S.W. Chou, 2012. The impact factors for the client's commitment in software outsourcing: The dual perspective of formal control and relational governance. *23rd International Conference on Information Management & Practice*, Institute of Information Management.
- Chen, J.V., D.C. Yen, T.M. Rajkumar and N.A. Tomochko, 2011. The antecedent factors on trust and commitment in supply chain relationships. *Computer Standards and Interfaces*, 33(3): 262-270. Available at: <https://doi.org/10.1016/j.csi.2010.05.003>.
- Chen, S.Y., 2005. *Multivariate analysis*. Taipei: Hwa Tai Publishing Co.
- Cheng, J.H. and C.C. Lan, 2015. A study on leader-member exchange, relationship, internal control, and work performance: Taiwan's local hospitality industry. *Journal of Commercial Modernization*, 8(1): 227-246.

- Cheng, R.W., 2004. A qualitative research: An empirical test for the theoretical model of interpersonal trust. Taipei: Executive Yuan, National Science Council.
- Chiang, J.X. and S.C. Lee, 2011. Formation of manufacturer-supplier relationship commitment and its effects on alliance performance. *Science and Technology Management Research*, 4(1): 235-238.
- Chiu, H.C., 2006. Quantitative research and statistical analysis. Taipei: Wu-Nan Book Inc.
- Choudhury, V. and R. Sabherwal, 2003. Portfolios of control in outsourced software development project. *Information Systems Research*, 14(3): 291-341. Available at: <https://doi.org/10.1287/isre.14.3.291.16563>.
- Dant, R. and P. Schul, 1992. Conflict resolution processes in contractual channels of distribution. *Journal of Marketing*, 56(1): 38-54.
- Dant, R.P. and P.L. Schul, 1992. Conflict resolution processes in contractual channels of distribution. *Journal of Marketing*, 56(1): 38-54. Available at: <https://doi.org/10.2307/1252131>.
- Doney, P.M. and J.P. Cannon, 1997. An examination of the nature of trust in buyer-seller relationships. *Journal of Marketing*, 61(4): 35-51. Available at: <https://doi.org/10.2307/1251829>.
- Dore, R.R., 1983. Goodwill and the spirit of market capitalism. *British Journal of Sociology*, 34(4): 459-482.
- Dwyer, F.R., P.H. Schurr and S. Oh, 1987. Developing buyer-seller relationships. *Journal of Marketing*, 51(2): 11-27. Available at: <https://doi.org/10.2307/1251126>.
- Dyer, J.H., 1997. Effective inter-firm collaboration: How firms minimize transaction value. *Strategic Management Journal*, 18(7): 535-556. Available at: [https://doi.org/10.1002/\(sici\)1097-0266\(199708\)18:7<535::aid-smj885>3.0.co;2-z](https://doi.org/10.1002/(sici)1097-0266(199708)18:7<535::aid-smj885>3.0.co;2-z).
- Dyer, J.H. and H. Singh, 1998. The relational view: Cooperative strategy and sources of inter-organizational competitive advantage. *Academy of Management Reviews*, 23(1): 660-679. Available at: <https://doi.org/10.2307/259056>.
- Fang, S.R., J.W. Chang and S.M. Huang, 2003. A study on the antecedents of IOR long-term orientation: Small and medium enterprises' moderating role. *Taiwan Academy of Management Journal*, 3(1): 101-124.
- Fornell, C. and D.G. Larcker, 1981. Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1): 39-50. Available at: <https://doi.org/10.2307/3151312>.
- Frank, L.J. and R. Richard, 2000. Trust and adaptation in relational contracting. *Academy of Management Review*, 25(4): 873-882. Available at: <https://doi.org/10.2307/259212>.
- Fukuyama, F., 1995. Trust: The social virtues and the creation of prosperity. NY: Free Press.
- Gadde, L. and I. Snehota, 2000. Making the most of supplier relationships. *Industrial Marketing Management*, 29(4): 305-316. Available at: [https://doi.org/10.1016/s0019-8501\(00\)00109-7](https://doi.org/10.1016/s0019-8501(00)00109-7).
- Ganesan, S., 1994. Determinants of long-term orientation in buyer-seller relationships. *Journal of Marketing*, 58(1): 1-19. Available at: <https://doi.org/10.2307/1252265>.
- Goo, J., 2010. Structure of service level agreements (SLA) in IT outsourcing: The construct and its measurement. *Information Systems Frontiers*, 12(2): 185-205. Available at: <https://doi.org/10.1007/s10796-008-9067-6>.
- Goo, J., R. Kishore, H.R. Rao and K. Nam, 2009. The role of service level agreements in relational management of information technology outsourcing: An empirical study. *MIS Quarterly*, 33(1): 119-145.
- Goo, J. and K. Nam, 2007. Contract as a source of trust-commitment in successful IT outsourcing an empirical study. *Proceedings of the 40th Annual Hawaii International Conference on System Sciences (HICSS'07)*.
- Govindarajan, V. and J. Fisher, 1990. Strategy, control and system, and resource sharing: Effects on business-unit performance. *Academy of Management Journal*, 33(2): 259-285. Available at: <https://doi.org/10.5465/256325>.
- Gulati, R., 1995. Does familiarity breed trust? The implications of repeated ties for contractual choices in alliances. *Academy of Management Journal*, 38(1): 85-112. Available at: <https://doi.org/10.5465/256729>.
- Gulati, R., 1998. Alliances and networks. *Strategic Management Journal*, 19(4): 293-317.
- Gulati, R. and H. Singh, 1998. The architecture of cooperation: Managing coordination costs and appropriation concerns in strategic alliances. *Administrative Science Quarterly*, 43(1): 783-814. Available at: <https://doi.org/10.2307/2393616>.

- Gulati, R. and M. Sytch, 2007. Dependence asymmetry and joint dependence in interorganizational relationships: Effects of embeddedness on a manufacturer's performance in procurement relationships. *Administrative Science Quarterly*, 52(1): 32-69.
- Hair, J.F., R.E. Anderson, R.L. Tatham and W.C. Black, 1998. *Multivariate data analysis*. 5th Edn., UK: Prentice Hall International.
- Hitt, M.A. and M.T. Dacin, 2000. Partner selection in emerging and developed market contexts resource-based and organizational learning perspectives. *Academy of Management Journal*, 43(3): 449-467. Available at: <https://doi.org/10.5465/1556404>.
- Hong, I.B., 2002. A new framework for interorganizational systems based on the linkage of participants' roles. *Information & Management*, 39(4): 261-270. Available at: [https://doi.org/10.1016/s0378-7206\(01\)00095-7](https://doi.org/10.1016/s0378-7206(01)00095-7).
- Huang, E. and Y.R. Yen, 2009. Exploring different group behaviors in virtual communities from the relationship commitment perspective. *Journal of Information Management*, 16: 57-81.
- Huang, S.M. and S.R. Fang, 2003. A study on long-term orientation of partnerships between marketing channel members and organizational performance. *Management Review*, 22(2): 55-85.
- Jap, S.D. and S. Ganesan, 2000. Control mechanisms and the relationship life cycle: Implications for safeguarding specific investments and developing commitment. *Journal of Marketing Research*, 37(2): 227-245. Available at: <https://doi.org/10.1509/jmkr.37.2.227.18735>.
- Jonsson, P. and M. Zineldin, 2003. Achieving high satisfaction in supplier-dealer working relationships. *Supply Chain Management*, 8(3/4): 224-240. Available at: <https://doi.org/10.1108/13598540310484627>.
- Kim, W.C. and R. Mauborgne, 1998. Procedural justice, strategic decision making and the knowledge economy. *Strategic Management Journal*, 19(4): 323-338. Available at: [https://doi.org/10.1002/\(sici\)1097-0266\(199804\)19:4<323::aid-smj976>3.0.co;2-f](https://doi.org/10.1002/(sici)1097-0266(199804)19:4<323::aid-smj976>3.0.co;2-f).
- Klein, B., 1996. Why hold-ups occur: The self-enforcing range of contractual relationships. *Economic Inquiry*, 34(3): 444-463. Available at: <https://doi.org/10.1111/j.1465-7295.1996.tb01388.x>.
- Kristof, S., S. Hendrik and R. Filip, 2017. Formal controls and alliance performance: The effects of alliance motivation and informal controls. *Management Accounting Research*, 37(1): 49-63. Available at: <https://doi.org/10.1016/j.mar.2017.03.002>.
- Lambe, C.J., R.E. Spekman and S.D. Hunt, 2000. Interimistic relational exchange: Conceptualization and propositional development. *Journal of the Academy of Marketing Science*, 28(2): 212-225. Available at: <https://doi.org/10.1177/0092070300282003>.
- Lawrence, B. and P.J. Kaufmann, 2011. Identity in franchise systems: The role of franchisee associations. *Journal of Retailing*, 87(3): 285-305. Available at: <https://doi.org/10.1016/j.jretai.2010.11.003>.
- Li, F. and J.A.F. Nicholls, 2000. Transactional or relationship marketing: Determinants of strategic choices. *Journal of Marketing Management*, 16(5): 449-464. Available at: <https://doi.org/10.1362/026725700785046001>.
- MacDonald, J.M. and P. Korb, 2008. *Agricultural contracting update, 2005*. Economic Research Service/USDA, Agricultural Economic Report, 9.
- Marcus, W.C. and T. Schaffler, 2014. The interplay of relational governance and formal control in horizontal alliances: A social contract perspective. *Journal of Supply Chain Management*, 50(2): 41-58. Available at: <https://doi.org/10.1111/jscm.12041>.
- McCutcheon, D. and F.I. Stuart, 2000. Issues in the choice of supplier alliance partners. *Journal of Operations Management*, 18(1): 279-301.
- Mignonac, K., C. Vandenberghe, R. Perrigot, A. El Akremi and O. Herrbach, 2015. A multi-study investigation of outcomes of franchisees' affective commitment to their franchise organization. *Entrepreneurship Theory and Practice*, 39(3): 461-488. Available at: <https://doi.org/10.1111/etap.12050>.

- Mohr, J. and R. Spekman, 1994. Communication strategies in marketing channel: A theoretical perspective. *Journal of Marketing*, 60(1): 103-115.
- Mohr, J.J., R.J. Fisher and J.R. Nevin, 1996. Collaborative communication in interfirm relationships: Moderating effects of integration and control. *Journal of Marketing*, 60(3): 103-115. Available at: <https://doi.org/10.2307/1251844>.
- Morgan, R.M. and S.D. Hunt, 1994. The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(3): 20-38. Available at: <https://doi.org/10.2307/1252308>.
- Morris, B.G.A. and J.W. Cadogan, 2001. Partner symmetries, partner conflict and the quality of joint venture marketing strategy: An empirical investigation. *Journal of Marketing Management*, 17(1-2): 223-259. Available at: <https://doi.org/10.1362/0267257012571474>.
- Pérez, P.M. and A.M. Sánchez, 2001. Supplier relations and flexibility in Spanish automotive industry. *Supply Chain Management*, 6(1): 29-38. Available at: <https://doi.org/10.1108/13598540110381272>.
- Rousseau, D.M., S.B. Sitkin, R.S. Burt and C. Camerer, 1998. Not so different after all: A cross-discipline view of trust. *Academy of Management Review*, 23(3): 393-404. Available at: <https://doi.org/10.5465/amr.1998.926617>.
- Searle, R., A. Weibel and D.D.N. Hartog, 2011. Employee trust in organizational contexts. In G. P. Hodgkinson and J. K. Ford (Eds.), *International review of industrial and organizational psychology*. Chichester: Wiley. pp: 143-191.
- Selnes, F. and J. Sallis, 2003. Promoting relationship learning. *Journal of Marketing*, 67(3): 80-95. Available at: <https://doi.org/10.1509/jmkg.67.3.80.18656>.
- Smith, J.B. and D.W. Barclay, 1997. The effects of organizational differences and trust on the effectiveness of selling partner relationships. *Journal of Marketing*, 61(1): 3-21. Available at: <https://doi.org/10.2307/1252186>.
- Tiwana, A., 2010. Systems development ambidexterity: Explaining the complementary and substitutive roles of formal and informal controls. *Journal of Management Information Systems*, 27(2): 87-126. Available at: <https://doi.org/10.2753/mis0742-1222270203>.
- Tiwana, A. and M. Keil, 2009. Control in internal and outsourced software projects. *Journal of Management Information Systems*, 26(3): 9-44. Available at: <https://doi.org/10.2753/mis0742-1222260301>.
- Vieira, L.M., E.L. Paiva, A.B. Finger and R. Teixeira, 2012. Trust and supplier-buyer relationships: An empirical analysis. *BAR-Brazilian Administration Review*, 10(13): 1-18.
- Vijayarathy, L.R., 2010. Supply integration: An investigation of its multi-dimensionality and relational antecedents. *International Journal of Production Economics*, 124(2): 489-505. Available at: <https://doi.org/10.1016/j.ijpe.2010.01.010>.
- Williamson, O.E., 1985. *The economic institutions of capitalism: Firms, markets, relational contracting*. New York: The Free Press.
- Wilson, D.T., 1995. An integrated model of buyer-seller relationship. *Journal of the Academy of Marketing Science*, 23(4): 336-345.
- Wolf, J., 2014. The relationship between sustainable supply chain management, stakeholder pressure and corporate sustainability. *Journal Bus Ethics*, 119(3): 317-328. Available at: <https://doi.org/10.1007/s10551-012-1603-0>.
- Ye, W.L. and R. Huang, 2017. The customer stewardship control plays as an informal control system in sales management to obtain synergistic effect: Customer housekeeper control (CSC) for example. *Journal of Brand Research*, 1: 37-49.
- Yeh, W.C., M.H. Tseng and C.C. Lee, 2016a. Asset specificity in the industrial waste management industry. *Journal of Asian Scientific Research*, 6(6): 99-111.
- Yeh, W.C., M.H. Tseng and C.C. Lee, 2016b. Inter-organizational structural and co-opetition relationships: A case of industrial waste management institutions. *International Review of Social Sciences and Humanities*, 12(1): 40-57.
- Yen, T.F. and S.E. Chen, 2005. The research of interpersonal trust, inter-organizational trust, inter-organizational dependence, and the influence to partnership and relationship performance among goat milk channel members. *Bio and Leisure Industry Research*, 3(2): 127-141.

Yusoon, K. and Y.C. Thomas, 2015. Deep, sticky, transient, and gracious: An expanded buyer–supplier relationship typology. *Journal of Supply Chain Management*, 51(3): 61-87. Available at: <https://doi.org/10.1111/jscm.12081>.

Zucker, L.G., 1986. Production of trust: Institutional sources of economic structure. *Research in Organizational Behavior*, 8(1): 53-111.

APPENDICES

Appendix-1. Measurement of variables

Construct	Research Factor	Measurement Variable	Definition	Reference
Organizational control	Formal control	Result control	Specific goals, deadlines, and budget that must be completed by the company	Govindarajan and Fisher (1990) ; Goo <i>et al.</i> (2009)
		Behavior control	Methods and procedures that must be followed by the company in product processing	Govindarajan and Fisher (1990); Goo (2010)
	Relationship control	Relationship norms	Behavioral principles accepted and expected by both parties	Dore (1983); Dant and Schul (1992); Goo <i>et al.</i> (2009); Yusoon and Thomas (2015)
		Conflict resolution	Joint resolution of conflicts by cooperation partners	Dore (1983); Kim and Mauborgne (1998); Yusoon and Thomas (2015)
		Mutual dependence	Economic value and nonsubstitutability of cooperation partners	Dore (1983); Lambe <i>et al.</i> (2000); Gulati and Sytch (2007); Yusoon and Thomas (2015)
	Relationship commitment	Relationship commitment	Willingness to maintain long-term cooperation relations	Mohr and Spekman (1994); Morris and Cadogan (2001)
		Relational trust	Cooperation partners' trust in each other's reputation and skills	
	Partnership theory	Long-term orientation	Mutually beneficial	Cooperation partners consider mutual interests
Complementary			Cooperation partners match and complement each other's deficiencies	
Closeness		Sharing of risks and interests	Cooperation partners jointly undertake risks and share interests	Gulati and Singh (1998); Capon (2001)
		Information sharing	Cooperation partners share information with each other	Hitt and Dacin (2000); Mohr and Spekman (1994)
		Relationship constancy	Cooperation partners' willingness to continue cooperation in future	Pérez and Sánchez (2001)

Construct	Research Factor	Measurement Variable	Definition	Reference
		Comprehensive communication	Cooperation partners are able to fully communicate and have good communication channels	Anderson and Narus (1999)
Trust	Relational trust	Honesty and credibility	Honest and trustworthy business of cooperation partners	Morgan and Hunt (1994); Doney and Cannon (1997); Rousseau <i>et al.</i> (1998); Cheng (2004)
		Task completion	Responsible and benevolent completion of tasks by a cooperation partner	
	Institutional trust	Partner reputation	Reputation, size, and operational management of cooperation partners	Ganesan (1994); Doney and Cannon (1997); Ganesan (1994)
		Problem solving	Cooperation partners' ability to handle problems and overall ability trustworthiness	
Relationship performance	-	Relationship equity	Cooperation partners treat each other with fairness	Smith and Barclay (1997); Fang <i>et al.</i> (2003)
		Relationship satisfaction	Customer satisfaction and continuance	Smith and Barclay (1997); Selnes and Sallis (2003); Fang <i>et al.</i> (2003)
		Relationship maintenance	Willingness to cooperate and continue cooperation in future	Gadde and Snehota (2000)

Appendix-2. Scale reliability, loadings, and variance extracted

Variable	Loading (not standardized)	Loading (standardized)	Error variance	Measurement variable reliability	Composite reliability (CR)	Average variance extracted (AVE)
Formal control					0.716	0.711
Result control	0.020**	0.997**	0.404	0.001		
Behavior control	1.00	0.013	0.001	0.995		
Relationship control					0.671	0.411
Relationship norms	0.936**	0.301**	0.175	0.090		
Conflict resolution						
Mutual dependence	1.163**	0.413**	0.130	0.171		
	1.00	0.300	0.199	0.900		

Construct	Research Factor	Measurement Variable	Definition		Reference	
Relationship commitment					0.336	0.220
Relationship commitment	1.00	0.250	0.447	0.062		
Relationship commitment	0.201**	0.540**	0.4154	0.003		
Relational trust	0.031**	0.008**	0.399	0.001		
Relational trust						
Honesty and credibility					0.846	0.787
Task completion	3.849**	0.998**	0.001	0.997		
Institutional trust	1.00	0.264	0.288	0.700	0.137	0.076
Partner reputation	0.700**	0.130**	0.354	0.170		
Problem solving	1.00	0.195	0.315	0.380		
Partnerships					0.639	0.513
Long-term orientation	0.541**	0.185**	0.171	0.034		
Closeness	1.00	0.471	0.072	0.222		
Relationship performance					0.880	0.711
Relationship equity	1.00	0.558	0.181	0.311	0.814	0.593
Relationship satisfaction	1.179**	0.544**	0.271	0.296		
Relationship continuance	1.313**	0.619**	0.227	0.383		

Note: * indicates p<0.1; ** indicates p<0.05. Coefficients in the table are standardized coefficients; — indicates automatic setting to a constant value of 1 in SEM and a non-standardized error.

Appendix-3. Discriminant validity analysis

Latent variable	Formal control	Relationship control	Institutional trust	Relational trust	Relationship commitment	Partnerships	Relationship performance
Formal control	0.843						
Relationship control	0.228	0.641					
Institutional trust	-0.001	-0.006	0.276				
Relational trust	-0.100	0.141	0.141	0.887			
Relationship commitment	0.224	0.909	0.368	0.013	0.469		
Partnerships	-0.035	-1.430	0.965	0.142	0.225	0.716	
Relationship performance	0.022	0.091	0.968	0.132	0.448	0.965	0.770

Note: A diagonal line indicates construct AVE square root.

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